

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	5%	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%	20%		
216	Integrated Pest Management Systems	5%	0%		
403	Waste Disposal, Recycling, and Reuse	0%	20%		
	Total	100%	100%		

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Actual Paid Professional	16.2	3.8	0.0	0.0
Actual Volunteer	2.0	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
120243	151048	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
363485	151048	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1963969	206255	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

assisted the Alabama NRCS implementing Precision Agriculture Incentive through Environmental Quality Incentives Program (EQIP). The PA EQIP encourages adoption of precision ag technologies for nutrient and pest mgt practices to promote environmental stewardship.

- Coosa River Science School - 78 groups over 700 hours instructional time and over 5,000 youth, on-site participants and over 22,000 off-site participants.
- Classroom-in-the-Forest/Forest-in-the-Classroom; 36 groups with 175.2 instruction hours and 6527 total youth in field trips, in-school enrichment, field days and 4-H Club programs.
- Skins-N-Skulls; 127 groups with 471 instructional hours and 23,966 youth in day camps, Coosa River Science School, summer camp, in-school enrichment, field days, FAWN, and 4-H Club programs.
- Nutrient / zone management workshop for 20 participants. Education focused on improving nutrient management on-farm by tailoring fertilizer prescription maps to soil / crop needs. 20 participants.
- Crop Sensors for Enhancing Input Management and Nutrient Stewardship Workshop- Conducted this day long workshop for the Alabama Crop Management Association. 30 participants.
- The Alabama Precision Ag program
- AAMU/ACES E-waste Institute -serves as a medium to provide education about safe environmental practices for managing electronic waste. 5 Extension educators conducted and/or participated in 6 e-waste workshops, 2 e-cycling drives, 3 e-cycling days and 2 environmental festivals. An estimated 349,050 lbs. of e-waste was recycled. Radio and television broadcasts and online and print media reached over 660,454.
- Urban Environmental Science Education Program (UESEP) - 5 Extension educators provided 2760 hours implementing YEEs (Youth Exploring Environmental Science) and ECEE (Engaging Citizens in Environmental Education) components of UESEP in 10 counties. Activities included presentations, demonstrations, 1-2 hour in-school enrichment workshops, field days, festivals, expos, recycling drives and multidisciplinary research activities, reaching 7463 youth and 2927 adult clientele.
- Urban Home*A*Syst -6 groups of urban residential homeowners were offered integrated approaches to help them identify low, medium and high risks concerns or problems in and around their home utilizing this national environmental risk assessment program.
- Alabama Smart Yards projects offer residential landscape mgt solutions to reduce NPS pollution associated with land uses and everyday activities of people living within a watershed. We have significant surface water A's and \$millions in consumer spending to home landscapes/gardens; there is huge potential for water quality impact.
- Urban Gardens and Sustainable Landscapes (UGSL) provides urban focused resource and training activities in horticulture for the 9 urban areas of Alabama by conducting demonstration, presentations, workshops, and field days.

- Water Wheels Mobile Learning Lab-unveiled in 2012 at ACES Green Living expo. Water Wheels provides middle and high school youth an interactive 3-D gaming environment to learn about water conservation and how to become conservation savvy.

2. Brief description of the target audience

- Youth and adult citizens of Alabama.
- Alabama farmers and agri-businesses.
- The UESEP, the AAMU E-waste Institute, and the Urban Home*A*Syst programs primarily target youth and adults in urban and nontraditional communities, and urban/rural interface environmental control groups within the metropolitan statistical areas (MSAs) of Alabama.
 - Consumers of horticulture goods and services

3. How was eXtension used?

- eXtension was used to acquire information to enhance program implementation for the UESEP, the AAMU E-waste Institute, and the Urban Home*A*Syst programs.
- eXtension was used for Red Imported Fireant information, resources & materials

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	642825	11531475	54062	687699

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	3	3	0

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. Contact reporting data will be used to measure output.

