

2006

FY 2006 October 2005 through September 2006

Annual Report of Accomplishments and Results

University of Alaska Fairbanks - Cooperative Extension Service



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**Annual Report of Accomplishments and Results
UAF Cooperative Extension Service
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I. Planned Programs

GOAL 1. AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY. *Through research and education, empower the agricultural system with knowledge that will improve competitiveness in domestic production, processing and marketing.*

1.0 Executive Summary

Highlights and Accomplishments

During this reporting period more than 81 planned workshops related to Goal 1 were taught by 11 Land Resources faculty, reaching 1620 Alaskans in 32 communities. Topics ranged from developing Alaska markets for locally grown produce, reducing disease in potato crops, improving livestock nutrition and reproduction, supporting Alaska's alternative livestock producers to Master Gardening, lawn care, insects and pesticide management, landscaping, garden production and managing woodlots.

Land Resources program faculty and program staff provided a combined 5,043 hours of public service, reaching over 29,000 Alaskans covering a range of topics from lawn care, vegetable gardening, forest products, to greenhouse management. Over 4,240 hours of consultation time were provided to individuals, agencies and organizations during this reporting period, reaching 4,780 clientele on Goal I related topics that included noxious weed control, horticulture, pesticide use, vegetable growing, and tree clinics. Contacts were made by telephone, e-mails, office and site visits, meetings and audio conferencing.

In this reporting period over 10,000 clients received ag/hort newsletters; 110 newspaper articles were published, 11 fact sheets and publications were written by faculty, 21 television spots and 17 radio spots were produced featuring Extension ag/hort topics were delivered throughout the state.

Expenditures and FTEs

Federal:	\$402,545
State Match:	\$402,545
FTEs:	11

Key Themes:

1.1 Agricultural Profitability

Statement: Leaves of greens in the cabbage family are grown for specialty salad mixes and have nutritional value that includes calcium and iron. The 2005 field trials evaluated young and older leaves of Brassica greens for total yield and mineral levels. We compared seven types of Brassica greens: two Asian greens, four kales, and red giant mustard. Baby leaves were harvested when leaves were 4-6 inches long, and large leaves were harvested when leaves were big enough to put in bunches. Samples of leaf tissue were analyzed at the Palmer Laboratory for calcium, iron, magnesium, copper, zinc, sulphur, and percent dry matter. The dry matter was high in kale: 10-13 % in Toscano, 11 % in Winterbor and Redbor, and 7-11 % in Red Russian. Dry matter was 6-7 % in red giant mustard and the Asian greens mizuna and tatsoi. Calcium levels (on a dry matter basis) were similar in these greens, usually around two percent, and slightly lower in Red Russian kale. The levels of iron were usually higher in baby leaves than older leaves, but baby leaves often produced about half a pound per foot of row, which was much lower than the yield from bigger plants.

Impact: Salad greens are a wonderful crop suitable for most climates in Alaska, and related nutrient information is of value to home gardeners and commercial growers. Both cooked and salad greens are a good source of minerals in the human diet, though few differences in mineral levels were found between types. Mostly, nutrient levels are maintained as plants mature

Source of Federal Funds: Smith Lever 3b&c and Hatch

Scope of Impact: Integrated Extension and Research

Statement: In Palmer field experiments, four varieties of green storage cabbage were compared for size and quality after several months of storage. For the second season, field trials compared three spacing treatments. Month-old seedlings were transplanted at 12, 14, and 16 inches apart in rows. The cabbage trials were planted at two locations and harvested in late September and early October for storage. Cabbages were stored with refrigeration for three to six months and observed for changes in quality. As in the 2004 trial, the variety Gideon had larger head size than the other three varieties. Gideon and Survivor stayed green in storage through December and then had unmarketable yellow leaves with longer storage. The other two varieties stayed green in storage past March. Although these varieties, Arena and Safekeeper II, were smaller, they tended to increased head size with increased spacing between plants.

Impact: Cabbage varieties for storage grow more slowly in the field and grow longer than fresh market varieties. Cabbage sales can be extended into the winter season by choosing varieties and cultural practices that lead to storage quality and marketable size. While fresh market cabbage stores for days, Gideon is good for weeks of storage, and Arena and Safekeeper II can store well for months.

Source of Federal Funds: Smith Lever 3b&c and Hatch

Scope of Impact: Integrated Extension and Research

Statement: Because seed companies change the varieties that are available to farmers, we have evaluated new selections of lettuce for their performance in the long days and cool soils of Alaska. Eleven varieties of crisphead lettuce were grown in replicated field trials on two commercial farms in the Matanuska Valley. As in 2004 trials, the variety “Sniper” performed well, similar to “Alpha” that was commonly planted on commercial farms in Alaska. “Prestige” and “Victory” were new in 2005 and also performed well.

Impact: Alaska growers produce thousands of cartons of head lettuce to supply the market during the summer season. Lettuce varieties with medium head size and low frequency of defects like tipburn are desirable. Some new varieties show good potential for crop production in Alaska, while other varieties are not adapted to the local growing conditions.

Source of Federal Funds: Smith Lever 3b&c and Hatch

Scope of Impact: Integrated Extension and Research

Statement: We studied white mold disease, caused by the fungus *Sclerotinia sclerotiorum*, which is common in cultivated fields and gardens, where it overwinters as sclerotia. In 2005, a field collection of *S. sclerotiorum* was made during August and September from eleven sites where vegetables are cultivated. Samples included three forms of the fungus: white mycelium on decomposing plants, vegetative resting propagules called sclerotia, which have black rinds and white internal mycelia, and sexual fruiting bodies called apothecia, which produce airborne ascospores after self-fertilization or outcrossing. More than 500 isolates of *Sclerotinia* were collected and cultured. DNA sequencing and microsatellite markers were used to describe populations of *Sclerotinia* in Alaska.

Impact: The data revealed that these populations of *S. sclerotiorum* are predominantly non-recombining clonal lineages. Surprisingly, many diseased plants were found to be infected by the unnamed and closely related *Sclerotinia* “species 1” that previously has been found only in Norway, on wild plants and cultivated potato. In some fields “species 1” was the only pathogen involved in disease. However, white mold in most fields was caused by both “species 1” and *S. sclerotiorum* together, and these fungal species are capable of hybridizing. White mold disease can devastate vegetable yields in Alaska and worldwide. Our research has two components: scientific study of population ecology and, for practical horticulture, determination of whether various fungal populations exhibit different characteristics that may lead to different crop management strategies for different species of *Sclerotinia* in Alaska.

Source of Federal Funds: Smith Lever 3b&c and Hatch

Scope of Impact: Integrated Extension and Research

Statement: To better understand the outbreak of late blight disease of potatoes that occurred in the Matanuska Valley in 2005, we studied some isolates of the pathogen. This was only the third occurrence of the disease in Alaska, and the outbreaks of 1995 and 1998 were much less damaging. Leaf tissue from infected plants of potato and tomato was collected, and the pathogen was cultured and described using several lab tests. Late blight disease is caused by a water mold, *Phytophthora infestans*. In 2005, *P. infestans* was collected from symptomatic plant tissue from ten commercial potato fields and two greenhouse tomato plants grown in the Matanuska Valley, Alaska. All isolates were consistent with the US-11 isozyme genotype, IIB mitochondrial haplotype, and mating type 1 that are described in worldwide literature on populations of *P. infestans*.

Impact: Because potatoes are an important commercial crop in Alaska, producers want information on disease outbreaks that occur. Alaska's elaborate system for preventing late blight disease includes plant quarantines and seed certification for potatoes. Obviously, the 2005 outbreak showed a failure in prevention. Since all isolates tested were a single type of *P. infestans*, the data imply as few as one breach in the prevention system, whereas multiple types would have suggested multiple breaches.

