2004

FY 2004 October 2003 through September 2004

Annual Report of Accomplishments and Results

University of Alaska Fairbanks - Cooperative Extension Service

University of Alaska Fairbanks - Cooperative Extension Service

SERVICE GOALS - PROGRAM INDEX

Annual Report of Accomplishments and Results
UAF Cooperative Extension Service
FY 2004 October 2003 through September 2004

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 76 planned workshops related to Goal 1 were taught by eleven Land Resources faculty, reaching 2,170 Alaskans in 16 communities. Topics ranged from developing Alaska markets for locally grown produce, reducing disease in potato crops, improving livestock nutrition and reproduction, supporting Alaska's alternative livestock producers to Master Gardening, lawn care, insects and pesticide management, landscaping, garden production and managing woodlots.

Land Resources program faculty provided 81 hours of public service, reaching 11,500 clients 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 over 3,500 clients received ag/hort newsletters, 29 newspaper articles were published, and 18 fact sheets and publications were written by faculty. Over 2 hours of television programming featuring Extension ag/hort topics were delivered, and over 160 radio minutes were broadcast throughout the state.

Expenditures and FTEs

Federal:	$349, 638
State Match:	$349,638
FTEs:	8

Key Themes:

1.1 Agricultural Profitability - Alaska Greenhouse and Nursery Conference

Statement: The 115 participants at the Annual Alaska Greenhouse and Nursery Conference are evidence that horticulture is a vital and growing industry in the state. Sponsored by the UAF Cooperative Extension Service, the 23rd annual conference brought Alaskans from all over the state to Anchorage in 2004, with 67 percent noting that they either owned or were employed by greenhouses, garden centers, nurseries, interior plantscape companies, landscape contractors, golf courses or grounds maintenance firms.

Impact: Forty-five percent of the surveyed conference participants said they have attended past conferences and made changes in how they do business as a result, including how fertilizer is applied, watering, Integrated Pest Management practices, weeding and pruning. Conference participants also said their awareness of invasive species increased, and their interest in knowing about and growing native plants was boosted as a result of past conferences.

Source of Federal Funds: Smith Lever 3b&c

Scope of Impact: Integrated Extension and Research

1.2 Agricultural Profitability - Potato and Vegetable Growers Conferences

Statement: These two annual events, which address concerns of commercial produce growers in south central Alaska, had a combined participation count of 75. Alaska potato and vegetable growers have identified plant pests as the most important deterrents to increasing profits in recent years. Identification of disease resistant varieties, pest monitoring, weed control, 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 were presented to the joint AFES/CES sponsored Potato and Vegetable Growers conferences. 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. Fresh market potatoes are Alaska's most valuable crop ($3.3 million in 2003). Specialty potatoes are sought after by consumers at local Farmers Markets and present a lucrative opportunity for small operations.

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

Scope of Impact: Integrated Research and Extension

1.3 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. 216 hours of consultation and on-farm site visits were logged 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 and workshops in this period. Topics included Animal Nutrition, Reproductive Management of Livestock, and 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: In animal nutrition classes, scores rose from 42.4 percent in the pretest to 81.6 percent in the posttest. In animal reproduction, scores rose from 28.8 percent in the pretest to 77.8 percent in the posttest. In animal lactation, scores rose from 13.3 percent in the pretest to 65.0 percent in the posttest.

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

Scope of Impact: Integrated Research and Extension

1.4 Horticulture: A Growing Alaskan Industry

Statement: Alaska's horticulture is quite diverse, comprised of orchards, farms (including one owned by an Alaska Native corporation), nurseries, a private botanical garden, and arborist and plant care services. Based on presentations given at the 2004 Alaska Greenhouse and Nursery Conference, interest has been piqued in new enterprises such as Alaska-grown sour cherries and peonies. Alaska-grown peonies could fill a niche in the world market because they bloom here in July and August, whereas lower-latitude peonies bloom in May and June. It is estimated that cut-flower peonies have the potential to gross $70,000/acre.

Impact: According to figures from the state's Agricultural Statistics Service, horticulture makes up the largest segment of Alaskan agriculture, with 68 percent of the total crop cash receipts coming from the greenhouse and nursery industry.

