

2003

FY 2003 October 2002 through September 2003

Annual Report of Accomplishments and Results

University of Alaska Fairbanks - Cooperative Extension Service



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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 78 planned workshops related to Goal 1 were taught by eleven Land Resources faculty, reaching 2,231 Alaskans in 18 communities. Topics ranged from developing Alaska markets for locally grown “baby greens”, 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 provided 72 hours of public service, reaching 11,700 clientele, covering a range of topics from lawn care, vegetable gardening, forest products, to greenhouse management. Over 2,000 hours of consultation time were provided to individuals, agencies and organizations during this reporting period, reaching more than 4,000 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 3,450 clientele received ag/hort newsletters, 31 newspaper articles were published, and 15 fact sheets and publications were written by faculty. Ten television programs featuring Extension ag/hort topics delivered over two hours worth of information and 160 radio minutes were broadcast throughout the state.

Alaska continues to implement AREERA. The most notable development in this regard is our plan to implement a Web-based information management system in 2004. This relational database system will synthesize data collection and reporting efforts and will also function as a clientele impact data gathering tool through online feedback forms and surveys.

Expenditures and FTEs

Federal:	\$325, 488
State Match:	\$325,488
FTEs:	8

Key Themes:

1.1 Agricultural Competitiveness

Statement: The Extension Horticulture Specialist, filling a joint position with the School of Agriculture and Land Resources Management - Palmer Research and Extension Center (PREC) continued testing of 19 cultivars of lettuce for quality and yield in the summer of 2003. Applied research and demonstration to enhance vegetable production included continuation of on-farm lettuce variety trials for head size, tip burn, white mold and marketability. Similar trials were conducted on two farms and the experiment station fields for 12 storage cabbage cultivars. New varieties of specialty greens (3 arugula, 4 Asian greens and 3 kales) were added and compared in grower fields with currently grown varieties. Field experiments targeting *Sclerotinia* (white mold) in vegetables, particularly lettuce, continued at PREC and on-farm.

Impact: Salad crops can be produced locally in the summer to supply local markets with short transport and storage times. The Alaskan Grown program “fresher by far” fostered by the Alaska Division of Agriculture and the Agricultural and Forestry Experiment Station has resulted in increased awareness of the benefits of locally grown produce over that shipped in from the lower 49 states. Results from applied studies are presented each year to the joint SAES/CES sponsored Potato and Vegetable Growers Conference. These presentations over the past 10 years have established recommended varieties of potatoes and vegetables grown by Alaska producers as well as providing production practices information. The SAES/CES potato late blight monitoring program continued in 2003 with again no use of fungicides required for any commercial fields resulting in sizeable savings for fungicide applications.

Source of Federal Funds: Smith-Lever 3b&c, Hatch General. CSREES Special Grants

Scope of Impact: Integrated Research and Extension

1.2 Agricultural Profitability - Alaska Greenhouse and Nursery Conference

Statement: The 22nd Annual Alaska Greenhouse and Nursery Conference presented topics ranging from safe pesticide use to “best practices.” Eighty-five commercial growers and landscapers attended, representing eleven communities, with many participants traveling over 50 miles to attend, and 61 percent having direct involvement with greenhouses, garden centers, nurseries, plantscape companies, landscape contracting firms, golf courses or grounds maintenance. Commercial Horticulture is the largest segment of Alaskan agriculture.

Impact: More than 75% of participants reported they’ve made changes in their horticultural practices as a result of attending past conferences. They also responded that they plan to try new pesticides, and will not plant invasive plants. Ninety-five percent indicated they plan to attend the next year’s conference.

Source of Federal Funds: Smith Lever 3b&c

Scope of Impact: Integrated Extension and Research

1.3 Agricultural Profitability - Delta Farm Forum

Statement: The 2003 Delta Farm Forum was attended by more than 145 people, another exceptional turnout for the annual forum held at Delta Junction. Coordinated by the Delta Junction Land Resources Agent, in association with the Delta Center of the Alaska Farm Bureau, both AFES researchers and CES specialists and agents disseminated knowledge from applied research, as well as information related to commercial greenhouse production, grain trials, haylage production, diversified farming, and miscellaneous reports from state and federal agencies, including best practices. Farmers and producers were able to meet with and speak to their state legislative representative and state department officials on agriculture topics of interest and concern in Alaska.

Impact: Quantifiable methods of assessing specific areas of effectiveness are being determined.

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

Scope of Impact: Integrated Research and Extension

1.4 Agricultural Profitability - Potato and Vegetable Growers Conference

Statement: The extension land resources program organized the annual Potato and Vegetable Growers Conference. This annual event is structured to address current concerns of commercial produce growers in south central Alaska. It also exposes growers to new technology and growing practices that show promise in Alaska. Potato and vegetable growers have identified plant disease as the single most important deterrent to increasing profits in recent years. Identification of disease resistant varieties, pest monitoring, integrated pest management, and biological control methods are the primary avenues of investigation being pursued by Alaska horticulture and plant pathology researchers.

Impact Results from applied studies are presented each year to the joint SAES/CES sponsored Potato and Vegetable Growers Conference. These presentations over the past 11 years have established recommended varieties of potatoes and vegetables grown by Alaska producers as well as providing production practices information. For example, results demonstrating yield and quality advantages for Cal-White potatoes over other commonly used varieties would increase gross income by \$600/A for a grower adopting recommended practices and varieties. For an 80-acre potato farm, that results in a \$48,000 increase at 2003 prices. The SAES/CES potato late blight monitoring program continued in 2003 with again no use of fungicides required for any commercial fields resulting in sizeable savings for fungicide applications. Basic research with virulence and taxonomic relationships in *Rhizoctonia* has involved researchers from other states and countries and has resulted in improved understanding of the nature of the disease and control strategies in crops.

Source of Federal Funds: Smith-Lever 3b&c, Hatch, and CSRF.ES Special Grants

Scope of Impact: Integrated Research and Extension

1.5 Animal Reproduction

Statement: On-farm site visits to Alaska livestock operations by extension's livestock specialist continue to provide excellent opportunities to work with individual producers on livestock production and management issues that impact farm profitability, and allow development of animal nutrition and feed management programs, animal breeding and reproductive management programs, improvement of animal health and calf survivability and improvement of many other factors related to the well being of Alaska's livestock industry. More than 70 on-farm site visits were made by the livestock specialist to address a range of needs from feed analysis, diagnosing disease and health conditions, to herd management.

The Extension Livestock Program conducted seven producer-oriented Animal Science classes during calendar year 2003. Topics included Animal Nutrition, Reproductive Management of Livestock, Physiology of Lactation, Genetics and Animal Breeding, Environmental Physiology and Animal Welfare and Well-being. Each class lasted 3 hours and attendance averaged 10-18 livestock producers and other interested people.

Impact: Pre- and post-tests of students in the seven classes indicated a significant increase in producers knowledge of animal science. This indicates a substantial increase in the knowledge base of Alaska's Livestock Producers, followed by demonstrated improvements in management abilities. Outcomes from these continuing education efforts clearly demonstrate the effectiveness of reproductive management technologies and techniques that are being used to improve reproductive efficiency on traditional dairy/beef and alternative livestock farms, ranches, and open range.

Where dairy production and beef and reindeer numbers are down significantly, applied research and outreach activities closely tied to farm operations continues to be critical to achieving economic improvements. Reports indicate that prior to working with Extension, feed costs for dairy farmers were often greater than \$7.00 per cow per day and have since been reduced to \$6.40 per cow per day for a milking herd. Reports indicate research and assistance to farmers has resulted in cows averaging 65 lbs of milk per day for a cost of \$9.85 per cwt. of milk. Given the Alaska milk price of \$21.00, a farmer's feed costs are less than 47% of milk prices, and are considerably lower than the generally accepted figure of feed costs averaging 50% to 60% of milk price. Even with this reduction of input costs, dairying in Alaska is difficult, especially if debt load is large.