Source of Federal Funds: Smith Lever 3b&c and Hatch

Scope of Impact: Integrated Extension and Research

Statement: Much of the service component of Extension agents during the '05-'06 growing season was dominated by Potato Late Blight. The disease was identified by plant pathologists at the AFES Matanuska Farm in early August and then was sent on to OSU for later verification.

Impact: Extension agents worked closely with the Alaska Department of Environmental Conservation to provide a list of Alaska-approved fungicides within three hours of the initial potato late blight diagnosis. Agents were able to activate the phone tree to get the message out to growers. This speed allowed us to give growers management options on the same day that the disease was identified in the area. Over the course of August and September we wrote a series of press releases to provide a science-based background to local reporters. These newspaper articles and radio interviews allowed us to reiterate the message that the disease posed no health hazard to the consumer so although yields were impacted sales of local potatoes remained strong.

Much of our subsequent winter programming focused on educating growers and gardeners on how to manage this disease. Agents were able to put on a Post-Harvest Quality workshop in the fall and discuss how to modify potato storage practices in light of Late Blight. Later in the fall agents held a workshop for the potato growers focusing specifically on Late Blight. In this meeting the focus was on the need for fungicide application and the technology needed for proper spraying. Growers identified numerous unregistered fungicides that they wished to use. Throughout December and January agents worked with Alaska DEC and various pesticide manufacturers to get these products registered. In January Extension brought one of the country's Late Blight experts to the state to explain how to use the fungicides to best control the disease. The growers set up a voluntary quarantine to not ship seed potatoes from infected areas to 'clean' areas. Agents gave presentations in

both Delta Junction and Fairbanks explaining the biology of the disease and why it was important for growers and gardeners to honor the quarantine.

A 'Potato Bash' was held in Anchorage to educate gardeners in the importance of Late Blight. Agents used a taste test and a show and tell of potato varieties to get gardeners to come in for an all-day potato meeting. In addition to various talks on potato varieties, potato consumption, and garden growing strategies, the gardeners were educated in the disease biology, symptoms, and what to do when they say suspicious symptoms.

Various potato breeders in the lower 48 were contacted, which resulted in about eight breeder lines of material being received that is now showing resistance to Late Blight. Agents grew these lines out in the field trials during the summer '06. These lines will be evaluated for their suitability for the Alaska fresh market.

The growers had to plant infected seed since there was not an adequate supply of clean seed. Many large and small growers instituted a protective spray plan. Several organic growers also made modifications in their growing strategies. Although the weather was favorable for disease development, Late Blight was only identified on one farm late in the growing season. This material will be consumed as fresh potatoes and will be kept out on the seed potato stream.

Source of Federal Funds: Smith Lever 3b&c and Hatch

Scope of Impact: Integrated Extension and Research

Statement: In 2005, potatoes were planted and harvested in field trials to compare cultural practices and potato varieties for yield and quality. Management trials evaluated the effects of plant spacings on marketable yield of seven varieties.

Impact: The trend was higher marketable yield at spacings less than eleven inches between seed pieces in a row. Fresh potatoes produced in Alaska are marketed on multiple fronts, such as organic, specialty, and wholesale. Management strategies such as plant spacing allow specialty growers options to maximize profits within their specific market. For example, tight spacing in Shepody and Yukon Gold counteracts the Alaska tendency to grow oversize tubers and pushes a greater percentage of the tubers into marketable size range.

Source of Federal Funds: Smith Lever 3b&c and Hatch

Scope of Impact: Integrated Extension and Research

Statement: Dairy farming in Alaska is a real challenge, and the industry is struggling to survive with fewer than 10 operating dairy farms in the state. Recently, the Alaska Board of Agriculture and Conservation asked Extension for assistance in understanding the difficulties repeatedly experienced

by the dairy industry. With the assistance of UAF Extension and through collaboration with Utah State University Extension, a nationally recognized dairy economist was contracted to analyze the Alaska dairy industry. Bruce Godfrey, Utah State University dairy management economist, worked with UAF Extension Livestock Specialist Milan Shipka to visit dairy farms throughout Alaska and initiate the process of gaining familiarity with the farms. Godfrey developed a questionnaire aimed at gathering specific financial and management data from each farm.

Godfrey relied on UAF Extension Program Development Specialist Bill Hall to visit the farms and help farmers complete the questionnaire. Godfrey's work resulted in the first complete economic analysis of dairy farming in Alaska in more than 25 years. His report was presented to the Alaska Board of Agriculture and Conservation and details Alaska's dairy economics compared to those of five western states.

Impact: "Two important points from that report are that producing milk in Alaska costs more than producing milk in the Lower 48," Shipka said. "And milk production per cow on Alaska dairy farms is considerably lower than Lower 48 counterpart farms." As a result of Godfrey's analysis, the Alaska Board of Agriculture and Conservation chairperson formed the Dairy Industry Ad Hoc Committee, as part of the Division of Agriculture, Alaska Department of Natural Resources. Again, Extension's expertise was sought to help develop long-term solutions to problems faced by the Alaska dairy industry. The committee will use the resulting findings to develop recommendations for dealing with the problems of Alaska's dairy industry. These potential solutions will be provided to Alaska's new governor in early 2007.

Source of Federal Funds: Smith Lever 3b&c and Hatch

Scope of Impact: Integrated Extension and Research

1.2 Animal Reproduction

Statement: Collaboration with Reindeer Research Project: This year the Nome Extension Agent participated in efforts to promote the Reindeer industry and consumer use of Reindeer meat through collaboration with the Kawerak Reindeer Herder's Association, UAF Northwest Campus (NWC), and UAF School of Natural Resources & Agriculture Sciences' Reindeer Research Program (SNRAS/RRP). Extension hosted workshops in Nome and Stebbins on Meat Cutting & Canning Reindeer where the agent taught the canning portion. The meat cutting section of the workshop was taught by UAF SNRAS Reindeer Research program faculty.

Impact: Workshop surveys demonstrated evidence that participants from Nome and the surrounding rural communities benefited by gaining practical information and consideration of new options for future employment. Also, Extension will incorporate these workshops into sections of a DVD on Food Safety and Preservation.

Source of Federal Funds: Smith-Lever 3b&c, Hatch

Scope of Impact: Integrated Research and Extension

Statement: Successful reproduction in domestic herds of ruminant animals produced on farms in Alaska is paramount for the establishment of livestock production in the north and the economic viability and sustainability of Alaska livestock production enterprises.

Impact: Results of extension livestock activities demonstrate the effectiveness of reproductive management technologies and techniques that can be used to improve reproductive efficiency on Alaskan livestock farms and ranches. The market value of the offspring (~\$5000/muskox calf; \$1500/reindeer calf, \$1500/yak calf, \$500 beef calf) is a significant portion of the income generated by the Alaskan diversified livestock industry. Techniques such as synchronizing and timing estrus results in highly synchronized, predictable calving, thereby reducing costly labor associated with the calving period and potentially maximizes calf survival.

Source of Federal Funds: Smith-Lever 3b&c, Hatch

Scope of Impact: Integrated Research and Extension

GOAL 2: A SAFE AND SECURE FOOD AND FIBER SYSTEM. *Improve access to an affordable, healthful and culturally relevant food supply, and improve food safety by controlling or eliminating food borne risks.*

2.0 Executive Summary

Highlights and Accomplishments

During this reporting period seven Home Economics faculty, reaching 2,334 Alaskans in 19 communities, taught over 73 planned workshops related to Goal 2. Topics included canning and food preservation and utilizing traditional food sources (berries, wild salmon and game meat).

