

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Natural Resources and Quality of Life

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
101	Appraisal of Soil Resources			3%	
102	Soil, Plant, Water, Nutrient Relationships			15%	
111	Conservation and Efficient Use of Water			5%	
112	Watershed Protection and Management			14%	
133	Pollution Prevention and Mitigation			5%	
134	Outdoor Recreation			3%	
135	Aquatic and Terrestrial Wildlife			18%	
605	Natural Resource and Environmental Economics			4%	
607	Consumer Economics			2%	
608	Community Resource Planning and Development			6%	
801	Individual and Family Resource Management			6%	
802	Human Development and Family Well-Being			5%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities			5%	
805	Community Institutions, Health, and Social Services			2%	
901	Program and Project Design, and Statistics			3%	
903	Communication, Education, and Information Delivery			4%	
	Total			100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890

Plan	0.0	0.0	15.0	0.0
Actual Paid Professional	0.0	0.0	13.0	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
0	0	698196	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	698196	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	511963	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Basic and applied research will be conducted to address underlying principles related to natural resources and to assist in the implementation of efficient, effective management actions to conserve natural resources and ensure the sustainable use of those resources. Research will also be conducted in human environmental science. Research findings will be disseminated via appropriate scientific publications, conferences, workshops, trainings, etc.

2. Brief description of the target audience

Researchers, scientists, extension specialists, conservation managers, policy makers

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2012
 Actual: 2

Patents listed

FOSSIL FUEL-FREE PROCESS OF LIGNOCELLULOSIC PRETREATMENT WITH BIOLOGICAL HYDROGEN PRODUCTION

US Patent #7,943,390 Issued on ?Supported molecular biofluid viscosity sensors for in vitro and in vivo use. M. Haidekker, S.A. Grant, E. Theodorakis, M. Intaglietta, J. Frangos, Date: May 17, 2011.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	146	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of peer reviewed journal articles

Year	Actual
2012	95

Output #2

Output Measure

- Number of other peer reviewed publications (book chapters, proceedings, abstracts, etc.)

Year	Actual
2012	51

Output #3

Output Measure

- Number of invited papers and invited presentations

Year	Actual
2012	43

Output #4

Output Measure

- Number of graduate degrees awarded

Year	Actual
2012	22

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Research efforts will result in new knowlege that will lead to improved quality and sustainability of natural and human environments.

Outcome #1

1. Outcome Measures

Research efforts will result in new knowledge that will lead to improved quality and sustainability of natural and human environments.

2. Associated Institution Types

- 1862 Research

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)

A stream's health is influenced by many factors but nothing is more important than the runoff transported into the stream from its watershed. Understanding the impact of rain events is key to understanding how sediment and other environmental compounds are transported from the watershed to the stream.

What has been done

Researchers at the University of Missouri are using a Doppler on Wheels (DOW) to get detailed, on-site measurements of rain events. The DOW has advanced features that allow researchers to precisely look vertically into a storm, not just horizontally as conventional radars. This on site tool is used to measure rain intensity, raindrop size and raindrop velocity to get a detailed picture of a rain event. This information is then used to predict details about sediment transport from the watershed.

Results

The runoff from a rain event directly effects stream health. Better information about the impact from a rain event will lead to a better understanding of how the stream ecology is affected by factors in the watershed and their potential impact on stream health.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Individual faculty were reviewed by their respective Division Directors. Faculty submitted their research goals and accomplishments. Besides evaluating individual progress, the Division Directors reviewed research progress and accomplishments in the context of the planned program. Results show continued progress in both basic and applied research.

Points of evaluation included the following:

Research focus: Was it relevant and consistent with the objectives of the planned program?

Successful scholarship: Were research results conveyed through peer reviewed publications?

Successful grantsmanship: Was the research quality high enough to successfully compete for external grant funds?

Key Items of Evaluation

- Peer reviewed publications
- Grant submission
- Presentations and communication of results
- Popular media exposure