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

Scope of Impact: Integrated Research and Extension

1.6 Diversified / Alternative Agriculture

Statement: Alaska CES, as the major sponsor the FY2003 Alternative Livestock Producers Conference attended by 58 registrants. Speakers made presentations covering animal husbandry, operations management, and marketing and profitability. A field trip was hosted that visited three ranch operations for yak, bison and elk production. Delta Junction's Future Farmers of America served a lunch with main dishes of bison stew and reindeer sausage to participants. The conference was organized by the extension livestock specialist who holds a joint extension and research appointment, and the Delta Junction Land Resources Agent and staff. The new Alaska Diversified

Livestock Association (established from this conference) has approached the Experiment Station with a request for research that specifically addresses their needs and has approached the state legislature for funding support.

Additional research support for production of diversified livestock in Alaska will depend upon extramural funds. Neither The Alaska Division of Agriculture nor the UAF AFES have discretionary funds to support additional animal scientists. However, the extension livestock specialist / AFES animal science researcher has been successful in recruiting a M.S. student to assist in his efforts with diversified livestock.

Impact: The successful production of alternative livestock in Alaska depends on the success of individual producers coming together for improvement of the industry as a whole. One important outcome of this conference was the establishment of the Alaska Diversified Livestock Association. A follow-up survey of the attendees reported that the conference presentations and topics were very applicable to the needs of the producers. The request for further research by the new Association highlights the synergistic importance and significance of extension and research collaboration.

As a result of the efforts of the Extension Livestock Specialist (a joint extension/AFES research appointment) the Alaska Diversified Livestock Association has incorporated as a non-profit corporation in Alaska with a dues paying membership and elected officers. The ADLA continues to meet regularly and provide members information on information and issues of important to diversified livestock producers in Alaska.

Source of Federal Funds: Smith-Lever 3b&c, USDA Rural Development Grant

Scope of Impact: Integrated Research and Extension

1.7 Home Lawn and Gardening

Statement: Garden clinics in the Anchorage District continue to utilize an abundance of time and talents of Master Gardener volunteers to educate the public at large and at the Alaska State Fair. The Master Garden program also provided training for 178 gardeners in 7 locations around the state. These Master Gardeners in turn multiplied the effect, for example in Anchorage assisting 3,529 members of the public and volunteering 1,035 community hours in educational events and projects.

Master Gardeners also supported the Alaska Botanical Garden to provide visitors with extension publications as well as direct educational contact. In Fairbanks, Master Gardeners were busy with the 12th Annual Master Gardener Tour, the Tanana Valley State Fair, and volunteering at the Georgeson Botanical Garden on the UAF campus. In Delta Junction, Master Gardeners helped with preparing the vegetable and flower gardens and grain plots for the Sullivan Roadhouse Historical Museum, which draws about 5,000 visitors per season. With each new MG student volunteering 40 hours of service to share what they have learned with the rest of the community, the benefits keep growing.

Impact: Participation remained strong in the Master Gardener program; Over 7,000 hours of volunteer service valued conservatively at \$85,000 returned to Alaska communities. Master Garden

program-trained volunteers participated in garden clinics and fairs, reaching thousands people in Alaskan communities, which CES supported.

Statement: Juneau Master Gardeners have had continuing success conducting plant sales, garden tours and a semi-annual garden conference in the Juneau area.

Impact: In the past two years, master gardeners have put dollars back into the Juneau community, giving out one \$1,500 scholarship per year to youth studying in an area of horticulture. Master gardeners also gave out cash prizes at a high school science fair, helped pay for a new shelter at the community garden, maintained a small parcel of land in the Auke Bay area, paid part of the cost of an electric fence around the community garden, and paid for and planted trees and shrubs at the new care center built near Juneau hospital. Essentially, giving back to the community is what master gardeners do,

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

Scope of Impact: Juneau Specific

1.8 Noxious and Invasive Plants (NIP) Management

Statement: In 2003, Noxious and Invasive Plant (NIP) program personnel collected over 550 GPS points of invasive plant infestations in the Anchorage area alone. The data was contributed to the AKEPIC database. In 2002, more than 1,200 points were collected.

Impact: During this two-year period, many invasive plant species have become widely spread throughout the Anchorage area, while other more insidious species have begun to gain a foothold. Through identification, location and eradication of these non-native species, NIP is helping to prevent further ecosystem damage in Alaska.

Source of Federal Funds: National Fish & Wildlife Foundation – PTI / BLM, Smith –Lever b&c

Scope of Impact: State Specific

Statement: Invasive plants are plants that become established and spread without natural controls. Invasive plants can cause extreme economic or environmental harm to native habitat, agricultural fields, or recreation areas. The long-term effects of uncontrolled spread can result in higher crop and livestock production cost, loss of native plants, degradation of wetlands and destruction of wildlife habitat.

The Cooperative Extension Service has led a multi-year project to coordinate the development of a statewide NIP management network to address and mitigate the potential for extreme harm from noxious and invasive plants. Activities included the formation and participation in the Alaska Committee for Noxious and Invasive Plants Management (CNIPM), a multi-level partnership group of federal, state, university, local government, tribal agencies and non-profit organizations.

2003 saw continued progress in CES development of partnerships to manage noxious and invasive plants. CES develop a key agency partnership with BLM to combat invasive plants in Alaska. CES and BLM secured a grant award from the National Fish and Wildlife Foundation (NFWF) – Pulling Together Initiative. The grant funded Alaska’s development of a coordinated effort to control and eradicate weed infestations by implementing actions tasked in the Strategic Plan for Noxious and Invasive Plants Management in Alaska. 2003 action tasks include statewide coordination, extensive education, and outreach to the public and partners in the effort.

The U.S. Forest Service provided a grant to the CES IPM program to inventory invasive weeds in the Anchorage area. In addition it provided funding for the salary of an assistant in Fairbanks to liaison with the CNIPM partnership.

Impacts: In November 2002, CES hosted Alaska’s 3rd Annual Noxious and Invasive Plants Management Workshop, held in Anchorage, with 90 attending participants, and featuring 20 speakers and 10 major exhibitors. Along with monthly teleconferencing meetings and statewide newsletters, 2 major publications were distributed, the “Strategic Plan for Noxious and Invasive Plants Management in Alaska,” and the “Contact Directory of over 100 Individuals Interested in Noxious and Invasive Plants Management.” Housed at the USGS Alaska Exotic Plant Information Clearinghouse, a non-native species mapping and inventory data-base tool program was developed and made available on-line, and increasing statewide coordination through the CNIPM website at www.cnipm.org.

Source of Federal Funds: National Fish & Wildlife Foundation – PTI / BLM, Smith –Lever b&c

Scope of Impact: State Specific

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 915 Alaskans in 14 communities, taught more than 58 planned workshops related to Goal 2. Topics included canning and food preservation and utilizing traditional food sources (berries, wild salmon and game meat). Class evaluations indicated that more than 85% of the clientele planned to adopt new practices in the areas of safe food utilization and preservation.

Home Economics program faculty provided over 650 hours of consultation time to individuals, agencies and organizations during this reporting period, reaching more than 4,600 clientele on Goal 2 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 more than 1,500 clientele received newsletters by Home Economics faculty, 28 newspaper articles were published on food safety topics, and 6 fact sheets and publications were written by faculty. Sixty minutes of television programming and 30 minutes worth of radio spots were used statewide to deliver food safety information.

Expenditures and FTEs

Federal:	\$147,257
State Match:	\$147,257
FTEs:	2.5

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 1,660 families enrolled in the TEFAP program and extension influenced at least 737 of those families through information distribution and demonstrating practical food use.

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 Quality

Statement: Safe food preservation is of paramount importance to Alaska's population. Many people live a subsistence lifestyle, harvesting wild edible plants and game meats for their family's livelihood. Even in more urban areas, game meat and berries are a major part of many families' diets.

