V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Water Resource Protection and Management

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%			
111	Conservation and Efficient Use of Water	5%			
112	Watershed Protection and Management	40%			
133	Pollution Prevention and Mitigation	20%			
608	Community Resource Planning and Development	10%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	10.0	0.0	0.0	0.0
Actual Paid Professional	8.0	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
345595	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
305961	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Campus-based and region-based faculty members will conduct meetings, workshops and short courses in partnership with commodity groups, general public and private industry. Field days will be offered to show how to demonstrate methods to protect watersheds and improve water quality. Mass media (printed, radio, television coverage) will be used to increase awareness of programs and classes. Watershed planning committees will be established and trained to develop and implement watershed management plans.

2. Brief description of the target audience

Citizens of Missouri that are living in watersheds that are on the state 303 (d) list of impaired waters are a primary audience. A secondary audience will be the community citizens that are directly affected by water resource concerns because of potential contaminants.

3. How was eXtension used?

Many of the programming efforts and questions that resulted have information available through eXtension. This provides science based information that can be readily used for educational purposes and trainings.

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	3200	10000	500	1000

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year:	2012
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Two educational seminars/conferences for water resources protection and management will be offered each year.

Year	Actual
2012	14

Output #2

Output Measure

- Four Water resource classes will be offered each year for professional education credits.

Year	Actual
2012	4

Output #3

Output Measure

- Each year five watershed groups will receive assistance in developing watershed plans to respond to water resource concerns.

Year	Actual
2012	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Fifty percent of water resource seminar participants will indicate increased knowledge after attending educational seminars and management classes on water resource management and protection.
2	Seventy percent of those attending water resource protection and management courses for professional education credits will change behavior based on knowledge gained.
3	Five watershed groups will receive assistance and change their behaviors towards water resource protection and management.

Outcome #1

1. Outcome Measures

Fifty percent of water resource seminar participants will indicate increased knowledge after attending educational seminars and management classes on water resource management and protection.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	250

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
More people recognize that water quality and quantity are major issues for protecting human and environmental health and providing sound economic value to rural communities. Assistance with funding of practices has decreased so local people are working closely to identify concerns and trying to maximize benefits of water quality with the few funding dollars available. There is a need to increase awareness of water quality issues and how it affects local citizens.

What has been done
Programs for watershed planning have been established in critical watersheds, on-site sewage programs have been offered to improve human and environmental health, youth education projects have been implemented and major educational events and conferences have been held to increase awareness, knowledge and understanding of some of the issues associated with water quality and quantity.

Results
Watershed Management conferences have been held across the state with survey results showing that 92% thought the conference useful and will be changing some behavior to support water quality improvement. 98% would recommend the class for others wanting to understand watershed management planning On-site sewage education pre and post test show an increase in knowledge by 18% with 145 class participants. A train the trainer was held to demonstrate management practices to reduce soil erosion, decrease potential pesticide runoff and improve soil characteristics. 85% of those attending stated they would use the information in classes being offered, newsletters, and at soil and crop conferences. Watershed education expanded from local producers to youth activities with more than 500 3 and 4 graders attending water festival activities. Pre and post test demonstrated that there was an increase in awareness and knowledge by 33% on the topics covered at the watershed education events.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #2

1. Outcome Measures

Seventy percent of those attending water resource protection and management courses for professional education credits will change behavior based on knowledge gained.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1485

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Watershed resource protection and education is important in determining soil erosion, pesticide use and nutrient application rates. Recognizing how each field contributes to the larger watershed needs to be understood to assist farmers in working on a plan of action that will reduce, control or eliminate water quality problems. The economics associated with soil loss, over fertilization or pesticide runoff into waterways is a major factor in working with producers to change behavior.

What has been done
A series of classes for Pesticide applicators, certified crop advisors and farm managers are offered to increase awareness, knowledge and understanding of environmental issues and how management of private land can result in economic benefits and reduce environmental concerns. A series of DVDs have been developed for Pesticides and Water Quality to assist homeowners and turf management specialists in reducing pesticide use and improving lawn management.