Home Economics program faculty provided over 413 hours of consultation time to individuals, agencies and organizations during this reporting period on topics which included safe canning, and food preservation, and utilizing traditional Alaskan food sources. Contacts were made by public presentations, phone calls, e-mails, office and site visits, fairs, meetings and audio conferencing.

In this reporting period Home Economics faculty produced 15 newspaper articles 17 newsletters, fact sheets and/or district publications were written, five television spots were produced, and three radio spots were produced and used statewide to deliver food safety information.

Expenditures and FTEs

Federal:	\$ 182,975
State Match:	\$ 182,975
FTEs:	5

Key Themes:

2.1 Food Accessibility and Affordability

Statement: The Fairbanks community serves ~26,000 people a year through the local Food Bank. The local extension home economist supports this work by offering classes on making baby food and food preparation. Each month people are taught how to use the food they receive in their USDA Commodities TEFAP (The Emergency Food Assistance Program) food boxes. This year the Food Bank had 2,037 families enrolled in the TEFAP program.

Impact: Commitment to annual on-going training of 500+ families enhances the usability of thousands of dollars worth of food a year. For example, 500 families receiving enough food for one week a month worth \$100, is more than \$50,000 worth of food that has been efficiently and nutritionally utilized. This training also enhances the benefits of the TEFAP food program.

Source of Federal Funds: Smith-Lever 3b&c

Scope of impact: State specific

2.2 Food Safety

Statement: Food Safety and Preservation continues to be a central component of the home economics program in Alaska. Food preservation information is delivered through classes, workshops, community wide events, fair booths, newspapers newsletters and the toll free Food Safety and Preservation Hotline According to Alaska Department of Fish and Game.

An essential part of extension's outreach, the Cooperative Extension Home Economics program, year-round, provides research based information on food preservation for clients and teaches people to preserve food in a safe and appropriate manner, whether it is fish, big game or berries. Reliable information is imperative to reduce the risk of food borne illness, and to minimize waste of valuable and unique food resources.

Impact: Research was completed for the development of 2 new publications: Canning Smoked Fish in Cans and Canning Meat (Game Meat) in Cans. Research was completed for canning crab in jars; a new publication will be completed during the next reporting period. A major revision of the publication, Assembling A Can Sealer, was completed. All of the new and revised publications are now distributed statewide and on the CES web site. The research was carried out in a partnership with Fisheries Industrial Technology Center/UAF in Kodiak.

Source of Federal Funds: Smith-Lever Food Safety and Quality Formula Funds

Scope of Impact: State Specific

Statement: CES offers pressure canner dial gauge testing clinics for tourists and local citizens. I traveled to Homer, Seward, Ninilchik and Cooper Landing providing testing clinics.

Impact: Extension tested 221 gauges with 11% reading inaccurate and needing replaced. The impact of this effort can be stated in prevention of food borne illness from under processed fish.

Source of Federal Funds: Smith-Lever Food Safety and Quality Formula Funds

Scope of Impact: State Specific

Statement: The Food Safety Hotline, the Food Preservation Hotline and the Ask the Expert Website provide convenient access options to the public on critical food safety and preservation information. No advertising has been done for these services, yet demand for information has significantly increased the number of questions answered through our program. The plan is to begin actively advertising the availability of the Hotline, especially in rural communities.

Impact: In FY06, the Food Safety and Preservation Hotline answered 668 questions from 28 communities in Alaska. The *Ask the Expert* web site, responded to 85 questions received from 15 communities in Alaska; 8 other states and 3 foreign countries.

Source of Federal Funds: Smith-Lever Food Safety and Quality Formula Funds

Scope of Impact: National

GOAL 3: A HEALTHY, WELL NOURISHED POPULATION *Optimize consumer health through improved quality of diets, food and number of food choices, and promotion of health, safety and access to quality health care.*

3.0 Executive Summary:

Highlights and Accomplishments

During this reporting period 70 classes were taught by extension home economics faculty that related to Goal 3 and quality of diets, quality of food or food choices. These classes represented over 246 hours of teaching and reached over 1,050 clients.

Consultations by the home economists with individuals, agencies and organizations reached over 6,789 clients with an investment of more than 706 hours.

In this reporting period 15 newspaper articles were published on diet and nutrition topics, and 16 fact sheets and newsletter publications were written by faculty. Three radio spots and five television spots were produced on Goal 3 topics.

Expenditures and FTEs

Federal:	\$ 146,380
State Match:	\$ 146,380
FTEs:	4

Key Themes:

3.1 Human Health

Statement: Preventing obesity through increased fitness and promoting nutritional choices is important in the community. The Palmer home economics agent taught nutrition to middle school youth who spent their after school hours at the library. A small grant was obtained to fund the program. Getting the youth to the classes was a challenge though we advertised in newspapers, radio and on TV and had students coming through the library in the after school hours.

Impact: From the after-school program encouraging nutritious and fitness choices, an intensive week-long program for middle school youth evolved. After the program participants were observed reading labels, choosing beverages with less sugar, choosing peanuts over a chocolate bar for a snack. During the class they applied the goal setting steps by setting healthy goals for themselves. The post tests showed participants were able to name steps to reaching a goal and name nutrition information they could not name in the pre-test.

Source of Federal Funds: Smith-Lever 3b&c and special grant

Scope of Impact: State Specific

Statement: Two sessions of the Strong Woman Program were offered in the Mat-Su District in 2006. Attendees were women, 44 to 67 years old.

Impact: All participants increased the amount of weight they lifted from the first class to the last. The most exciting result was a 66 year old woman's 4% increase in bone density. She had not taken any supplements and the only difference in activity level was the Strong Woman class. She consistently attended twice a week for 20 weeks. Researchers say post-menopausal women can lose 1-2% bone mass annually, according to Miriam Nelson, PhD, Tufts University.

Source of Federal Funds: Smith-Lever 3b&c

Scope of Impact: State Specific

Statement: With the growing number of overweight and obese children and adults in Alaska, helping youth make healthy lifestyle choices is becoming a critical service of Extension's Home Economics program. Giving youth information about nutrition, emphasizing the importance of regular fitness activities and helping them learn to set realistic goals is a good start in the right direction. To achieve these goals, the Palmer home economist held programs at summer camps, a local library and a charter school in the Matanuska-Susitna Valley.

An interactive program on fats in foods at 4-H camp helped one teen visualize what she was eating. Her mother observed, "My daughter grabbed a candy bar for a snack between classes. She opened the candy bar—then couldn't eat it." The Palmer home economist designed and led a series of weekly after-school programs at the library to give teens information on making healthy choices. Activities

based on various nutrition topics, active movement and preparing healthy snacks helped the youths gain ideas about healthy choices. The students were encouraged to set goals for healthy lifestyle choices during the next week. The principles and activities in helping youths learn to set goals to incorporate nutrition and fitness into their lifestyle were also used in an intensive week long program at the Academy Charter School in Palmer.

Impact: During the program middle school students learned to identify reliable research-based nutrition information resources online and were asked to write and report on a nutrition topic of interest to them. Fitness activities were integrated throughout each day to illustrate the importance of physical activity in their lives. Mixing, kneading and baking their own bread received favorable reviews. Preparing snacks like hummus and pinto bean dip were new experiences to most of the students. Tasting tamarind, fennel and freshly ground nut butters on a field trip offered more new opportunities.

Source of Federal Funds: Smith-Lever 3b&c

Scope of Impact: State Specific

Statement: Food product testing focuses on ways to increase commercialization of several Alaska-grown products. The Extension Food Science Specialist and Research Assistant are conducting studies in Alaska's first, and so far only, state-approved food product testing facility to assess the flavor, juiciness and other attributes of reindeer meat, determine which Alaska-grown potato varieties make the best bakers or French fries, and explore new hull-less barley varieties for taste.