Impact: CES sponsored, supported, or conducted food quality and safety workshops and training sessions, are providing a key avenue for up-to-date research information and publications to be widely shared directly with Alaska residents, and other agencies and educational programs directed at enhancing food safety and quality of Alaskan diet staples. 100% of the students in a recent class expressed more confidence in food preservation skills when surveyed 6 months later and 80% said they had used these new skills to preserve foods.

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

Scope of Impact: State Specific Integrated Extension and Research

2.3 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.

Over 40% of the sport fishing effort in the state of Alaska takes place on the Kenai Peninsula. Annually, approximately 300,000 sockeye are harvested in the sport fishery on the Kenai Peninsula, mostly during a salmon run in July. Annually one Soldotna hardware store reports selling 24,000 to 32,000 salmon cans each year to home canners. Salmon is an important food in the diet of many Alaskans.

Impact: From June 2002 to October 2003, over 1,000 clients on the Kenai Peninsula requested food preservation information by telephone, email or by office visit. CES delivered over 100 hours of instruction throughout the state reaching more than 500 clientele addressed canning, smoking and cooking salmon and wild game, as well as utilizing berries and home garden produce.

Statewide, over 5,000 consumer questions were answered by the extension home economists and the food preservation technician throughout the state, both in person and by telephone hotline.

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

Scope of Impact: State Specific

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 56 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 70 hours of teaching and reached over 1,500 clients. Faculty participated in community health fairs that reached more than 100 clientele in rural Alaska, and more than 5,000 general public participants in Fairbanks and Anchorage. More than 1,100 hours of volunteer time is donated working with the statewide and regional health boards and arranging presenters for community health fairs held statewide.

Consultations by the home economists with individuals, agencies and organizations reached over 3,000 clientele with an investment of more than 500 hours. The nutrition specialist/EFNEP coordinator documented 720 hours of consultations as he assisted extension faculty, media, agencies and peers in other states with questions in this program area.

Five EFNEP food and nutrition assistants in Anchorage and Fairbanks taught nutrition, cooking skills and budgeting to 294 low-income families. They also taught the food guide pyramid, food safety, healthy snacks and food choices to 1,756 youth. These activities represented over 5,700 contact hours during this reporting period.

In this reporting period 10 newspaper articles were published on diet and nutrition topics, and 11 fact sheets and publications were written by faculty. Twenty minutes of television programming were used statewide to deliver nutrition information

Expenditures and FTEs

Federal:	\$73,121
State Match:	\$73,121
FTEs:	2.5

Key Themes:

3.1 Human Health

Statement: The Tanana District Extension office cooperates each year with the Alaska Health Fair Association to bring the latest in health research to Alaska's communities. Extension topics presented at the fairs include food safety and preservation, proper hand washing techniques, pressure canner gauge testing, and preventative health care, as well as information in the form of publications and EFNEP correspondence course information. Health fairs are an economical way to reach many people and present targeted information in a casual manner, reaching both youth and adults. An exhibit on sugar for use at Health fairs has been developed. It is an interactive display with youth measuring out the amounts of sugar in various sized drinks. The aim is to help reduce the amount of sugar consumed by drinking heavily sweetened beverages such as soda pop.

Impact: 119 Expanded Food and Nutrition Education Program (EFNEP) adult participants showed improvement in eating habits as a result of training. 80 EFNEP adult participants showed improvement in food safety habits such as refrigeration and food preparation habits. 1,927 school-age children participated in the EFNEP program and showed understanding in nutrition and food safety habits.

700 copies of the quarterly Cost of Food at Home in Alaska, which includes a statewide summary of food costs as well as suggestions for diet and food safety improvement, were mailed to agencies and individuals. In addition, an increasing number of people access this document from the web. Summaries regularly appeared in Alaska's largest newspapers and on radio programs.

Source of Federal Funds: Smith-Lever 3b&c, EFNEP 3d funds.

Scope of Impact: State Specific

3.2 Human Nutrition

Statement: Dietetic internship programs exist throughout the United States serving as hands-on training grounds for graduate students aspiring to be registered dietitians. The University of Alaska Anchorage Dietetic Internship Program was established eight years ago to address a work force shortage of registered dietitians in Alaska. For the past four years, the Anchorage District Cooperative Extension Service home economics program has been one of the key community rotation sites for training dietetic interns and future professional dietitians.

Impact: Eight dietetic interns have successfully completed a term of service rotation, assisting CES with teaching community nutrition classes, teaching distance education classes, and providing in-service training for paraprofessionals. Completing their internship, all passed the RD exam, and 4 of the 8 remain in Alaska and have filled critical positions as dietitians in community outreach settings.

CES dietetic interns provided additional outreach services, including appearing on local TV and radio shows, writing articles for local newspapers, serving as State Science Fair judges and presenters, and distributing surplus food to low-income families at food pantries.

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

Scope of Impact: State Specific

3.3 Human Health

Statement: Diabetes is one of the fastest growing health concerns in the United States. It has been found that type 2-Adult Onset Diabetes is striking younger and younger children. In an effort to educate youth on the effect of sugar consumption on diabetes, we created an exhibit for health fairs on sugar.

Impact: During the past year, 997 clients explored the amount of sugar in soft drinks and other snack foods commonly eaten. The exhibit has been used in 11 locations at health fairs and school activities, including 7 in rural location where consumption of soft drinks and the incidence of diabetes is very high.

Source of Federal Funds: Smith-Lever 3b&c, EFNEP 3d funds.

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 the state forestry specialist, reaching 854 Alaskans in five communities, taught 16 planned workshops. Topics included forest stewardship, insects and diseases of forests, forest product development and forest genetics.

The land resources faculty provided over 100 hours of consultation time to individuals, agencies and organizations during this reporting period, reaching more than 500 clientele 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 water quality, 2 Land Resources agents taught 28 hours of workshops reaching more than 500 people, covering topics from village drinking water to issues affecting homeowners and watersheds. Agents provided over 900 hours of consultation time to individuals, agencies and organizations, reaching more than 4,700 clientele on topics including drinking water and water quality environmental issues.

In the area of invasive pest management, over 90 educational workshops, presentation and classes were presented to the public in seven communities by land resources faculty and IPM technicians. Over 11,000 publications were distributed in IPM related activities alone, and 35 media contacts delivered (combination of television, newspaper articles, newsletters and radio spots).

In this reporting period over 5,400 newsletters were distributed to clientele on topics from forestry to water quality. Also in this period, faculty wrote 2 fact sheets and 2 publications.

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. Restructuring of the CES state advisory council has made strides to increase geographic and stakeholder representation. 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:	\$111,803
State Match:	\$111,803
FTEs:	3

Key Themes

4.1 Integrated Pest Management

Statement: The Integrated Pest Management program provides education and consultations to the Alaskan public on alternative, least toxic pest control in the home and garden. Through direct contacts such as phone calls, office walk-ins with specimens, presentations to school and community groups, clients throughout Alaska have been reached during 2003. This number does not include the thousands reached through booths at fairs, shows and clinics.

Impact: The IPM program directly served Alaskans from five Extension District offices, over 10,000 clientele were reached in the summer 2003 season. Over 90 classes, workshops and presentations were given during this time period. The 10,000+ clients requested information identifying and offering solution to their pest problems. In many cases, application of pesticides was prevented.

In addition to the direct contacts, the IPM program staff had over 30 media contacts including newspaper articles either written by the staff or resources for media writers, television appearances, and radio interviews. Thousands of publications covering IPM topics have also been distributed this year. Many of the thousands of participants at Home and Garden Shows in Anchorage and State Fairs in Palmer and Fairbanks received information on safe use and alternatives to pesticides in the home and garden.

The establishment of the Alaska Committee for Noxious and Invasive Plants Management has been a significant development 2000-02. A Memorandum of Understanding for establishment and support of the committee was formed involving eight federal agencies, twenty state agencies and three private entities. Educational workshops, a resource directory and a draft strategic plan for the management of invasive plants has been developed.

