

**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
101	Appraisal of Soil Resources	0%		20%	
111	Conservation and Efficient Use of Water	10%		0%	
112	Watershed Protection and Management	15%		0%	
122	Management and Control of Forest and Range Fires	10%		0%	
123	Management and Sustainability of Forest Resources	10%		30%	
131	Alternative Uses of Land	10%		0%	
134	Outdoor Recreation	5%		20%	
404	Instrumentation and Control Systems	5%		0%	
605	Natural Resource and Environmental Economics	15%		10%	
608	Community Resource Planning and Development	15%		10%	
610	Domestic Policy Analysis	5%		10%	
	<b>Total</b>	100%		100%	

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

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

Year: 2014	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	4.0	0.0	1.9	0.0
<b>Actual Paid</b>	3.0	0.0	0.8	0.0
<b>Actual Volunteer</b>	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
135142	0	19847	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
63196	0	51250	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
440933	0	0	0

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

**1. Brief description of the Activity**

Research products will provide science-based information on resource planning, the economic and environmental impact of natural resource use involving market and nonmarket value of resources, and land planning issues in urban and rural communities.

Measurable outcomes will include peer-reviewed and lay publications, rural community business development plans and citizen participation. Extension activities involve partners from other UAF units as well as AFES to make sure that the information provided to stakeholders is relevant to their needs.

Integrated and/or multistate projects concerning natural resources stewardship will provide collaboration and engagement with other land-grant institutions, Extension and federal partners.

Activities will address the needs of Alaskans most directly impacted by specific natural resource matters. Partnerships will be developed and/or maintained that address emerging natural resources issues.

Specific activities will include literature reviews; reviews of contemporary research relevant to the program; lay publications that provide unbiased, scientific information about natural resources issues; website development for natural resources issues; Extension workshops, demonstrations and basic skill trainings; public meetings and discussions; 4-H and FFA projects; and young adult stakeholder workforce readiness trainings. AFES and CES will continue to pursue joint appointments and collaborative activities.

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

This program will focus on industry and entrepreneurs, including communities, families newly forming cooperatives and businesses, and nonprofit and for-profit development corporations. Efforts will be made to address problems of the traditionally underserved rural populations within the limit of resources available. Stakeholders are those directly impacted by 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; persons in natural resource-related occupations who wish to increase their skill and/or knowledge level; and federal and state agencies.

**3. How was eXtension used?**

An agent answered eXtension Ask an Expert wood energy questions. Two agents regularly used eXtension's search engine. Another agent is developing content for the Climate, Forests and Woodlands Community of Practice.

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

**1. Standard output measures**

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	2329	26772	681	1409

**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
<b>Actual</b>	0	1	1

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

**Output Target**

**Output #1**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2014	77

**Output #2**

**Output Measure**

- Output 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>
2014	27

### **Output #3**

#### **Output Measure**

- Output 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>
2014	5

### **Output #4**

#### **Output Measure**

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

<b>Year</b>	<b>Actual</b>
2014	3

### **Output #5**

#### **Output Measure**

- Output 5. Develop regional economic models for Alaska resource management scenarios. Output will be models, presentations and publications.

<b>Year</b>	<b>Actual</b>
2014	5

### **Output #6**

#### **Output Measure**

- Output 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>
2014	12

### **Output #7**

#### **Output Measure**

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

<b>Year</b>	<b>Actual</b>
2014	1

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

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

O. No.	OUTCOME NAME
1	Outcome 1: Increase and maintain partnerships with stakeholder groups, government agencies and other institutions that will enhance the land-grant mission.
2	Outcome 2: Increase the number of integrated and multistate research-extension activities.
3	Outcome 3: Increase the recruitment and retention of youth appreciating and considering natural resource management careers.
4	Outcome 4. Increase public involvement in natural resource and community development issues. Outcome measure will be the increase in number of communities.
5	Outcome 5: Increase public knowledge about the use of firewood to heat homes while addressing air quality concerns. The measure will be the number of individuals who participate in wood energy educational outreach events.
6	Outcome 6: Increase familiarity with GPS and GIS software to improve the use of the navigation and land planning software. The measure will be the number of individuals who participate in the hands-on geospatial outreach events.
7	Outcome 7: Increase and maintain partnerships with outdoor recreation stakeholder groups, government agencies and other institutions that will enhance the land-grant mission. Measure is presentations and publications.

## **Outcome #1**

### **1. Outcome Measures**

Outcome 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>
2014	0

### **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, about 100 million acres are state lands and 218 million are federally managed. AFES provides 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 research. CES promotes economic development and meets other community and rural 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 included the Alaska Energy Authority, the U.S. Forest Service, Alaska Division of Forestry, Alaska Department of Fish and Game and the Cold Climate Housing Research Center. CES organized the 2014 Alaska Wood Energy Conference for the energy authority and coordinates its Wood Energy Development Task Group. The Division of Forestry supports CES forest stewardship outreach and coordination of Project Learning Tree program. Fish and Game funded forest grouse survey research. The National Park Service collaboration has proved invaluable.

