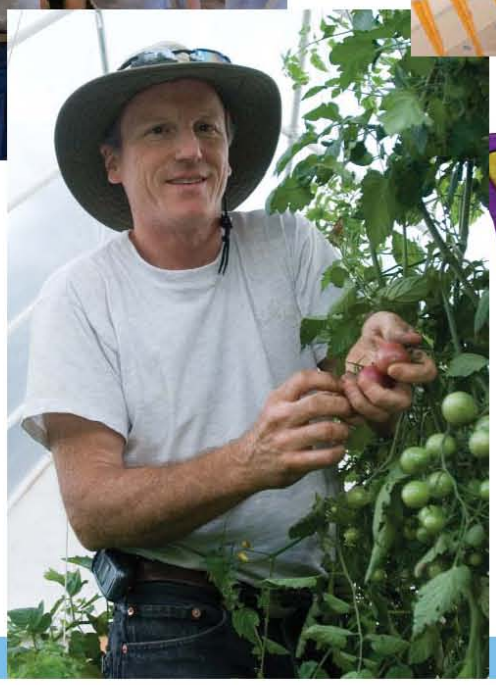
THE UNIVERSITY OF MAINE
Cooperative Extension

A Member of the University of Maine System

2006

Annual Report of Accomplishments and Results



Prepared for USDA / Cooperative State Research, Education, and Extension Service

This **Annual Report of Accomplishments and Results** summarizes the University of Maine Cooperative Extension programming from October 1, 2005 to September 30, 2006. It is prepared for and follows specific format determined by the USDA/Cooperative State Research, Education, and Extension Service (CSREES) as part of our federal partnership. The goals outlined in this report highlight UMaine Extension's role in providing research-based information to the citizens of Maine and beyond through community improvement and citizenship in our own state, while embracing collaborations regionally, nationally and internationally.

For additional information about UMaine Extension, please visit our Web site at www.umext.maine.edu. If questions arise, please contact John Rebar, Interim Director, at 207-581-2811, or via electronic mail at jrebar@umext.maine.edu.

The University of Maine Cooperative Extension
Annual Report of
Accomplishments and Results
2006

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CSREES Goal 1

An Agricultural System that is Highly Competitive in the Global Economy

Executive Summary

During 2006, the University of Maine Cooperative Extension helped producers improve the sustainability of their agricultural operations by implementing alternative production approaches, finding ways to reduce input costs, and utilizing new and relevant methods, tools, and information.

Alternative Production Approaches

Maine growers have both production challenges and strategic strengths. Helping farmers take advantage of these strengths will improve the sustainability of Maine's agriculture. We endeavor to offer research-based information to the growing organic dairy industry and farmers who are considering the transition to organic, helping to establish New England as the national leader in organic dairy research and education. Our work with the Maine Grass Farmers Network is helping our organic and natural livestock producers produce higher quality meats. One of Maine's specific production strengths is the capacity to produce abundant, cool- season grasses, which will help spur the number of dairy farms converting to organic production, leading to a higher price received for Maine-produced organic milk.

Organic dairy farmers now number nearly 20 percent of the dairy farms in Maine. With funding from the USDA – Agricultural Research Service New England Plant, Soil and Water Lab, the Organic Livestock Research and Education Consortium is a collaboration of research and Extension at UMaine and the University of New Hampshire, and a partnership with the Maine Organic Milk Producers. The partnership has led to the successful funding of several major grants, bringing in over $1.4 million to support organic dairy research and Extension activities. The outcome of one project helped to increase the price of organic milk paid to New England farmers by nearly 20 percent and resulted in an average net increase in gross revenue to the "typical" organic dairy farm of $44,000 per year in 2006. This represents a cumulative impact of $2.6 million in revenue to the Maine agricultural industry. Work in this area continues with regional efforts, such as the University of New Hampshire's organic dairy research facility, and research on organic grain production with the University of Vermont, USDA/ARS and UMaine Extension. The Organic Livestock Research and Education Consortium won the Northeast Extension Directors Award of Excellence in 2006.

Alternative Enterprises

Interest in biodiesel production continues to grow across the U.S. In Maine, we have helped growers produce oil seed crops, and worked with the Houlton Band of the Maliseet Indian Nation to determine the economic feasibility of building a plant to produce biodiesel. A resulting pilot project has led to the successful production of small batches of biodiesel. Based on the results of our work, the tribe has decided to proceed with the construction of a five million gallon oil production facility.

UMaine Extension is also researching alternative methods of growing specialty crops under protective structures, called high tunnels, using various active and passive solar collection methods. High tunnels have shown great promise for extending Maine's short growing season and allowing producers to grow high-value crops, such as tomatoes and cut flowers, not typically grown in Maine.