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

Scope of Impact: State Specific

Statement The Tanana District IPM technician worked in cooperation with the State of Alaska and APHIS to monitor for the presence of the exotic gypsy moth in Alaska. The technician cooperated with Alaska Department of Natural Resources and the Air Force to monitor life histories of the exotic birch leaf miner, which is well established in Anchorage and has recently been found in the Fairbanks area on Eielson AFB. The technician taught over 35 classes in the Tanana district, from elementary school age children to adults, and provided articles to various local newspapers about various IPM topics including beneficial organisms, least-impact pest management, horticulture, and tree health. These presentations help the public have safe and economical use of pesticides. The technician reared and pupated a caterpillar pest of delphiniums for purposes of proper species identification by UAF museum entomologist Jim Kruse.

Impact Over fifty pheromone traps were placed and monitored in high risk areas around Interior Alaska. Information from gypsy moth monitoring will be used to aid in the introduction of a biological control species. The caterpillar species pupated and reared by the technician had originally been misidentified by scientists and the proper species needed to be confirmed by adult specimens. Also, the technician identified particularly high populations of native forest insect pests and provided information to individuals and the media about the life history of these species. Species included the spruce bud worm, aspen leaf miner, and a stinkbug species.

Statement Though not a Smith-Lever program, an important monitoring project took place in 2003 that could have had far-reaching implications for the state. During the summer, the CES IPM program partnered with the State of Alaska Division of Agriculture to participate in a gypsy moth monitoring project. While the moth is not known to be in Alaska, it could quickly become a serious problem to the Alaska forestry industry and the ecosystem in general if ever successfully introduced. Three extension districts were involved in placement and monitoring of insect traps in their area during the summer of 2003. Over 50 triangular traps were hung in Interior Alaska locations.

Impact At the end of the summer, no gypsy moth species were found in any of the traps recovered.

Source of Federal Funds: State of Alaska

Scope of Impact: State Specific

4.2 Pesticide Management & Safety

Statement: The Pesticide Safety Education Program provided information on the safe use of pesticides. Cooperative Extension Service provides pesticide safety instruction in coordination with the Alaska Department of Environmental Conservation (ADEC) Pesticide Branch, which provides pesticide safety exams and certification. The Pesticide Applicator Training (PAT) program provided professional pesticide applicator training for Alaskans to be certified / recertified with the Alaska Department of Environmental Conservation as restricted or commercial use pesticide applicators. Workshops were conducted in Anchorage, Palmer, Soldotna, Fairbanks, Talkeetna and Nome. Importantly, consumers need information on pesticide safety to protect the environment and human health from improper pesticide use.

4.2 Pesticide Management & Safety

Impact: Pesticide applicator training for the state's 13 categories is available through the CES Pesticide Safety Education Program. 18 pesticide safety workshops were held in eight communities and assisted 163 Alaskans to become certified pesticide applicators. The 2nd annual pesticide re-certification workshop in Anchorage in April 2002 was attended by 12 certified pesticide applicators seeking recertification.

The Kenai Peninsula CES District Agent serves as state coordinator of the Alaska Pest Management Program (APMP), and the Kenai Peninsula District has successfully obtained federal funding to develop a comprehensive, web-based pesticide and pest management information network (<http://www.alaskapestmanagement.com>) linking all Alaskans to current state, regional and federal pest management resources.

Source of Federal Funds: USDA EPA. PAT funds Interagency Agreement

Scope of Impact: State Specific

4.3 Nutrient Management

Statement: A soil nutrient sampling project was undertaken to assist Delta District farmers with general fertilizer and herbicide recommendations, as well as to correlate the area Soil and Water Conservation District's soil testing results with those of the university soil-testing lab. The Palmer and Delta Junction Agricultural Agents conducted a fertilizer trial at Kenny Lake investigating sulfurs as a limiting nutrient in smooth brome grass hay crops. The Kenny Lake area is set apart from the other farming regions of Alaska and little research has been conducted there. Sulfur is known to be a limiting nutrient in grain and grass production throughout the other regions, but Kenny Lake producers historically had not been applying any sulfur.

Extension Agents provide fertilizer workshops for the area producers along with training sessions for the use of a soil sampling kit purchased by their local Soil and Water Conservation District. Through this exercise it became obvious that they would not need to be applying lime as had historically been done, thereby reducing production costs.

Several introduced, invasive broadleaf weeds have recently become problematic in grain and forage fields of the Delta Junction area. Generally 2, 4-D has been ineffective so herbicide trials are being conducted by the Delta Junction District Agricultural Agent to determine the most effective and least costly options for producers. As part of this trial a sulfonylurea herbicide is being used alone and in several different tank mixtures. Little research has been done investigating the persistence of sulfonylurea in the relatively cool dry soils of Interior Alaska so part of this study will investigate necessary intervals of cropping rotations.

The herbicide trial in the Delta Junction area is investigating control of foxtail barley (*Hordeum jubatum*) in smooth brome grass. This insidious weed can significantly impact the quality of pastures and forage crops because of its especially sharp barbed awns. Currently, good cultural practices such as applying ample fertilizer and mowing prior to the foxtail barely heading out are the extent of a producers options to limit its impact. Finding a selective herbicide to remove one perennial grass from another has proven to be the challenge, but gains are being made.

Impacts: There has already been some reduction of production costs noted for hay growers, but more time is needed to assess other impacts. Similar forage crop nutrient management trials on the

Kenai Peninsula significantly reduced per acre application of Nitrogen rates when Sulphur fertilizer was applied.

Source of Federal Funds: Smith Lever 3b&c

Scope of Impact: Integrated Extension and Research

4.4 Natural Resources Management

Statement: Although not funded through Smith Lever funds, CES through funds from the State of Alaska, is a partner with the Delta Junction Mine Training Center (DMTC) in Delta Junction. The DMTC serves as Alaska's primary source of training for bedrock and open pit miner safety certification training and is the principle means of Mining Extension education in Alaska. Short-courses on the basics of mining, mineral identification and, use of global positioning systems for locating mineral claims and for outdoor safety are offered in many Alaska rural communities.

Impact: The Collaboration between DMTC and CES, while not an expense to CSREES funds, provides an important service to Alaskans in explaining environmentally safe ways to engage in mineral and energy exploration and extraction. The DMTC program also fits well with extension and research work in disturbed site re-vegetation.

Source of Federal Funds: n/a

Scope of Impact: State Specific

4.5 Sustainable Agriculture

Statement: Sustainable Agriculture thrives in Alaska. The typical farm is a small family farm that has found ways to diversify to survive. The Sustainable Agricultural educational activities include:

- Tours of farms where producers are implementing innovative farming practices.
- Educational programs that build an understanding and reduce reliance on pesticides.
- Network and educate through newsletters. Over 450 ag producers receive the *Sustainable Agriculture for Alaska* newsletter on a quarterly basis.
- Encourage farmers to get more involved in sustainable agricultural practices through grants.

Impact: Quantifiable methods of assessing specific results are being determined. See Web site: <http://www.uaf.edu/ces/SARE/index.html>

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

Scope of Impact: State Specific (some Multi-state)

4.6 Water Quality - Western Regional Project

Statement: Alaska CES is a partner Region 10 (along with Washington, Oregon and Idaho) in a four-year, \$1,000,400 Extension Water Quality Coordination grant. A team has been formed consisting of water quality coordinators from the four university extension services, an EPA liaison, and the four university water institute directors. Regional issues and tasks include:

- 1) Identifying regional clientele and extension training needs for confined animal waste management;
- 2) Surveying regional clientele attitudes concerning water quality issues and comparing with past surveys to determine changes and trends;
- 3) Surveying water quality training needs for regional extension professionals; and
- 4) Creating and distributing a series of regional Riparian Buffer bulletins targeted to specific groups such as recreationists, rural landowners and dry land agriculturists;
- 5) Creating a resource manual for extension agents with up-to-date information on domestic water use to assist clientele with household water issues and problems;
- 6) Coordinating regional extension activities to the national water quality themes including animal waste management, drinking water and human health, pollution assessment and prevention, watershed management, nutrient and pesticide management, environmental restoration, and water quality policy.