1.5 Noxious and Invasive Plants (NIP) Management

Statement: Alaska Cooperative Extension has been collaborating with the U.S. Forest Service and the University of Alaska Natural Heritage Program to gather research-based information and rank the

invasiveness of non-native plants in Alaska. Also participating are the USDA, the US Geological Survey and the National Park Service. To date almost 50 species have been ranked including 16 horticultural species including four woody species and one grass.

Impact: In March 2004, Alaska Extension developed a "Do Not Plant" list of garden species that are escaping into natural areas or have the ability to do so. An additional list of 24 "Invasive Garden Perennials to Watch" was also compiled.

Source of Federal Funds: US Fish and Wildlife, USGS, Smith-Lever 3b&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.

Management of invasive plants in Alaska is challenging because of its vast acreage, limited communication, and because transportation corridors and adjacent lands are managed by multiple agencies. Inventories, particularly of major highways, are necessary to assess impacts, develop management control strategies and raise public awareness.

Impacts: In 2004, CES teamed up with BLM representatives to conduct the "Dalton Highway inventory." The project's goals were to identify exotic plant species along 219 miles of the Dalton Highway from the Yukon River bridge to Galbraith Lake; describe and map their distributions; identify the extent of the spread of exotics off the highway to adjacent areas; identify potential sources of infestations; submit data to the Alaska Exotic Plant Information Clearinghouse (AKEPIC) and develop recommendations for monitoring and control. Areas were surveyed and GPS location, infested area, and canopy cover were recorded; data will serve as a baseline for future monitoring.

Source of Federal Funds: BLM, Smith-Lever 3b&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 over 900 Alaskans in 14 communities, taught over 60 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 87% 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 4,650 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 5 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:	$158,415
State Match:	$158,415
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 2,037 families enrolled in the TEFAP program.

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

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

Scope of impact: State specific

Statement: In a partnership with the Fairbanks Health Coalition and the Fairbanks Food Bank, CES is helping parents of infants learn how to make their own baby food.

Impact: Sixty-two parents of infants were provided with a $16 baby food grinder donated by the Fairbanks Health Coalition. The grinder can replace four jars of food at $1.25 per jar, per day. Over a six-month period, parents can save $90; for all 62 participants, $5,580 can be saved.

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. 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.

Impact: 100% of the students in a recent class expressed more confidence in food preservation skills when surveyed 6 months later and 80 percent 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.

Impact: In the Tanana District, twenty people completed the eight lessons necessary to qualify for Master Food Preserver Certification. Classes ranged from rural locations such as Koyukuk, Ruby, and Tok, to the Master Food Preserver classes at the Fairbanks Food bank. Of particular interest this year was teaching 18 students from the Koyukuk public schools to can salmon and make jellies from the local berries. These students ranged in age from 9 to 16. Many of these students had canned fish at home with their parents. All were using safe processing techniques. At completion, the students invited the adults to a potlatch where they served the newly canned salmon.

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

Scope of Impact: State Specific

Impact 2: A Master Food Preserver survey was completed in the Anchorage District this year. The purpose of the survey was to help document the many impacts the program has had over the past 20 years. There were 110 names in the original database. After adjustments for non-contactable participants, the survey was mailed to 80 of the original 110 participants. Twenty-four completed surveys were returned, and 95 percent of respondents indicated that Cooperative Extension had been a positive influence in their communities.

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

Scope of Impact: State Specific

Impact 3: In 2004, food safety activities included developing processing times for smoked salmon in metal 301 and 307 cans; two classes demonstrating assembly, maintenance and use of the can sealers (18 participants); on-site support for the Master Food Preservers class (8 participants); and installation and instruction of can sealer equipment at our Mat-Su District Office.

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 58 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 75 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 1,000 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 clients with an investment of more than 500 hours. The nutrition specialist/EFNEP coordinator documented 2564 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 over 300 low-income families. They also taught the food guide pyramid, food safety, healthy snacks and food choices to over 1,800 youth. These activities represented over 5,700 contact hours during this reporting period.