#### **Results**

The wood energy task group evaluated requests for pre-feasibility studies to increase the utilization of wood for energy in public facilities. The wood energy conference brought multiple agencies, individuals and industry together to consider rural energy and Interior heating concerns. Work with the Division of Forestry and the Cold Climate Housing Research center extended knowledge about wood heat, biomass, firewood, forest stewardship and woodstove safety, which is important because of high energy costs in rural and urban Alaska. Ongoing research on forest

grouse surveys helped Fish and Game and state forestry determine timber harvest and habitat effectiveness programs. The collaboration between the National Park Service and a researcher has resulted in the NPS contact teaching a course to undergraduates. The researcher continues to develop tools that are being adopted nationwide, and student internships are available.

#### 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
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 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>
2014	12

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

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

Alaska's geographic isolation and the high cost of travel from the state 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 researchers and Extension provides the best possible information for

stakeholders.

**What has been done**

A CES/AFES agent has worked to extend Alaska's forestry markets and provide wood energy, emergency preparedness and forest education outreach. As a member of the ANREP initiative on climate change, the agent was trained to deliver climate change adaptation workshops and participated in emergency preparedness workshops related to natural disasters. Agents have collaborated with Extension in other states on tourism resources and on GIS activities.

**Results**

Forest outreach included workshops and clases on birch tapping, log construction class, harvesting and weaving birch bark, other forest products and youth outreach. An agent co-presented a module on risk and vulnerability at the ANREP National Extension Climate Science Initiative Conference and an in-service workshop. An outreach event included forestry research information on estimating wood usage.

**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
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development

**Outcome #3**

**1. Outcome Measures**

Outcome 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>
2014	0

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Youth who are introduced to natural resource issues through an organization or agency in their community are more likely to consider natural resource careers. Youth and students want to participate in field and classroom activities relating to natural resources.

#### What has been done

4-H offered a number of activities that introduce youth to or foster an appreciation of science, including natural resources. These include workshops, special activities such as a service and natural resource camp in Seward, a harvest camp in Juneau and a spirit camp in Prince William Sound that provided lessons in marine biology. Other activities included coaching an Envirothon team and programs with partners, including the Anchorage Museum and Campbell Creek Science Center. Teachers were trained on outdoor forest education activities and other outdoor education.

#### Results

Of recently graduated Alaska 4-H seniors, 78 percent are attending college and a few study natural resources at the university. Twenty-six college students who were elementary school or middle school student teachers were trained in the forest outreach education in Fairbanks and 47 teachers were trained in Anchorage. Through hands-on activities, the program trained educators to show students how to think about complex environmental issues. Evaluations of 22 participants in Fairbanks showed that 16 rated the workshop a 4 or 5 (on scale of 5) on whether the workshop prepared them to use materials. Most thought they could use them several times a year.

### 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
134	Outdoor Recreation
608	Community Resource Planning and Development

### Outcome #4

#### 1. Outcome Measures

Outcome 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 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2014	6

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

**Issue (Who cares and Why)**

Alaska communities, large and small, seek to broaden economic opportunities. Tourism in Alaska is dominated by large tour companies from Outside but there are community development opportunities for small tour operators and for beneficial local tourism based on the culture, aesthetics, heritage and environment of the communities.

**What has been done**

A group of smaller Alaska tour operators and communities have developed a charter for a geotourism group to develop tourism opportunities. Extension worked with the Bristol Bay Native Association to help deliver workshops in Naknek and Dillingham about geotourism and hosted a familiarization tour for three small tour operators in Naknek and King Salmon. Based on the life of a Japanese immigrant, geotourism events and performances are being planned in several communities in FY15.

**Results**

Two rural tourism projects have been initiated by regional stakeholder groups. Several communities have become interested in the life of Jujiro Wada, who helped pioneer the Iditarod Trail and was a marathon athlete, adventurer and dog musher. Memorial groups have developed in Japan, Alaska and the Yukon Territory. A 100-plus group from Japan will be touring to these communities and putting on a musical about Wada's life, called "The Samurai Musher," in Seward, Wasilla, Fairbanks and Anchorage. Participants on the tour are cultural tourists interested in seeing where Wada lived in Alaska. The Bristol Bay Native Association and several residents have begun to explore a geotourism site on Naknek Lake, which would include the entire Bristol Bay region, and are considering other possibilities for the culturally curious traveler.

**4. Associated Knowledge Areas**

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

## **Outcome #5**

### **1. Outcome Measures**

Outcome 5: Increase public knowledge about the use of firewood to heat homes while addressing air quality concerns. The measure will be the number of individuals who participate in wood energy educational outreach events.

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2014	258

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

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

Heating costs are high in Interior and rural Alaska and heating with wood is a viable solution for many communities. The increased use of wood stoves and outdoor wood boilers in some communities has contributed to poor air quality. Burning seasoned firewood in an efficient stove is critical to holding down energy costs and reducing air pollution.

