

National Fish and Wildlife Foundation
Final Programmatic Report

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U.S. Department of Agriculture, under an NRCS Conservation Innovation Grant.*

Project Name and Number: Cooperative Conservation for Watershed Health

Recipient Organization/Agency: Iowa Soybean Association

Recipient Organization Web Address: www.iasoybeans.com

Project website: <http://www.iasoybeans.com/environment/programs-initiatives/ccfw>

1) Summary of Accomplishments

In four to five sentences, provide a brief summary of the project's key accomplishments and outcomes that were observed or measured.

This project strove to improve watershed health in Iowa by developing, testing, and implementing a cooperative conservation system focused on water quality with linkages to soil, atmosphere, and energy. To achieve this, goal five HUC12 watersheds were chosen in the Boone and Raccoon River basins in which to focus efforts. Within each watershed a watershed management plan was developed which then guided the development of resource management systems for participating farmers. A number of supporting activities were completed during this process including water monitoring, RASCAL assessments of the streams, a sociological survey, soil loss and phosphorus risk analysis, in field performance evaluation, agronomist training, and attribute analysis. The combination of planning and assessment at the field, farm, and watershed scale successfully demonstrated a framework for watershed improvement.

2) Project Activities & Results

If your grant agreement included an approved logic framework, paste the logic framework table here.

Activities

- *Describe and quantify the primary activities conducted during this grant (refer back to your approved logic framework, if applicable).*
- Five watersheds – Willow Creek, Greene County; Fannys Branch, Greene and Dallas Counties; Lower Eagle Creek, Wright County; Buck Creek, Wright and Hamilton Counties; Lyons Creek, Hamilton County - were selected for inclusion in this project. Selection was based on historical water quality data and the experience of project partners working in this area.
- Memorandums of understanding or work contracts were agreed to with Dallas, Greene, Hamilton, and Wright County Soil and Water Conservation Districts to help facilitate project work in the watersheds.
- Fact sheets were developed about the project for each watershed.
- Sociological survey of landowners and farm operators in the five watersheds was completed.

- Watershed stakeholder groups were assembled for each watershed and 20 meetings were held with various stakeholders across the 5 watersheds. The outcomes of these meetings were used in development of the area wide watershed management plans.
- Five area wide watershed management plans were completed and submitted to the soil and water conservation districts. Each district has ownership of the plan and continues to work towards implementation.
- RASCAL (Rapid Assessment of Stream Conditions Along Length) stream assessments were completed in each watershed.
- Land use surveys were completed in Willow Creek and Fannys Branch watersheds. Previous surveys were used for the other three watersheds.
- During the four years of this project 238 water samples were taken from the 5 HUC 12 watersheds from points near where the streams enter the river. Each sample was analyzed for nitrate, nitrite, sulfate, phosphate, fluoride, and turbidity.
- Data requirements for attribute analysis (energy, carbon balance, and greenhouse gas emissions) were investigated.
- A comparative analysis of energy and greenhouse gas emission models was completed and a farm energy calculator was evaluated.
- ISA staff enrolled 102 farmers in this project.
- Two years of farm management practice data (2010 and 2011) was entered into a database which calculated a direct and indirect energy use for each practice or product. That data was then analyzed by Environmental Intelligence, Inc., for relationship to carbon and particularly greenhouse gas emissions. Results were then compared across 311 fields and the 5 watersheds.
- In 2010, 2011, and 2012 1,644 end of season stalk samples were collected on 434 fields covering 43,093 acres. End of season stalk sampling provides the farmer feedback on the crop's utilization of nitrogen. In 2010 and 2011 aerial images for 345 fields were collected to assist with identifying sample points and to provide the farmer additional feedback.
- Fifteen agronomists and crop consultants were trained in RMS planning. These contractors to the project developed 52 RMS plans.
- *Briefly explain discrepancies between the activities conducted during the grant and the activities agreed upon in your grant agreement.*
- Five watersheds were chosen for this project instead of four. Lyons Creek was added due to the proximity and similarity to Buck Creek and at the request of the Hamilton County SWCD.

