

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Climate Change

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
123	Management and Sustainability of Forest Resources		10%		10%
124	Urban Forestry		45%		45%
132	Weather and Climate		10%		10%
133	Pollution Prevention and Mitigation		10%		10%
134	Outdoor Recreation		5%		5%
205	Plant Management Systems		5%		5%
403	Waste Disposal, Recycling, and Reuse		15%		15%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	3.0	0.0	5.0
Actual	0.0	2.0	0.0	4.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	50000	0	262514
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	51000	0	206373
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	1000

V(D). Planned Program (Activity)

1. Brief description of the Activity

Producers need new knowledge to plan and make decisions in adapting to changing environments, sustaining economic vitality, and taking advantage of emerging economic opportunities offered by climate change mitigation technologies. Research was conducted to quantify the environmental benefits of urban forests, carbon sequestration, urban forest effects on air quality, plant and animal systems, understanding of the land-water interface and the urban-agriculture interface. Another research was also conducted to quantify urban forest effects on UV exposure in relation to proper vegetation design. Research results and other information were communicated directly to citizens and through extension personnel in the form of publications, conferences, workshops, field days, home/office visits, demonstrations and other educational resources. Researchers received additional grants to hire undergraduate and graduate students to assist in the project. Student's participation enhanced their experience in research, preparation of educational information, and delivery of information that is tailored to clientele needs. Also, this planned program will provide training to empower minorities through ownership and pollution reduction from landfills. It will continue its gulf coast weather and climate studies so as to provide pertinent information to assist citizens, government, and other groups in planning and managing economic and natural resources as a process of minimizing loss due to natural disaster such as hurricanes Katrina and Rita of 2005 and hurricane Gustav of 2008.

2. Brief description of the target audience

Target audience includes all citizens such as homeowners, metro areas, garden clubs, arborists, small producers, limited resource producers, socially and economically disadvantaged, women, minorities, and communities. Others are youth (13 - 18 years and even those in grades K-8), community leaders/stakeholders, interested agencies and organizations

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	3600	38000	0	0
Actual	1805	100090	0	0

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

Patent Applications Submitted

Year: 2010
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	0	7	
Actual	0	7	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- 1. Number of educational program activities

Year	Target	Actual
2010	36	51

Output #2

Output Measure

- 2. Number of educational contacts

Year	Target	Actual
2010	41600	100295

Output #3

Output Measure

- 3. Number of published materials distributed

Year	Target	Actual
2010	5500	23000

Output #4

Output Measure

- 4. Number of research & extension outreach publications

Year	Target	Actual
2010	8	9

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	1. Percent of clients who gained new knowledge/skills, awareness and/or changed attitudes.
2	2. Percentage of adoption rate for recommendations by clients.

Outcome #1

1. Outcome Measures

1. Percent of clients who gained new knowledge/skills, awareness and/or changed attitudes.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	70	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Ozone depletion in the upper atmosphere has resulted in a significant increase in solar ultraviolet-B radiation (UV-B, 280-315nm) on earth's surface. Effects of the enhanced UV-B on living organisms and ecosystems have been a major concern for more than two decades. Nearly two-thirds of 400 plant species/cultivars, mainly annual crops, appear to be UV-B sensitive. Relatively little information exists on the effects of UV-B radiation on forest tree species, which account for 80% of the global net primary production. With the future uncertainty of ozone recovery and climate change, there is a critical need for systematic evaluation of UV-B impacts on forest/tree species. UV-B impacts are many and some have serious economic consequences. Many United States residents do not have sufficient knowledge about these impacts especially as they relate to health.

What has been done

Research scientists applied for and received grants to study Ultraviolet-B Radiation protection strategies especially in selected southern trees. The study is helping to identify and quantify UV-B absorbing compounds (flavonoids/phenolics) using UV-VIS Spectroscopy and HPLC, and to measure leaf epidermal screening effectiveness to enhanced UVB using a fiber-optic microprobe system. Information gathered through this research is being prepared and shared to citizens and the scientific community. The aim is to provide reader-friendly fact sheets that citizens can use to increase knowledge on ways of selecting trees that can help to protect the environment from the adverse effects of UV-B. Information sessions, workshops, and seminars about climate change were also provided. A 2-day conference dealing with plant biosecurity was conducted with over 150 individuals from communities, institutions, government from several states (Louisiana, Texas, Florida, Mississippi, Georgia, Virginia, and North Carolina) in attendance.

