V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Forestry

☑ 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
121	Management of Range Resources	0%		14%	
122	Management and Control of Forest and Range Fires	20%		0%	
123	Management and Sustainability of Forest Resources	40%		86%	
124	Urban Forestry	10%		0%	
125	Agroforestry	15%		0%	
132	Weather and Climate	5%		0%	
133	Pollution Prevention and Mitigation	5%		0%	
403	Waste Disposal, Recycling, and Reuse	5%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	9.9	0.0	0.0	0.0
Actual Paid	16.3	0.0	2.6	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**
416384	0	75464	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
416384	0	8088	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	59259	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research will be conducted in forest production and management, timber harvesting, forest recovery, and environmental impacts of forest practices. Extension programming will be conducted to share this information with forest landowners and industry personnel.

2. Brief description of the target audience

The audience for these programs includes forest landowners, loggers, professional foresters, industry personnel, and the general public.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Overall, 230 MSU employees are eXtension users. Further, MSU Extension has 71 employees that serve on one or more of the 66 Communities of Practice (COPs); MSU Extension employees are members of 39 COPs. 10 MSU Extension employees serve as a leader for a COP, leading 7 COPs. 1 MSU Extension employee is a member of the Climate, Forests, and Woodlands COP. 1 MSU Extension employee is a member of the Prescribed Fire COP. 2 MSU Extension personnel are members of the Wood Products COP.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	70671	71592	0	0

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	10	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of producers and industry attending seminars, workshops, short courses, and demonstrations.

Year	Actual
2014	23711

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers adopting new technologies or practices based on research/extension recommendations.
2	Number of timber producers increasing profitability of their forest operations.
3	Number of producers improving their environmental stewardship.
4	Number of producers reporting increased income/decreased expenses based on practice changes.

Outcome #1

1. Outcome Measures

Number of producers adopting new technologies or practices based on research/extension recommendations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	4742

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
With many youth and young adults these days, there is an assumption that all fires in nature are bad. From the media to their parents, there has been a resounding push against the use of fire in forestry and other places. A large amount of the information about fire is negative. Fire, when used correctly, responsibly, and under strict control and circumstances, is beneficial to the landscape, and there is a need for more information about the positive effects of fire in forestry.

What has been done
A Fire in Forestry workshop was held with area youth that went over the techniques used to responsibly control and implement a burn program in our area. A lot of old information about the bad things fire causes were debunked, and the consequences of misuse of fire were reiterated. It was important to teach the youth about the good that fire can create, as well as make sure they understand the full extent of the damage fire can cause when not managed or controlled properly.

Results
Many youth left the workshop feeling more informed and educated on the ways fire benefit the landscape and wildlife. There are more youth interested in the ways to use and implement a fire program on their family land. The youth will be more knowledgeable about the correct planning and manpower needed to safely and correctly use fire on their family property in the future. They also now have a more positive view of fire and the ways its benefits nature, as well as ways good fires prevent bad fires.

4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources
124	Urban Forestry
125	Agroforestry
133	Pollution Prevention and Mitigation

Outcome #2

1. Outcome Measures

Number of timber producers increasing profitability of their forest operations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1821

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Landowners in south Mississippi are increasingly interested in planting longleaf pine for multiple reasons. Chief reasons stated include longleaf pines increased tolerance for hurricane-force winds and increased wildlife habitat quality as opposed to loblolly pines. However, successful planting of longleaf pine is more challenging than planting of other pines. MS landowners are interested in information on successful replanting techniques, where to get help, use of prescribed fire in longleaf pines, and possible economic returns.

What has been done
A Longleaf Pine Field Day was held in Greene County to address the above concerns. The landowners discussed their interest, and a long-time forester discussed the history of longleaf pines in south MS. The field day started in an area recently replanted with longleaf pine. This was followed by other talks in more mature timber, and the field day concluded with a discussion of where landowner could go for both technical and financial assistance regarding longleaf pine.

