

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

**Program # 16**

**1. Name of the Planned Program**

Climate Change: Forest Management

**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	90%		40%	
213	Weeds Affecting Plants	5%		20%	
215	Biological Control of Pests Affecting Plants	0%		20%	
216	Integrated Pest Management Systems	5%		20%	
	<b>Total</b>	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	3.6	0.0	1.0	0.0
Actual	2.9	0.0	1.7	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
156044	0	90445	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
156044	0	90445	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
36406	0	456117	0

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

1. Brief description of the Activity

The Climate change: Forest management team is made up of five faculty members contributing a total of 2.9 FTEs to this project. Team members generated \$114,148 in external grant support and made 5,636 direct teaching contacts. Team members produced five peer-reviewed Extension publications and one article in a professional/scientific journal. The Team has four major areas of focus:

- Improving Family Forest Management
- Sustainable Timber Harvesting
- Natural Resource Education for Professionals
- Youth and Educators

Workshops and field days for family forest owners, forestry and natural resource professionals, and for loggers continue to dominate the agenda for this Team. These efforts are generally presented in series to increase the knowledge and understanding of the target audience about a suite of topics each year. Team members continued to produce educational articles for various trade publications and for our own newsletter targeting forestry professionals.

A new grant supported a multistate effort to evaluate the educational status and needs of forest owners related to climate change, in partnership with Oregon State University.

## 2. Brief description of the target audience

Family Forest Owners, Loggers, Natural Resource Professionals

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

#### 1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	600	15000	50	200
<b>Actual</b>	4406	1220250	1230	18450

#### 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
<b>Plan</b>	2	1	

<b>Actual</b>	5	4	9
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**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of workshops, field days, etc.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	30	54

**Output #2**

**Output Measure**

- Number of participants in workshops, field days, etc.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	600	4038

**Output #3**

**Output Measure**

- Number of articles in popular and trade press.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	15	26

**Output #4**

**Output Measure**

- Number of web site "hits".

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	3000	4200

**Output #5**

**Output Measure**

- Continuing Education hours for foresters, loggers, & other natural resource Professionals.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	2000	4808

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

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

O. No.	OUTCOME NAME
1	O: Family forest owners manage resources to achieve healthy, sustainable forests. I: Numbers of family forest owners indicating they will adopt recommended practices (e.g., monitor for insect, disease, or animal damage; thin forest trees; complete a forest management plan; etc.).
2	O: Family forest owners' understand issues and practices related to forest ecology, silviculture, and forest management. I: Number of family forest owners participating in educational programs who report an increase in awareness and knowledge of specific forest ecology, silviculture, and forest management issues.
3	O: Loggers operate using recommended forest management practices (e.g., monitor for insect, disease, or animal damage). I: Numbers of LEAP Update participants indicating they will adopt specific improved forest management practices.
4	O: Loggers possess credentials required by forest industry to conduct business. I: Number of loggers who complete continuing education requirements.
5	O: Natural resource professionals have knowledge consistent with current scientific understanding and emerging technologies. I: Number of natural resource professionals demonstrating increase in knowledge related to specific forest science and technology topics.
6	O: Other scientists are aware of our research findings. I: Number of refereed scientific journal articles.
7	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

## **Outcome #1**

### **1. Outcome Measures**

O: Family forest owners manage resources to achieve healthy, sustainable forests. I: Numbers of family forest owners indicating they will adopt recommended practices (e.g., monitor for insect, disease, or animal damage; thin forest trees; complete a forest management plan; etc.).

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2010	300	881

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

#### **Issue (Who cares and Why)**

Roughly 44% of the forests in the Idaho Panhandle (Boundary, Bonner, Kootenai and Benewah counties) are held and managed by 46,993 family forest owners (23,663 owning 5 acres or more). Family forests are critical to timber supply, water, wildlife, and many other shared values. For example family forests tend to be more concentrated near key locations for ecosystem functions (e.g., along lakes, streams, and in increasingly rare low elevation wildlife habitats)

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

As part of the Idaho Forest Stewardship program, a cooperative effort with the Idaho Dept. of Lands and many other partners, UI Extension provides an annual series of workshops, field days and other educational activities titled Strengthening Forest Stewardship Skills. The activities are designed to strengthen forest owners' ability to implement practices that improve forest health and growth, and are offered in a variety of locations and times.

#### **Results**

In FY 09-10, 672 owners of nearly 90,000 family forest acres attended UI Extension workshops and other educational activities in the Idaho panhandle. On average, less than a third of participants indicated previous involvement in various forestry education or assistance programs. Participants indicated knowledge increases ranging from 40% to 158%, with an un-weighted average of 84%. Based on evaluation results: 215 panhandle family forest owners will attend additional forestry education programs; 140 will contact a forester for additional assistance; 108 will monitor for insect, disease, or animal damage; 89 will thin forest trees; 81 will manage to favor larch and pines; 61 will complete a forest management plan; 52 will reduce noxious weeds or other non-native invasive species; 48 will reduce fuels in the home ignition zone; 43 will make their house easier for firefighters to identify and access; 39 will prune forest trees; 31 will reduce unwanted vegetation.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