The Maine Cheese Guild, with support from UMaine Extension, hosted several cheese schools for artisan cheese makers. Several of the graduates have taken leadership roles in this growing Maine industry.

Sustainable Horticulture Practices
Maine ornamental horticulture businesses require a steady flow of knowledge, as crops, issues, and the marketplace change continuously. UMaine Extension recently updated the Maine Horticulture Guide to help growers effectively produce quality horticulture products as efficiently and safely as possible. The new Guide includes bio-control and pesticide compatibility, greater depth and breadth of information about new fungicide chemistry, and more information on plant growth regulator use on perennial crops. Annual flower trials at the Maine Agricultural Experiment Station Rogers Farm have provided evaluation data for more than 200 new taxa of annuals for use in the bedding plant industry.

Integrated Pest Management (IPM)
One of the best ways for growers to reduce input costs is through targeted disease and pest management. For the 2006 crop season, UMaine Extension's Potato IPM program was active in potato, sweet corn, small fruit, and greenhouse operations. We collected and identified over 350 plant disease samples, scouted 125 farmers' fields, and identified over 1,700 insect samples. As a result of our aphid detection program, a timely aphicide application was applied, protecting the $3.2 million potato seed industry from infestation.

In 2006, potato late blight was discovered in 19 percent of the fields scouted by UMaine Extension scouts. Early discovery allowed growers to implement strategies to prevent further spread of the disease and minimize infection. Losses avoided as a result of our recommendations have been estimated at greater than $10 million.

Farm Profitability
During the 2006 growing season, UMaine Extension and Maine farmers addressed issues which challenged many commodities, including vegetables, small fruits, and forage and grain fodder. Above average rainfalls and cooler than normal growing seasons forced many producers to re-evaluate their management and cropping choices. UMaine Extension conducted nearly 200 workshops to help Maine farmers learn sustainable practices and marketing strategies to apply in tough environmental conditions. Individual consultations resulted in more than 400 farms making changes in their operations by identifying cost-effective cultural practices to increase their farm's profitability.

UMaine Extension works in partnership with Coastal Enterprises, Inc., the Maine Organic Farmers and Gardeners Association, the Maine Organic Milk Providers, the Maine Department of Agriculture Food, and Rural Resources, USDA Natural Resources Conservation Service, and

the Small Business Development Councils of Maine to provide a wide range of expertise for Maine farmers who are looking to invest and make changes to their operations to remain profitable in the future. Since 2001, we have provided technical assistance to 122 farms as part of the Farms for the Future Program. Farms for the Future has granted more than $1.34 million to 74 of these farms for implementing their business plans, while leveraging nearly $6 million in private investments and placing 17,505 acres under protective conservation easements.

UMaine Extension also worked on other projects to improve the production and marketing of Maine agricultural products. We worked with Maine Agricultural Experiment Station researchers to evaluate "re-baling" of large round hay packages into smaller bales for resale at higher profit margins to high-value markets. We were also instrumental in providing leadership on many educational programs to improve specific farm management skills. Examples include equine clinics for a growing industry in Maine, and a three-day Shepherd School that helped 20 participants fine-tune production practices on their sheep farms. Sheep producers were also served through workshops that taught techniques to evaluate parasite loads in sheep.

Through the Maine Cattle Health Assurance Program (MeCHAP), headed by a team involving UMaine Extension staff, the Maine Department of Agriculture, Food, and Rural Resources personnel, practicing veterinarians, and Maine livestock producers, we are addressing public health, zoonotic disease control, and the safety of an important component of the food supply. We have introduced health management practices designed to prevent the introduction of a disease agent, and reduce disease transmission within the farm animal population. On-farm risk assessments identify risk factors for disease transmission, which are then matched to intervention strategies that give producers credit for employing practices that improve animal health and food safety.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 1 Total	1,436	$199,786.73	-0-	$199,786.73	$399,573.46

Consolidated Plan of Work Performance Goals

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days: 1,436
Agricultural producers will diversify crop production (acres).	618
Agricultural producers will participate in community management initiatives.	120
Agricultural producers will practice resource conservation methods.	306
Crop and livestock producers will increase integration of operations.	27
Farmers will develop new agricultural products.	53
Farmers will develop new markets.	125
Farmers will implement farm management skills.	363