Year	Actual
2012	0

Output #2

Output Measure

- Coosa River Science School Environmental Education program at the Alabama 4-H Center on-site and off-site programs, Classroom in the Forest instructional hours = 175 to 6527 youth, and 471 instructional hours of Skins-N-Skulls to 23,966 youth.

Year	Actual
2012	0

Output #3

Output Measure

- 471 instructional hours in Skins-N-Skulls to 23,966 youth, 175 instructional hours in Classroom in the Forest to 6,527 youth, and over 700 instructional hours from Coosa River Science School to 27,428 participants (on and off-site).

Year	Actual
2012	0

Output #4

Output Measure

- Number Alabama Smart Yard (ASY) workshops/demonstrations

Year	Actual
2012	57

Output #5

Output Measure

- Number of media stories related to ASY principles (and started or maintained 5 Facebook pages)

Year	Actual
2012	186

Output #6

Output Measure

- Extension Specialists supported ASY wksp: Mitchell, Sikora, Jacobi, Hagan, Graham, Flanders, Enloe, Rowe, Brodbeck, Han

Year	Actual
2012	10

Output #7

Output Measure

- ASY - Educational web-based videos - <http://vimeo.com/48026353> - Friend or Foe - <http://vimeo.com/48022396> - Hit the Panic Button (teaching tool for MGs working Helplines) - and Alabama Smart Yards - http://www.youtube.com/watch?v=PZ4KnaL_1-0&list=PL8850C61091390A03&index=57

Year	Actual
2012	3

Output #8

Output Measure

- Master Gardeners have demonstration gardens in Lee, Houston, Elmore, Madison, Jefferson, Tuscaloosa, Montgomery, Mobile, Cleburne, Etowah, Calhoun, and Chilton counties. These teach concepts such as composting, soil amendments, raised beds, native plants, heirloom plants, food plants, variety selection, pollinator plants, and ornamental herbaceous and wood plants best adapted to specific parts of our state.

Year	Actual
2012	12

Output #9

Output Measure

- Number of volunteers assisting/partnering in ASY project delivery

Year	Actual
2012	117

Output #10

Output Measure

- E-waste Institute - the number of workshops (6), e-cycling drives (2) and recycling days conducted (3); number of volunteers recruited, informational booths displayed at festivals (2), partnerships developed, articles and success stories written (4); questionnaires (1650), brochures (1800) and publications disseminated; and the educational information shared via radio, TV, websites, newspaper articles, and newsletters.

Year	Actual
2012	0

Output #11

Output Measure

- E-waste Institute - Amount of electronic waste collected or recycled through program and partnerships (in pounds)

Year	Actual
2012	349050

Output #12

Output Measure

- UESEP - number of school enrichment workshops, field days, demonstrations, expos, festivals, symposiums, presentations, and research activities participated in /conducted (80); number of articles (6) and success stories written (16); number of research grants received (4); and number of partnerships developed.

Year	Actual
2012	0

Output #13

Output Measure

- Urban Home*A*Syst - number of workshops (6) and environmental risk assessments conducted; number of surveys returned; number of articles and success stories written (7); number of presentations made; and number of grants submitted and awarded (1).

Year	Actual
2012	0

Output #14

Output Measure

- Water Wheels: Workshops conducted (4), Rain catchment systems installed (2), participated/attended workshops (25), hoop house installation (1), Estimated gallons of rainwater conserved by adoption of practices (27,480 gal), estimated cost saving by clients adopting rainwater conservation practices (\$40K) total adult face to face contacts (1929), total youth face to face contacts (632)

Year	Actual
2012	29

Output #15

Output Measure

- UGSL-The program team devoted a total of 437 days to the program resulting in: 27 success stories, 18,540 face to face contacts, 2,260,815 non face to face contacts, 6,569 male contacts,

8,158 female contacts, 9,145 white contacts, 5,411 black contacts, total estimated contributions through partnerships/collaborators, \$305,758.51, 516 adopting water conservation & irrigation practices, rain water conserved 50,826 gal, 475 adopting xeriscaping management practices, \$49,372 saved by adopting water & irrigation management practices, 5962 trained on urban & community gardening, producing 5,439 and 1,539 lbs. of produce, respectively.

