

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

**Program # 2**

**1. Name of the Planned Program**

Natural Resources and Community Development

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
111	Conservation and Efficient Use of Water	10%		0%	
112	Watershed Protection and Management	20%		0%	
122	Management and Control of Forest and Range Fires	10%		0%	
123	Management and Sustainability of Forest Resources	10%		10%	
131	Alternative Uses of Land	10%		0%	
134	Outdoor Recreation	5%		20%	
403	Waste Disposal, Recycling, and Reuse	0%		5%	
404	Instrumentation and Control Systems	5%		0%	
511	New and Improved Non-Food Products and Processes	0%		5%	
605	Natural Resource and Environmental Economics	10%		20%	
608	Community Resource Planning and Development	15%		10%	
610	Domestic Policy Analysis	5%		20%	
805	Community Institutions, Health, and Social Services	0%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)**

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

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	3.9	0.0
Actual Paid Professional	2.9	0.0	2.4	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
103763	0	172896	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
136240	0	729138	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
890439	0	2315960	0

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

### 1. Brief description of the Activity

Research products provided science-based information in resource planning, economic and environmental impact of natural resource use, market and nonmarket value of resources, and conflict resolution in rural communities and villages along with basic information in climate change issues, food security, forest sciences and soil sciences for use by planners, economists and policy makers. Measurable outcomes included peer-reviewed publications, lay publications, rural community business/development plans, and citizen participation. Extension activities involve partners from other UAF units as well as AFES to assure that there is a feedback loop that will continue to make the information provided to stakeholders relevant to their needs. These activities provided integrated and/or multistate projects concerning natural resources stewardship within the University of Alaska Fairbanks and with other land-grant institutions.

CES programs addressed the needs of those Alaskans most directly impacted by specific natural resource matters and maintained partnerships with government agencies concerning stakeholder needs. It provided community and economic development, particularly in rural Alaska, and environmental education to teachers and youth. It assisted the UAF School of Natural Resources and Agricultural Sciences and other units of the University of Alaska in recruiting and graduating young Alaskans with endorsements, certificates and degrees with careers in managing, using and protecting natural resources.

Product development activities included:

- Providing standards for Alaska woods.
- Developing non-timber forest products with business entrepreneurs.
- Investigating the fuel potential of Alaska's forests.
- Investigating recreation opportunities and impacts in Alaska's ecosystems.

### 2. Brief description of the target audience

This program focused on industry and entrepreneurs including communities, families, and newly forming cooperatives and businesses, nonprofit and for-profit development corporations. Efforts were made to address problems of the traditionally underserved rural populations within the limit of resources available. Stakeholders are those directly impacted by contemporary natural resource issues related to forest and land resources, mining resources, and water resources, young adults wanting entry level skills needed for employment in natural resource related businesses, agencies or organizations, and persons in natural resource related occupations needing to increase their skill and/or knowledge level, federal and state agencies.

### 3. How was eXtension used?

The AFES/CES specialist worked on the multistate Cooperative eXtension CoP on climate, forests and woodlands to write eXtension content. The water quality expert chaired the national Drinking Water and Human Health eXtension Community of Practice, which is developing content. One of our agents answers Ask an Expert questions using eXtension and two regularly use the search engine.

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

##### 1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	5819	30045	8273	755

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

###### Patent Applications Submitted

Year: 2012

Actual: 0

###### Patents listed

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

###### Number of Peer Reviewed Publications

2012	Extension	Research	Total
<b>Actual</b>	4	9	10

#### V(F). State Defined Outputs

##### Output Target

###### Output #1

###### Output Measure

- Output Target 1: Active partnerships with other land grant institutions, government agencies, stakeholder groups and organizations.

Year	Actual
2012	43

###### Output #2

###### Output Measure

- Output Target 2: Develop and deliver public issues education workshops and classes for

stakeholders on locally relevant natural resources and related issues.