Impacts: Quantifiable methods of assessing specific results are being determined.

Source of Federal Funds: CSREES Special Grant

Scope of Impact: Multi-state

4.7 Alaska Village Drinking Water Quality

Statement: In 2000 the Extension Water Quality Agent and partnering agencies performed work on a grant to help rural villages test traditional water sources for contaminants, it was found that people in these villages frequently drink water that state regulations determine to be unfit for swimming, wading or boating. Educational materials, including specially designed posters were developed and mailed out to over 250 villages and communities in Alaska, and an educational video of the project was released and made available to the public. In 2002, attention continues to be focused on policymakers, working closely with the governor's office and the Alaska Department of Environmental Conservation, to highlight productive ways of spreading messages about simple and effective approaches that can help keep water safe for consumption.

Current work builds upon previous (1999-2000) UAF Cooperative Extension Service testing of untreated traditional water sources (e.g. ice/snowmelt, rivers, roof catchments, springs, in rural communities) at both the village source and inside home water storage containers. Results identified the presence of total coli form and fecal coli form (associated with human sewage) contamination, and highlighted risks associated with lack of treatment and use of an open dipper arrangement (small pitcher or container).

Impact: The recently completed public outreach and policy video project is proving highly popular and has already been used as an Environmental Protection Agency training tool for culturally appropriate educational materials. Copies of the video have been distributed to hundreds of Alaskan communities and more workshops and training are planned with the help of additional EPA and USDA-CSREES Sustainable Development funding.

During 2001/02 CSREES Sustainable Development funding enabled Extension and the Alaska Native Water Storage Steering Committee to develop new education materials, presenting information at the Alaska Tribal Environmental Management Conference, the Alaska Forum on the Environment, Alaska Water & Wastewater Management Association Water Operator Training and regional conferences. Working with Health Practitioners, State Village Safe Water Engineers (Alaska Department of Environmental Conservation) , commercial engineers/tank builders, and workshop participants, risk assessments led to a new water barrel lid design and field test program (taking place in six pilot villages) . We are confident that this simple and robust solution will significantly reduce dipper contamination and the potential spread of human pathogens including Hepatitis, Gastrointestinal disease and Impetigo prevalent in Rural Alaska.

Source of Federal Funds: EPA and Smith-Lever 3d Funds. Special Grant

Scope of impact: State Specific

4.8 Forestry

Statement: Alaska's forests include the cool temperate coastal forests of southeast Alaska to the Interior boreal forest. Forest productivity and species composition varies widely throughout Alaska. Most of Alaska's extensive forests are in public lands or are owned by Native Alaska Corporations. Two of the largest National Forests in the United States are in Alaska. Extension's forestry program addresses several issues: management of Alaska's private and state forest lands for timber and non timber forest products and, assist timber dependent workers and communities develop ways to increase profit from forest resources through value added manufacturing. As part of this project workshops and conferences are held in various parts of Alaska and executive summaries of these extension educational activities are written and distributed. Extension bulletins, publications and short courses are offered in various communities.

Impact: Master Tree Gate and Woodland Stewardship Class: an eight week class was presented in Fairbanks at the University Park facilities and was open to the public for participation as a registered class with the University of Alaska Fairbanks. The class included fifteen forestry topics and a field trip to local woodlands.

In addition to final exams, a student group developed a management plan, which provided for meeting specific objectives with the management of their woodlands. The outline for these plans was based upon documentation provided in the CES document Managing Your Tree and Shrubs in Alaska. Responses from the course participants were very positive and although there was only room for 31 students in the course, initially more than 30 people applied to take the class. There is a demonstrated need and demand for additional classes.

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, 118 planned workshops (over 720 hours of teaching) were taught by the 4-H, Home Economics and Land Resources faculty, reaching more than 4,500 Alaskans in 17 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 75 public service presentations reaching 5,750 youth and adults on topics ranging from 4-H shooting sports, leadership training, to fly fishing and animal care. Faculty provided over 2,300 hours of consultation time to individuals, agencies and organizations during this reporting period, reaching more than more than 6,500 clientele 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 more than 18,600 clients received newsletters. Thirty-six newspaper articles were published, and faculty wrote 8 fact sheets and publications. Twenty minutes of information were delivered via 42 television spots, and 75 radio spots delivered 60 minutes of Extension information.

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. Thirteen classes and workshops on these topics reached more than 500 clientele in nine communities throughout Alaska. The Housing and Energy Specialist received funding for a third VISTA volunteer to work with him on rural housing issues. The addition of this volunteer to the Housing and Energy program has allowed the expansion of the program, especially through increased collaboration with Rural CAP and other Alaska native agencies and organizations.

Expenditures and FTEs

Federal:	\$325,488
State Match:	\$325,488
FTEs:	8

Key Themes:

5.1 Air Quality

Statement: The Alaska Home Economics program is recognized as a regional winner by the National Extension Association of Family and Consumer Science for efforts in teaching Indoor Air Quality throughout the state. Workshops are taught by the energy specialist and facilitated by the District Extension home economists and are offered in 8 different locations, via distance delivery for the past three years. <http://www.uaf.edu/coopext/faculty/seifert>

Indoor air quality, especially problems caused by excess moisture in homes, can result on mold growth. Today's predominantly wood buildings often result in under ventilated environments, which lead to mold problems. In order to address public information and the need for advice in coping with mold and moisture problems, a series of relevant publications has been added to the Extension's repertoire in Indoor Air Quality; "Mold in Homes", by the Minnesota Department of Health, "Ventilation for Older Homes", from the Nova Scotia (Canada) Department of Natural Resources. These publications are quite applicable to Alaskan situations and have been very valuable in helping clients deal with mold clean-up and prevention.

Impact: In FY03, workshops reached 500+ clients in communities throughout Alaska.

Source of Federal Funds: Smith Lever 3b&c

Scope of Impact: State Specific

5.2 Children Youth and Families at Risk

Statement: To help youth understand what is happening when a parent is deployed to other locations around the world, the Eielson Air Force Base 4-H agent in collaboration with Eielson Family Advocacy and Family Member Services developed "Operation Bug Out", a mock deployment for 3rd through 8th graders. Resembling as close as possible to a real deployment, youth gain a better understanding of what their parents face when they are deployed. In addition to Operation Bug Out, various camps are available which expose youth to high adventure activities, including ice sculpture, cross-country skiing, snowboarding, hiking, canoeing, dog mushing, and tent camping. Annually, up to 9 mini-camps help reach up to 300+ youth participants.

Impact: The 4-H Agent at Eielson Air Force Base received a third-year \$140,000 grant to take this successful 4-H program at Eielson to Elmendorf Air Force Base. As a direct result of this program's successful development and implementation in Alaska, a mock deployment curriculum is being shared with other Air Force bases outside of Alaska. Alaska 4-H extension was key to this creation of a model that establishes liaisons and partnerships with Air Force family advocacy outreach groups.

Source of Federal Funds: Smith-Lever 3d CYFAR

Scope of Impact: State specific and Multi-state

5.3 Training for Volunteer and Non-Profit Boards

Statement: Volunteer members of non-profit organizations face many challenges that involve finances, personnel management and contract administration. CES provides volunteer members of non-profit and non governmental organizations with training in board procedures, governance and related matters.

Impact: Three strategic planning and training sessions were held with non-profits boards and service staff, and two time management classes for students were presented during the year. The sessions were well attended. Groups developed a strategic plan to help them forge a future. With board training each board was able to better understand their role as board members and gained insight on how to trouble shoot some of their problems. Time management classes were taught to students entering or returning to the job market.

Source of Federal Funds: Smith-Lever

Scope of Impact: State specific

5.4 Estate Planning

Statement: The Extension Home Economist in Fairbanks provided 38 people with training in estate planning. In conjunction with the local Food Bank and an attorney, provided the essential components of how and why heirs must be provided for, with topics including wills, durable power of attorney, living wills, guardianships and conservators, and inheritance taxes. Because of the popularity of the class, plans are to offer the class more frequently in the coming year.