Year	Actual
2012	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased knowledge of forest management practices, tools and techniques. Appreciation for private forest landowners, and increased understanding of the importance of natural resources. Increased knowledge of how one's actions affect the environment, and increased respect for citizenry, community, and environment. Empowerment to lead, plan, organize, problem-solve, make decisions, and work on a team to address environmental sustainability issues.
2	Alabama Smart Yards (ASY) - % participants who improved their knowledge of possible contaminants in storm water runoff leaving residential properties
3	ASY - % participants who improved their knowledge of installing a rain barrel or cistern
4	ASY - % participants who improved their knowledge of drip/micro irrigation benefits
5	ASY - % participants who plan to teach others about rainwater harvesting (rain barrel/cistern)
6	ASY - % participants who plan to install drip/micro irrigation in one or more areas of their landscape or in a garden
7	ASY - % participants who plan to install a rain barrel or cistern
8	ASY - % participants who plan to change their management tactics in their home lawns
9	E-waste Institute - % of participants who are aware of the environmental hazards associated with e-waste
10	E-waste Institute - % of participants who plan to begin recycling electronic products at home or their business within the next 3 to 6 months
11	UESEP - % of participants who agree the program was very/extremely effective at increasing their knowledge of environmental concepts.
12	Urban Home*A*Syst - % of participants who showed increased knowledge in the environmental risk assessment content areas.
13	Alabama Fireant Management Program - \$\$ saved
14	UGSL- % individuals who increased their knowledge and adopted water conservation & irrigation practices.

Outcome #1

1. Outcome Measures

Increased knowledge of forest management practices, tools and techniques. Appreciation for private forest landowners, and increased understanding of the importance of natural resources. Increased knowledge of how one's actions affect the environment, and increased respect for citizenry, community, and environment. Empowerment to lead, plan, organize, problem-solve, make decisions, and work on a team to address environmental sustainability issues.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Society because of the value of natural resources and importance of environmental stewardship and sustainability.

What has been done

Environmental stewardship programming has been delivered to f4-H youth in Alabama.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity

Outcome #2

1. Outcome Measures

Alabama Smart Yards (ASY) - % participants who improved their knowledge of possible contaminants in storm water runoff leaving residential properties

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	86

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Alabama ranks 14th in the US for nursery and greenhouse total sales and ranks #1 among US states for navigable river miles. Knowing the connection between these river miles, other surface waters and aquifers, and adding to this our knowledge about consumer spending (\$843 million - 2009, AU Special Report #7) relative to Alabama's home landscapes/gardens, there is huge potential for water quality impact. Residential gardeners view their landscapes as home property investments worth protecting; Extension educators know the importance of these gardeners protecting our state's natural resources.

What has been done

Home Grounds REAs provided teaching/demonstration

Results

86% of respondents showed a knowledge gain comparing their understanding of storm water contaminants prior to the wksp/demo and after - 418 participant surveys

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

ASY - % participants who improved their knowledge of installing a rain barrel or cistern

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	83

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Rain barrels and cisterns capture rain water for later use, but more importantly reduce the volume of water moving across a landscape. Reducing volume, reduces water force in movement. Rapid moving water has greater potential to transport contaminants and causes greater erosion problems both on property and in nearby streams.

What has been done

Home Grounds REAs provided teaching/demonstration

Results

83% of respondents showed knowledge gain comparing their understanding of rain barrel/cistern installation prior to the wksp/demo and after. As well, 84% of respondents showed knowledge gain comparing their understanding of barrel/cistern construction prior to the program and after - 418 participant surveys

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #4

1. Outcome Measures

ASY - % participants who improved their knowledge of drip/micro irrigation benefits

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	84

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Drip and micro irrigation are not new technologies, but are better known in production of horticulture crops such as strawberries and tomatoes. Residential consumers now have wider access to these devices and these are appropriate for many ornamental landscape plantings. Drip/micro irrigation devices are more efficient in water usage than is overhead broadcast irrigation and have the potential to decrease erosion problems.

