V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Environmental Stewardship

☑ 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%	10%		
104	Protect Soil from Harmful Effects of Natural Elements	10%	10%		
111	Conservation and Efficient Use of Water	10%	10%		
112	Watershed Protection and Management	10%	20%		
123	Management and Sustainability of Forest Resources	10%	0%		
131	Alternative Uses of Land	10%	0%		
132	Weather and Climate	10%	0%		
133	Pollution Prevention and Mitigation	10%	10%		
135	Aquatic and Terrestrial Wildlife	10%	0%		
136	Conservation of Biological Diversity	10%	0%		
403	Waste Disposal, Recycling, and Reuse	0%	20%		
723	Hazards to Human Health and Safety	0%	20%		
	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	3.9	1.1	0.0	0.0
Actual Paid Professional	39.6	2.5	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**
231028	150803	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
687279	150803	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
3565028	202629	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Classroom-in-the-Forest (CIF)

CIF is designed to help communicate and promote wise management of all of our forest resources and to educate youth concerning the importance of private land ownership and private landowners

4-H Coosa River Science School (CRSS)

CRSS programs are designed using a hands-on, experiential learning model with a focus of promoting comfort in the woods, environmental education, and an appreciation for Alabama's natural spaces

Alabama 4-H Outdoor Classroom (AOC)

AOC programs provide guidance to develop outdoor classrooms on school campuses and provide professional development workshops for educators and those that work with youth

4-H Skins N Skulls

4-H SnS program provides youth opportunity hands-on lessons to learn about wildlife, their habitats, and the larger ecosystems, in which we all coexist

Mobile Bay Oyster Garden Program

MBOGP is a volunteer restoration program. Volunteers grow oysters on private wharves for collection and planting on restoration sites

Water Wheels

A mobile, interactive, 3-D game-based learning lab provides educational programming concerning water quality and conservation

Watershed Management

Educational multi-team programs were conducted to integrate the link between land use and water quality. Topics include link between soils, forages, riparian forests, urban landscapes and water quality. Actions include citizen science training and monitoring of waterways, implementation of BMPs, and engagement of decision makers

Aquatic Nuisance Species

Educational programs and resources were developed in response to current and future concerns related to the spread of nuisance species that results in economic or ecological damage

Nutrient Management Planning for Poultry Growers

Educational programs were conducted to provide continuing education for Concentrated Animal Feeding Operations (CAFO) registration requirements

Alabama Smart Yards (ASY)

(ASY projects offer residential landscape management solutions to reduce nonpoint source pollution associated with the everyday activities within a watershed.

Professional Logger Manager (PLM)

PLM focuses on continuing education for professional loggers with regard to resource conservation, safety, and business management

Invasive Species Identification/Ecology/Control (ISIEC)

ISIEC focuses on education for forest landowners, professionals, and practitioners to enhance their ability to identify and control invasive plants and wild pigs.

E-waste Institute

E-waste institute provides educational programming related to proper management and disposal of electronic waste.

Synergistic Efforts to Reduce Pharmaceuticals in the Environment (SerPIE)

SerPIE enables citizens to safeguard their home and the environment from expired and unwanted pharmaceuticals.

Urban Environmental Science Education Program (UESeP)

UESeP provides educational programming focused on improving environmental stewardship.

Urban Home*A*Syst

Urban Home*A*Syst helps homeowners identify, low, medium and high risks found in and around the home and offers integrated approaches to help resolve them

2. Brief description of the target audience

4-H youth 9-19, educators, youth, volunteers and other youth development professionals, coastal residents and visitors, landowners, homeowners, elected officials, farmers, loggers, poultry growers, consumers of horticulture goods and services, citizens, coaches, volunteers, managers of municipal recreational fields and parks, and teachers

3. How was eXtension used?

Nutrient Management Planning for Poultry Growers

Livestock and Poultry Environmental Stewardship sections from eXtension were used as reference materials and the Livestock and Poultry Environmental Stewardship newsletter is forwarded to Poultry and Animal Science program team members

Alabama Smart Yards

eXtension was employed to host "Don't Bug Me Webinar Series 2013"

Invasive Species Identification/Ecology/Control (ISIEC)

Information dissemination concerning wild pig management.