In this reporting period 11 newspaper articles were published on diet and nutrition topics, and 13 fact sheets and publications were written by faculty. Thirty minutes of television programming were used statewide to deliver nutrition information

Expenditures and FTEs

Federal:	$79,208
State Match:	$79,208
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: 105 adult participants showed improvement in one or more food resource management practices; 114 adult participants showed improvement in one or more nutrition practices, and 75 adult participants showed improvement in one or more food safety practices. 946 school-age children received training 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

Statement: The Strong Women Program was developed by Dr. Miriam Nelson at Tufts University as a progressive strength-training program for midlife-to-older women. Through scientific research, Dr. Nelson demonstrated that strength training would increase strength and muscle mass and improve balance. Strength training can reduce the risk of chronic diseases such as diabetes, heart disease, arthritis and osteoporosis. Strength training has also been shown to reduce depression and contribute to a sense of well-being.

Impact: In February 2004, CES introduced the program to Alaska. The Kenaitze Indian Tribe in Kenai was the first site in Alaska to offer the program; in addition to strength training exercises, there was an educational component covering subjects such as balance, metabolism and nutrition. Impacts recorded so far are the testimonies of participants: statements such as "I feel better," "I lost visible fat," and "The opportunity to socialize while training is beneficial" have been frequently heard.

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

Scope of Impact: State Specific

3.2 Human Nutrition

Statement: The USDA's recent restructuring of the food pyramid, as outlined in the MyPyramid Education Framework, provides specific recommendations for making food choices that improve the quality of an average American diet. These recommendations are interrelated and should be used together. Recommendations include increased intake of vitamins and mineral, dietary fiber, fruits, vegetables and whole grains, and other essential nutrients; lowered intake of saturated fats, trans fats, and cholesterol; calorie intake balanced with energy needs.

Impact: Curriculum was developed for a new "Trans Fats" workshop to address the first change in the food label in nine years. The program was offered three times in FY2004 and the expectation is that it will continue.

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

Scope of Impact: State Specific

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 nine years ago to address a work force shortage of registered dietitians in Alaska. For the past five 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: Two dietetic interns have successfully completed the internship program, assisting CES with teaching community nutrition classes, teaching distance education classes, and providing in-service training for paraprofessionals.

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

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, reached over 500 Alaskans in six communities, taught 10 planned workshops. Topics included tree cone identification for grade school students, toxicity in non-native plants, and driftwood in Alaska.

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 30 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 4,500 clients on topics including drinking water and water quality environmental issues.

In the area of invasive pest management, over 85 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 IP- related activities alone, and 33 media contacts delivered (combination of television, newspaper articles, newsletters and radio spots).

In this reporting period over 5,400 newsletters were distributed to clients on topics from forestry to water quality. Also in this period, faculty wrote 3 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. 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:	$119,204
State Match:	$119,204
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 2004.

Impact: In 2004, more than 10,500 individual contacts to the public were made. More than 100 educational programs and displays at events were conducted, accounting for half the individual contacts. Media contacts numbered 25 and reached additional thousands through subscribers, viewers and listeners. More than 1,100 pest specimens were identified, including 100s of beneficial or benign insects. By identifying bugs as non-pests, the use of pesticides decreased.

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

Scope of Impact: State Specific

Statement: The Gypsy Moth is a particular problem in the lower-48 states, defoliating a broad range of tree species. So far, they haven't been a problem in Alaska and yearly monitoring takes place to locate and eradicate any that do arrive. An Asian Gypsy Moth also exists that could have far worse implications. Although not found in the US yet, the possibility exists particularly for Alaska. As all species are susceptible to trapping, monitoring is possible.

Impact: IPM technician set out 240 Gypsy Moth pheromone traps across the state in 2004.

Statement: The IPM program is also involved in the important task of preventing the spread of invasive weeds in Alaska. IPM staff members have been inventorying invasive weeds around the state with an emphasis in Southcentral and Southeast Alaska.

Impact: Workshops were held in various Southeast locations in 2004. An inventory of local weeds was done in each community along with the workshop and information on how to deal with the problem. Over 580 new locations (data points) on invasive weeds were added to the Alaska Exotic Plants Information Clearinghouse, a statewide database on invasive weeds.