What has been done

Home Grounds REAs provided workshop/demonstrations

Results

84% of respondents showed a knowledge gain comparing their understanding of drip/micro irrigation benefits prior to the wksp/demo and after - 418 participant surveys

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

Outcome #5

1. Outcome Measures

ASY - % participants who plan to teach others about rainwater harvesting (rain barrel/cistern)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	64

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A tremendous benefit of all Extension programs is the multiplier effect. We teach one person and they then teach another; or several others - and so on.

What has been done

Home Grounds REAs provided teaching/demonstration and encouraged participants to share their new gained knowledge with others

Results

64% of respondents intend to teach someone else how to build/install a rain barrel or cistern - 418 participant surveys

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #6

1. Outcome Measures

ASY - % participants who plan to install drip/micro irrigation in one or more areas of their landscape or in a garden

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Drip and micro irrigation are not new technologies, but are better known in production of horticulture crops such as strawberries and tomatoes. Residential consumers now have wider access to these devices and these are appropriate for many ornamental landscape plantings. Drip/micro irrigation devices are more efficient in water usage than is overhead broadcast irrigation and have the potential to decrease erosion problems.

What has been done

Home Grounds REAs provided teaching/demonstration

Results

60% of respondents plan to install drip/micro irrigation in one or more locations of their property - 418 participant surveys

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

Outcome #7

1. Outcome Measures

ASY - % participants who plan to install a rain barrel or cistern

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Rain barrels and cisterns capture rain water for later use, but more importantly reduce the volume of water moving across a landscape. Reducing volume, reduces water force in movement. Rapid moving water has greater potential to transport contaminants and causes greater erosion problems both on property and in nearby streams.

What has been done

Home Grounds REAs provided teaching/demonstration

Results

75% of respondents intend to install one or more rain barrels or cisterns - 418 participant surveys

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

Outcome #8

1. Outcome Measures

ASY - % participants who plan to change their management tactics in their home lawns

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
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2012

70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Home lawns provide many benefits and uses for families. However, inch for inch they require more inputs for better plant health compared to other landscape plantings. As well, effective commercial marketing and accepted cultural norms create a high potential for excess inputs to residential lawn maintenance. Teaching consumers about the recommended amounts of and seasonality of inputs (fertilizers, herbicides, etc) often shows them the excesses of their current management plan.

What has been done

Home Grounds REAs provided teaching/demonstration. These results are for one workshop of 30+ participants

Results

70% of respondents intend to reduce the amount of fertilizer used in their lawns. As well, these same respondents said they intend (68%) to change the mowing height of their lawn to the recommendations given - and they (68%) said they will send a soil sample for testing before making another fertility (fertilization) decision. - 418 participant surveys

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
216	Integrated Pest Management Systems

Outcome #9

1. Outcome Measures

E-waste Institute - % of participants who are aware of the environmental hazards associated with e-waste

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	57

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Educational information to respond to community needs related to e-waste management is becoming increasingly important. According to the U.S. EPA the number of electronic products in households and businesses that are considered to be obsolete or irreparable is growing at 3 times the rate of household trash. Unfortunately, many of the materials used in these products are toxic. Continued production of e-waste in such a rapid manner creates a need for improved education and understanding of issues associated with hazardous waste management.

What has been done

Extension staff provided 896 hours to e-waste programming reaching 4,784 youth and adults. Several partnerships were continued, including those with the Funding Factory and Keep Mobile Beautiful. Notable projects included e-waste workshops, recycling days, e-cycling drives, recruitment of volunteers, and information booths at festivals, like the Huntsville Green U Festival. Over 50 cell phones and 500 printer cartridges were recycled through continuous recycling programs at Alabama A&M University and Extension County Offices.