<b>Year</b>	<b>Actual</b>
2012	23

**Output #3**

**Output Measure**

- Output Target 3: Develop and maintain a web-based platform for discourse and information sharing on relevant areas of interest in natural resource issues that connect people to information.

<b>Year</b>	<b>Actual</b>
2012	4

**Output #4**

**Output Measure**

- Output Target 4: Conduct needs assessments of natural resource management stakeholders.

<b>Year</b>	<b>Actual</b>
2012	4

**Output #5**

**Output Measure**

- Output Target 5. Develop regional economic models for Alaska resource management scenarios. Output will be models, presentations and publications.  
Not reporting on this Output for this Annual Report

**Output #6**

**Output Measure**

- Output Target 6. Develop and implement public involvement in natural resource issues. Output measure will be public input sessions and publications.

<b>Year</b>	<b>Actual</b>
2012	11

**Output #7**

**Output Measure**

- Output Target 7. Provide analysis of natural resource and environmental laws. Output measure will be presentations, workshops and publications.

<b>Year</b>	<b>Actual</b>
2012	2

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

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

O. No.	OUTCOME NAME
1	Outcome Target 1: Increase and maintain partnerships with stakeholder groups, government agencies, and other institutions that will enhance the land grant mission.
2	Outcome Target 2: Increase the number of integrated and multistate research-extension activities.
3	Outcome Target 3: Increase the recruitment and retention of youth appreciating and considering natural resource management careers.
4	Outcome Target 4: Increase public involvement in natural resource and community development issues. Outcome measure will be the increase in number of communities.
5	Outcome Target 5: Increase community development and economic diversification through tourism. Outcome measure will be number of tourism opportunities and communities impacted.
6	Outcome Target 6: Increase environmental collaborations between K-12 teachers, students and university educators through outreach. Outcome measure is the number of students or educators who increased their knowledge through outreach.
7	Outcome Target 7: Improve natural resource management of outdoor recreation. Measurement is publications, presentations or project reports.

## **Outcome #1**

### **1. Outcome Measures**

Outcome Target 1: Increase and maintain partnerships with stakeholder groups, government agencies, and other institutions that will enhance the land grant mission.

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

- 1862 Extension
- 1862 Research

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	64

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

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

Of the 375 million acres of land in Alaska, 44 million are Native lands, 101 million are state lands, and 218 million are federally managed. Approximately 12 million acres are privately owned. AFES seeks to provide research that meets the needs of the private, state and federal stakeholders and with CES assures that stakeholders are engaged with UAF in the application of that research. CES promotes economic development and meets other community needs. Partnerships are critical to assuring this happens. Our partners work with us, often assisting in the research and outreach efforts.

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

Important partnerships for CES included the Alaska Energy Authority, the U.S. Forest Service, Alaska Division of Forestry, the UA Center for Economic Development and Alaska Sea Grant. CES organized the 2012 Alaska Wood Energy Conference for the energy authority and coordinates its Wood Energy Development Task Group. AFES partners included Alaska Energy Authority, the U.S. Forest Service, Alaska Division of Forestry, the UA Center for Economic Development and Alaska Sea Grant. CES organized the 2012 Alaska Wood Energy Conference for the energy authority and coordinates its Wood Energy Development Task Group. AFES partnered with master log home builders, AK Dept of Forestry, University of Washington's Center for International Trade and Dept of Civil and Environmental Engineering, University of Idaho-Inland Empire, Poppert Mill Industry and the Alaska Valley Arts Alliance.

#### **Results**

The wood energy task group explores opportunities to increase the utilization of wood for energy. The wood energy conference, which occurred during the FY13 year, brought multiple agencies, individuals and organizations together to consider community use of wood biomass. Sea Grant's Alaska Center for Ocean Science Education Excellence supported CES salmon and science

literacy training to 18 educators at a three-day in-service. Participants in a cooperative development workshop hosted by CES and the UA Center for Economic Development heard from a variety of successful cooperatives and online cooperatives.

#### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
123	Management and Sustainability of Forest Resources
134	Outdoor Recreation
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
610	Domestic Policy Analysis

#### Outcome #2

##### 1. Outcome Measures

Outcome Target 2: Increase the number of integrated and multistate research-extension activities.

##### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

<b>Year</b>	<b>Actual</b>
2012	10

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

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

The geographic isolation of Alaska and the expense traveling elsewhere present challenges to maintaining multistate relationships. At the same time, many issues, particularly natural resources, energy and climate change, have implications that extend well beyond our borders. Tapping into other states' experiences and research will strengthen our ability to assist Alaskans. Integrated activity between AFES researchers and Extension personnel provide the best possible information for stakeholders in the unique environment of our state.

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

AFES/CES specialist has worked to extend Alaska's forestry markets, and provide wood energy and forest education outreach. As an outgrowth of the national ANREP conference in Alaska and a further workshop on climate change and forests, she is a member of the ANREP initiative on climate science. An agent worked with the University of Minnesota and ESRI to develop a virtual field trip for 4-H'ers. CES water quality coordinator chaired national Drinking Water and Human Health eXtension Community of Practice and participated in regional water quality group. CES worked with Missouri Extension to revise a community development handbook.

### **Results**

A partnership with a Palmer arts alliance led to a OneTree program, a birch tree crafted into artwork with 20 artists. A large display on the project drew many visitors at the state fair and the Palmer fair. Forest outreach included a birch tapping workshop and youth outreach. Water quality coordination work shares information among participating Western states and the public. The community development handbook is used with tourism workshops and in a rural development class in Alaska and with tourism and community development seminars in Missouri. Details about the virtual trip are included in Outcome 6. Agent's work with the climate initiative led to a working group to consider regional outreach priorities.

## **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land
608	Community Resource Planning and Development

## **Outcome #3**

### **1. Outcome Measures**

Outcome Target 3: Increase the recruitment and retention of youth appreciating and considering natural resource management careers.

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

- 1862 Extension
- 1862 Research

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	8

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

**Issue (Who cares and Why)**

Young people who are introduced to natural resource issues through an organization or agency in their community are more likely to consider natural resource careers.

**What has been done**

The School of Natural Resources & Agricultural Sciences is one of two schools at UAF participating in the Peace Corps Master's International Program (PCMIP). This program provides an opportunity to integrate graduate study with international development practice through Peace Corps field experience in natural resources management or rural development. The program of study is designed to meet individual student needs while taking into consideration the degree requirements and the needs of the Peace Corps host country.

**Results**

Since 2004, eight graduate students have participated in the PCMIP. Three have completed their tour and university studies. They will or have served in El Salvador, Paraguay, Fiji, The Gambia, Ghana, and Honduras. A new opportunity is the Paul D. Coverdell Fellows Program which provides stipend and tuition to a returning Peace Corps volunteer. Our current fellow completed his tour in Mali. These highly competitive programs provide a full stipend with tuition. Stories of the volunteers can be found at the SNRAS/AFES blog <http://snras.blogspot.com/2012/11/snras-welcomes-first-peace-corps-fello.html>. See articles on October, 31, 2011, November 8, 2011, February 22, 2012, and February 27, 2012.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land
403	Waste Disposal, Recycling, and Reuse
608	Community Resource Planning and Development

**Outcome #4**

**1. Outcome Measures**

Outcome Target 4. Increase public involvement in natural resource and community development issues. Outcome measure will be the increase in number of communities.

**2. Associated Institution Types**

- 1862 Research

### 3a. Outcome Type:

Change in Action Outcome Measure

### 3b. Quantitative Outcome

Year	Actual
2012	0

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Environmental conservation is a local, regional and global concern. The changes in Namibia are providing inspirations to land managers around the world and in Alaska.