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

Scope of Impact: State Specific

4.2 Pesticide Management & Safety

Statement: The 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 he certified / recertified with the Alaska Department of Environmental Conservation as restricted or commercial use pesticide applicators. Workshops were conducted in Anchorage, Palmer, Delta Junction, Fairbanks, Juneau, and Sitka. Importantly, consumers need information on pesticide safety to protect the environment and human health from improper pesticide use.

Impact: Pesticide applicator training for the state's 13 categories is available through the CES Pesticide Safety Education Program. 10 pesticide safety workshops were held in six communities and assisted 85 Alaskans to become certified pesticide applicators.

The Kenai Peninsula CES District Agent continues to make available a comprehensive pesticide and pest management information Website (http://www.alaskapestmanagement.com) linking all Alaskans to current state, regional and federal pest management resources.

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

Scope of Impact: State Specific

4.3 Nutrient Management

Statement: Yield and quality of barley and brome grass as affected by zero/minimum tillage, fertilizer rate, and cutting regimes: long-term tillage research has been conducted for 21 years at Delta Junction. Soil samples (0-5 cm, 5-10 cm, 10-25 cm, and 25-45 cm) from no-till, minimum till, and conventional till with and without straw and two N treatments were analyzed for available and total nutrient (N, P, K) organic carbon, Eh, and pH. No-till resulted in increased soil C in the 0-5 cm depth only. Straw retention had no effect on organic C; however, N application with no-till resulted in increased yield. Unlike similar studies at lower latitudes, straw residue and N application had little effect on soil C or barley yield and tillage had a lesser effect over a longer period of time. This observation is likely the result of the short growing season and cold, dry climate and year round winds decreasing decomposition rate of residue on the soil surface and incorporated in the soil. New field experiments on brome grass hay yield and quality responsive to N rate (0, 50, and 150 kg/ha) and cutting frequency (one and two cuts) was initiated at the Fairbanks Experiment Farm. However, yield and quality data is not yet available.

Impact: The results of a 21-year tillage study provide guidelines for soil conservation practices for reduced soil loss from wind erosion, quantitatively measured C sequestration, and provides an estimation of mineralizable N and subsequent improvements in N use efficiency. The findings from this study confirm improved soil health and quality is correlated with less tillage disturbance in the surface; however, minimum tillage comes with a sacrifice in grain production in interior Alaska.

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

Scope of Impact: Integrated Extension and Research

4.4 Natural Resources Management

Statement: With a quarter-million people calling the Anchorage area home, one of the land management issues being addressed is pet waste. It is estimated that 22 tons of dog waste is deposited each day in both private and public places such as trails, roadsides and public lands. Creeks and lakes throughout the area are readily affected.

Impact: CES, in partnership with the Anchorage Waterways Council, Municipality of Anchorage, Alaska Department of Environmental Conservation and the US Bureau of Land Management, have created a three-step program to raise awareness and educate the public about the dog poop problem. During phase 1, a series of posters with a "Got Poop?" theme were produced featuring local personalities such as Olympic skiers and hockey stars. Phase 2 demonstrated the need for and results of the "Scoop the Poop" program by featuring a cleanup of a trail system on a BLM tract of land, and an educational "Science Center" was located on the site. Phase 3 was the installation of sponsored poop stations at trailheads and parks in the municipality. More than 30 stations have been constructed, and include signage, a poop bag dispenser, and a trash can to deposit the bags.

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: Mike Emers of Rosie Creek Farm was honored as a runner up for the 2004 Patrick Madden Award for Sustainable Agriculture. Emers has raised vegetables and cut flowers on Rosie Creek Farm near Fairbanks since 1997. Together with his wife Joan Hornig, they grow more than 70 varieties of cut flowers and a wide range of vegetables for shareholders in a community supported agriculture enterprise and for sale at the Tanana Valley Farmer's Market. Emers regularly offers his farm as a tour stop for University of Alaska events. As farmer's market president, Emers has helped organize the group of Alaska producers to make the most of their products and sales strategies. Moreover, Emers created a network of vegetable growers in the Fairbanks area who meet monthly to communicate about issues of interest and cooperatively order supplies. A proponent of using native plants on the landscape, Emers received Western SARE farmer/rancher grants in 2000 and 2002 to refine propagation techniques for native legume seed. His work built upon research conducted to revegetate oil fields on Alaska's North Slope; his protocols for germinating and growing out legume

species such as Astragalus alpinus proved to be of great interest to landscapers and state agencies charged with vegetating disturbed landscapes.