Results

- *Describe and quantify progress towards achieving the project objectives or outcomes described in your grant agreement. (Quantify using indicators from your approved logic framework, if applicable, or by using new indicators not included in the application.)*
- An EPA 319 grant proposal was submitted for Lyons Creek for watershed improvement efforts. This grant has been awarded and is currently being implemented by the Hamilton SWCD. Other proposal were made but not funded.
- Four of the watersheds were proposed to be included in the USDA Mississippi River Basin Initiative (MRBI). The watersheds, Fannys Branch, Lower Eagle Creek, Buck Creek, and Lyons Creek were approved for the MRBI program. This has led to three Cooperative Conservation Partnership Initiative (CCPI) projects that cover these watersheds. The CCPI proposals requested \$7,257,861 in EQIP funding for cost share practices in these watersheds.

- At least 13 CIG participants (12.7%) have enrolled in MRBI EQIP contracts. Participants have enrolled at least 3,256 acres in nutrient management, 1,756 acres in strip tillage or no tillage systems, and 1,772 acres in cover crops. Not all MRBI enrollment is known, so there are likely additional participants who are implementing conservation practices through MRBI.
- ISA developed a 4 step training program to train agronomists and crop consultants in RMS planning, nutrient management planning, and NRCS programs.
- 102 producers across the 5 watersheds participated in the project. Fifteen of those producers chose to only receive the in-field evaluation, 17 producers received an RMS assessment, and 70 received an RMS plan.
- Energy and greenhouse gas emission analysis of the 5 watersheds indicated differences between the watersheds that suggest further study is needed. For instance, Lyons Creek farmers create the most emissions (average of 602 lbs of CO₂ equivalent) in their production systems amongst the 5 watersheds, while neighboring Buck Creek farmers create the least (average of 277lbs of CO₂ equivalent). This is at least partially attributed to significantly more corn on corn acreage in Lyons Creek. But given their geographic proximity, similar soils, and that many farmers farm in both watersheds, additional analysis is needed to truly understand this difference.
- Additional detail and results can be found in the attached documents.
- *Briefly explain discrepancies between what actually happened compared to what was predicted to happen.*
- 69% of farmers originally enrolled in the project fully participated throughout the project. Thirty two farmers participated at a lower level, either only receiving performance evaluation and/or a scaled back RMS assessment. This occurred for several reasons. Two farmers passed away during this project. The rest were either uncomfortable sharing the level of detail about their operations needed to complete a full RMS, or they were frustrated with staffing changes at ISA that delayed rollout of the RMS and chose to withdraw from the remainder of the project.
- *Provide any further information (such as unexpected outcomes) important for understanding project activities and results.*
- 12 of the 15 agronomists trained during this project are employees of local grain and agricultural input cooperatives. All were unfamiliar with NRCS tools, standards, and programs as this type of assistance is typically outside of the services provided by cooperatives. Eleven of the 12 work for cooperatives that are members of Agriculture's Clean Water Alliance (ACWA). ACWA has received an MRBI CCPI project, and several of the contractors trained in this project are now providing these services to farmers enrolled in the ACWA CCPI. At least one of these cooperatives is considering conservation planning as a long-term addition to the series it provides its clients.

3) Lessons Learned

Describe the key lessons learned from this project, such as the least and most effective conservation practices or notable aspects of the project's methods, monitoring, or results. How could other conservation organizations adapt their projects to build upon some of these key lessons about what worked best and what did not?

- This project involved developing an area wide watershed management plan while also working with local farmers in developing resource management systems for their operations. ISA's goal

was to use the RMS process to help further goals set for the watershed. Logically, the area wide plan needs to be developed first to determine those goals; however there is valuable local management data that is gathered during the RMS process. This led to a joint development process where information was shared during the development of plans at both the farm and watershed scale. This process is articulated in a slide in the attached Technical Report.