V(E). Planned Program (Outputs)

1. Standard output measures

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

Patent Applications Submitted

Year:	2013
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	12	7	19

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- ACES will reach both adult and youth audiences, agricultural producers, homeowners, agribusinesses, and rural and urban populations through participation in workshops, targeted PPT programs, 4-H enrichment programs, 4-H Club meetings, Coosa River Science School, media exposure, websites, partnerships, and curriculum.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of environmental stewardship activities conducted

Year	Actual
2013	44579

Output #3

Output Measure

- Number of trained volunteers to produce, collect, and plant oysters in restoration areas in Mobile Bay

Year	Actual
2013	100

Output #4

Output Measure

- Number of individuals participating in Water Wheels programs and receiving educational resource materials, website, radio, television, and social media

Year	Actual
2013	2536

Output #5

Output Measure

- Number of individuals who participated in water quality educational activities

Year	Actual
2013	9832

Output #6

Output Measure

- Number of individuals participating in meetings focused on Nutrient Management Planning for Poultry Growers

Year	Actual
2013	825

Output #7

Output Measure

- Number of participants reached in Alabama Smart Yards (ASY) Program

Year	Actual
2013	7074

Output #8

Output Measure

- Number of participants engaging in continuing education Professional Logger Manager course.

Year	Actual
2013	63

Output #9

Output Measure

- Number of participants engaging in Invasive Species Identification/Ecology/Control conferences

Year	Actual
2013	2119

Output #10

Output Measure

- Number of participants in E-waste Institute

Year	Actual

2013	1316

Output #11

Output Measure

- Number of Synergistic Efforts to Reduce Pharmaceuticals in the Environment.

Year	Actual
2013	3461

Output #12

Output Measure

- Number of Urban Environmental Science Education Program participants

Year	Actual
2013	6528

Output #13

Output Measure

- Number of individuals participating in Urban Home*A*Syst.

Year	Actual
2013	1908

Output #14

Output Measure

- Number of participants attending workshops and consultations concerning BMPs for athletic field turf management.

Year	Actual
2013	19

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	-knowledge increase local and state environment -how one's action affect the environment - increased knowledge of environmental sustainability -understand value of local involvement - increased knowledge of career choices related to environmental stewardship
2	-increased respect for citizenry, community, and environment; -increased frequency of sustainability behaviors; -increased community service related to environmental stewardship; -inform the policy process as it relates to environmental stewardship; -increased implementation of environmental stewardship management practices
3	-increased perception of self-empowerment - ability to make a difference; -increased capacity for planning organizing, problem solving, decision-making, and teamwork to address problems; -Increased leadership skills; -increased number of citizens practicing environmental stewardship leading to a cleaner, safer environment; -increased capacity to create innovative solutions for complex environmental problems; -increased environmental stewardship advocacy; - revenue generation attributed to improved environmental sustainability; -increased use of alternative, renewable sources of energy
4	Increase citizen awareness of best management practices for residential landscapes
5	Increase adoption of principles taught: IPM, rain barrels installed, pruning for plant health/aesthetics, proper use of garden chemicals, right plant - right place, identification of invasive exotic plants, environmentally sound production of livestock and poultry
6	Increased knowledge and awareness of household hazards and their impact on the environment and human health; -Increased adoption of environmentally friendly homesite BMPs; -Modified behavior towards homesite and residential land management;-Increased conservation of soil and water resources; -Improved management of the household waste generated from urban and suburban homes
7	knowledge increase, increased knowledge of environmental sustainability, understanding the value of local involvement, increased community service related to environmental stewardship, increased implementation of environmental stewardship management practices
8	Knowledge increase local and state environment
9	change in knowledge, outcome, and condition related to Watershed Management and Aquatic Nuisance Species
10	to change knowledge and actions related to perceptions about poultry litter; poultry litter should not be perceived as waste, rather as a valuable commodity.
11	To change knowledge of calculating storm water runoff and the importance of reducing runoff total flow, and to change knowledge and actions related to pollinators and of IPM.
12	Invasive Species Identification/Ecology/Control programs increase knowledge of forest landowners related to how to manage invasive species.
13	E-waste Institute program increased perception of self-empowerment - ability to make a difference; -increased capacity for planning organizing, problem solving, decision-making, and teamwork to address problems; -Increased leadership skills; -increased number of citizens practicing environmental stewardship leading to a cleaner, safer environment; -increased capacity to create innovative solutions for complex environmental problems; -

	increased environmental stewardship advocacy; - revenue generation attributed to improved environmental sustainability
14	Synergistic Efforts to Reduce Pharmaceuticals in the Environment programs increased respect for citizenry, community, and environment; -increased frequency of sustainability behaviors; -increased community service related to environmental stewardship; -increased implementation of environmental stewardship management practices
15	Urban Environmental Science Education Program increased knowledge of the local and state environment, how one's action affect the environment, environmental sustainability, understanding of the value of local involvement and increased knowledge of career choices related to environmental stewardship
16	Urban Home*A*Syst programs change knowledge related to household hazards.