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

CES coordinated the Alaska Wood Energy conference in April 2014. Participants included community and tribal leaders, industry representatives, agency representatives from the state and federal government, and the public. The three-day conference highlighted rural energy and Interior heating concerns, including the sustainable harvest of wood and air quality. Free evening workshops were aimed at residential wood users. Other outreach efforts have emphasized the importance of seasoning firewood and burning responsibly to reduce air quality problems. A consumer wood energy website is maintained at [www.alaskawoodheating.com](http://www.alaskawoodheating.com).

#### **Results**

The Alaska Wood Energy website maintained by Extension had more than 53,000 hits from wood users looking for information about wood stove safety and wood heating options. Eight workshops taught to 127 individuals have focused on the importance of cutting, stacking and curing firewood to reduce burn efficiently and reducing pollution from firewood. Participants at the wood energy conference were introduced to different heating options and technologies and techniques to manage particulate matter. Of the 32 individuals who completed conference evaluations, most said that sessions were useful to them. They indicated that the most useful sessions included forestry practices to produce fuel, a pellet presentation and new technologies. The evaluation also

provided presentation ideas for the 2016 conference.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
608	Community Resource Planning and Development

#### Outcome #6

##### 1. Outcome Measures

Outcome 6: Increase familiarity with GPS and GIS software to improve the use of the navigation and land planning software. The measure will be the number of individuals who participate in the hands-on geospatial outreach events.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2014	386

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

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

GPS is a crucial navigational technology used by hunters, boaters, hikers, etc. Most users do not know the potentially life-threatening technological pitfalls behind GPS. GPS data displayed through GIS helps individuals analyze topographic, environmental and land use data.

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

Agents taught 10 geospatial classes introducing individuals to GPS and also explained the different coordinate systems. Audiences included hikers, hunters, boaters and youth. An agent also developed a portable 10-station geospatial technology lab that he began using to teach non-formal short courses in GIS and GPS. He used the lab to train on site in rural communities, including a three-day training with federal and tribal land managers in Nome.

###### **Results**

In all, 386 individuals attended GPS or GIS training courses, including 241 youth. The GPS training taught individuals how to navigate using the device. Participants learned to identify the four major coordinate formats and the appropriate map datum (mathematical earth surface model)

for the type of topographical map they are using. The geospatial lab is important because there are few private consulting firms that can provide GIS and GPS training. Those that do provide the service often charge more than \$1,000 a day per person for a program. The lab allowed an agent to offer the training in Nome at a reduced rate. The lab can also be dispatched anywhere in the state where there is a need for a large-scale emergency response. The National Park Service has requested use of the lab in case there is a devastating earthquake or other natural disaster.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation
404	Instrumentation and Control Systems

#### Outcome #7

##### 1. Outcome Measures

Outcome 7: Increase and maintain partnerships with outdoor recreation stakeholder groups, government agencies and other institutions that will enhance the land-grant mission. Measure is presentations and publications.

##### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2014	3

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

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

The beneficial outcomes associated with outdoor recreation are supported by a large emerging body of evidence. Physiological benefits of physical activity include the positive impacts on longevity and mitigation of the onset of conditions including heart disease, diabetes, and colon and breast cancer. Reduced systolic blood pressure and increased immune function is also indicated. Psychological benefits as well as economic benefits have been documented.

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

To assess the benefits of recreation and to improve management of park systems, surveys have been developed. These were tested on recreational visitors in Alaska. Findings show that

previous methodologies employed in the United States were too general. Results were published and shared with the Bureau of Land Management and researchers at other universities.

### **Results**

Results were presented to a BLM discussion group. This increased understanding of the BLM staff's knowledge and understanding of measures of recreation benefits, especially how those measures relate to management plans the BLM must complete for lands they manage. The new model proposed will advance our understanding of the recreational experience and after OMB review and approval will be applied nationwide.

## **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 extreme weather events such as abnormal warm winter temperatures, which cause rain and ice storms in the subarctic winter. These high temperatures have resulted in unfrozen seas in Western Alaska, which buffet the coast causing massive coastal erosion, hurricane force wind storms that blow down acres of trees and drought, which has reduced tree growth and made the forests susceptible to insect predation and forest fire. Although Alaska is an oil-producing state, the petroleum-refining facilities are limited. Most petroleum used in Alaska comes from West Coast refineries, which significantly increases gasoline, diesel and heating fuel costs in rural Alaska communities. Likewise, much of the state's vast natural gas deposits are located far from population centers and pipelines. Meanwhile, state government wrestles with a burgeoning budget and the drop in oil production. Long distances between rural communities that are not on a road system and accessible only 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.

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

#### **Evaluation Results**

Of the 32 individuals who completed Alaska Wood Energy Conference evaluations, 26 said the conference met their expectations and most said that sessions were useful to them. They indicated that most useful to them were forestry practices to produce fuel, a pellet presentation and new technologies. The evaluation also provided presentation ideas for the 2016 conference. Evaluations of 22 participants in the Project Learning Tree training showed that 16 rated the workshop a 4 or 5 (on scale of 5) on the question of whether the workshop prepared them to use materials in their classrooms. Most thought they could use them several times a year.

### **Key Items of Evaluation**

A change of action has resulted from the development of a survey tool for outdoor recreation, which is in the process of adoption nationwide by the National Park Service. It will assist them in designing better management plans.