Results

Funding for implement agricultural practices for watershed resource protection has become tighter so producers are using the knowledge gained to determine where management practices will provide the best opportunity for reducing soil loss and improving water quality runoff. Professionals evaluated the course offerings and gave it an 85% approval rating on necessary knowledge for making decisions. 95% recommended that others attend the training and 92% stated they would make changes in their behavior or in their decisions with landowners. Improved education can promote positive changes in behavior to protect water quality. Pesticide Applicator Training have used the DVDs for "Pesticide and Water Quality" with the 2500 participants to increase their understanding on how to recognizes what management practices are the most effective at reducing pesticide runoff.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #3

1. Outcome Measures

Five watershed groups will receive assistance and change their behaviors towards water resource protection and management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The 303 (d) list of impaired water that the Missouri Department of Resources develops identifies watersheds that are impaired for a number of different contaminants. To improve water quality in these watersheds, we try to assist with forming a local group and developing a plan of action that

identifies sources of pollution, potential management practices, educational needs, and cost associated with implementation of the plan. Each watershed group that is formed may have different needs and ideas and must be worked with as the local citizens see the need.

What has been done
Meetings with local agency personnel have been set up to identify potential watershed committee members. Once established groups start identifying concerns and issues and work through the nine element watershed planning process. A watershed conference is held to discuss issues and what it takes to develop a watershed plan. This includes identifying partners, technical and financial resources, where to find water quality information and how to estimate potential load of contaminants in the watershed area.

Results
Watershed communities have put together a draft of a watershed plan and are trying to finalize different elements of the nine element plan. Those receiving assistance agree that without help from University Extension the process would take much longer and may not happen at all. Local citizens act as representatives to the community in developing the plan and determining cost to implement the plan and the length of time it will take to see water quality changes. Of those groups working on a watershed management plan 100% state that Extension has played a valuable role in getting the committee moving in the right direction for plan development. 100% have stated that management practices have been selected that meet both the economic and environmental needs of the local producers, and 70% state that they would be willing to host a watershed education meeting for other watershed groups. Two watersheds have started gathering data to be removed from the 303 (d) list in Missouri. Knowledge areas utilized are 111,112, 133, 608 and 803.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

This year Missouri saw both flooding in parts of the state and severe drought in other parts of the state. Many of the watershed activities that were planned to demonstrate management practices were not done because of these severe weather conditions. A recent change that may affect future reporting is on changes in government regulation and what will be required of watershed communities on the 303 (d) list of impaired waters. Along with these concerns is the decreasing availability of funds to implement practices that landowners need to protect water quality and to monitor any improvements on the land.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Watershed Management conferences: 92% thought the conference useful and will be changing some behavior to support water quality improvement.

98% would recommend for other to take this class

85% of those attending a train the trainer on management practices to reduce soil erosion, decrease potential pesticide runoff and improve soil characteristics would use the information in classes being offered, newsletters, and at soil and crop conferences.

Pre and post test of 500 third and fourth graders demonstrated that there was an increase in awareness and knowledge by 33% on the topics covered at the water festival activities. .

On-site sewage education pre and post test show an increase in knowledge by 18% from 63% to 81% with 145 class participants.

Watershed resource protection for CCA Professionals gave an 85% approval rating on necessary knowledge for making decisions.

95% recommended that others attend the training

92% stated they would make changes in their behavior or in their decisions with landowners.

100% of those working on watershed management plan stated that Extension has played a valuable role in getting the committee moving in the right direction for plan development.

100% have stated that management practices have been selected that meet both the economic and environmental needs of the local producers,

70% state that they would be willing to host a watershed education meeting for other watershed groups.

Two watersheds have started gathering data to be removed from the 303 (d) list in Missouri.

Key Items of Evaluation

Through Extension we try to demonstrate the importance of education in promoting changes in attitude and knowledge on water quality protection. We focus on the long-term protection of water quality and helping keep the economic and environmental integrity of an area in focus.