Outcome #1

1. Outcome Measures

-knowledge increase local and state environment -how one's action affect the environment -increased knowledge of environmental sustainability -understand value of local involvement -increased knowledge of career choices related to environmental stewardship

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	302

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
While worldwide water consumption is rising at double the rate of the population, the amount of freshwater remains at only 2.5 percent of the world's water resources. Rainfall replenishes much of the water we use. However, it is predicted that by 2025, eighteen countries will use more water than can be replenished. Collected rainwater is used for domestic purposes and irrigation. In some countries, it is the only source of potable water. Rainwater is usually collected from rooftops, greenhouses, pool covers and other relatively clean surfaces. This stored water can be used for irrigation, flushing toilets, or washing cars; however, it is nonpotable and requires extensive treatment for use as tap water. Potable water purification requirements vary with state and local ordinances and must be inspected by local authorities.

What has been done

44 workshops and seminars for clientele about the importance, methods, and skills to create and install their own rain water catchment systems. During each workshop/seminar participants also worked on their own rain barrel which were installed in their own homes. A total of 1162 adult clientele, 67% white, 26% black, 45% male, 55% female attended the scheduled workshops and seminars.

Results
302 rain barrels were constructed and distributed to conserve water. Youth participants through Water Wheels improved skills and abilities to recognize, identify, and evaluate poor water conservation practices. Increased knowledge and adoption of water conservation practices was 31%. A total of 27K gallons of water was conserved as a direct result of the adopted practices. An estimated $40K was saved by clientele by adopting the conservation practices obtained by the Water Wheels Programming.

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4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water

Outcome #2

1. Outcome Measures

-increased respect for citizenry, community, and environment; -increased frequency of sustainability behaviors; -increased community service related to environmental stewardship; -inform the policy process as it relates to environmental stewardship; -increased implementation of environmental stewardship management practices

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

-increased perception of self-empowerment - ability to make a difference; -increased capacity for planning organizing, problem solving, decision-making, and teamwork to address problems; -Increased leadership skills; -increased number of citizens practicing environmental stewardship leading to a cleaner, safer environment; -increased capacity to create innovative solutions for complex environmental problems; -increased environmental stewardship advocacy; - revenue generation attributed to improved environmental sustainability; -increased use of alternative, renewable sources of energy

Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

Increase citizen awareness of best management practices for residential landscapes

Not Reporting on this Outcome Measure

Outcome #5

1. **Outcome Measures**

Increase adoption of principles taught: IPM, rain barrels installed, pruning for plant health/aesthetics, proper use of garden chemicals, right plant - right place, identification of invasive exotic plants, environmentally sound production of livestock and poultry

Not Reporting on this Outcome Measure

Outcome #6

1. **Outcome Measures**

Increased knowledge and awareness of household hazards and their impact on the environment and human health; -Increased adoption of environmentally friendly homesite BMPs; -Modified behavior towards homesite and residential land management;-Increased conservation of soil and water resources; -Improved management of the household waste generated from urban and suburban homes

Not Reporting on this Outcome Measure

Outcome #7

1. **Outcome Measures**

knowledge increase, increased knowledge of environmental sustainability, understanding the value of local involvement, increased community service related to environmental stewardship, increased implementation of environmental stewardship management practices

2. **Associated Institution Types**

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual

2013	40115

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Oyster restoration in Mobile Bay is important to the environment and to the local economy. Local citizens and tourism are concerned with the environment as well as economic vitality of the region.

What has been done
Mobile Bay Oyster Garden Program

Results
-100 volunteers engaged in the Mobile Bay Oyster Garden Program to establish oyster beds
- 40,115 oysters were produced and planted in Mobile Bay populating over 8,000 square meters; 124.75 volunteer hours and 580 miles volunteer travel.

