V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Natural Resources and Community Development

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%		10%	
122	Management and Control of Forest and Range Fires	10%		10%	
123	Management and Sustainability of Forest Resources	20%		30%	
131	Alternative Uses of Land	10%		0%	
134	Outdoor Recreation	10%		10%	
605	Natural Resource and Environmental Economics	5%		10%	
608	Community Resource Planning and Development	10%		10%	
610	Domestic Policy Analysis	5%		10%	
805	Community Institutions, Health, and Social Services	0%		10%	
	Total	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	4.0	0.0	2.0	0.0
Actual	5.2	0.0	2.3	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**
93357	0	3618352	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
91128	0	346636	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1246752	0	4120200	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research products will provide science-based information in resource planning, economic and environmental impact of natural resource use, market and non-market value of resources, and conflict resolution in rural communities and villages along with basic information in agriculture and horticulture, forest sciences, and soil sciences for use by planners, economists, and policy makers. Measurable outcomes will include peer- reviewed publications, lay publications, rural community business/development plans, and citizen participation. Extension activities involve partners from other UAF units including 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 will develop integrated and/or multi-state projects concerning natural resources stewardship within the University of Alaska Fairbanks and with other land grant institutions; develop criteria to broadly define the temporal natural resource interests of stakeholders so the program's activities address the needs of those Alaskans most directly impacted by specific natural resource matters; develop partnerships with government agencies to identify and address stakeholder needs; regularly assess stakeholder needs and emerging natural resources issues impacting stakeholders; conduct literature reviews and review contemporary research relevant to this program; develop culturally and educationally relevant CES publications, fact sheets, bulletins, and newsletters that provide unbiased, scientific information about natural resource issues; develop, review, and revise a website to be the electronic portal for UAF CES information on natural resources stewardship matters of concern to stakeholders; develop, plan, deliver, evaluate and revise as needed extension workshops, demonstrations and basic skill trainings; facilitate discussions and other meetings that address stakeholder needs in or near their communities; develop, conduct and review 4-H projects related to the natural resource stewardship program; develop, plan, conduct, evaluate and revise as needed young adult stakeholder workforce readiness trainings that prepare youth for entry-level positions in natural resource management positions; develop, deliver, facilitate and evaluate natural resource stewardship informational discussions with urban populations to increase their awareness of natural resource issues and the values and needs of stakeholders relative to natural resources; coordinate and assist 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 that result in careers in managing, using and protecting natural resources.

2. Brief description of the target audience

This program will focus on industry and entrepreneurs including communities, families, and newly

forming cooperatives and businesses, non-profit 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 contemporary natural resource issues related to forest and land resources, mining resources, 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 who wish to increase their skill and/or knowledge level.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	300	875	450	1000
Actual	6210	4291	178	226

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
Plan	0	6	
Actual	1	6	7

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Target	Actual
2010	5	48

Output #2

Output Measure

- Output Target 2: Develop and deliver public issues education workshops for stakeholders on locally relevant natural resources and related educational issues.

Year	Target	Actual
2010	25	33

Output #3

Output Measure

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

Year	Target	Actual
2010	1	7

Output #4

Output Measure

- Output Target 4: Conduct at least two formal needs assessments per year of stakeholders with interest in natural resource management.

Year	Target	Actual
2010	2	3

Output #5

Output Measure

- Output Target 5. Develop regional economic models that depict the impact of Alaska resource management scenarios on Alaskan communities. Output will be electronic and written publications.

Year	Target	Actual
2010	2	8

Output #6

Output Measure

- Output Target 6. Develop, adapt, and implement public involvement processes that meet public expectations. Output measure will be public input sessions conducted and publications.

Year	Target	Actual
2010	2	10

Output #7

Output Measure

- Output Target 7. Provide analyses of the effectiveness of natural resource and environmental laws. Output measure will be publications.