This kitchen allows for the potential for commercial grower/producer projects with UAF, such as individuals developing products for farmers markets and bazaars, and small commercial food companies.

Impact: One such project involved researchers with the UAF School of Natural Resources and Agricultural Sciences and School of Fisheries and Ocean Sciences are developing an economical reindeer chow by replacing protein in the feed from soybeans with waste from fish-processing operations. Testing the relative "fishiness" of reindeer meat raised on these feeds is an integral part of making these fish-based feeds—and the meat from animals raised on them—marketable. SNRAS research faculty Greg Finstad and Eva Wiklund worked with Long and visiting Swedish researcher Lisbeth Johansson to develop protocols for testing reindeer meat using trained food testers. Extension Food Product Development Program researchers also tested eight Alaska potato varieties for glucose content and acceptability as a refrigerated french fry product. The initial tests indicate that the high glucose content of the potatoes is a barrier for their use as a french fry because of the intense browning of the fries. Alaskans put their taste buds to the test one more time to help determine the potential for developing a commercial, Alaska-made whole-grain cracker product for market. Although final analysis of the data is pending, an initial review indicates that consumers did not perceive any difference in the taste of the mother and daughter varieties.

SNRAS is currently developing new hull-less barley varieties that will withstand the heavy winds and rains of late summer. The data from research conducted in Extension's food product testing kitchen

supports Alaska Native reindeer herders and Alaska farmers who need reliable information to better market products statewide and nationally.

Source of Federal Funds: Smith-Lever 3b&c and special grants

Scope of Impact: State Specific

GOAL 4: GREATER HARMONY BETWEEN AGRICULTURE AND THE ENVIRONMENT. *Enhance the quality of the environment through better understanding of and building on agriculture and forestry's complex links with soil, water, air, and biotic resources.*

4.0 Executive Summary:

Highlights and Accomplishments

During this reporting period, land resources faculty provided over 905 hours of consultation time to individuals, agencies and organizations, reaching more than 2,442 clients on Goal 4 topics, which included urban forestry, invasive weeds, pesticide and herbicide issues, and soil and nutrient management. Contacts were made by public presentations, phone calls, e-mails, office and site visits, fairs, meetings with agencies, and audio conferencing.

In the area of invasive pest management, over 80 educational workshops, presentations and classes were presented to the public in 12 communities by land resources faculty and IPM technicians. Thousands of publications were distributed on IP- related activities alone, and 43 media contacts delivered (combination of television, newspaper articles, newsletters and radio spots).

Combined, the Goal 4 programs work to keep Alaska's environment an international model of a pristine environment in an economically viable, contemporary society that values working lands. In a state where distances are great, conditions diverse, and demands on a relatively small staff are growing; information delivery and exchange of information continue to be critical elements, as are working partnerships with state researchers and other entities. Communities and their stakeholders need to be involved in the planning processes for CES and addressing land use issues. CES is continuing to address the issues of environmental quality with its in-state partners, in spite of economic constraints and uncertainties and its own workload challenges.

Expenditures and FTEs

Federal:	\$ 256,165
State Match:	\$ 256,165
FTEs:	7

Key Themes

4.1 Integrated Pest Management

Statement: In partnership with USDA/CSREES, U.S. Forest Service and the Alaska Division of Agriculture, the CES-IPM Program directly served more than 14,000 clients in FY06. Out of 2,000 pest identifications made, two high priority “Exotic Pests” were discovered and about 50 mass media presentations featured IPM Program information. One hundred educational presentations and displays showcased Program efforts, from rural villages to the National IPM Symposium in St. Louis, MO.

Impact: This highly respected program continues to generate increasing levels of partnership funding, with a current annual total of approximately \$320,000 and a base USDA/CSREES 3-d contribution of \$56,000.

Source of Federal Funds: Smith-Lever 3b&c, and Smith-Lever 3d IPM

Scope of Impact: State Specific

Statement: The Extension Integrated Pest Management Program teaches environmental awareness while helping to safeguard Alaska’s natural resources. The IPM team serves as proactive first detectors through the performance of monitoring, trapping and educational outreach to help prevent destructive, imported pests—known as exotics—from becoming established in Alaska’s forests, woodlots, agricultural fields, home gardens and greenhouses. Community forest health is a major focus of the IPM Program. Participating in collaborative gypsy moth monitoring, IPM staff place approximately 300 traps in 20 communities across the state each year. The combined IPM Program team is experienced at assisting the public with identifying pests, diagnosing plant disorders, and delivering educational programs. Annually, this team raises the pest management awareness level of more than 14,000 people. The diverse clientele served include urban and rural residents, educators, youth groups, community agencies, garden clubs and the green industry (landscape, nursery, tree care).

Impact: From this monitoring, a major breakthrough occurred when IPM Technician Cathy Turner captured a European gypsy moth. Because the pest was detected, additional monitoring and trapping were performed to prevent it from becoming established in Alaska. “This early detection work is very important in light of increased tourism to Alaska, especially by vehicular routes,” said James Kruse, U.S. Department of Agriculture Forest Service entomologist. “Gypsy moths are moved by people, usually in immature stages, such as cocoons.”

Source of Federal Funds: Smith-Lever 3b&c, and Smith-Lever 3d IPM

Scope of Impact: State Specific

4.2 Pesticide Management & Safety

Statement: The Alaska Pest Management Program (APMP), funded through USDA/CSREES and the Western IPM Center continues as the premiere pesticide-use resource for the state of Alaska, offering direct access to pesticide labels, MSDS sheets, state pesticide registration, EPA pesticide updates, PNW Pest Management Handbooks and links to pesticide information and agencies across Alaska, the west and the nation.

Impact: Access to this excellent program is through our website www.alaskapestmanagement.com. Between July 1, 2005 and June 30, 2006 this website received over 1500 visitors, more than doubling the previous year's activity and a 1200% increase since its first year on-line.

Source of Federal Funds: Smith-Lever 3b&c, Smith-Lever 3d IPM and competitive grants

Scope of Impact: State Specific

4.3 Natural Resources Management

Statement: The Kodiak Orange Hawkweed Eradication Project efforts in 2005-2006 invested approximately 40 hours in the model invasive weed eradication project on Kodiak Island (U.S. Fish and Wildlife Refuge) with implications affecting future lawn applications, statewide.

Impact: This project continues to show impressive progress toward the control of the extremely invasive Orange Hawkweed. The Kenai/Soldotna land resource agent continues to be highly sought as a pesticide consultant to the project and has also actively pursued efforts to expand the use of the herbicide Transline to Kodiak homeowners, through a special registration process with Dow Chemical, ADEC and EPA, in conjunction with Blythe Brown, Homer SWCD technician.

Source of Federal Funds: Smith-Lever 3b&c, USDA grants

Scope of Impact: State Specific

Statement: High Priority Weed Control Activities on the Kenai Peninsula consumed 100 hours in education, demonstrations and control efforts in FY2005-2006. More than 20 cooperators across the Peninsula participated. Two of these high visibility projects were carried over from 2005, the Cow Parsnip (Pushki) Control Project (Happy Valley), and the Devil's Club Control Project (N. Kenai). Both projects involved the application of the herbicide Crossbow to various stages of the target species development.