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

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 Forestry

Statement: The CES Forestry Specialist continues to present the "What is Forestry?" program to several elementary schools around the state. The program focuses on Alaska's conifer forest and teaches children terminology, cone identification, the components of spruce cones, and physiology of seeds and pollen.

Impacts: In pre- and posttests, children demonstrated an average improvement of 35 percent on test scores. Students also indicated they enjoyed the program, and teachers rated it as informative and interesting.

Source of Federal Funds: CSREES Special Grant

Scope of Impact: Multi-state

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, 121 planned workshops (over 730 hours of teaching) were taught by the 4-H, Home Economics and Land Resources faculty, reaching more than 4,500 Alaskans in 18 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 78 public service presentations reaching 5,800 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 6,500 clients on Goal 5 topics**.** Contacts were made by public presentations, phone calls, e-mails, office and site visits, fairs, meetings with agencies, and audio conferencing.

In this reporting period more than 18,500 clients received newsletters. Forty newspaper articles were published, and faculty wrote 11 fact sheets and publications. Fifty minutes of information were delivered via 58 television spots, and 76 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. Fifteen classes and workshops on these topics reached more than 500 clients in nine communities throughout Alaska.

Expenditures and FTEs

Federal:	$349,638
State Match:	$349,638
FTEs:	8

Key Themes:

5.1 Air Quality

Statement: Recent high profile incidents have weighed heavily in the general concern over carbon monoxide poisonings in Alaska. Particularly influential was the death of an Anchorage family in December 2003. The Alaska State Legislature passed a law requiring use of carbon monoxide detectors in houses. This legislation resulted in a series of workshops around the state by the CES housing specialist.

Impact: In 2004, air quality workshops reached 300+ clients in communities throughout Alaska. Carbon monoxide information, including recommendations for carbon monoxide detectors, was shared with the public.

Source of Federal Funds: Smith Lever 3b&c

Scope of Impact: State Specific

5.2 Children Youth and Families at Risk

Statement: AFTER-THE-BELL Program: 4-H and After the Bell have formed a partnership to help students learn about the arts. When we learned there was a grant available through 4-H for after school programming, the directors of After The Bell, the principal of Soldotna Elementary and local 4-H representative met and developed a plan. The principal agreed it would be a workable partnership and with the custodial needs of the school, would be welcome.

Impact: A three-part enrichment program including art, music and drama was developed. The program is open to After the Bell students as well as any students in the school if parents are willing to provide transportation. Students participating in the program can become 4-H members with the help of the grant. This covers the insurance and the membership fee which provides three publications per member. The new 4-H'ers receive the monthly newsletters and become aware of all 4-H activities and opportunities. A video tape, after the fashion of the "ZOOM" program on PBS television, was made to show to parents and interested fans at a closing program. 4-H'ers were recorded doing science experiments, cooking activities, poetry and jokes. Another group of new 4-H leaders taught ceramics. All of these activities were put on the video. Some students were behind the scenes and learned about all that goes in producing a program. The video was copied and given to each young person who had a part in it. Fifty-seven young people were given the opportunity to find out about 4-H and experience some great learning experiences with caring adults in the after school setting.

Source of Federal Funds: Smith-Lever 3d CYFAR

Scope of Impact: State specific

5.3 Youth Development / 4-H

Statement: The Borealis Bullseyes are 4-H club members in the Anchorage District. In 2004 they had success everywhere they entered. In December 2003, in conjunction with the "rifle people" in Fairbanks, the Borealis Bullseyes sponsored the 2004 USA Shooting Junior Olympic Shooting Championship. The results were sent to Fairbanks where the final scoring was done after their matches.

Impact: Eight shooters from Anchorage shot air rifle; Scott Hall took the bronze medal for the men and Jessalin Schultz and Katy Crabtree took silver and gold respectively for the women. They both went to the national championship held at the Olympic Training Center in Colorado Springs, Colorado in March 2004. Jessalin placed 48th and Katy placed 38th.