Year	Target	Actual
2010	2	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Outcome Target 1: Increase the number of 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 multi-state research-Extension activities to 25% within five years.
3	Outcome Target 3: Increase the recruitment and retention of youth appreciating and considering natural resource management careers.
4	Outcome Target 4. Increase the number of communities and organizations participating in public involvement processes that target community economic development and policy and law. Out come measure will be the increase in number of communities.
5	Outcome Target 5. Identify situations in which existing resource management laws with conflicting purposes are reconciled.
6	Outcome Target 6. Increase the number of cultural tourism economic development opportunities in communities.
7	Outcome Target 7: Provide critical information to meet energy needs to Alaska citizens. Measure will be workshops, presentations and publications.

Outcome #1

1. Outcome Measures

Outcome Target 1: Increase the number of 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

Year	Quantitative Target	Actual
2010	5	13

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, 3.2 million are state parks, and federal land totals 54 million acres. Sixty-five percent of Alaska is federally managed. 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. Partnerships are critical to assuring this happens. Our partners work with us, often assisting in the research and outreach efforts.

What has been done
In AFES, bio-economic models were constructed to inform the North Pacific Fisheries Management Council, the Alaska Board of Fisheries, the Alaska Department of Fish and Game and the National Marine Fisheries Service. Surveys and interviews were designed in collaboration with the U.S. Forest Service to understand how natural resource recreation contributes to well-being and resilience in Alaska. Six Extension personnel joined the Sea Grant Marine Advisory Program agents in Fairbanks to hear climate change presentations from scientists and to develop a climate assessment model for Alaska coastal communities.

Results
Formal AFES partnerships have been formed with the CES, USDA ARS, Forest Service, Cooperative Ecosystems Study Unit, Cold Climate Housing Research, Kawerek Reindeer Herders Association, UAF Northwest Campus, Bristol Bay Campus, Chena Hot Springs Resort, Pikes Waterfront Landing, Alaska Berry Growers Association, National Geographic. Research collaboration includes the AT&T and Google Earth, AK Board of Fisheries, AK Department of Fish and Game, National Marine Fisheries Service, North Pacific Fisheries Management Agency, U.S. Fish and Wildlife Service, Corp of Engineers, World Wilderness Congress, Marine Mammal Commission, City of Fairbanks, Fairbanks North Star Borough, and the Nyarkoa Foundation,

Ghana. CES partnerships were formed as a result of the MAP association. Agents developed a climate change assessment model, and the Southeast Extension agent worked with MAP agents to develop a regional food security survey that was distributed to the region's residents and organizations in FY11. The goal is to develop a plan that will increase food security in a region accessible by boat or plane and vulnerable to interruption in supply lines.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources
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 multi-state research-Extension activities to 25% within five years.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2	16

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Alaska's geographic isolation and the expense of traveling elsewhere present challenges to maintaining multi-state relationships. At the same time, many issues, particularly natural resource, energy and climate change, have implications that extend well beyond our borders. Tapping into other state's experiences and research will strengthen our ability to assist Alaskans. Integrated activity between researchers and extension personnel provides the best possible information for stakeholders in the unique environments of our state.

What has been done

Progress was made on the multistate research project NECC1011 Balancing Natural Resource Recreation Management, Human Well-Being, and Community Resilience. Extension hosted the June 2010 national Association of Natural Resource Extension Professionals Conference, which emphasized collaborations to respond to climate change and energy challenges. Agent worked with other land-grant colleagues to create an online learning environment for 4-H youth that has interactive components, including the opportunity to engage in climate research and to learn about how climate change impacts the environment.

Results

The Resources Management Issues at High Latitudes field course is a success story. The first day of the 10-day trip is organized by research and extension faculty who connect students and agency partners through field presentations in the Delta Junction area. These included lake water loss by AFES faculty, riverbank stabilization by NRCS, management of military lands by the Center for the Environment, fisheries management by AKF&G, the Clearwater Flood Control project by Soil and Water Conservation, invasive weed management by Salcha Delta SWCD and state forestry presented by AK Forest Service and the owners of the Northern Lights Dairy, the R&R Bison and Woods Elk Ranch, and a yak farm. The Association of Natural Resource Extension Professionals (ANREP) meets every two years to exchange ideas about natural resource programs. Collaborating with University of Idaho and Oregon State, the CES/AFES forester is assessing the knowledge of private forest landowners regarding the impacts of climate change. Meetings held for local forest owners in five Alaska communities resulted in adding Native focus groups and prioritizing community climate adaptation work.