Impact: Excellent control (kill) was obtained from an application of herbicide to the entire plant (leaves and stems) at the early flowering growth stage. The information obtained from these two studies will be the basis for future control recommendations, statewide. Additional 2006 projects included a selective tank-mix herbicide application (Ally and Sword) and timing study on Hempnettle along ditch-banks in Soldotna, Canada thistle control efforts in Sterling and Kenai, and a look at the

new herbicide Milestone for Orange Hawkweed control in timothy. All of these projects have strong local support and should lead to effective control recommendations in the near future

Source of Federal Funds: Smith-Lever 3b&c, USDA grants

Scope of Impact: State Specific

Statement: The Extension Rural Development Program often grapples with the question of how to reach folks scattered throughout rural Alaska. Sometimes a telephone call or e-mail offers an easy answer. But other situations—such as the escalating cost of fuel oil—call for more of a “show and tell” solution. For this reason, the Extension resource development agent diverted 2004 grant money earmarked for “increasing distance delivery” toward the recently unveiled wood-burning website, www.alaskawoodheating.com.

Impact: The site outlines a wealth of detailed information to break the dependence on dwindling oil supplies by using the state’s renewable resources—mainly trees. Features include an interactive map listing harvestable trees by region, tree-harvesting safety, home and municipal heating studies, links to manufacturers, and best of all, an online heat calculator. This easy-to-use section computes heating costs based on home location, square feet, insulation, heat system, type and cost of fuel. Another section offers a tree-species table to determine the amount of heat each type yields. Cottonwood, for example, logs in at 14,500,000 BTUs per cord, while birch tops the list at 23,600,000 BTUs per cord. Clients can click on the interactive map to get the cost calculator for a tree species in that area.

Source of Federal Funds: Smith-Lever 3b&c, USDA grants

Scope of Impact: State Specific

4.4 Sustainable Agriculture

Statement: Pest introductions from lower 48 wholesalers are on the rise. One of the newer introductions is the devastating broad mite. Accordingly, the Kenai/Soldotna land resource agent devoted considerable time in 2006 problem solving for commercial greenhouse producers and helping to formulate an integrated pest management approach to this serious pest problem.

Impact: A new cut flower enterprise was initiated on the lower Kenai Peninsula this summer. The agent was asked to consult on irrigation, nutrient management and pest control for the project, which has tremendous potential to make Alaska a national player in the cut flower market.

Source of Federal Funds: Smith-Lever 3b&c, USDA grants

Scope of Impact: State Specific

Statement: The 1995 sulfur deficiency testing and education trials continue to positively impact the Kenai Peninsula hay producers. These trials found that the addition of as little as 20 pounds of

sulfate sulfur applied per acre to S-deficient field soils could more than double yields with up to a 5x reduction in nitrogen levels. Tissue sampling and testing for total N:S with ratios found above 13:1 indicate a S-deficiency. Standard fertilizer recommendations were changed and the new Kenai Peninsula standard adopted in 1998 is 400 pounds of 20-10-10-8 per acre.

Impact: Since developing this testing and fertilizer recommendation program, the Kenai agent has continued to test at no-charge to simulate participation. Five fields tested (and 20 hours) across the Kenai Peninsula in 2006 found two fields with sulfur deficiencies, making a total of 18/47 since testing began.

Source of Federal Funds: Smith-Lever 3b&c, USDA grants

Scope of Impact: State Specific

4.5 Water Quality

Statement: For the last five years, Extension has been a partner with the Municipality of Anchorage, Bureau of Land Management, Anchorage Waterways Council and several other state agencies and organizations on a dog waste program called “Scoop the Poop.” The issue came to light when the State of Alaska published its 303(d) list of impaired water bodies. Eight creeks and three lakes in the Municipality of Anchorage were on the list for fecal matter pollution. In response the partners formed a committee and created the “Scoop the Poop” project. The goal of the program was to raise awareness and educate the public about a dog poop problem. The program had a number of phases, including a series of posters, TV and radio spots, and sponsored “poop stations” where the community could find pick-up bags and trash cans. The partners also sponsored and held a community cleanup of the trail system on BLM land within the municipality—with extensive and popular hiking and skiing trails used year-round. For the first year of the event, local user groups were the targeted audience. The results, partially due to weather, were not as successful as hoped, and many of the trails didn’t get cleaned up.

Impact: The following year the community cleanup was open to the general public with food and entertainment adding a festival atmosphere to the event. Meanwhile, the new city system of “poop stations” included the trail system on the BLM land tract. For the next few years the event was a success. Literally truckloads of dog poop had been collected. However, in 2005 the project turned a corner and attendance was about the same, but the amount of poop was less than expected. There was not as much poop showing up on the trails even though the usage had not changed. People were picking up after their dogs and placing it in the trash cans at the trailheads. Due to the evident impact of the program in this area, in 2006 the committee decided to cancel the community trail cleanup event and focused on a different festival at a dog park in the city.

Source of Federal Funds: Smith-Lever 3b&c, special grants

Scope of Impact: State Specific

GOAL 5: ENHANCE ECONOMIC AND SOCIAL OPPORTUNITIES AND QUALITY OF LIFE FOR AMERICANS. *Empower people and communities, through research-based information and education, to address economic and social challenges facing our youth, families, and communities.*

5.0 Executive Summary:

This goal, more than any other, reaches across the program lines of Cooperative Extension. Cooperation between agents within disciplines and in different disciplines is highlighted in the Key Themes that follow. A few of the highlights resulting for Goal 5 include:

During this reporting period, 171 planned workshops (over 750 hours of teaching) were taught by the 4-H, Home Economics and Land Resources faculty, reaching more than 3,067 Alaskans in 26 communities statewide. Topics included: family finance, 4-H youth and leader training, parenting, time management, cold-climate, marine-climate home building, and junior master gardening.

Extension specialists and faculty gave over 200 public service presentations reaching 3,524 youth and adults on topics ranging from 4-H shooting sports, leadership training, to fly fishing and animal care. Faculty provided over 2,006 hours of consultation time to individuals, agencies and organizations during this reporting period, reaching more than 28,000 clients on Goal 5 topics. Contacts were made by public presentations, phone calls, e-mails, office and site visits, fairs, meetings with agencies, and audio conferencing.

In this reporting period thousands of clients received newsletters; twenty-nine newspaper articles were published, and faculty wrote 28 fact sheets, newsletters and other types of publications.

Indoor Air Quality, taught by the Housing and Energy specialist, continues to be a major program of interest statewide, along with cold- and marine-climate home building. The issue of asthma in children and its relationship to the home environment continues to be a topic of growing community awareness and concern. Twelve classes and workshops on these topics reached more than 400 clients in seven communities throughout Alaska.

Expenditures and FTEs

Federal:	\$ 365,950
State Match:	\$ 365,950
FTEs:	10

Key Themes:

5.1 Economic Opportunities

Statement: Eating native berries can be good for your health, and Alaska's supply is plentiful and varied. But turning this bounty into an economic benefit can be challenging.

Last year the Seldovia Village Tribe—a federally recognized Indian tribe located on the lower Kenai Peninsula—came to Extension seeking help in developing a new jams and jellies product line marketed through its Alaska Tribal Cache business. The tribe had received a grant from the Administration for Native Americans to help Seldovia economically diversify while providing valuable job skill training to local youth. “Our grant through ANA is helping us to expand economic viability in Seldovia,” said Rosanna McInnes, marketing and project director for the Seldovia Expansion Enterprise project. “The work that the Extension team is doing for us is valuable, and with their guidance and resources, we are confident that we are moving in the right direction.”

Impact: The Tanana Valley Extension Home Economist assembled a team to work with the tribe, take an in-depth look at the business and ensure the profitability of new products. Extension home economists and food specialists along with Quentin Fong, fisheries marketing specialist with the UAF Fishery Industrial Technology Center, worked with the Seldovia Expansion Enterprise project staff to examine their line of products. The group looked at not only what was currently being produced—but also for gaps in the market. Products currently under consideration are fresh berries, frozen berries, low-sugar spreads, berry lollipops, berry teas and fruit leather. Each of these products will be taste tested and evaluated in view of market gaps. Marketing plans will be developed before deciding which products will make it to the Alaska Tribal Cache line.