#### Outcome #2

##### 1. Outcome Measures

O: Family forest owners' understand issues and practices related to forest ecology, silviculture, and forest management. I: Number of family forest owners participating in educational programs who report an increase in awareness and knowledge of specific forest ecology, silviculture, and forest management issues.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Condition Outcome Measure

##### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	300	672

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

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average of 84%.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

#### Outcome #3

##### 1. Outcome Measures

O: Loggers operate using recommended forest management practices (e.g., monitor for insect, disease, or animal damage).I: Numbers of LEAP Update participants indicating they will adopt specific improved forest management practices.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Condition Outcome Measure

##### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	230	142

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

###### **Issue (Who cares and Why)**

Loggers are a critical link in forest management. Unfortunately, if communication between landowners, loggers, or foresters is inadequate, the resulting timber or biomass harvests may not meet expectations. To the extent forest certification programs require trained loggers, UI Extension logger training efforts are vital to helping Idaho forest product companies maintain or increase Idaho's share of global markets for certified wood products.

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

Logger Education to Advance Professionalism ("LEAP") features over 20 hours of training designed to increase loggers' understanding and skills related to forest ecology, silviculture, and water quality. Based on logger recommendations, we developed LEAP Update, an annual 2-day program where loggers can get updated on current forestry issues. UI Extension has integrated logger education needs into other education programs as well.

###### **Results**

Eight hundred and ninety-two loggers have attended the 38 LEAP sessions offered annually in the Idaho Panhandle since 1994. As a result of 158 loggers participation in the three LEAP

Update sessions held in the Idaho Panhandle in 2010: 142 loggers will be able to identify Douglas-fir tussock moth problems; 138 will select better leave trees; 138 will be able to better evaluate forest stand density; 129 will manage slash more effectively; and 101 will make better decisions on biomass harvesting.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

#### Outcome #4

##### 1. Outcome Measures

O: Loggers possess credentials required by forest industry to conduct business. I: Number of loggers who complete continuing education requirements.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Condition Outcome Measure

##### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	250	683

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

###### **Issue (Who cares and Why)**

Partially stimulated by SFI, the Idaho logger education committee developed the "Idaho Pro-Logger" program, administered through the Associated Logging Contractors of Idaho (ALC). The Idaho Pro-Logger credential requires LEAP and 16 credits of continuing education annually. With growing enrollment in the Idaho Pro-Logger program, more loggers are looking for ways to meet credit requirements.

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

Based on logger recommendations, we developed LEAP Update, an annual 2-day program where loggers can get updated on current forestry issues.

###### **Results**

Six hundred eighty-three loggers have maintained enrollment in the Idaho Pro-logger program.

#### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

## **Outcome #5**

### **1. Outcome Measures**

O: Natural resource professionals have knowledge consistent with current scientific understanding and emerging technologies. I: Number of natural resource professionals demonstrating increase in knowledge related to specific forest science and technology topics.

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Knowledge Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2010	150	314

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

#### **Issue (Who cares and Why)**

Forests are vital to the economy and quality of life in the Inland Northwest. Foresters and other natural resource professionals must continually sharpen their skills and stay current with emerging scientific and technological developments to sustainably produce more wood and forest biomass and simultaneously improve forest biodiversity and health. K-12 teachers must also stay updated and are continually looking for local opportunities to hone their skills.

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

UI Extension and WSU Extension cooperate to hold an annual forum for consulting foresters, state-employed service foresters, and other natural resource professionals working with family forest owners, titled The Family Foresters Workshop, updates participants on emerging technology and knowledge applicable to family-owned forests. Other efforts involve adjusting programs developed for forest owners or other groups to simultaneously meet foresters' or teachers' needs as well.

#### **Results**

Over 267 foresters attended UI Extension forestry programs in the Idaho Panhandle in 2009-2010, for 1,074 contact hours. Participants in the 2010 Family Forester's Workshop, indicated percentage knowledge increases ranging from 13-68% on: cap and trade, wetland/riparian habitat improvement, LIDAR, managing forests for aquifers, and family forest economics/policy. Three panhandle teachers took the Forestry Shortcourse for credit in 2009-2010. Some teachers have used the shortcourse to develop innovative high school forestry classes. Future UI Extension

programming in this area will evolve to reflect emerging technologies and professional education needs in the Idaho Panhandle related to forestry.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

#### Outcome #6

##### 1. Outcome Measures

O: Other scientists are aware of our research findings. I: Number of refereed scientific journal articles.

##### 2. Associated Institution Types

- 1862 Research

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1	0

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

**Issue (Who cares and Why)**  
{No Data Entered}

**What has been done**  
{No Data Entered}

**Results**  
{No Data Entered}

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

## **Outcome #7**

### **1. Outcome Measures**

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

### **2. Associated Institution Types**

- 1862 Research

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2010	2	0

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

#### **Issue (Who cares and Why)**

{No Data Entered}

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

{No Data Entered}

#### **Results**

{No Data Entered}

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Public Policy changes
- Populations changes (immigration, new cultural groupings, etc.)

#### **Brief Explanation**

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

### **1. Evaluation Studies Planned**

- After Only (post program)
- Before-After (before and after program)

### **Evaluation Results**

Evaluation results are described in the outcomes portion of this program

### **Key Items of Evaluation**