- Locally-led watershed management plans are an important tool for engaging farmers/landowners in conservation, demonstrating the role their management plays in addressing watershed resource concerns and supporting implementation of practices through additional cost share funding and awareness-building.
- The watershed planning process needs to be led by those living and farming in the area where the resource issues exist and supporting or mitigating practices will need to be implemented.
- Local water monitoring, performance and management data are essential, with assessment and continuing data collection conducted as part of the planning process. This data will inform implementation strategies, leading to better decision-making.
- Alignment of actions, goals and resources among project partners improves the likelihood of project success, saving time, making most efficient use of resources, maximizing availability of collective expertise, and optimizing program delivery.
- Private sector technical assistance capacity building for conservation planning can work, and must work for sufficient conservation TA to be delivered.
- Successful private sector TA capacity building should engage individual agronomists, both independent and co-op, at the earliest stages. Obtaining buy in from the agronomist who already has a relationship with the farmer generally improves project participation and practice implementation. However, some farmers appreciate a third party review of their operation by someone who is not familiar with their operation.
- None of the 12 co-op agronomists involved in this project were knowledgeable about NRCS programs, tools, and standards; yet all 3 of the independent consultants were all very familiar in this area. This illustrates the different approaches and services that the various suppliers of agronomic knowledge provide to their clients.
- When contracting with local co-op agronomists, it is vital to have both the agronomist and the agronomy department management involved in the project discussions from the start. In cases where we used either the top-down (management only) or bottom- up (agronomists only) approach to begin project planning, there was less overall buy-in in those organizations, and those agronomists struggled to successfully implement the project.
- In some cases introductions were made between the field agronomists and local NRCS staff. This proved to be very beneficial in helping both groups be more comfortable with each other and ensured that the farmer was hearing the same message from both their agronomist and their NRCS office.
- Continuity of assistance is important. In some cases farmers were contacted by 4 different ISA staff and possibly their agronomist. This led to some confusion and dropout amongst participants.

4) Dissemination

Briefly identify any dissemination of lessons learned or other project results to external audiences, such as the public or other conservation organizations.

- Project information can be found online at http://www.iasoybean.com/environment/program_initiatives/ccfw
- A project case study is being developed. A draft is included in the attached Technical Report. This case study will be disseminated at farmer meetings, amongst ISA partner organizations, and other related events, as well as posted online.

- A number of presentations with results from this project have been given:
 - o 5/22/12-Sustainability Tour for food processors, sustainability staff for end users of the soy value chain, 15 attendees
 - o 6/13/12-District 7 Farmer Advisory Council Meeting, farmers, 10 attendees
 - o 7/8/11 – ACWA Board of Directors Meeting, agronomy managers, 15 attendees
 - o 2/25/10 – Greene and Boone County Conservation Workshop, farmers and NRCS staff, 45 attendees
 - o 7/17-20/11 -Poster presentation entitled, "Boone and Raccoon River Cooperative Conservation Project" at the annual Soil and Water Conservation Society conference, over 500 conservation professionals
 - o 9/16/11-Iowa Water Quality Summit, environmental professionals, 100 attendees
 - o 11/8-9/11-Presentation at Leadership for Midwestern Watersheds conference/workshop, 50 watershed professionals and agency staff
 - o 10/31 —11/1/12- Presentation at Leadership for Midwestern Watersheds conference/workshop, watershed professionals, 45 in attendance
 - o 10/10 -Cannon River Watershed Partnership meeting in Minnesota, watershed stakeholders and partners, 50 attendees
 - o 4/11 - Friends of Lake Peppin Agriculture Leadership for Clean Water meeting, Red Wing Minnesota, watershed professionals and stakeholders, 150 attendees
 - o 8/31/09 - Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) Annual Meeting, 100 attendees

5) Project Documents

- a) *Include with your report 2-10 representative photos from the project. Photos need to have a minimum resolution of 300 dpi.*
- b) *Include with your report publications, GIS data, brochures, videos, outreach tools, press releases, media coverage, and any project deliverables per the terms of your grant agreement.*

The following project documents are included with this report.

- Operator and Landowner Survey Results
- 4 Watershed Fact Sheets
- 5 Watershed Management Plans
- RMS Example Plan
- Attribute Analysis Report
- CIG Case Study DRAFT
- 2011 SWCS Conference Poster
- CIG Pictures