Source of Federal Funds: Smith Lever 3b&c

Scope of Impact: State Specific

Statement: The Extension home economics program seeks to provide food product development research and support for Alaskan's interested in home and commercial production of new food products.

Impact: 19 sensory evaluation sessions were carried out during the reporting period. These sessions consisted of: 3 consumer sensory evaluation sessions with a total of 245 participants; 13 trained panel sessions with an average of 5 panelists per session; and 2 untrained panels with an average of 10 panelists per session. Two Alaska products were under investigation; Alaska reindeer and 13 Alaska grown, hullless, barley varieties. These research results will be reported in 2006-2007.

Source of Federal Funds: Smith Lever 3b&c and special grants

Scope of Impact: State Specific

Statement: Extension has recently joined the “Partners for Progress in Delta,” an educational consortium created to deliver training and education for career advancement, university degrees or continuing education credit in the Delta Junction area. UAF’s Tanana Valley Campus, Delta Mine Training Center, Delta/Greely School District and Alaska Works Partnership are also members of the consortium. The group was instrumental in obtaining funding to build the Delta Career Advancement Center. DCAC has a 7,000 square foot workshop inside its 9,600 square foot facility, allowing year-round, real world cold climate construction training. The center also houses a smart classroom and a computer lab. Additionally, Extension also collaborates with DMTC to offer short courses on the basics of mining, mineral identification, and use of global positioning systems in many Alaska rural communities. Courses are developed by Extension faculty educators and delivered through adjunct instructors with the UAF Tanana Valley Campus.

Impact: DMTC serves as Alaska’s primary source of training for bedrock and open pit miner safety certification and is also the principal provider of Mining Extension education in Alaska. Extension’s partnership in these projects will strengthen UAF’s educational capacity in Delta and provide additional visibility for traditional areas of Extension outreach such as cold-climate building techniques, home and work environment safety, consumer awareness and family finances, horticulture, pest management, home gardening, and livestock production.

Source of Federal Funds: Smith-Lever 3b&c and special grants

Scope of Impact: State Specific

5.2 Youth Development / 4-H

Statement: The Juneau 4-H Clubs joined the Southeast Alaska Master Gardeners, Juneau Community Garden Association, Juneau Garden Club, Juneau Primrose Society, and eight green industry businesses in this year’s community plant sale. This event is the largest fundraising activity of the Juneau 4-H Clubs. 4-H featured 30 different varieties of bare-root trees, shrubs, and small fruits appropriate for Southeast Alaska.

Impact: In a single day, 4-H sold 650 plants to more than 135 customers for a profit of \$3,672.12. Fifteen 4-H leaders and 10 4-H parents contributed more than 155 hours of service. Thirty-five 4-H members contributed an additional 150 hours of service. Each of the 10 participating 4-H clubs received \$185.00 for their efforts. We hope to expand the 4-H Tree Sale to both Haines and Ketchikan in 2007.

Source of Federal Funds: Smith-Lever 3d CYFAR

Scope of Impact: State specific

5.3 Promoting Housing Programs

Statement: With energy costs steadily rising, especially in rural Alaska communities, Extension is focused on providing research-based information to make Alaska more economically sustainable for the long term. The Extension Energy and Housing Specialist Rich Seifert has taught classes on cold climate building techniques across Alaska for more than 16 years. And while the information Seifert delivers is research-based, much of it has been done in Canada and Scandinavia.

However, the recent opening of the Cold Climate Housing Research Center on the UAF campus will change that. The CCHRC is an industry-based, nonprofit corporation created to facilitate the development, use and testing of energy-efficient, durable, healthy and cost-effective building technologies for Alaska and the world's cold climate regions. A collaborative research partnership between Extension and CCHRC is seen as a win-win situation by CCHRC and Extension.

Impact: CCHRC will collaborate with Extension as a resource for education and outreach, while CCHRC will help Extension develop building science curriculums. With its outreach office at the CCHRC building, the Extension Housing and Energy Program will be poised to extend applications of research on cold climate technologies and products for all Alaskans, including the development of strategies for greater energy security and economically sustainable homes throughout the state.

Source of Federal Funds: Partly Smith-Lever 3b&c (but majority of funds from the Alaska Housing Finance Corporation and the IA S. Dept of Energy)

Scope of Impact: State Specific

II. Stakeholder Input Process

Extension jointly sponsors many agricultural and horticultural conferences and outreach activities with SNRAS/AFES where the units share mechanisms to gather formal and informal stakeholder input. Extension also relies on advisory groups as an important stakeholder needs assessment process. Extension has a Statewide Advisory Council and faculty in district across the state use local advisory committees to provide them with community input related to local program stakeholder needs and interests. The State Advisory Council meets in-person at least twice annually and has audio-conference meetings regularly throughout the fall, winter and spring. Faculty, staff and administrators within Extension are also members of the advisory committees and boards of organizations that are stakeholders of the organization. This service on committees and boards provides another venue for stakeholders to provide input to Extension.

In the fall of 2005 in preparation for the 2007-2011 POW and as part of strategic planning, all Extension faculty were required to conduct formal needs assessments within their districts and of their stakeholders. As part of their needs assessments, the faculty were required to assess the needs of underserved audiences and how they could be better served by Extension programming. The individual faculty used a variety of techniques. The faculty wrote needs assessment reports that were shared with all other faculty within Extension. The needs assessments were a critical part of Extension's POW and strategic planning process used to identify program priorities. In addition, Extension faculty members routinely gather stakeholder input as part of their program planning and development process.

Members from the public who have participated in or who have an interest in Extension's program offerings represent one segment of the organization's stakeholders. Another significant stakeholder group is public and private agencies and organizations that have professional and programmatic relationships with Extension or direct interest in Extension programming. Some of Extension's major stakeholder organizations includes, but are not limited to, Alaska State Legislature, Farm Bureau, Grange, Reindeer Herders Association, Greenhouse Growers, Food Banks of Alaska, Department of Natural Resources (Alaska), Forest Service, Boys and Girls Clubs, and Future Farmers of America. As an additional mechanism to gather stakeholder input, Extension has a State Advisory Council. The nine members of the council are appointed by the Executive Dean of the College of Rural and Community Development based upon recommendations provided by the council. The council selects candidates from individuals who apply for membership based upon a call for applications advertised to the public and from recommendations from Extension employees.

Extension uses a wide array of methods to gather stakeholder input. The Extension Director required all faculty to conduct formal needs assessments within their districts in preparation for the 2007-2011 POW. Faculty were encouraged to include traditional customers, partners and collaborators in their assessments and to consider new clientele groups and the stakeholder groups associated with these new clientele in their needs assessment. They were also specifically required to assess the needs of underserved groups and how could be better served by Extension When feasible,

faculty use the needs assessments generated by stakeholders organizations, or other organizations like municipal governments. The most common forms of needs assessments used by Extension faculty included surveys of existing clientele, focus groups, and use of advisory committees. In support of stakeholder needs assessment, Extension administration conducted a survey of Alaska state legislators to learn directly from this important stakeholder group the issues they thought were most important to the state. Standing advisory committees are also an important mechanism Extension uses to gather stakeholder input. Extension has a State Advisory Council composed of individuals from across the state that provide input on global issues affecting the organization like budget, program priorities, and future trends. Field-based faculty use advisory committees to provide them with stakeholder input related to programming priorities at the grassroots level.