Results

Evaluation of conference participants showed the following: 100 percent of participants said they gained new knowledge about climate change; 100 percent indicated that new knowledge gained will be very useful. The results of the UV-B research was shared with the scientific community and also with the target audience - homeowners, garden clubs, arborists, small producers, limited resource producers, socially and economically disadvantaged, women, minorities, and communities. They gained new knowledge about climate change, the impacts of UV-B on the environment, and the possible adaptation strategies. Implementation of these projects has resulted in strengthened relationship and collaboration with other states and institutions. Two doctoral students are gaining knowledge of conducting climate change research through their involvement in data collection for dissertation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
124	Urban Forestry
132	Weather and Climate
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse

Outcome #2

1. Outcome Measures

2. Percentage of adoption rate for recommendations by clients.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	48	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Knowledge of urban wood waste utilization and mulch management is lacking due to insufficient research and low availability of research-based educational information. Knowledge urban wood waste utilization and mulch management could allow for more efficient and economic use of urban plant-based residue (including wood waste) by way of organic mulches. Research can

assist in assessing the impact of the following Louisiana natural resources: cypress mulch, longleaf pine needles, loblolly pine bark, municipal oak tree residue, and mixed non-oak hardwood mulch products, on soil carbon cycling, sequestration, and chemical composition. Also, the effects of selected tree-based mulch treatments on the dynamics of growth and development (physiology, morphology, and anatomy) of live oak tree species and its associated rhizosphere dynamics can be studied. Research-based educational information can be made available to producers, land owners and home owners on the effects of selected tree-based mulch on root disease severity of live oak tree rhizosphere, microbial population dynamics, and saprophytic survival of selected soil borne plant pathogens.

What has been done

A collaborative project between Southern University Agricultural research and Extension Center, USDA-NIFA, and the USDA-FS was conducted to make contributions toward addressing the challenges of the emerging biobased industry with outcomes that support research, development, demonstration, and pre-commercialization activities. Additionally, through collaborative efforts with the Gulf Coast Cooperative Ecosystem Studies Unit (GC-CESU) and non-profit organizations the restoration efforts in Louisiana, Mississippi and other neighboring states are being impacted. Collaboration with the private sector and arboricultural companies has promoted the utilization of wood waste, especially, the urban wood waste in Louisiana. Utilization of urban wood waste and biobased plant residue has several potentials and major impacts such as: expanding and extending the life of the wood fiber supply; contributing to carbon storage, thereby reducing greenhouse gases; reducing the amount of recoverable wood going to landfills; and stimulating new technologies and market to utilize recoverable wood fibers. Students and faculty in urban forestry and traditional agricultural research and extension were involved. Over 1,000 professionals have been reached through conferences; and 500 homeowners in Louisiana have been reached through direct and indirect research, educational and outreach activities.

Results

This initiative has increased the capacity of Southern University Agricultural Research and Extension Center in biomass utilization research and other initiatives are underway to assess the utilization of urban wood-waste in biofuel and bioenergy production. Seven graduate and 25 undergraduate students have gained knowledge and skill about conducting research through their participation in this project. Five hundred homeowners in Louisiana have been reached through direct and indirect research, educational and outreach activities. A survey indicated that more than 65% of the homeowners and 85% of the businesses in Louisiana are utilizing some sources of biobased plant residue as mulching materials in their landscaping projects.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
124	Urban Forestry
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse

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

The ongoing economic crisis caused serious setback on the availability of state funds in Louisiana. In FY

2010, the state budgets were again drastically reduced, oftentimes in the middle of the fiscal year. This action resulted in severe loss of funding for planned activities which in turn negatively affected outcomes. Additionally, budget problems and government priority changes caused the relocation of some program participants resulting in decline in number of citizens impacted. Furthermore, the continuing recovery from hurricanes of 2005 and 2008, and the 2010 oil spill inflicted much havoc on the state and impacted outcomes.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}