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
132	Weather and Climate
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity

Outcome #8

1. Outcome Measures

Knowledge increase local and state environment

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual

2013	5290

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Youth are disconnected from nature and 4-H makes a real investment in environmental education and outdoor learning. Studies show environmental education engages students in learning, raising test scores, and encouraging youth to pursue careers in environmental education and natural resources.

What has been done
4-H Skins and Skulls, 4-H Classroom in the Forest, 4-H Coosa Science River School, and 4-H Outdoor Classroom

Results
88% of the respondents (n=2884) reported that because of their involvement in the Skins n? Skulls program, they have a better understanding of different ecosystems and the interconnectivity between them. 300 public and private schools across Alabama have enrolled in the AOC where teachers were equipped to expand educational opportunities through the use of an outdoor classroom. 75 percent of Classroom in the Forest participants (n=869) reported they can more effectively assess a tree's health. Youth feel more connected to nature, enjoy meeting youth from other areas of the state, many stay away from home for the first time, and most want to come back. Youth learn life skills related to environmental stewardship.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity

Outcome #9

1. Outcome Measures

change in knowledge, outcome, and condition related to Watershed Management and Aquatic Nuisance Species

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	250000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Local, state and federal agencies increasingly value partnerships with Extension to demonstrate practices that assist in meeting their goals that include improved quality of life; safe, abundant drinking water; waters that meet their designated use standard; and increased awareness of new technologies to achieve these goals.

What has been done
Implementation of demonstration projects that incorporate field days and technical trainings

Results
850 linear feet of stream enhanced or restored, improved storm water quality from the implementation of 16 storm water control measures, and 52 agricultural best management practices value at $250,000 completed; including waste management facilities, pasture improvements, stream crossings, and heavy use areas.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
136	Conservation of Biological Diversity

<u>Outcome #10</u>

1. Outcome Measures

to change knowledge and actions related to perceptions about poultry litter; poultry litter should not be perceived as waste, rather as a valuable commodity.

2. Associated Institution Types

- 1862 Extension

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)
Poultry litter is a valuable commodity when handled, stored, and used properly and can be sold by producers to increase sustainability of the farm enterprise and to reduce phosphorus buildup on surrounding farm land.

What has been done
Nutrient Management CAFO registration meetings.

Results
Over 50 percent of poultry litter generated in Alabama is now used off the farm of origin increasing poultry farm of origin sustainability and reducing phosphorus buildup on surrounding farm land.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
403	Waste Disposal, Recycling, and Reuse

Outcome #11

1. Outcome Measures

To change knowledge of calculating storm water runoff and the importance of reducing runoff total flow, and to change knowledge and actions related to pollinators and of IPM.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	290

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Significant surface and ground water combined with the level of consumer spending in Alabama's home landscapes/gardens ($843 million - 2009, AU Special Report #7) suggest huge impacts from home landscapes/garden runoff.

What has been done
"What do I spray on it", is still a common question Extension Agents hear today, but a pesticide isn't always necessary to address the perceived problem. We teach our clients how to identify the problem, determine the severity of the problem, and then multiple options to address it. When suggesting pesticides, we teach them to "READ the label", proper use, and that pesticides are just one option for management.

Results
-76% of participants showed knowledge gain in calculating runoff potential; 60% said they would install a rain barrel; and 60% felt confident calculating runoff potential; total harvest potential = 3400 gal/person.
-81% of participants increased their knowledge of using pesticides safely and reading the label; 71% said they would educate others about importance of pollinators; and 92% said they would adopt/implement the IPM practices shown

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
136	Conservation of Biological Diversity

Outcome #12

1. Outcome Measures

Invasive Species Identification/Ecology/Control programs increase knowledge of forest landowners related to how to manage invasive species.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	1911

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Forest land owners, timber professionals, and practitioners need to know how to identify and control invasive plants and wild pigs.

What has been done
Workshops, publications, and social media

Results
1911 (98%) participants reported change in knowledge. These 1911 participants are responsible for over 2.8 million acres of forestland.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity

Outcome #13

1. Outcome Measures

E-waste Institute program increased perception of self-empowerment - ability to make a difference; -increased capacity for planning organizing, problem solving, decision-making, and teamwork to address problems; -Increased leadership skills; -increased number of citizens practicing environmental stewardship leading to a cleaner, safer environment; -increased capacity to create innovative solutions for complex environmental problems; -increased environmental stewardship advocacy; - revenue generation attributed to improved environmental sustainability

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	1054

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Educational information to respond to community needs related to electronic waste (e-waste) management is becoming increasingly important. According to the USEPA the number of electronic products in households and businesses that are considered to be obsolete, broken, or irreparable is growing at 3 times the rate of household trash. Continued production of e-waste in such a rapid manner creates a need for improved education and increased adoption of e-waste BMPs. The E-Waste Institute serves as a medium to educate, train, raise public awareness, and influence public policies about safe environmental practices for e-waste.