The Extension director required all faculty to conduct needs assessments in the fall of 2005 as part of a parallel POW and strategic planning process. The needs assessment results were shared with all Extension faculty and were used as part of strategic planning. The needs assessments helped faculty to identify emerging issues which led to the identification of the five planned programs that will provide the focus of Extension programming during this five-year POW cycle. Invasive Weeds, Noxious Plants and Pest Management Sustainable Individuals, Families, and Communities Youth Development Agriculture and Horticulture Natural Resource Stewardship. At the conclusion of strategic planning, Extension faculty were charged to form work groups around the five planned programs to generate the POW mandated logic models. The faculty used their needs assessments to assist them in the development of the logic models. The faculty also used their needs assessments to generate their individual work plans, called workloads at UAF.

Within Extension administration, the faculty needs assessment results contributed to the identification of priority objectives for Extension programming. Based upon information generated by the needs assessments, future programming needs related to hiring have been affected; for example, recruitment of a new faculty in home economics with skills in nutrition and health was recently concluded. Stakeholder needs will continue to be a driving factor in determining Extension priorities and programming.

The purpose and composition of CES' state advisory council is geared to emphasize and maximize stakeholder input in the planning and budgeting process of CES and to assist in developing program direction and priorities. The council is comprised of 12 members and two ex-officio members and seeks continual input from stakeholders and community members in each member's respective geographic region. The council meets monthly to discuss new, existing and potential CES projects; they provide input to the CES director and continually discuss new possibilities for implementing the CES Plan of Work national goals. The current membership list, which includes a short bio for each member, is published on the CES Web site at http://www.uaf.edu/coop-ext/dir_info/advisorycouncil.html.

Outcomes-based Reporting

Extension's new Web-based Faculty Data Management System saw its first year of implementation in FY06, and along with its implementation Extension has fine-tuned the way in which outputs are captured; namely, not only faculty but program assistants as well are required to report data into the system. In previous years, most faculty members made best efforts to incorporate program assistant output data into their own tallies; however this was not done consistently and was not as precise as our new system allows. The result has been that our output data shows a moderate 'spike' from previous years, particularly in the way of consultation hours and client head counts. The positive side of this is of course that we are now seeing a truer picture of what we do and how many Alaskans we interact with in a year's time.

Despite our improved methodology in recording and reporting outputs, there is still much work to be done in the way of reporting outcomes. As the 2005 report reviewers noted, there has been a need to strengthen impact statements in many program areas, but most notably in the 4-H and Youth category. Because of the required improvement to move "beyond anecdotal evidence to a more systematic assessment of impacts through data" (2005 report review team), we have this year captured only one impact in the 4-H/Youth area; i.e., other impact statements submitted by faculty and program assistants had not moved beyond anecdotal accounts. This demonstrates that much improvement is required in this area in the next plan of work cycle, and probably represents a 'culture' shift in the 4-H/Youth program as to how impact data are captured and demonstrated. The recent 4-H program review conducted by North Carolina State University 4-H experts has also shed light on this weakness, and will in all likelihood spur significant changes to the outcomes-based reporting mechanics in the near future.

As mentioned in last year's report, the all-faculty plan of work meeting held in December 2005 was pivotal in outlining an outcomes-based approach for the organization, as has been reflected in the 2007-11 plan of work. Alaska Extension has seen recent changes in top administration, and the interim director has expressed interest in inviting an evaluation specialist to Alaska to conduct vital outcome/impact reporting training.

III. Program Review Process (Merit Review)

Merit review of the Extension components of the POW and how the proposed activities will integrate Extension's activities with SNRAS/AFES will consist of internal and external reviews. Internal review of the Extension components of the POW will be achieved by a panel of University of Alaska Fairbanks faculty and administrators. External reviews of the POW will be by Extension's State Advisory Council. At least one peer land grant institution in the Western Region will be recruited to review the Extension components of the POW. The different review panels will be charged with assessing how well the activities and resources proposed in the plan will contribute to achieving the proposed goals. Collective feedback from the merit reviews will be incorporated into future iterations of the Extension components of the POW. Whenever the Extension components of the POW undergoes major revisions, the merit review process described above will be used to assess the utility

of the proposed changes. Merit review means an evaluation whereby the quality and relevance to the State program goals are assessed. Program Review Process a. Merit Review. Effective October 1, 1999, each 1862 land-grant institution and 1890 land-grant institution must have established a process for merit review in order to obtain agricultural research or extension formula funds. This was established in the FY 2000–2004 5-Year POW by all institutions. b. Scientific Peer Review. A scientific peer review is required for all research funded under the Hatch Act of 1887, including Multistate Research Fund. For such research, this scientific peer review will satisfy the merit review requirement specified above. c. Reporting Requirement. As a component of the 5-Year POW, each institution depending on the type of program review required will provide a description of the merit review process or scientific peer review process established at their institution. This description should include the process used in the selection of reviewers with expertise relevant to the effort and appropriate scientific and technical standards. In the web-based software, CSREES will provide a check list with the commonly reported types of reviews, as well as a narrative text box to allow for additional information in the form of a brief narrative if needed.

IV. Evaluation of the Success of Multi and Joint Activities

Alaska participates in the following multistate research and coordinating committees:

W-1147: Managing Plant-Microbe Interactions in Soil to Promote Sustainable Agriculture

W-112: Reproductive Performance in Domestic Ruminants

W-192: Rural Communities and Public Lands in the West: Impacts and Alternatives

NC-218: Assessing Soil N Availability in Regional Corn Cropping Systems

4-NRSP/IR4: A National Agricultural Program to Clear Pest Control Agents for Minor Uses.

NCR –101: Controlled Environment Technology and Uses

WCC-021: Revegetation and Stabilization of Deteriorated and Altered Lands

WCC-093: Western Region Soil Survey and Inventory

Outreach and extension programming carried out by Extension are conducted in response to identified stakeholder needs and interests. On a statewide level, Extension's State Advisory Council is an important mechanism for gathering stakeholder input. Faculty and staff also routinely conduct formal and informal stakeholder needs assessments within their local communities to determine appropriate program priorities. The strategic plans of the College of Rural and Community Development, the University of Alaska Fairbanks and the University of Alaska were developed with extensive public input provide guidance for strategic issues within Extension. Other important organizational stakeholders that influence Extension programming include, but are not limited to: Alaska Legislature, Dept of Natural Resources (Alaska), Dept of Commerce, Community & Economic Development (Alaska), Dept of Health and Social Services (Alaska), US Dept of Agriculture, Cooperative States Research, Education and Extension Service, Forest Service, Rural Development, US Dept of the Interior, Bureau of Land Management, US Fish and Wildlife Service, US Dept of Energy.

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Indigenous people make up a large proportion of Alaska's population. Despite urbanization, many Alaska Natives live in isolated rural villages with small populations and often inaccessible by surface transportation. A whole or partial subsistence lifestyle is practiced by many Alaska Natives as well as many rural residents. Extension has extensive resources it provides to related to safe food preparation and preservation that supplement traditional methods. A predominate focus of Extension's newly formed Natural Resource Stewardship and Rural Development program will be on rural community development, often with an emphasis on Alaska Native communities. The Extension Indian Reservation Program, (EIRP) serves over 40 native villages. Extension has a tradition of working with underserved populations. It has a successful Expanded Food and Nutrition Education Program (EFNEP) and it has successfully competed to be Alaska's Food Stamp Nutrition Education Program (FSNEP) provider. In cooperation with the College of Rural and Community Development, Extension is promoting science and math education in rural villages to increase Alaska Native enrollment in post-secondary science and natural resource disciplines. This effort is part of the CSREES sponsored Higher Education Project for Alaska Native and Native Hawaiian Serving Institutions.