Source of Federal Funds: Smith-Lever 3d CYFAR

Scope of Impact: State specific

Statement: After a number of years of dwindling membership, the Anchorage District 4-H program is gaining ground and exploring new territory. The entries in the fairs were up and everyone is thinking of new way to get more members, clubs and volunteers involved in this program. There is new interest in dogs and parents are talking about getting more dog groups started in Anchorage.

Impact: This past year three new clubs were formed: K-9 Lovers dog club in Chugiak, Southside Stitchers in south Anchorage and the 4-H 500 club, a walking group, formed. Two more clubs, Bird Creek 4-H and shooting covers, came back after a few years on hiatus.

Source of Federal Funds: Smith-Lever 3d CYFAR

Scope of Impact: State specific

Statement: In February 2004 the USA Shooting Alaska State Junior Olympic Three-Position Air Rifle Championship was held. Four teams from Region IV-Bartlett, Chugiak, Service and West competed. Service High won by one point and went on to represent Alaska at the national championship. In March, six shooters from the Borealis Bullseyes participated in the American Legion Junior Position Air Rifle Tournament.

Impact: Jessalin Schultz fired the highest individual score, won the Region 11 championship and earned a spot at the National Champion at the USA Shooting Range Facilities at the Olympic Training Center. The team then traveled to Kentucky in July for the USA Shooting National Junior Olympic Three Position Air Rifle Championship, they placed third and won bronze medals in the precision class scholastic division as well. There were 28 states represented, 135 individuals, and our Bullseyes placed third—GO CHAMPS!

Source of Federal Funds: Smith-Lever 3d CYFAR

Scope of Impact: State specific

5.4 Leadership Training and Development

Statement: Western Region Leaders Forum (WRLF) is comprised of 13 states. Every 13 years the yearly convention is held in Anchorage and in 2004 was held in Anchorage during the first week in March. All agents in the state participated, as well as the state 4-H leaders' council, many members of the state communications department, the state 4-H leader, and members of the land resources faculty, home economics and other state and district support staff. The university staff provided professional services, guidance and exhibited a professional level of cooperation in accomplishing a conference of this scale, all coordinated over audios from various points across the state.

Impact: Teens and their leaders participated in a variety of workshops, such as Cowboy Poetry, Taking the High Road; Doing the Right Thing and Getting a Bang out of 4-H Shooting Sports. Cowboy Poetry is a great way to involve young people in public speaking while building literacy skills. Attendee comments on conference feedback forms were overwhelmingly positive. The fact that eight agents and the statewide 4-H volunteers succeeded in presenting such a well-attended, well-organized conference is a credit to our state's program.

Source of Federal Funds: Smith-Lever 3d CYFAR

Scope of Impact: State specific and multistate

5.5 Cost of Credit

Statement: What does it cost for four years at an Ivy League school? When comparing schools, students should weigh the costs with the benefits. Extension home economists conducted seminars at local area high schools to help explain the cost of credit, and how easily young adults can go deep into dept.

Impact: Students learned to use specialized calculators that calculate payments, saving computations, annuities and interest. After teaching them to use the calculators, students figured the yield from savings accounts and the cost of credit cards, as well as the price of a car, a house and a college education.

***Source of Federal Funds*:** Smith-Lever

Scope of Impact: State specific

5.6 Parenting

Statement: In 2004, CES began teaching weekly parenting classes in Bethel. The series, "Steps to Successful Parenting!" is designed to address the issue and challenges of parenting as a child grows and changes. Participants share their views and questions together during the classes and they learn steps to better parenting.

Impact: The CES agent in Bethel has utilized storytelling components to teach these classes for the past two years. This approach has been very positively received by the predominantly Alaska Native clientele.

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

Scope of Impact: State Specific

5.7 Promoting Housing Programs

Statement: For more than 11 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 11 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 impact**s** of these efforts continue to be significant. 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

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

We are happy to report that one of the key goals of FY04 was met: the purchase and gradual implementation of a Web-based reporting system for agents to more accurately and consistently report their field data. We anticipate full system implementation by July 2005, when it will be made the de facto faculty reporting system for CES. The system was designed by a University of Nevada-Reno Ag/Experiment Station staff member who modeled the system with federal plan of work goals, along with university reporting requirements, in mind. In the near future, we also expect to implement a Web-based surveys management tool. As we indicated last year, we anticipate online survey will provide an important additional means of gathering client feedback and "staying connected" with the client. We hope to extend client feedback participation well beyond point of service workshop surveys, mailers and the like.