#### What has been done

A recent sabbatical spent in Namibia has broadened understanding of similarities between village corporations and conservancies. Prior to independence Namibians were not allowed to hunt so that poaching had destroyed much of the wildlife. There have been conflicts between hunters in Alaska and villagers concerning use of their lands. A few corporations are running lodges and ecotourism businesses and at least one has an agreement with a professional guide to bring clients onto their land. Introduction of plains and wood bison as well as official permission to harvest moose for funeral potlatches are examples of similar approaches that may be successful examples of conflict resolution.

#### Results

Trophy hunting is not well regarded in most villages in interior Alaska, but in Namibia trophy hunting has proven to have advantages over regular tourism. Hunters are also willing to endure many hardships that regular tourists do not expect to encounter. Hunters do not expect four star accommodation or gourmet cooking. Hunting is less sensitive to changes in the economy, while traditional tourism is vulnerable to even the slightest recession.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land
608	Community Resource Planning and Development

## **Outcome #5**

### **1. Outcome Measures**

Outcome Target 5: Increase community development and economic diversification through tourism. Outcome measure will be number of tourism opportunities and communities impacted.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	5

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

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

Alaska's diverse communities, urban and rural, are seeking ways to broaden their economic base. The natural beauty of Alaska, its diverse cultural groups and its rich history contribute to the future growth of Alaska's visitor industry. Tourism can have significant impacts on community life and culture, particularly in small communities.

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

CES worked to promote tourism in rural Alaska. Staff met with a Prince of Wales visitors committee to promote tourism on the island and CES agent met with Forest Service in Wrangell to discuss climate change and its effects on migratory birds and birding tourism. Cultural host training in Anchorage provided participants with an increased awareness of remote, rural Alaska. The training is designed to benefit the tourism or hospitality industry, teachers and others who work and travel in rural Alaska. A cultural tourism exchange of Japanese to two Alaska communities was based on the stories of early Japanese in Alaska.

#### **Results**

A 2011 tourism summit succeeded in attracting two small cruise lines to the Prince of Wales Island. One cruise line began once-a-week stops in Klawock and at El Capitan in 2011, and the second cruise line made stops in Kasaan and Thorne Bay in 2012. The cruise line additions provided indirect economic benefits to the communities. Cultural host training increased cultural sensitivity and customer service skills among individuals who work in rural Alaska. Materials developed for the workshop were used in training in four Alaska communities in 2013 FY. Cultural exchange workshops with tourists from Japan visiting Tanana and Anchorage, involved 259 participants, including youth and elders, who exchanged dances and traditions. The exchange brought cultural and economic benefits to two communities.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development

#### Outcome #6

##### 1. Outcome Measures

Outcome Target 6: Increase environmental collaborations between K-12 teachers, students and university educators through outreach. Outcome measure is the number of students or educators who increased their knowledge through outreach.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2012	1019

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

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

In a natural resource-rich state it is important to familiarize students and educators about environmental issues.

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

Project Learning Tree presentations to students and teachers use the Alaska boreal forest as the basis for learning. CES hosted a classroom salmon incubation project in-service for 18 rural teachers that provided science curriculum and training to run the classroom project. Due to partnership with the University of Minnesota and the Environmental Systems Research Institute (ESRI,) agent developed a virtual field trip for 4-H'ers as he climbed the Western Hemisphere's tallest mountain, Aconcagua. Youth used GIS software to track his progress in real time.

###### **Results**

Thirty teachers and 19 students were reached in Project Learning Tree presentations. Through hands-on activities, the program trained educators to show students to how to think about complex environmental issues. We know from many teachers who have taken the training twice that they are using it in their classroom. Thirty-five to 40 schools participate annually in the classroom salmon incubation program, which provides a culturally relevant science curriculum to more than 1,200 students. 971 4-H'ers participated in the virtual field trip, viewing data from the

agent's GPS beacons and online GIS websites with high-resolution photography. The program was featured at the International GIS Education Conference in San Diego and at the national 4-H conference as a way to promote learning about GPS/GIS software among youth.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
134	Outdoor Recreation
404	Instrumentation and Control Systems
608	Community Resource Planning and Development

#### Outcome #7

##### 1. Outcome Measures

Outcome Target 7: Improve natural resource management of outdoor recreation. Measurement is publications, presentations or project reports.