Results

Significant increases in knowledge were observed among the program participants surveyed: 95% (from 63%) knew definition of e-waste and 85% (from 34%) were aware of the hazards associated with e-waste. Over 1800 brochures, 1650 questionnaires, and 250 publications were disseminated. A total of 239,300 lbs. of e-waste was collected at electronic recycling days in Mobile and Dothan, AL. Over 1600 cars dropped of electronics during these events. These results indicate a change in behavior among Alabama citizens as result of knowledge gained through e-waste programming, marketing, and dissemination of educational materials concerning the hazards associated with improperly disposing of electronic waste. It also suggest that the availability of e-cycling opportunities can greatly reduce the amount of discarded electronics fated for the environment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
136	Conservation of Biological Diversity
403	Waste Disposal, Recycling, and Reuse

Outcome #10

1. Outcome Measures

E-waste Institute - % of participants who plan to begin recycling electronic products at home or their business within the next 3 to 6 months

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	57

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The U.S. EPA has estimated a 5 to 10% increase in the generation of e-waste each year globally, yet alarmingly only 5% of the total global amount of 40 million tons is being recovered (Kuehr, 2010; USEPA, 2011). The E-Waste Institute at Alabama A&M University serves as a medium to educate, train, and raise public awareness about safe environmental practices for e-waste.

What has been done

A number of electronic products can be problematic for the environment once their lifespan has ended. Information on electronics like computers and televisions were shared with participants. For instance, multiple elements from the Periodic Table can be found in complex electronics. Experts suggest that proper recycling of 1 million cell phones can recover some 9 kg of palladium, 24 kg of gold, 250 kg of silver and 9,000 kg of copper (UNA, 2011). A number of efforts were carried out to share this type of information with citizens and to encourage them to begin managing and disposing of electronics properly. The data provides results from a group of 57 participants.

Results

Many of the program participants were unaware of e-waste facts at the time they enrolled in the program. Results indicated that 83% of those surveyed plan to begin recycling electronic products at home or their business within the next 3 to 6 months as a result of the program. In addition, 79% of those surveyed plan to share with others the importance of proper management and disposal of electronics. Of the participants 89% (from 46%) were aware of ways to re-use, reduce or recycle materials to keep them out of landfills.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
136	Conservation of Biological Diversity
403	Waste Disposal, Recycling, and Reuse

Outcome #11

1. Outcome Measures

UESEP - % of participants who agree the program was very/extremely effective at increasing their knowledge of environmental concepts.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	221

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As urban communities continue to expand, issues such as natural resource conservation are progressively becoming a concern for many families. Notably, the future lies in the hands of our citizens. Their level of knowledge concerning environmentally-related issues is highly important. UESeP seeks to improve citizen appreciation for science and enhance their understanding of the environment; thus, it provides a framework for citizens to become better environmental stewards.

What has been done

The Unit used a team-based approach, coupling hands-on learning experiences with education curriculum in YEEs and providing research-based information in ECEE. The unit participated in over 80 workshops, demonstrations, field days, expos, fairs, festivals, trainings and conferences (i.e., ACES Green Living Expo). Educational information was shared via radio, TV and websites. An estimated 350 extension client calls were taken and 30 site visits or guest appearances were made. Efforts were also led to promote recycling.

Results

Results revealed that 63% of the youth surveyed agree the program was very or extremely effective at increasing their knowledge of environmental concepts and 80% of the adults surveyed plan to begin recycling, reusing or reducing waste. Over 680 lbs. of plastic, 4615 lbs. of paper

products, and 10 lbs. of aluminum cans were recycled through UESEP efforts.

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
123	Management and Sustainability of Forest Resources
132	Weather and Climate
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity
403	Waste Disposal, Recycling, and Reuse

Outcome #12

1. Outcome Measures

Urban Home*A*Syst - % of participants who showed increased knowledge in the environmental risk assessment content areas.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In most homes there are potential risks to human health and the environment that go unnoticed, due to a lack of knowledge. The Urban Home*A*Syst Program helps to identify low, medium and high risks, concerns or problems found in and around the home, and encourages home owners to take action. It does so by providing environmental risk-assessment education to homeowners on issues such as water quality, yard and garden care, household hazards, and self-management of fuels (Home*A*Syst Program, 1997; Urban Home*A*Syst Program, 2006).