What has been done
a). Economic and environmental impacts were observed from reductions in CO2 emissions, e-waste fated for landfills, and the reclamation of precious resources. A continuous small electronics recycling program (SERP) was conducted via a partnership with recycler Funding Factory. Over 959 lbs. of printer cartridges (586) and cell phones (41) were recycled, resulting in 722 lbs. of remanufactured items and 235 lbs. of recycled items. b). ACES also led the Wiregrass E-waste Recycling Drive in Dothan, AL resulting in 60 cars dropping off 5200 lbs. of e-waste. Collaborative efforts included assisting with the promotion of the Madison Co. AL Electronics and Mercury Collection Drive, resulting in 485 cars dropping of 39,388 lbs. e-waste. Participants were reached via radio, television and web; they also received ACES publications on e-waste hazards.

Results

a). Over 591 lbs. of resources (copper , aluminum, steel, plastic, nylon) were reclaimed. Over 10 MtCO2e (metric ton CO2 equivalent) were prevented through remanufacturing and recycling. The quantity of e-waste recycled was equivalent to offsetting CO2 emissions from the consumption of 1,141.63 gals. of gasoline. The total ACES?s yearly earnings generated from recycling with Funding Factory are $321.00.
b).The economic and environmental gains observed from the Wiregrass E-waste Drive totaled $733.00 for 2100 lbs. of metal ($147.00); 200 lbs. of wire ($160.00), 400 lbs. of electrical units ($160.00)?...etc. The event deferred 8,232 lbs. of carbon emissions from entering the atmosphere. This equates to 1,397 gals. of gasoline conserved (@ $3.19 per gal. = $4,456.43), 317 trees saved, 11,931 plastic bottles recycled or 54,882 aluminum cans recycled (@0.60 per lb. = $32,929.20). Results also revealed that 69% of workshop participants improved their knowledge of the benefits of reusing, reducing and recycling e-waste and 78% showed knowledge gains on how to dispose of e-waste properly (n=144).

4. Associated Knowledge Areas

KA Code	Knowledge Area
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse
723	Hazards to Human Health and Safety

Outcome #14

1. Outcome Measures

Synergistic Efforts to Reduce Pharmaceuticals in the Environment programs increased respect for citizenry, community, and environment; -increased frequency of sustainability behaviors; -increased community service related to environmental stewardship; -increased implementation of environmental stewardship management practices

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	171

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In recent years, pharmaceuticals and personal care products (PPCPs) have been detected in the environment by scientists all over the world. The Synergistic Efforts to Reduce Pharmaceuticals in the Environment (SerPIE) Program aims to help individuals understand the environmental safeguards germane to proper management and disposal of unwanted medicine, ensuring improved human, animal and environmental health. Results of questionnaires provided by ACES during a drug take-back initiative (n= 48) Female (67%); Male (33%)] revealed that 73% of the participants had never utilized a drug-take back event before. Results also revealed that minority participation was extremely low at 11% versus that of Caucasians at 89%. Similar demographic trends were seen throughout the state, suggesting a need for increased outreach among minorities.

What has been done

a). SerPIE, which entails workshops, research activities, and participation in drug-back initiatives has led to reductions in the number of pharmaceutical drugs fated for the environment (i.e., water supplies) and stockpiled in homes, significant increases in knowledge, anticipated positive changes in behavior, adoption of recommended pharmaceutical BMPs, and achievement of social, and environmental expectations. Eight workshops were offered to diverse audiences ranging from small ruminant producers to youth counselors. Significant knowledge gains were observed among educators and youth counselors (n = 77) as well as among small ruminant producers (n = 36).

