

**V(A). Planned Program (Summary)**

**Program # 1**

**1. Name of the Planned Program**

ENVIRONMENT, WATER, LAND AND NATURAL RESOURCES

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	35%		44%	
111	Conservation and Efficient Use of Water	30%		25%	
112	Watershed Protection and Management	15%		10%	
121	Management of Range Resources	20%		21%	
	<b>Total</b>	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	11.0	0.0	21.0	0.0
Actual Paid Professional	3.8	0.0	3.5	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
514595	0	636998	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
514595	0	636998	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

## **1. Brief description of the Activity**

### **Forest Health and Wildfire Risk Reduction and Education**

#### **Issue**

All forested communities in the White Mountains Zone of Arizona's Navajo, Apache and Greenlee counties are listed as "at risk communities" in the Federal Register with respect to catastrophic wildfire. The National Institute of Food and Agriculture (NIFA) and the University of Arizona have adopted Firewise USA as an applicable community and property owner education and implementation tool for comprehensively addressing wildland fire community risk. Local governments throughout the area determined that effectively addressing the risk to local communities was a priority and requested Cooperative Extension to provide leadership, on-the-ground development and programming facilitation. Working cooperatively, to provide intensive educational programming for local governments and community property associations, a Community Forest Health and Wildfire action team was initiated formed and trained by Cooperative Extension. Their mandate is to evaluate risk within the entire area on a landscape basis. After the evaluation they make recommendations on where to best focus resources that will most effectively mitigate risk.

#### **What has been done?**

As part of an ongoing effort that continued in 2013, Arizona Cooperative Extension in Navajo County increased fire mitigation awareness by conducting a comprehensive program that includes education guides, training, assessments and a highly visible demonstration area in cooperation with local communities. Five property associations and three local governments provided 27 individuals for seasonal training cycles in 2012 and 2013.

#### **Impacts reported in Report Overview**

### **Water Wise: Water Conservation in Cochise County**

#### **Issue**

Arizona's increasing population has an enormous impact on vast tracts of public and private land. Between 2000 and 2010, Arizona's population increased by just under 25% (US Census Bureau). This rapid urbanization permanently alters natural watershed characteristics. According to the United States Geological Survey (2005), the average American uses between 80 and 100 gallons of water daily. Nationally, residential outdoor water use is about 30%, but in Arizona due to high temperatures and evaporation rates it is estimated that on average, outdoor water use in Arizona accounts for over 50% of a residence's total water consumption. One of the most significant perennial desert river reaches in the United States is the San Pedro River which lies within the Sierra Vista sub-watershed of Cochise County. Balancing the needs of the river with the water needs of current and future residents is a top priority for the Cochise County Board of Supervisors, City of Sierra Vista officials, and numerous other government entities and residents.

#### **What has been done?**

Cochise County, the City of Sierra Vista, and Fort Huachuca have funded the Water Wise Youth, Water Wise Community Education (Sierra Vista Sub-watershed) and Water Wise & Energy Smart (Ft. Huachuca) programs since 1999. These extensive and comprehensive programs are developed and implemented as a team effort, with Cochise County Cooperative Extension responsible for overall program direction, curriculum, and communication with funding partners.

Highlights: Water Wise Youth classroom presentations and after school programming activities reached 1,695 students during 2013; an additional 1,015 students participated in out of classroom teaching events. The Water Wise Community Education residential program included 68 on-site visits, 26 information racks, 23 workshops/events with 416 direct contacts, one xeriscape tour in cooperation with Master Gardeners (130 attendees), and two rainwater harvesting tours (35 attendees). The commercial program conducted 11 Industrial, Commercial and Institutional (ICI) building audits. All Cochise County building permit applicants and Sierra Vista newcomers receive Water Wise materials. The Water Wise & Energy Smart program supports U.S. Army Fort Huachuca's water and energy conservation efforts through outreach and education to military personnel, their families, and all who work on post. In 2013, 61 energy audits were conducted, encompassing 2,767,756 square feet, and 61 school classes reached 1,510 students.

**Impacts reported in Report Overview**

**2. Brief description of the target audience**

Natural resource managers, Governor's Office and state agencies, municipal organizations and leaders, households, consumers, youth, master gardening and master watershed programs.

**3. How was eXtension used?**

eXtension was not used in this program

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	35000	40000	307	2000

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

**Patent Applications Submitted**

Year: 2013  
 Actual: 1

**Patents listed**

Curable Composition, Paste, and Oxidatively Carbonated Composition

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2013	Extension	Research	Total
<b>Actual</b>	139	168	307

## V(F). State Defined Outputs

### Output Target

#### Output #1

##### Output Measure

- Effectiveness of the research program will be used to reach direct and indirect contacts  
Not reporting on this Output for this Annual Report

#### Output #2

##### Output Measure

- Number of individuals participating in educational programs

Year	Actual
2013	35307

#### Output #3

##### Output Measure

- Number of individuals adopting new technology

Year	Actual
2013	1500

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Effectiveness of research programs will be based on publications, external grant support, and integration into existing extension programs
2	Number of individuals gaining knowledge by participating in educational programs
3	Volunteers completing Master Gardening training
4	Create awareness and increase knowledge

**Outcome #1**

**1. Outcome Measures**

Effectiveness of research programs will be based on publications, external grant support, and integration into existing extension programs

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	307

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

All participants in the research and extension programs and the respective clientele for these programs care.

**What has been done**

Arizona has a fully integrated research and extension program and all faculty strongly pursue competitive grants.

**Results**

More than \$1.5 million dollars in non-USDA grants were obtained to support this program.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
121	Management of Range Resources

**Outcome #2**

**1. Outcome Measures**

Number of individuals gaining knowledge by participating in educational programs

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	35307

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
121	Management of Range Resources

**Outcome #3**

**1. Outcome Measures**

Volunteers completing Master Gardening training

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	637

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

The Master Gardener program is an important component of our Cooperative Extension program.

**What has been done**

2,216 volunteers donated their time teaching others.

**Results**

Master Gardener Volunteers donated over 91,000 hours in 2013, which @\$21/hr is valued at \$2M.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
121	Management of Range Resources

**Outcome #4**

**1. Outcome Measures**

Create awareness and increase knowledge

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	29510

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

All recipients of our programs care about increasing their knowledge.

**What has been done**

2,216 Master Gardener volunteers shared information directly with 29,510 program participants.

**Results**

The majority of the recipients consistently indicate a change in knowledge resulting from our programs and materials.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
121	Management of Range Resources

**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

**Brief Explanation**

## **V(I). Planned Program (Evaluation Studies)**

### **Evaluation Results**

All programs are currently in the process of being evaluated for existing areas to preserve, protect, or enhance, as well as areas to discontinue or modify. We are beginning the process to seek further input from stakeholders, advisory committees, and focus groups utilizing needs assessments with the assistance and expertise of an Evaluation Specialist [to be hired]. Plans are also underway to seek input from non-traditional audiences. See State DefinedOutcomes.

### **Key Items of Evaluation**