What has been done

Program inputs included acquisition of an external grant to assist in modification of the program to better fit ACES clientele. A total of six workshops were conducted and three articles were published (i.e., Good till the Last Drop). Additional educational information was shared via radio, TV, websites, online publications, calendars, and newsletters, including appearances on Focus on Ag and the Charlie Platte Show, reaching over 143,306 contacts indirectly. In-service training and professional development included attendance at the Alabama Water Resource Conference.

Results

Participants surveyed showed increased knowledge in water quality (72%); runoff management (79%); lawn and garden (74%); managing hazardous products (65%); handling automotive products (59%); household waste water treatment (61%) and managing household waste (59%). A large number of the participants planned to change their behavior concerning their home site management as a result of the program and their enhanced knowledge.

- 63% plan to apply recommended amounts of fertilizer and control watering.
- 60% plan to water plants and shrubs in the morning to conserve water.
- 56% plan to purchase household products, like paints in smaller quantities.
- 43% plan to take used oil to a collection center.
- 48% plan to refrain from pouring paints and other chemicals down the drain.
- 50% plan to begin recycling, reusing or reducing household waste.
- 97% of those surveyed would recommend this program to others.

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
133	Pollution Prevention and Mitigation
136	Conservation of Biological Diversity
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse

Outcome #13

1. Outcome Measures

Alabama Fireant Management Program - \$\$ saved

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	5000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

People spend too much money, too much time, and use too much insecticide in their efforts to control fire ants. Our fire ant extension programs train Extension agents in fire ant management, and then they conduct fire ant demonstrations, workshops, and other educational activities.

What has been done

Extension agents located stakeholders who had problems with fire ants, ranging from homeowners to cattlemen to managers of municipal parks and airports. They conducted broadcast bait demonstrations and other programs to teach how bait products put out very small amounts of pesticide product; are economical when used correctly; and contain target specific pesticides. This not only achieves the desired pest mgt goal, but does so with minimal (or no) negative environmental and human impact.

Results

The demonstrations occurred in both rural and urban settings. Of particular note, the grounds staff at one park setting and one municipal airport learned about and adopted the recommended fire ant bait treatment methods. Combined, their estimated minimum savings was \$5,000 (labor, materials, property damages, etc). Unmeasured benefit was reported by a diverse client base: cattlemen, specialty crop growers, homeowners, various municipal properties, and school grounds.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
216	Integrated Pest Management Systems

Outcome #14

1. Outcome Measures

UGSL- % individuals who increased their knowledge and adopted water conservation & irrigation practices.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Although much of urban communities are unaware, water is a natural resource and it is limited resource. Water conservation begins with location and resource availability. Urban areas see a high demand for water and often times that resource becomes limited. An easy and often overlooked resource is rainwater and its use in irrigation of urban and community gardens.

What has been done

Program inputs included acquisition of an external grant to assist in educate youth in rainwater harvesting and water conservation. A total of 27 success stories ("Let's Get Growing", "When it Rains...It Stores!", and "Kitchen Komposting" . Additional educational information was shared via TV, websites, online publications, calendars, and newsletters, including appearances on Morning Shows, reaching over 2,260,815 contacts indirectly. In-service training and professional development included attendance at the Alabama Water Resource Conference.

Results

516 adopted water conservation & irrigation practices, rain water conserved 50,826 gal, 475 adopting xeriscaping management practices, \$49,372 saved by adopting water & irrigation management practices. 48% actually adopted the recommended rainwater irrigation practices and 45% of individuals actually changed their planting and watering practices such as adopting more xeriscape management practices.