Results

A total of 1253 lbs. of pharmaceutical drugs were collected during 4 drug-back initiatives, resulting in reduced potential for drug abuse or misuse, and anticipated improved environmental and water quality. Results of the workshops revealed that 80% of the youth educators increased their knowledge concerning the impacts of improperly disposing of pharmaceuticals; 92% increased their knowledge of how pharmaceuticals affect human health; and 96% increased their knowledge of street names commonly used for pharmaceuticals (n=77). 90% of the small ruminant producers showed knowledge gains concerning the drug take-back initiative; and 80% increased their knowledge of risks posed to human and environmental health. As a result of the program, 47% stated that they would no longer flush medication down the toilet and 50% stated that they had already adopted that recommended BMP (n=36). Of the 10 participants responding to 3 to 6 month follow-up surveys, 100% had eliminated the practice of flushing drugs down the toilet; 40% had participated in a drug-take back program, and 100% had achieved their social expectation of a more drug-free, safer home (n=10).

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
135	Aquatic and Terrestrial Wildlife
403	Waste Disposal, Recycling, and Reuse
723	Hazards to Human Health and Safety

Outcome #15

1. Outcome Measures

Urban Environmental Science Education Program increased knowledge of the local and state environment, how one's action affect the environment, environmental sustainability, understanding of the value of local involvement and increased knowledge of career choices related to environmental stewardship

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	337

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Environmental education is the key to advances in conservation and to avoiding the long-term consequences associated with poor environmental stewardship and management of natural resources. The Urban Environmental Science Education Program (UESeP) seeks to improve citizen appreciation for science and enhance their understanding of the environment. It provides a framework for citizens to become better stewards by identifying environmental issues and providing unbiased, science-based information to aid in their understanding of these issues.

What has been done
A team-based approach was used to implement UESeP in various settings. Multiple delivery modes, including classroom enrichment, workshops, field days, fairs, festivals and expos were used. Two extramural grants were received and presentations were also made at local, regional and national meetings. Research activities were used to create experiential learning opportunities for undergraduate students and to provide researched-based data for Extension program enhancement.

Results
UESEP youth learned the impacts of non-point pollution; the importance of natural resource conservation, the importance of pollinators; and the benefits of reducing, reusing and recycling discarded waste.
Youth improved their skills and abilities to problem solve, evaluate, reason, focus, observe, research a problem, and measure (PERFORM) via hands-on activities involving GPS and geocaching, constructing wildlife habitats, and participating in Enviroscape demonstrations. The average youths' knowledge before the workshops was rated very low to moderate (1-3) compared to ratings of high and very high (4-5) after the workshops. Surveys revealed that 98% of youth

surveyed increased their level of knowledge concerning the environment and 94% agreed that the program made them want to become better stewards of the environment (n= 337).
Comments: This workshop was not only extremely informative but it was fun and interesting! It was awesome! I learned that it is important to take care of the planet and keep it clean! They are very good at what they do, I hope they come back! Thank you for teaching us about the environment! I liked it!

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
135	Aquatic and Terrestrial Wildlife
403	Waste Disposal, Recycling, and Reuse
723	Hazards to Human Health and Safety

Outcome #16

1. Outcome Measures

Urban Home*A*Syst programs change knowledge related to household hazards.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	166

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Education and citizen involvement is critically important to the improvement of environmental stewardship. Outreach programs that address emerging environmental issues and offer integrated approaches to help resolve them are needed to combat environmental illiteracy among urban and suburban home owners. In order to enhance decision-making, homeowners must understand that their actions are crucial to the protection of their health and the environment.

What has been done

a).Urban Home*A*Syst workshops were conducted to help homeowners identify risks or problems found in and around the home, and encourage them to take action. Program outcomes were shared via poster presentations at the 2013 Water Education Summit and AAMU Annual STEM Day.
b). A collaborative effort with the Mobile Co. Environmental Department, ACES and Keep America Beautiful resulted in the development and implementation of an ACES questionnaire (n = 779) along with collection of 12,625 containers of paint and 596 miscellaneous containers at a Mobile Co. Paint Disposal Collection Day.

Results
a).Participants showed increased knowledge in water quality; runoff management; lawn and garden; managing hazardous products; storing automotive products; household wastewater treatment; and managing trash and waste prevention (n=166). Of the 22 participants responding to 3 to 6 month follow-up surveys, the majority had adopted at least 3 of the recommended BMPs and 90% felt that the program enabled them to achieve a social (hazard free, securer home), environmental (protecting the environment from poor home site management practices) or economic (saving money) expectation (n=22).
b). Of the 779 participants/cars surveyed at the Paint Disposal Collection: 83% (637) were recycling paint for the first time; and 81% (633) recycled other products regularly. Although participants from 32 zip codes were represented, 62% came from 5 zip codes. These findings, along with demographic data [Caucasian (93%), African American (6%) and other (1%); Female (37%), Male (63%)] highlighted the need for more outreach and participation from minorities in future household hazardous waste collections.

