

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Natural Resources & the Environment--Climate Change

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	10%		1%	
111	Conservation and Efficient Use of Water	5%		2%	
112	Watershed Protection and Management	20%		10%	
123	Management and Sustainability of Forest Resources	25%		17%	
124	Urban Forestry	5%		4%	
125	Agroforestry	0%		5%	
133	Pollution Prevention and Mitigation	10%		20%	
134	Outdoor Recreation	0%		1%	
135	Aquatic and Terrestrial Wildlife	10%		10%	
215	Biological Control of Pests Affecting Plants	0%		2%	
402	Engineering Systems and Equipment	0%		2%	
403	Waste Disposal, Recycling, and Reuse	10%		18%	
405	Drainage and Irrigation Systems and Facilities	0%		2%	
511	New and Improved Non-Food Products and Processes	0%		2%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	0%		1%	
604	Marketing and Distribution Practices	0%		1%	
605	Natural Resource and Environmental Economics	5%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	22.0	0.0	6.0	0.0

Actual Paid Professional	19.0	0.0	21.2	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
486077	0	684022	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
486077	0	684022	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
731869	0	5258150	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Louisiana is a state rich in water and other natural resources. Key programs in this area include:

- Louisiana Master Farmer
- Water resource management
- Nutrient management
- Native fisheries
- Forest management and wood processing
- Animal waste handling
- Wetland plants in fresh water and coastal environments
- Wildlife

Activities include extension outreach using group and individual methods and mass media, research projects, result demonstrations and field days, incorporating the latest technological advances and use of social media.

Much effort was placed this year on determining the attitudes, opinions and beliefs of stakeholders regarding the effects of agricultural production practices on water quality in the Gulf of Mexico.

2. Brief description of the target audience

Louisiana farmers and livestock producers, coastal managers, wetlands stakeholders, commercial and recreational fishermen, hunters, forest land owners/managers and youth.

3. How was eXtension used?

A member of our natural resources team is a member of the Conservation Professional Training Community in eXtension, and some forestry extension articles have been propagated through eXtension.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	126870	4189937	19253	0

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

Patent Applications Submitted

Year: 2013
 Actual: 5

Patents listed

Development of Bacteria-Lufenuron Combined Termite Bait
 Oil-Water Separator
 Engineering Plastic/Inorganic Fiber Blends as Lost Circulation Materials
 Floating Pitfall Trap
 Control of Subterranean Termites

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	8	83	83

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	1208858

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	993709

Output #3

Output Measure

- Number of LaHouse Resource Center visitors
Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of building professionals who participated in sustainable housing educational activities (seminars, tours, technical assistance)
Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Number of consumer contacts in LaHouse sustainable housing and landscaping educational activities
Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of farmers certified through the Louisiana Master Farmer program

Year	Actual
2013	31

Output #7

Output Measure

- Number of LaHouse Facebook followers (Likes)
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased adoption of high performance building and retrofitting practices
2	Reduce the impact of animal waste on the environment
3	Increased adoption of recommended practices to reduce non-point source pollution in Louisiana waterways
4	Increased coordination of research and extension activities to address environment and natural resource concerns across the southeastern U.S.
5	Reduce coastal erosion through the establishment of viable wetland plants.
6	Determine ways to reduce the impact of animal waste on the environment through research discovery and development.
7	Landowners and managers adopt recommended practices for economic profitability and environmental sustainability.

Outcome #1

1. Outcome Measures

Increased adoption of high performance building and retrofitting practices

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Reduce the impact of animal waste on the environment

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Increased adoption of recommended practices to reduce non-point source pollution in Louisiana waterways

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Excess sediment and nutrients such as nitrogen and phosphorus continue to be a nationwide concern for water quality within the large watershed of the Mississippi-Atchafalaya River Basin (MARB) which drains 41% of the contiguous United States and parts of two Canadian Provinces to the Gulf of Mexico (GOM). Agricultural producers in Louisiana and upriver states are being challenged to develop strategies to address water quality issues and concerns.