Results
The Field Day reached 46 landowners. Evaluations revealed that 96% better understood how to successfully replant longleaf; 100% better understood the role of fire; 93% better understood various sources of assistance; 96% better understood potential economic returns; and 92% were more inclined to plant longleaf. Field day participants owned 9,798 acres of forestland and valued the information received at $130,500. Sixty-five percent would accept a reduction in the rate of return on their investment (3% or greater) in order to have longleaf pine.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
125	Agroforestry
132	Weather and Climate

Outcome #3

1. Outcome Measures

Number of producers improving their environmental stewardship.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1897

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Bark beetles and subterranean termites are keystone species in pine forests globally. Their combined activities plague timber before harvest until well after consumer utilization. Together, they have cost U.S producers and consumers more than $100B in prevention, control, and mitigation over the last 20 years. We recently discovered that subterranean termites feed preferentially on wood containing blue-stain fungi associated with bark beetles. The ecological implications of this discovery and potential for exploitation as an IPM strategy were knowledge gaps created.

What has been done
We began to investigate interactions between subterranean termites, blue-stain fungi, and bark beetles. Lab and field results indicate a strong preference for blue-stained wood exists for native and Formosan subterranean termites. Ongoing lab and field experimentation will assess other termite and fungal species, investigate potential compounds or mechanisms causing the behavior, and estimate the impact of this association on landscape scale carbon cycles.

Results
Our findings may have direct impacts on scientific understanding of forest ecosystems, utilization of natural resources, and economic impacts felt by forest product producers and consumers. These discoveries have wide implications for forest ecology and management, including partially explaining a previously unknown driving force behind landscape-scale nutrient flow in forest ecosystems. Interactions between bark beetles, blue-stain fungi, and subterranean termites are novel, and may generate knowledge regarding forest ecology, the impact of insect herbivores and decomposers on carbon cycles, and climate change models. We continue to investigate potential for commercialization of blue-stained wood or its derivatives with industry partners.

4. Associated Knowledge Areas

KA Code	Knowledge Area
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources
125	Agroforestry
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse

Outcome #4

1. Outcome Measures

Number of producers reporting increased income/decreased expenses based on practice changes.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1973

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Silvopasture is a process by which landowners can produce forage, livestock, and trees on the same acreage. This is accomplished by either planting trees in existing pastureland or by heavily thinning existing forestland to get sufficient light on the ground to grow grass. Legitimate questions persist about how to initiate a silvopasture system, compromises made, challenges landowners face, and other concerns. Establishing a silvopasture demonstration would help landowners make more informed decisions when considering a silvopasture system for their operations.

What has been done
MSU-ES and MAFES initiated a silvopasture demonstration at the McNeill Experiment Station. This demonstration consisted of pastureland planted with longleaf pine seedlings in early 2013. In September 2014, a Silvopasture Field Day was held for landowners and livestock producers to update them on this system. Presentations consisted of a silvopasture overview, timber production, forage and livestock production, wild hog damage, and reforestation expenses recovery. A total of 82 people attended the Field Day, and 45 completed an evaluation at the end of the Field Day.

Results
Landowners were very pleased with the program. Evaluations reveal that 98% better understand what silvopasture is; 100% better understand how to begin a silvopasture operation; 96% have increased knowledge of hog management; 93% better understand how silvopasture can diversify income; 81% better understand how to recover reforestation expenses; and 64% are more interested in starting a silvopasture operation. Participants owned 12,470 acres of land, and valued the information received at $161,500. Those interested in silvopasture on their land ranked the following reasons: 1) generating timber income, 2) diversifying income/reducing risk; and 3) improvign habitat. Key questions they had about silvopasture involved issues of cost and profitability.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
125	Agroforestry

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies were initiated and utilized for collecting evaluation information to determine program outputs and outcomes (see impact statements for examples). In FY 2014, MSU Extension agents and specialists were required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Planned Program Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. Finally, a specific request for impact statements from MSU Extension and MAFES faculty and staff is also made. The evaluation results shared through our impact statements are a combination of this quantitative and qualitative data.

Late in the 2014 program year, we introduced a Standardized Extension Evaluation Survey. The Standardized Extension Evaluation Survey was designed for use in any MSU Extension Service program, workshop, or event with adults. The survey assesses program process, participant satisfaction, knowledge and/or skill change, and behavioral intentions. It provides a ready-made evaluation for agents and specialists to use and will allow us to aggregate data across the state. A small number of agents and specialists have utilized the survey to date, but we hope use will increase over time.

Key Items of Evaluation