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
403	Waste Disposal, Recycling, and Reuse
723	Hazards to Human Health and Safety

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Cold temperatures delayed larval setting of oysters resulting in lower year-end

plantings and oyster gardening is restricted to areas allowed by Alabama Department of Public Health

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Classroom-in-the Forest

• 99% of participants learned new information regarding natural resources and how to teach information to youth.

Skins n' Skulls-84% indicated they are better prepared and more capable of positive, beneficial stewardship of natural resources.

40,115 oysters were produced and planted to restore over 8,000 square meters at 47 sites.

4-H Coosa River Science School

• 88% of the respondents reported they have a better understanding of different ecosystems and the interconnectivity.

Alabama Outdoor Classroom

• 99% of the workshop participants learned new information regarding natural resources and how to teach this information to their students.

• Alabama Outdoor Classroom Program is in 57 or Alabama's 67 counties.

• Through the Alabama Outdoor Classroom Program, more than 80,000 youth in grades K-12 are learning about Alabama's natural resources.

4-H Skins N Skulls

• 87% of the respondents reported that because of the program, they have a better understanding of the anatomical differentiations between herbivores and carnivores.

• 88% of the respondents reported that because of their involvement in the Skins n' Skulls program, they have a better understanding of different ecosystems and the interconnectivity between them.

Mobile Bay Oyster Garden Program

Invasive Species Identification/Ecology/Control

• 1911 (98%) participants reported change in knowledge. These 1911 participants are responsible for over 2.8 million acres of forestland.

E-waste Institute:

• Over 591 lbs. of resources (copper , aluminum, steel, plastic, nylon) were reclaimed. The quantity of e-waste recycled was equivalent to offsetting CO_2 emissions from the consumption of 1,141.63 gals. of gasoline.

• The economic and environmental gains observed from the Wiregrass E-waste Drive totaled $733.00 This equates to 1,397 gals. of gasoline conserved, 317 trees saved, 11,931 plastic bottles recycled or 54,882 aluminum cans recycled

Synergistic Efforts to Reduce Pharmaceuticals in the Environment:

• A total of 1253 lbs. of pharmaceutical drugs were collected during 4 drug-back initiatives, resulting in reduced potential for drug abuse or misuse, and anticipated improved environmental and water quality. Of the 10 participants responding to 3 to 6

month follow-up surveys, 100% had eliminated the practice of flushing drugs down the toilet; 40% had participated in a drug-take back program, and 100% had achieved their social expectation of a more drug-free, safer home (n=10).

Urban Home*A*Syst

- Of the 22 participants responding to 3 to 6 month follow-up surveys, the majority had adopted at least 3 of the recommended BMPs.
- Of the 779 participants surveyed at the Paint Disposal Collection: 83% (637) were recycling paint for the first time; and 81% (633) recycled other products regularly

Key Items of Evaluation

4-H Programs:

- Youth life skill development builds adults that will make the good decisions for the individual, families, community, nation, and world.

Mobile Bay Oyster Garden:

-Volunteer program resulted in economic and action change of condition with 40,115 oysters produced, collected and planted to restore over 8,000 square meters of Mobile Bay oyster beds.

Water Wheels:

-302 rain barrels were constructed and distributed and put into use to save over 27,000 gallons of water

Nutrient Management Planning for Poultry Growers:

-Over half of the poultry litter produced in Alabama now moves off the farm of origin as a commodity for use as fertilizer.

Alabama Smart Yards:

-214 participants out of 357 said they would install a rain barrel and felt confident calculating runoff potential.

. 346 out of 357 attendees reported they would adopt/implement the IPM practices shown.

E-waste Institute:

$1054.00 earnings from recovered valuable metals from E-waste campaigns.

Synergistic Efforts to reduce Pharmaceuticals in the Environment:

-A total of 1253 lbs. of pharmaceutical drugs were collected during 4 drug-back initiatives

Urban Home*A*Syst:

-637 participants recycled paint for the first time.