##### 2. Associated Institution Types

- 1862 Research

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2012	3

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

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

Research exploring the link between recreation and human well-being has resulted in many advances in recreation management. While our understanding of this has evolved substantially in recent years and management frameworks such as OFM can guide agencies in managing for human well-being, there is still a need to refine our understanding of the relationship between recreation and human well-being and for region-specific studies regarding the benefits of recreation to guide management efforts.

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

Several graduate students, in collaboration with the researcher and BLM and the U.S. Forest Service, participated in data gathering. The manuscript resulting from the research provided documentation of which areas might be better suited to provide certain outcomes, resulting in a stronger scientific basis for the RMP. The WMNRA analysis will lead to change in action related to how beneficial outcomes associated with outdoor recreation are measured.

### **Results**

Participation in the coordinating committee NECC1011 led to participation in the multistate research project NE1962. This partnership has clarified and strengthened research in Alaska. The results of the 2011 Steese Highway Corridor study resulted in a change of knowledge for BLM planners. The BLM is currently developing a Resource Management Plan (RMP) for the EIFO. As part of the RMP, the BLM must identify outcomes related to community well-being and resilience to be targeted at specific sites within areas they manage. The analysis of the open-ended ARSP data has provided new insights into differences in perspectives on natural resource management between long-term residents of an area and newer residents which resulted in a change of knowledge with the expectation that it will lead to a change in action in the near future.

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

<b>KA Code</b>	<b>Knowledge Area</b>
134	Outdoor Recreation

### **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**

External factors affecting Alaska natural resources include drought, which has reduced tree growth and made the forests susceptible to insect predation and forest fire. All communities are struggling with the high price of fuel, and state government wrestles with a burgeoning budget and the drop in oil production. Long distances between rural communities not on a road system and accessible by plane or boat, affect development and our ability to offer programs. Health and education of rural residents is slowly improving but is not on par with rural towns in the rest of the country.

The School of Natural Resources and Agricultural Sciences and the Agricultural and Forestry Experiment Station are going through a reorganization and strategic reassessment. The School of Natural Resources and Agricultural Sciences, the Agricultural and Forestry Experiment Station and the Cooperative Extension Service at UAF will continue to serve the needs of the citizens of the state of Alaska.

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

#### **Evaluation Results**

Participants in Palmer and Nome mining workshops filled out evaluations. All 15 Palmer participants said the workshop content was either good or excellent and found the content useful. Twelve of 15 participants planned to pursue a prospecting certificate. In the Nome prospecting class, all of the 11 participants thought the workshop content was good or excellent. Five indicated that they would pursue a prospecting certificate.

Teachers participating in the salmon incubation project in-service rated the change in their knowledge, ideas and skills on a scale from 1 to 5. They rated the workshop at 4.8 overall and 4.7 for increases in their knowledge and skills. Responses averaged between 4.4 and 4.8 for all topic areas, and topics related to salmon incubation and rearing skills rated on average from 4.6 to 4.8.

The 59 legislative process workshop participants in Anchorage and Bethel) were asked whether the workshop met objectives. Their responses ranged from 3 to 5 on a 1-5 highest (5-highest). Participants included Chamber of Commerce members, co-op members and local government representatives. Comments ranged from "cleared up misconceptions on how the process works" to helped to "cultivate strategic thinking."

The outdoor recreation project uses surveys that produce data requested by the National Park Service. It has resulted in a change of knowledge.

### **Key Items of Evaluation**