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
131	Alternative Uses of Land
132	Weather and Climate
136	Conservation of Biological Diversity

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

Brief Explanation

Sustainability and management practices of a garden or landscape will always be depend upon each specific location. Identifying area specific plants and environmental condition will lead to recommendations and continued sustainability.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

- 88.4% of 2153 youth surveyed have a better understanding of the importance of plants and animals.
- 75.9% of 2153 youth surveyed better understand the connection between growing food and the environment.
- 84% of 2153 your surveyed have a better understanding for the importance of clean water.
- 92.9 % of 1363 youth surveyed have an understanding of why trees are important.
- 85.3% of 1363 youth surveyed report that because of their 4-H experience they can be better stewards of the land.
- 74.9% of 2311 youth surveyed reported they know what an occipital ridge is.
- 84.1% of 2311 youth surveyed reported that Skins N Skulls taught them the differences in the teeth of herbivores and carnivores.
- The adoption of Precision Ag technologies by 2012 Alabama growers provided savings of over \$25,000,000 on pesticide and nutrients reducing economic risks at the farm level.
- Alabama Smart Yard (ASY) - significant learning occurred for survey respondents - overall, knowldge improved by 64% to 93%
- ASY - many respondents also intend to apply the principles taught or shown during the programs (42% to 75%)
- E-waste Institute - 91% of those surveyed reported that they knew the importance of recycling e-waste in their home and community.
- E-waste Institute- 83% of those surveyed plan to begin recycling electronic products

at home or their business within the next 3 to 6 months.

- UESEP -71% of the youth participants agree that learning about science and the environment makes them want to become better environmental stewards.
- Urban Home*a*Syst: The majority of the participants showed increased knowledge in water quality (72%); runoff management (79%); lawn and garden (74%); managing hazardous products (65%); handling automotive products (59%); household waste water treatment (61%) and managing household waste (59%)
- UGSL - 48% actually adopted the recommended rainwater irrigation practices and 45% of individuals actually changed their planting and watering practices such as adopting more xeriscape management practices. 87% adopted beekeeping practices, 8% adopted high tunnels practices, 58% adopted organic practices, and 63% reported an increase in yield from adopting those organic practices. However, only 8% reported an increase in yield due adoption of beekeeping practices.

Key Items of Evaluation

- All youth surveyed concerning Skins N Skulls, Classroom in the Forest, and Coosa River Science School reported increased knowledge related to relevant environmental stewardship topics.
- NRCS EQIP participants, USDA data, and grower survey data.
- Using totals from ASY rain barrel wksp/demos, the min 2012 water capture = 108,000 gals - if averaged across the 202 respondents, each reduces their potable water usage by 534 gallons - have the potential to irrigate 1000ft² of landscape 13 times - or equivalent 16 loads laundry - consider this impact if all 6,820 participants adopted these actions.
 - ASY wksp/demos - by mulch mowing and/or mowing at recommended intervals and soil testing, consumers who follow our recommendations have the potential to reduce nitrogen usage by half (possibly more) - this then also reduces potential stream eutrophication due to excess fertility applications that can travel in stormwater - as well, proper mowing grows thicker lawns which have fewer weeds, and so reduces the consumers' assumed need for herbicide applications.
 - E-waste Institute - Participants indicated that they wished there were more free e-cycling days. Most were surprised about the hazards associated with discarded e-waste. It was suggested that electronics be sold with literature that explains the hazards associated with improper disposal of electronics.
 - UESEP - 87% of those surveyed plan to work towards being better stewards of the environment.
 - Urban Home*a*Syst - The majority of the participants identified lawn and garden care, managing household trash, and managing household hazardous products as a "high risk" as it related to their home and property; while managing automobile products was identified as a "low risk" area.
 - Urban Home*a*Syst - Very few of the participants were recycling paper, plastics or glass at the time they enrolled in the program; many vowed to begin implementing recommended conservation practices.
 - UGSL-48% of those surveyed adopted recommended rainwater irrigation, while 100% indicated that they did increase their knowledge of water conservation and irrigation practices as a result of UGSL's workshops and demonstrations.