III. Program Review Process (Merit Review)

CES is applying for the CSREES "Institution Driven Reviews" merit review process in FY2005. Also, an all-faculty conference in December 2005 will address merit review processes.

IV. Evaluation of the Success of Multi and Joint Activities

Alaska participates in the following multistate research and coordinating committees:

W-1147: Managing Plant-Microbe Interactions in Soil to Promote Sustainable Agriculture
W-112: Reproductive Performance in Domestic Ruminants
W-192: Rural Communities and Public Lands in the West: Impacts and Alternatives
NC-218: Assessing Soil N Availability in Regional Corn Cropping Systems

4-NRSP/IR4: A National Agricultural Program to Clear Pest Control Agents for Minor Uses.
NCR –101: Controlled Environment Technology and Uses
WCC-021: Revegetation and Stabilization of Deteriorated and Altered Lands
WCC-093: Western Region Soil Survey and Inventory

Stakeholder inputs have questioned the importance of multistate 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, Alaska has 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 multistate research.

V. Integrated Research and Extension Activities

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

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

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

Agronomic Crops and Soils

Integrated activities continue to address best management practices for production of livestock feed crops, primarily forages and small grains as well as investigating new crop opportunities. The loss of the joint AFES/CES Agronomy Specialist position seriously impacted this program. AFES researchers and CES agents continued collaborative work at Delta Junction, Fairbanks, Palmer, and the Kenai Peninsula. In cooperation with Extension resource development and land resource agents, we hosted a turfgrass field day for golf course superintendents in 2004. A cooperative on-site golf green cultivar demonstration trial was re-established at the Settler Bay Golf Course in 2004 and will be evaluated over the next two years.

Potato and Vegetable Crops

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

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

Greenhouse Management/Nursery

Collaborative work continued in the greenhouse/nursery production of cut flowers, bedding plants, ornamentals, and other landscaping plants. Research and outreach addresses physiological response to light, day length, and temperature in controlled environments for species that included cyclamen, dwarf carnations, forget-me-nots, and selected food crops including raspberries. Extension oriented publications in 2003/2004 included a number of publications in Greenhouse Product News and Experiment Station circulars and bulletins. Research and demonstration efforts at the Georgeson Botanical Gardens evaluated woody perennials, herbaceous perennials, annual flowers, herbs and vegetables for survival and productivity at northern latitudes. The latter had a high degree of volunteer and extension involvement. Outreach efforts have included one-on-one contacts with growers and the public, presentations at CES workshops, master gardener program, and the annual CES/AFES Alaska Greenhouse and Nursery Conference, and lay publications including "Annual Flower Plant Evaluations", "Georgeson Botanical Garden Review", "Alaska Spinach, Savory, Succulent, Salad Selection" to name a few.

Reindeer Production

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

Animal Reproduction

The joint research animal scientist/livestock position (CES, 51%; AFES, 49%) addressed reproductive performance of ruminant animals under the aegis of multistate research (W-112) which addresses both traditional and alternative animal species. Most of this research and outreach was on-farm, directly involving the local extension agents and the producers. In 2004, outreach activities included one-on-one contacts with producers, workshop presentations at the Delta Farm Forum, and the Agricultural Symposium. He also presented a series of animal science workshops at four locations around the state and presented his research at two meetings of the Kawerak Reindeer Herders meetings in Nome. He was Alaska's representative to the USDA Small Farms Program, Alaska State Johnes Disease Detection and Management Committee, and Alaska Scrapie Disease Certification Committee. His project has become the cornerstone of our Integrated Activities in livestock with Cooperative Extension. It encompasses all the desirable elements of a multistate, integrated research and extension activities.

Soil Quality /Nutrient Management

No Integrated Activities reported in 2004.

Forest Production/Protection

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

Community and Rural Development

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

Attachments to the Annual Report of Accomplishments and Results

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