What has been done

The Louisiana Master Farmer Program Partnership, led by the LSU AgCenter, continues to help producers voluntarily address the environmental concerns related to production agriculture. Over 2,500 farmers within Louisiana are enrolled in the three-phase training program that includes classroom and field training and development of a farm-specific management plan. Louisiana Master Farmer program participation covers 96% of the parishes in the state with the state's major agricultural and forestry areas demonstrating the most participation. The recently implemented Louisiana Master Farmer University combines the first two phases of the classroom and field training into a 2-day back-to-back event that aims to recruit additional farmers to its ranks and promote this environmental stewardship opportunity to farmers. The program addresses nonpoint source management by focusing on best management practices (BMPs) and conservation practices (CPs) to address runoff water quality in agriculture, forest, and urban settings.

Results

A survey was conducted in spring of 2013 to determine producers' perceptions of the relationship between on-farm production practices and water quality and to measure their adoption of recommended best practices. Results indicate that while 60% of respondents recognize the connection between practices on the farm and the quality of the water in basins downstream, nearly 1/3 are not convinced of that connection or have never thought about the connection. Over 40% of the respondents acknowledge that the benefits of implementing nutrient management best practices are clear and the resources are available to implement, while the remainder are uncertain. Among the most frequently-adopted recommended practices were: Using water control structures, techniques to improve grazing distribution, conservation tillage and pesticide drift reduction BMPs; following LSU AgCenter fertilizer recommendations; and practicing crop rotation. Over 1/2 of respondents did not have a farm-specific conservation plan or a grazing management plan and about 2/3 reported that they did not capture and reuse surface water for irrigation. It was concluded that opportunities remain for convincing farmers about the relationship between on-farm nutrient management practices and water quality benefits.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

Outcome #4

1. Outcome Measures

Increased coordination of research and extension activities to address environment and natural resource concerns across the southeastern U.S.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Reduce coastal erosion through the establishment of viable wetland plants.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Determine ways to reduce the impact of animal waste on the environment through research discovery and development.

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Landowners and managers adopt recommended practices for economic profitability and environmental sustainability.

Not Reporting on this Outcome Measure

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

A survey on perceptions of nutrient management and adoption of environmental best management practices was compiled in spring of 2013. Its purpose was to determine

producer's perceptions on the importance of environmental stewardship, determine the current state of adoption of environmental best management practices and use this data as a base-line for planning future educational programs in this area. This survey was sent out to agricultural producers across Louisiana via email and personal contacts. Five hundred thirty eight (537) producers responded from forty eight (48) parishes). Respondents were located in all major watersheds.

Survey results indicated:

- 49% produced agronomic crops only
- 30% produced livestock/pasture only
- 21% produced both agronomic crops and livestock/pasture
- 93% believed that farming practices definitely or possibly affected water quality
- 43% believed that the benefits of nutrient management best management practices is clear
- 49% believed that technical assistance for implementing best management practices is available
- 49% believed that the cost of implementing best management practices is reasonable

The survey was quite extensive and covered many areas of resource conservation. Listed below are

the percentage of producers indicating that they have adopted certain key Best Management Practices:

Practices (% Adoption)

- Have a Farm-specific Conservation Plan (56%)
- Have a Grazing Management Plan (56%)
- Use pesticide drift reduction BMPs (85%)
- Use precision application technologies (57%)
- Follow LSU AgCenter fertilizer recommendations (86%)
- Soil test every three years (76%)
- Incorporate surface applied fertilizer or manures (62%)
- Use conservation tillage (87%)
- Contour farm on extreme slopes (32%)
- Have grassed turn rows and waterways (75%)
- Practice crop rotation (85%)
- Use water control structures (89%)
- Burn crop residue (48%)
- Disc crop residue (84%)
- Capture and reuse surface water for irrigation (36%)
- Use rotational grazing (79%)
- Analyze poultry litter prior to application (52%)
- Use techniques to improve grazing distribution (88%)

Ninety two percent (92%) of respondents indicated that they had used the LSU AgCenter as a source of technical assistance and production research support. Approximately 70% of respondents have participated in at least one federal conservation program and 37% have utilized Web-based sources of production/conservation information and 27% utilized printed resources. Results of this survey demonstrate that the Louisiana Master Farmer Program is effective in influencing producer conservation management decisions to reduce sediment and nutrient loss to improve water quality.

Key Items of Evaluation