4. Associated Knowledge Areas

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

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

Year	Quantitative Target	Actual
2010	30	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
As professionals retire, employers are concerned about the quality of new employees.SNRAS provides graduate and undergraduate degrees in Natural Resources Management and a Ph.D. in Natural Resources and Sustainability to educate future resource managers and policy makers. K-12 teachers need STEM preparation and employers are concerned about quality of employees. Faculty members appointments require teaching, research and community service commitments. Youth who are introduced to natural resource issues though an organization or agency in their community are more likely to consider natural resource careers. Agencies can offer internships or other opportunities to engage youth successfully and find youth can be real assets and problem solvers.

What has been done
SNRAS recruits new students, connects them with faculty advisors and broadens the reach of the university in the communities of Alaska. Internships provide students with hands-on experience and contact with federal and state agencies. The Alaska Forum on the Environment is a large annual statewide gathering of environmental professionals from government agencies, nonprofits, businesses, as well as community members. Extension hosted a two-day youth event in 2010 within the forum. More than 80 youths and 20 youth groups who are involved in natural resource issues participated, and a 4-H specialist presented information to forum participants about the value of integrating youth into programs and tips on how to do it.

Results
Teens are reached through One Tree experiences with science and art education, summer employment in gardening, tours provided of university, gardens, greenhouses, and reindeer. Faculty serve as the statewide FFA advisor, Ag in the Classroom participant, and science fair judges. The enrollment director participates in the annual campus Inside Out when high school students come to experience college. Youth can gain information on natural resource careers through the SNRAS blog, newspaper articles, pamphlets, brochures and campus activities like RAHI and Major Mania. Several agencies at the forum highlighted existing internships or study opportunities or other programs that foster youth leadership. Youth who had participated in some of these activities spoke about successful partnerships. Youth and young adult participants interacted with potential mentors and learned about resources and individual agencies that they could participate with. Representatives of a variety of agencies gained an understanding of the value of involving youth and suggestions on how to build a successful youth-adult partnership.

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 Target 4. Increase the number of communities and organizations participating in public involvement processes that target community economic development and policy and law. Out come measure will be the increase in number of communities.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Community decision makers and the citizenry need research and outreach that provides guidance for development. In a state where community needs have to balance city, borough, state and federal concerns, it is helpful to have resources to assist in possibly divisive issues.

What has been done
New projects include a bioeconomic framework on the implications of reducing size limits to the sustainability of the fisheries; how policies affect local participation and economic viability of salmon fisheries if compromised by farmed fish; and a food security and sustainable food systems study to develop understanding of local food production. An undergraduate student project estimated the impact of establishing riparian greenbelts on property values in the FNSB. The feasibility of developing a storm water utility in the City of Fairbanks determined if the City of Fairbanks would save money on legally-mandated storm water management services by creating

a Storm Water Utility. The Invasive Plant Plan for the UAF Campus developed a collaborative management plan for controlling invasive plants on campus.

Results
The riparian greenbelt project established additional evidence that new greenbelts should not decrease tax revenues and is currently being used by the Tanana Watershed Association in its efforts to protect water quality and reduce the risks of flood damage in the watershed. 2) The feasibility of a storm water utility project to help the City of Fairbanks produce cleaner storm water while remaining fiscally solvent was presented to the mayor and the City Council for their consideration in passing a new user-fee to pay for EPA-mandated storm water systems.3) The invasive plant management plan was endorsed by the University Master Planning Committee and the Landscape Committee unanimously. A website has been created to provide ready access to the plan. One local park used our plan as a model for creating its own plan and the local weed control network wants to create something similar for the community as a whole.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
610	Domestic Policy Analysis

Outcome #5

1. Outcome Measures

Outcome Target 5. Identify situations in which existing resource management laws with conflicting purposes are reconciled.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Federal land managers are required to act within a prescribed statutory and regulatory framework that guides their decision making. The courts have failed to properly apply the "Best Scientific Data Available" standard. Clarity is needed for what the term "scientific" means, and failure to consider whether data is scientific can have significant repercussions.