Impact: The home economist and attorney assisted attendees in completing living wills and durable power of attorney forms which were notarized at the training by a Food Bank board member. These two essential pieces of estate planning saved participants over \$4,000 in legal fees and set them well on their way to completing their individual estate plans.

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

Scope of Impact: State specific

5.5 Family Resource Management

Statement: The Women's Financial Information Program was taught by home economists at various locations throughout the state including Anchorage, Palmer, Soldotna, Kenai, Fairbanks, Eielson Air Force Base and Fort Wainwright. Local resource people as well as extension home economists presented sections of the program, including estate planning, money management, investing for retirement, social security and Medicare, resources and financial stability, banking and credit, using financial calculators, time management and family law issues.

Impact: Over 600 people attended training workshops. Quantifiable methods of assessing specific economic impacts to be determined.

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

Scope of Impact: State Specific

5.6 Leadership Training and Development

Statement: The 4-H fisheries program, coordinated by the extension 4-H fisheries specialist was originally designed to increase math and science literacy through fisheries biology in ten rural schools. The program now serves students and teachers in more than 75 rural communities, and the hands-on learning from rearing salmon eggs into fry with in-classroom incubators to stream habitat surveys, has yielded far more than higher math and science scores. Students and teachers alike have experienced a deeper appreciation and understanding of what it means to be good stewards of the fisheries resource.

Impact: 75 rural communities in 31 school districts (more than 1,650 students) were enriched with the fisheries program in rural schools this past fiscal year. The program has gained wide recognition and support throughout the state. Higher math and science scores among rural students are only one invaluable dividend of this successful program. Greater impact was empowering youth with the tools of knowledge and technical literacy and building their capacity of self-determination.

Source of Federal Funds: Smith-Lever 3d CYFAR

Scope of Impact: State Specific

5.7 Parenting

Statement: The Anchorage home economist helped coordinate volunteer efforts by 16 members of the Anchorage Council for Family and Community Education (FCE), an organization in partnership with the Cooperative Extension Service, to prepare and distribute Raise-A-Reader packets to parents of newborns in all four hospitals in the Anchorage district. The packets contained baby's first book and information on the importance of reading to children. Materials for packets were made possible by outside financial donations received from businesses in support of this program.

Impact: At least 4,000 parents of newborns in all four hospitals in the Anchorage District received Raise-A-Reader packets during FY 2003.

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

Scope of Impact: State Specific

5.8 Rural Development Grants

Statement: Alaska is a geographically broad area with many differences in physical landscape, natural resources, and culture. Alaska lacks county government structure and the location of Extension offices is tied to human population centers. This leaves about one third of Alaska's geographically scattered, culturally diverse rural population off the Alaska road system with limited access to Extension resources. The CSREES Rural Development grants in FY00, FY01, FY02 and FY03 have enabled Cooperative Extension to address some of the needs of these under-served rural Alaskans. The themes of the grants are sustainable natural resources based economic diversification, youth development, community development and sustainable land resource development.

Tourism: Tourism has become increasingly important to Alaska's rural communities. Rural Development grants enabled the CES Community Development Specialist to conduct a tourism assessment for the Copper River valley in south central Alaska. On Prince of Wales Island in southeast Alaska, a ferry rider survey for the Prince of Wales Inter-Island Ferry Authority was developed by the Extension Specialist. Assistance was provided to the communities of Thorne Bay, Coffman Cove, Klawock and Craig with tourism development.

Interpretative Naturalist Certification Program of Alaska: CES is part of a memorandum of Agreement to participate in the INCPA program. The program purpose is to provide training and certification of individuals that want to be employed as an interpretive naturalist in Alaska. The state has many employment opportunities in the tourism industry. Professional training opportunities were available to help individuals provide a higher quality service to the industry.

GIS (Geographic Information Systems) Program:

In 2002 in an effort to stimulate the Mariculture industry in coastal Alaska, the Alaska State Legislature created a Mariculture lease sale program. The new legislation directed the Alaska Department of Fish and Game to solicit nominations from local government, industry and the public for 90 aquatic farm sites located throughout the state. The goal of the lease sale program was to simplify the aquatic farm application process by providing the public with pre-approved aquatic farm sites.

Impacts: A Healthy Community's Manual was completed which assisted three target rural communities to develop strategies to become sustainable communities. The Geographic Information Systems (GIS) Agent assisted with the healthy communities project in one target community. Subsequently the GIS Agent developed and taught a basic GIS workshop that was attended by 12 Native land managers in Dillingham, AK.

CES provided training on interpretative naturalist field methods including training in the role of the scientific method in field trials. To date 25 individuals have participated in the field techniques sessions.

Working in collaboration with the City of Wrangell, Alaska Department of Fish and Game (ADF&G), University of Alaska's Marine Advisory Program (MAP), and Sea Culture of Alaska approximately 60 Mariculture sites were nominated in Southeast Alaska.

5.9 Promoting Housing Programs

Statement: For more than 10 years, a focal effort of the Energy and Housing Program of Cooperative Extension Service has been delivery of courses to the home buying public, enabling them to become better quality housing consumers. The courses are customized to various regions of Alaska and are commonly referred to as the Cold Climate Homebuilding and Marine Climate Homebuilding courses. Over the past 10 years, Extension has perfected course delivery, such that it is about seven hours long and extremely customized to various locations around the state.

Over those same 10 years, more than 3,000 people have taken this course. Many of them end up financing their homes through the Energy Rated Homes Program and get an energy mortgage incentive. This saves money for the homeowner, enhances the quality of the homes and the housing stock used, and consequently improves the health of the inhabitants of their homes. This continues to be a major thrust and a major benefit of extension to the state of Alaska exemplifying the application of university-based research to unique Alaska housing challenges in ventilation; heating systems, insulation performance, moisture control and radon reduction.

Another major accomplishment of the Energy and Housing Program has been the revision and republication by demand of the one-of-a-kind service book entitled: "A Solar Design Manual for Alaska." The new manual provides a much-needed text for delivering solar energy courses to Alaskans through the new focus on renewable energy applications, not only to housing design, but also for off-grid utility options.

Impact: The impacts of these efforts are enormous in Alaska. Just the savings in interest and finance costs, let alone the benefits to the health and well-being of people living in these healthier more durable houses, can be as much as \$10,000 per home over the life of a mortgage. The savings of one percent or more on an interest rate can demonstrate this over the life of a mortgage. On a larger scale, this means the fiscal cost of saving \$10,000 on 3,000 home mortgage purchases is on the order of \$30 million. Of course, this is a low end estimate because the savings may be more, and the number of houses affected may be greater. Each year the number of individuals who take the course in anticipation of buying new homes and who finance through mortgage incentive programs increases this tally.

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

5.10 Workforce Preparation:

Statement: Basic budgeting and money management classes for pre-release prison inmates continue to be taught. Topics include: planning ahead, goal setting, tracking spending, causes of family financial conflict and getting organized. Pre-release inmates are helped to create a spending and savings plan based on the income they will realistically earn after being released. The courses are taught by the extension home economist with the support of the education coordinator at the Wildwood Correctional Facility in Kenai, using the extension series, "Getting Organized."

Impact: In FY02, 54 pre-release inmates were instructed in financial management. Feedback from those taught indicates this training is highly valued and will be utilized after release from prison.

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

Scope of Impact: State Specific

5.11 Youth Development / 4-H

Statement: The Alaska 4-H program served more than 11,900 youth in 2003, aged kindergarten through eighteen, half of this figure were located in Fairbanks and Anchorage districts. 1,088 volunteers working with 4-H youth in Alaska provided an average of 48 hours a year of volunteer time, which is an important part of making the projects, camps and community service activities possible. The military is an important youth audiences in Alaska. A few years ago the U.S. Army mandated that their military bases have 4-H as the after-school program of choice on their installations. In the past year training and orientation were held for staff at Ft. Wainwright in Fairbanks and Ft. Richardson in Anchorage. In Fairbanks alone 120-plus youth were enrolled in 4-H. 4-H is filling a need for military families and giving the youth the anchor they need while living the military lifestyle.