Extension is committed to greater program accountability, particularly measuring outcomes and impacts. Extension's past experience has focused on measuring outputs (number of workshops offered, number of workshop participants, number of publications distributed, etc.) versus measuring outcomes and impacts. The CSREES plan of work requirement to increase measurement of outcomes and impacts has provided the impetus to move Extension to strengthen its program evaluation. It will be an evolutionary process where faculty members will gain experience and comfort with outcome and impact assessment as well as including planning for evaluation during the program planning phase. To assist faculty in their collection of data to measure outcomes and impacts, Extension has implemented an on-line Faculty Data Management System. The data base system has completed its first full year of implementation in FY06 and is expected to significantly improve accountability reporting in the next plan of work cycle.

The POW process that stresses outcomes and impacts is leading Extension to devote more effort to planning for program evaluation and conducting additional and more thorough post-program

assessments. With reliable and valid program assessment information, Extension will be better able to determine program effectiveness and the cost effectiveness of programs offered. This information will be critical in making future resource allocation decisions. The CSREES POW requirement to generate outcome and impact oriented objectives with related accountability expectations has lead Extension to focus its recourses on fewer high priority topics. Faculty members within Extension were charged with developing the logic models for each of the Extension-focused POW planned programs. This activity has given faculty ownership of the planned programs and responsibility for achieving the planned outcomes and impacts. Extension administration will provide faculty with guidance and support to assist them in their efforts to become better program planners and evaluators to ensure that programming responds to organizational priorities and that programs offered are assessed in relation to expected outcomes and impacts. The recently implemented Faculty Data Management System will be a useful tool in helping faculty and administration to assess programs effectiveness.

V. Integrated Research and Extension Activities

Alaska submitted Form CSREES-Waiver requesting a waiver for FY2000 Integrated Activities from Hatch Act Funds. CSREES granted the waiver and approved our projected Integrated Activities for the 2001-2004. The form CSREES-REPT reporting Integrated Activities for 2005 is included here.

The projections for Integrated Activities for 2001-2004 were based on the Supplement to the Plan of Work submitted to CSREES July 28, 2000. Despite the waiver, we moved ahead with Integrated Activities involving AFES researchers and support staff and CES specialists and agents; an evaluation and brief synopsis of those activities are summarized below:

The SNRAS/AFES Palmer Research Center in southcentral Alaska became the Palmer Research and Extension Center in 2001. In addition to housing two joint AFES/CES faculty positions in horticulture, the Center also provided office facilities for the CES Fisheries and Natural Resources specialist and a Curriculum Coordinator. Our goal is to increase Integrated Activities to the AREERA target percentage.

Agronomic Crops and Soils

Integrated activities continue to address best management practices for production of livestock feed crops, primarily forages and small grains as well as investigating new crop opportunities. The loss of the joint AFES/CES Agronomy Specialist position seriously impacted this program. AFES researchers and CES agents continued collaborative work at Delta Junction, Fairbanks, Palmer, and the Kenai Peninsula.

Potato and Vegetable Crops

AFES researchers and CES counterparts carried out applied research, demonstration, and outreach activities primarily related to variety selection, disease control and management, and weed control.

The Agronomy Specialist position was replaced with a horticulture specialist (75% CES and 25% AFES) in 2004 and the individual in that position is participating in the Hatch project “Production Practices, Cultivars, and Disease of Potato and other Horticultural Crops”. That project leader in cooperation with the AFES horticulture researcher at Palmer is evaluating: potato, lettuce, and cabbage variety and management trials, comparison of overhead and drip tape irrigation on vegetables, soil moisture monitoring in transplanted lettuce, and proposed hoop house evaluations. This information is presented annually to CES/AFES jointly sponsored workshops including: The Greenhouse and Nursery Conference, the Potato and Vegetable growers Conference, Ag Symposium, and the Delta Farm Forum (presentations included “Seed Piece Size and Fungicide Treatment”, “Compost Tea for Home Gardeners” to name a few. The horticulture/plant pathology researchers at the Palmer Research and Extension Center working closely with CES agents in Palmer, Anchorage, Soldotna, Fairbanks, and Delta Junction provide the core for this working group.

Greenhouse Management/Nursery

Collaborative work continued in the greenhouse/nursery production of cut flowers, bedding plants, ornamentals, and other landscaping plants. Research and outreach addresses physiological response to light, day length, and temperature in controlled environments for species that included cyclamen, dwarf carnations, forget-me-nots, and selected food crops including raspberries. Extension oriented publications included a number of publications in Greenhouse Product News and Experiment Station circulars and bulletins. Research and demonstration efforts at the Georgeson Botanical Gardens evaluated woody perennials, herbaceous perennials, annual flowers, herbs and vegetables for survival and productivity at northern latitudes. The latter had a high degree of volunteer and extension involvement. Outreach efforts have included one-on-one contacts with growers and the public, presentations at CES workshops, master gardener program, and the annual CES/AFES Alaska Greenhouse and Nursery Conference, and lay publications including “Annual Flower Plant Evaluations”, “Georgeson Botanical Garden Review”, “Alaska Spinach, Savory, Succulent, Salad Selection” to name a few.

Reindeer Production

Alaska native reindeer herders have managed herds totaling over 30,000 deer. Those numbers have dropped significantly in recent years from out-migration of deer joining migratory caribou. AFES scientists continued to carry out a number of research and demonstration projects in cooperation with the CES on the Seward Peninsula (details reported above under Goal 1). Current projects range from reproduction and disease management to range management and reindeer nutrition. The Extension reindeer agent position has been terminated but the Extension livestock specialist works with AFES researchers and other agencies (i.e. NRCS, AFG, and BIA), and the herders themselves and facilitates annual meetings and workshops.

Animal Reproduction

The joint research animal scientist/livestock position (CES, 51%; AFES, 49%) addressed reproductive performance of ruminant animals under the aegis of multistate research (W-112) which addresses both traditional and alternative animal species. Most of this research and outreach was on-farm, directly involving the local extension agents and the producers. In 2006, outreach activities included one-on-one contacts with producers, workshop presentations at the Delta Farm Forum, and the Agricultural Symposium. His project has become the cornerstone of our Integrated Activities in livestock with Cooperative Extension. It encompasses all the desirable elements of multistate, integrated research and extension activities.

Soil Quality /Nutrient Management

No Integrated Activities reported in 2006.

Forest Production/Protection

Alaska Cooperative Extension Service has a single Forestry Specialist who works cooperatively with AFES researchers both in applied research, demonstration, and dissemination of information on issues related to growth and yield. The AFES forester working in the area of growth and yield has worked cooperatively with CES and State and Private forestry in cooperation with the state Division of Forestry and the U.S. Forest Service.

Community and Rural Development

AFES resource planning researcher cooperated with CES land resource specialists and are developing a database of planning cases in Alaska. A literature review of criteria for effectiveness in resources planning and environmental dispute resolution was completed ("Public Planning Process"). A new project "Innovative Methods of Involving the Public in Environmental Decisions" will involve CES and outreach efforts. In 2004, an interdisciplinary team was established to develop alternatives for management of the Alagnak River based on prior and new public meetings and written comments. The plan was completed in 2005 and is being used by the National Park Service to guide the management and use of the popular river corridor. The AFES Natural Resources Economist continued work cooperatively with CES on the reindeer industry economic impact analysis through presentation of information at the CES sponsored annual reindeer meeting in Nome.

Attachments to the Annual Report of Accomplishments and Results

1. Form CSREES-RFPT (2006). Multi-state Extension Activities (Electronic copy with hard copy to follow.)