What has been done
Presentations were made at the Annual Meeting of the Alaska Chapter of The Wildlife Society concerning "Agencies in Limbo: Migratory Birds and Incidental Take by Federal Agencies," to the Defenders of Wildlife National Carnivores Conference on "Predator Control and the BLM: The Interplay Between NEPA and ANILCA," and at the George Wright Society Annual Conference on "Advising Noah: A Legal Analysis of Assisted Migration." USDA multistate participation was in the W192/1192 Western Working Group on Rural Communities and Public Lands in the West.

Results
Both the assisted migration project and the "best scientific data available" projects have broad national implications for resource management. The work related to the National Refuge System and Intensive Management was specifically requested by USFWS employees needing a better understanding of the implications of USFWS law. The work related to the Migratory Bird Treaty Act analyzes why agencies continue to violate the statute, what they are risking, and suggests regulatory changes for Fish and Wildlife that could correct this regulatory gap. This work resulted in a change of action within Denali National Park where research conclusions were used to justify higher standards of avian protection during construction and maintenance projects. This analysis will be of interest to NPS managers in other states faced with similar state statutes and can provide a clearer understanding of duties and responsibilities and provide a better understanding of the laws that constrain federal counterparts.

4. Associated Knowledge Areas

KA Code	Knowledge Area
610	Domestic Policy Analysis

Outcome #6

1. Outcome Measures

Outcome Target 6. Increase the number of cultural tourism economic development opportunities in communities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Communities often value cultural tourism as it relates to indigenous populations but can overlook possibilities associated with other cultural groups and not recognize opportunities to diversify.

What has been done
Agent worked with a team of community leaders, volunteers and organizations to develop events that honor the memory of Jujiro Wada, a Japanese immigrant who helped pioneer the Iditarod Trail from Seward to Nome, which would make the community a major outfitting and departure point for the gold rush. Wada was a marathon athlete, dog musher and figure important to the history of other communities in the state.

Results
A Wada memorial association was formed in Alaska, and delegates from the Japan Jujiro Wada Memorial Association toured Alaska in March 2010. Wada and another Iditarod pioneer were honored at a September 2010 event in Seward. A 5k race and the event were part of a 100-year anniversary commemoration of the Iditarod Trail involving Jujiro Wada memorial organizations in Alaska, Japan and Yukon Territories. Agent also made a presentation in Nome to promote the cultural heritage of Jujuo Wada. This resulted in a better understanding of Wada?s place in Alaska history and new tourism possibilities for the communities involved.

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services

Outcome #7

1. Outcome Measures

Outcome Target 7: Provide critical information to meet energy needs to Alaska citizens. Measure will be workshops, presentations and publications.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
A need exists, particularly in rural Alaska, for less expensive energy. Because of the high cost of fuel oil, wood heat is a logical choice for many residents.

What has been done

Extension personnel developed wood heat energy education materials that emphasize burning wood safely, efficiently and responsibly. Agents and staff presented information at five renewable fairs or conferences, including new fairs in Bethel and Juneau. CES also continued to update its wood heating website at www.alaskawoodheating.com with information about wood availability, harvesting and safety information. The goal is to increase the number of properly installed stoves that burn seasoned wood and to reduce the dependence on oil in rural Alaska. CES also conducted a wood heat feasibility study for the Fairbanks region.

Results

Recipients of wood heat information became more informed about air quality and efficiency issues relating to catalytic and noncatalytic stoves, heating with wood safely and with the minimum amount of emissions.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
605	Natural Resource and Environmental Economics

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. Climate change is having a dramatic effect on communities in the far north. 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. Health and education of rural residents is slowly improving but is not on par with rural towns in the rest of the country.

Extension's Natural Resources and Community Development Program is fairly new and is also small. A full time specialist position was replaced in 2009 with a one-quarter shared position. An advisory group recommended that our area focus our work on climate change, rural leadership and economic development but it takes time to develop a unified

stakeholder base, identify problems we can address, develop and deliver Extension education programs. The economy of rural Alaska continues to be depressed.

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Comparisons between program participants (individuals, group, organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of progra intensity.
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Key Items of Evaluation