Another developing stakeholder group includes handicapped youth and 4-H enrollment has grown tremendously in the horse riding programs. The Fairbanks agent works with the Special Olympics Riding program and the Anchorage agent works with the Rainbow Connection Handicap Riding program.

The Air Force 4-H Community Club (Eielson AFB) was created with approximately 25 members and 12 new leaders. This club is made up of Home School families that are stationed at Eielson. They have decided to undertake projects in Aerospace, Cooking, Sewing, Woodworking, Cloverbuds, Citizenship and Entomology / Science. The Family Services facility on the base allows the use of their kitchen so the club members can work together on their projects. Also in an outlying area of the community another Community Club has enrolled 25 youth and 12 project leaders in livestock projects. Most of these youth are also home schooled.

Impact: During FY 2003 enrollment continues to be healthy. A total of 120+ youth have enrolled in 4-H at Ft. Wainwright. The Army Youth Services at Ft. Wainwright have been orientated to 4-H and their School Age facility (like a mini 4-H world) now have 4-H clubs. Staff training at Ft. Wainwright Army base for 4-H leaders was accomplished. Early Child Care, School Age Services, and the Youth (Teen) Center are all beginning to enroll in 4-H. Their Day Care program is already in full swing with three new Cloverbud clubs have started, and several projects are happening at the School Age Services facility. A group of 13 youth and one leader began a Photo Club at the Teen Center. Teens are still in the planning stages of starting Computer, Gardening, Citizenship, Service Learning and Cooking clubs. This could potentially enroll 15 teens and five leaders.

In this district there are 165 youth enrolled in 4-H horse projects. This is an increase of almost 50 additional from last year. The total enrollment to date has doubled in this district and most all of the enrollments are horse or livestock youth. The Agent has spent a lot of time with the Livestock Committee and parents. She created a new Livestock Record Book, a Parent Resource Guideline book, and a new Horse Record Book. It offers the 4-H'er a better way to track the care of their animals. The Livestock Committee and 4-H Agents developed numerous "Kid Classes" for livestock/animal youth.

4-H Volunteer Leader Trainings occur at least once a month. This is done for all new leaders, but veteran leaders are encouraged to attend as well. Currently in the Fairbanks district there are about 220 leaders and it is a challenge to make sure all are trained in the same information and materials. Livestock and horse leaders are now meeting regularly every month. The agent sends a monthly newsletter out to almost 700 households. This mailing includes advisory councils, mayor's offices, Board of Regents of the university, the university administration, school principals and other Native Alaskan agencies involved with youth.

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

Scope of Impact: State Specific

5.12 Youth Development - Junior Master Gardener Program

Statement: The Junior Master Gardener program in Alaska is part of a new national program and innovative youth gardening project modeled after the highly popular Master Gardener program. JMG offers horticulture and environmental science education through fun and creative activities and introduces young gardeners to the art and science of gardening. The program helps youth develop leadership and life skills to become good citizens within their communities, schools and families.

Impact: 40 students were trained as junior master gardeners during FY 2003. The new shelter at the Community Garden is providing shelter for equipment, a play area for youth on rainy days while parents garden, and will eventually be enclosed on one end for year round storage.

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

Scope of Impact: State Specific

Statement: Mat-Su/Copper River District camps were held in July 2003. The Horse Camps held in June impacted approximately 75+ youth, 10 teen counselors and numerous adult leaders and volunteers. Camp participants received instruction in basic horse care, riding techniques as well as general camp activities. Teen counselors and adults supervised, assisted and instructed youth. In July 2003, 4-H Camp was continued. Forty campers attended, supervised and instructed by a staff of eight teen counselors and several adults. Youth participated in a wide variety of educational and recreational activities in addition to special 4-H Centennial events.

Impact Qualitative methods of impact assessment are being determined.

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

Scope of Impact: State Specific

II. Stakeholder Input Process

Extension State Advisory Council:

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

The past year has seen several personnel changes in the information management specialist position. Because of this, CES has experienced setbacks in implementing more consistent and pervasive impact assessment tools. However, a plan has been devised to significantly improve CES's outputs reporting and outcomes assessment methodology: the implementation of an online information management system in July of 2004. One of the key goals in implementing the system is to provide an automated, consistent method for recording agents' outputs and measuring the subsequent impacts. The system is modeled after Washington State University's highly regarded system and is designed to specifically address Extension output parameters and outcomes-based information needs. In tandem with the system, CES will implement a Web-based surveys management tool. As Web connectivity increases across the country, online survey systems are gaining national recognition as an additional means of gathering client feedback and "staying connected" with the client. As connectivity increases in Alaska, particularly in rural areas that are steadily coming online with new telephony and/or satellite broadband services, CES anticipates an increase in client feedback participation well beyond point of service workshop surveys, mailers and the like.

III. Program Review Process (Merit Review)

In response to CSREES's request to Alaska CES has enlisted the help of two non-partisan merit review team members from other Western Region Extension programs: Utah State University Extension Director Jack Payne and University of Wyoming Extension Associate Director Glen Whipple. They are providing valuable input and guidance as we formulate the next plan of work cycle. Also, CES is submitting a CSREES review request for FY2005. We anticipate this review, in tandem with the input of Drs. Pain and Whipple, to significantly impact our program planning and decision making processes as we move toward the next Plan of Work cycle.

IV. Evaluation of the Success of Multi and Joint Activities

Stakeholders have continued to question the importance of multi-state research to Alaska's needs. Specifically they point out the relative development of Alaska agriculture compared to most western states. Unlike other small population states in the west such as Wyoming, we have no nearby markets in other more populated states. This coupled with extreme differences in environmental and economic climate found in other states has been a factor in Alaska's limited participation in multi-state research. Many of the multi-state technical committees do not address the range of research our faculty is pursuing. Exceptions include W-112 and W-147. However, the relative isolation of our faculty would argue for more collaboration with scientists, agents and specialists from other regions. We will encourage our scientists, particularly young faculty to pursue these opportunities.

Alaska Extension agents and specialists participated in two multi-state technical committee annual meetings hosted by AFES/SALRM in FY 2003. They included:

W-112 "Reproductive Performance in Domestic Ruminants"

W-147 "Managing Plant-Microbe Interaction in Soils to Promote Sustainable Agriculture"

A special "integrated activities" seminar between AFES and CES personnel took place in March 2003. AFES researchers and extension agents discussed ways in which they could take AFES research "to the people" in new and better ways. The seminar was regarded as a success, and an integrated research activities form, submitted to the joint AFES/CES business office each year for reportable integrated activities, resulted (see Section V below for additional details).

Diversified livestock interest in our state has brought pressure on our animal scientist to broaden his program to include species that may not be of interest at lower latitudes (i.e. reindeer and musk ox). However, research contributions will continue to focus on W-1 P objective 2). Improve reproductive efficiency through development of technologies and systems to control estrous activities, conception, and fetal/neonatal survival.

Activities within W- 112 address specific reproductive problems that exist in Alaska.

- Alaska is participating with ID, WY, and TX to study detection of interferon induced genes during the post-breeding period in reindeer, musk ox, and elk.
- With TX to develop infrared system to investigate antler growth and quality in reindeer and elk.
- With NM to examine thyroid hormones in musk ox at the onset of the breeding system
- With OH to develop estrous synchronization protocols for musk ox.
- With TX to determine the relationship between JGF-1, calving, and antler casting and regrowth in female reindeer and caribou
- With WY to develop estradiol and progesterone assays in musk ox and reindeer plasma

As producers begin to see direct results from multi-state activities and have access to research findings from other states, we feel they will come around to acknowledge the importance of multi-state participation by our scientists. Among the underserved populations that may benefit from multi-state research is the Alaska Native reindeer herders in remote villages. One study being performed under the aegis of W-112 is related to the reindeer cow estrous activity and the impact of presence of male reindeer in that cycle. Research of this type is unique to this region and would not have been initiated without our participation in W-112. This program is also an Integrated Activity with Cooperative Extension and the UAF Agriculture & Forestry Experiment Station. The member scientist has a split appointment with Cooperative Extension and AFES. Through Integrated Multi-state involvement he brings back information that is disseminated in one-on-one contacts as well as sharing the information with CES agents throughout Alaska. The Alternative Livestock Producers Conference held in was attended by over 50 attendees targeted the educational needs of producers. This feedback will be invaluable to continued participation in W-112.

Other multi-state activities included involvement with the Western Extension Forestry Coordinating Committee with Oregon, Washington, Colorado, Utah and other western states. This project coordinated western Extension programs, efforts of the USDA Forest Service western regions and individual State Forestry Departments on wildfire education and mitigation efforts. Project impacts include multi-state, multi-agency public education and information efforts, particularly on wildfire management at the rural-urban interface in the western U.S. and Alaska. The success of this project is reflected in the support of the project by the Western Extension Directors, the Regional Foresters for the five USDA Forest Service regions involved in the project, the CSREES Program Leader for Extension Forestry and, the State foresters in the individual states involved. Efforts continue to secure a multi-regional USDA Forest Service coordinator who would directly work with the Western Extension Forestry Coordinating Committee members and the State foresters in the participating State Extension programs.

Alaska CES's forestry specialist is successfully collaborating with the University of Kentucky on forestry education programs, as well as with North Carolina State University on programming for woodlot management. Fairbanks, Delta Junction, and Kenai Peninsula land resources agents have linked multi-state efforts to invasive pest management, particularly of noxious weeds and invasive plants. Collaboration on the international level by the Kenai Peninsula land resources agent and the livestock specialist has led to the promising adaptation of circumpolar sustainable agriculture. In particular, the successful adaptation of Norwegian "Apelsvoll" orchard grass to the Alaska hay market continues to be evaluated and developed in cooperation with Dr Arild Larsen of the Norwegian Crop Research Institute, Vgones Research Station, Norway. The acceptance of this new cultivar by a variety of livestock fed "Apelsvoll." has been extremely encouraging. It should be noted again that many of the interactions that would be multi-state collaborations in other state extension programs become multi-national, circumpolar collaborations in Alaska.

Contrary to stakeholder concerns, Alaska's relative isolation argues in favor of participation in multi-state research and extension activities. Our faculty can benefit greatly from collaborative efforts with scientists and agents and specialists from other states. Literature review is important to guard against

“reinventing the wheel”, however, the value of meeting face-to-face and participating in discussion of common research goals cannot be overemphasized.

V. Integrated Research and Extension Activities

Alaska submitted Form CSREES-Waiver requesting a waiver for FY2000 Integrated Activities from Smith-Lever Act Funds. CSREES granted the waiver and approved our projected Integrated Activities for the 2001-2004. The form CSREES-REPT reporting Integrated Activities for 2003 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. In March of 2003, CES and AFES researchers and agents took part in a one-day seminar addressing integrated activities. Topics discussed included the definition of integrated research, how AFES research ties into the five national goals and ways in which CES can deliver AFES research results to the public. The biggest accomplishment of the seminar was the implementation of an integrated activities commitment form sent to CES and AFES faculty each year. The form asks agents and researchers to provide an estimate of the time they plan to commit to integrated activities as they relate to Hatch funding. A major achievement of this new method is the ability to determine whether CES as a whole has met minimum integrated activities requirements.

Below is a brief synopsis of FY2003 activities:

The SALRM/AFES Palmer Research Center in Southcentral Alaska became the Palmer Research and Extension Center in 2001. In addition to housing two split AFES/CES faculty positions in horticulture and agronomy, the Center also provided office facilities for the Fisheries and Natural Resources specialist. This is but one example of increased collaboration among research, teaching and extension faculty that is being taken to better develop research and extension programs in Alaska. Our goal is to increase Integrated Activities to the ARLERA target percentage

Agronomic Crops and Soils

Integrated activities centered on best management practices for production of livestock feed crops, primarily forages and small grains as well as investigating new crop opportunities. CES specialists, agents and AFES researchers continued collaborative work at Delta Junction, Point McKenzie, and the Kenai Peninsula. The extension agronomy specialist (75% CES and 25% AFES) terminated in 2003 and CES is no longer participating in the Hatch project “Forage and Turfgrass Management at Northern Latitudes”. That split position was replaced with a horticulture specialist (75% CES and 25% AFES) and the individual in that position will participate in the Hatch project “Production Practices, Cultivars, and Disease of Potato and other Horticultural Crops”. In various applied vegetable research and on-farm demonstrations. AFES published “Turfgrass Cultivars for Golf Courses in Southcentral Alaska” for distribution at CES workshops and to the general public. A cooperative on-site golf green cultivar demonstration trial was established at the Settler Bay Golf Course in 2003 and will be evaluated over the next two years.

Potato and Vegetable Crops

CES agents and AFES researchers carried out applied research, demonstration, and outreach activities primarily related to variety selection, disease control and management, and weed control. Much of this work is conducted in, but not limited to, southcentral Alaska where approximately 78% of the statewide value of production of potatoes and vegetables reside. The AFES 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. These positions carry split appointments and are performing applied research and on-farm demonstration for a wide range of vegetable crops both traditional and new crop opportunities including specialty greens. This information is presented annually to CES/AFES jointly sponsored workshops. Other AFES/CES collaborative work included potato late blight monitoring and treatment which assisted in controlling an outbreak in 1998 to blight-free fields in 2001, 2002, and 2003. Expensive fungicide treatments in 1998 and 1999 progressed to no treatments required in 2001, 2002, or 2003 due in large part to the monitoring program. Outreach included a joint AFES/CES publication on late blight control and presentation of research results at the joint CES/AFES Potato Growers Conference and Vegetable Growers Conference.

Greenhouse Management/Nursery

Collaborative work continued in the greenhouse/nursery production of cut flowers, bedding plants, ornamentals, and other landscaping plants. Research and outreach continued to address 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. 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 (i.e. "Greenhouse Flower Production for Local Markets"), 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. 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 research animal scientist/livestock split 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. Research and demonstration collaboration included silent ovulation detection in dairy cows, reindeer bull management effects on reproductive physiology of reindeer cows, and estrus synchronization in dairy and beef. Most of this research was on-farm, directly involving the local extension agents and the producers. Outreach activities included one-on-one contacts with producers, workshop presentations at the Delta Farm Forum, the Agricultural Forum and the development and hosting of the Alternative Livestock Conference. This project has become the cornerstone of our Integrated Activities with Cooperative Extension. It encompasses all the desirable elements of a multistate, integrated research and extension activities.

Soil Quality /Nutrient Mangement

In cooperation with AFES and the USDA-NRCS: Wind and water erosion can significantly impact soil conditions in the Delta Junction agricultural region and has resulted in over 25,000 acres of farmland being qualified for the federal Conservation Reserve Program. Our results would support minimum or no-till land preparation for small grain production to minimize soil loss and improve moisture holding capacity in this drought prone area. Similarly, no-till establishment of perennial forages is clearly a superior conservation practice, but at a significant cost in production in interior Alaska and less so in southcentral.

Forest Production/Protection

CES 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. 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.

VI. Plan of Work Update

In light of the significant changes on the horizon for the CSREES plan of work process, no additions or changes to the plan of work have been made during the 2003 reporting cycle. Alaska CES has formed a plan of work committee to discuss the 2007-2011 plan of work cycle.

Attachments to the Annual Report of Accomplishments and Results

1. Form CSREES-RFPT (2001). Multi-state Extension Activities (Electronic copy with hard copy to follow.)
2. Form CSREES-REPT (2001). Integrated Activities (Smith-Lever Act Funds) (Electronic copy with hard cops to follow.)