Farmers will implement sustainable agricultural practices.	1,133
General public will understand and support production agriculture.	75
Greenhouse industry will organize liaison group to speak on behalf of entire industry and conduct industry-wide projects.	1
Individuals will be trained to be more productive and knowledgeable farm employees.	210
Participants and volunteers will be involved in public policy issues affecting families, organizations, and communities in Maine.	15
Participants and volunteers will increase their confidence and participation in resolving family, organizational, or community issues.	60
Participants and volunteers will increase their educational and leadership skills.	66
Participants and volunteers will use their educational and leadership skills to bring about change in their family, organization, or community.	51
Producers will adopt alternative crops to reduce pesticide inputs, increase rotation length, and increase soil organic matter.	699
Producers will adopt sustainable animal husbandry practices.	304
Producers will form management teams.	24
Producers will identify yield limiting factors.	123
Producers will use new technologies.	1,053
Small farms will diversify.	151
Small-scale producers will make changes as a result of UMaine Extension programs.	338
Youth will demonstrate an understanding of the basic scientific principles that affect sustainable agriculture.	337

OUTPUT INDICATORS

Number of 1-hr. radio programs delivered.	699
Number of articles in news media.	304
Number of audio visual resources developed (video, slides, displays).	24
Number of consultations.	123
Number of educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	16
Number of groups formed (ad hoc or formally organized).	27
Number of issues of newsletters written.	61
Number of one-on-one consultations or trainings conducted by Extension program participants and volunteers.	41
Number of participants in educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	380
Number of people attending the workshops/events.	10,483
Number of people involved in groups formed.	305
Number of people receiving newsletters.	4,851

Number of publications distributed.	6,838
Number of publications written.	6
Number of volunteers trained.	125
Number of workshops/events.	194

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Agricultural Profitability

Maine Farms for the Future: Long term agricultural sustainability is important to Maine, and Maine's economy. Farms for the Future is a statewide economic development program that provides assistance to farmers who wish to develop and implement new and improved sustainable business plans. A program of the Maine Department of Agriculture, Food, and Rural Resources, the program is administered by the non-profit Coastal Enterprises Incorporated, which contracts with UMaine Extension to provide technical services to farm operators. The program offers two phases of support; phase one provides assistance in developing or updating business plans aimed at increasing farm viability, and phase two awards a grant of up to $25,000, or 25 percent of the funds needed, to implement the plan. In return for funding, farmers agree to place their land in a farmland protection agreement for a minimum of five years.

Summary of Impacts: Since 2001, 22 Extension educators and staff have provided technical assistance to 122 farms in Maine. Grants have been award to 74 farms totaling $1,336,149, leveraging an additional $5,992,931 in support through additional grants, business loans, and in-kind services. The program is responsible for protecting over 17,500 acres from non-agriculture development. Projections from 59 business plans indicate an anticipated average increase in net income of more than $37,000 within 3.1 years. One program participant stated, "This is the best program I have participated in [in] over 20 years of farming. It has allowed me to grow my business and remain profitable." Another said, "The business plan that you helped us develop has enabled us to focus our efforts on growing and marketing in an orderly and sensible manner. I use the plan often for reference to facts and figures that otherwise would be stored in some obscure file, much as buried treasure." Farms for the Future is currently based funded through state budgetary appropriations through at least 2007.

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: State Specific

Key Themes: Agricultural Waste Management, Human Health, Emergency Preparedness

Addressing Biohazards; Safe Disposal of Animal Carcasses: Recent national and international events have raised the awareness of policy makers, scientists, and regulators of the need to develop safe animal carcass disposal methods for routine mortalities, and to plan for catastrophic mortalities to minimize the spread of disease. Such events include the recent Foot and Mouth Disease outbreak in the United Kingdom; detection of Bovine Spongiform Encephalopathy (BSE) in dairy cattle in Canada and the U.S.; Chronic Wasting Disease in wild deer and elk; and the outbreak of and potential spread of Avian Influenza. Improper carcass disposal can spread disease and lead to significant animal death, negative environmental impact, and increased potential for human illness. The Maine Compost Team is a collaborative effort of the Maine Department of Agriculture, Food, and Rural Resources,

the Maine Department of Environmental Protection, the State Planning Office and UMaine Extension, that conducts research and delivers technical assistance to livestock producers and state and municipal officials. Through applied research, the Team has developed an internationally recognized and accepted safe methodology specifically for the composting of large animal and poultry mortalities.

Summary of Impacts: At least 50 Maine livestock operations have adopted our methodology for routine on-farm mortality disposal, and five states (Connecticut, Colorado, Maine, Washington, and Wisconsin) have adopted our methodology in their state plans and regulations. The efforts of the Maine Compost Team have helped to minimize the potential spread of disease and have improved the safe and timely response to catastrophic outbreaks, keeping thousand of animals and people safe from devastating and dangerous diseases. We have shared the large animal disposal methodology and general composting curriculum more than 1,000 participants through the Maine Compost School, and at the international symposium on Composting Carcasses and Slaughterhouse Residuals held in Portland, Maine in May 2005. Also in 2005, the National Association of County Agricultural Agents recognized a UMaine Extension educator for exemplary work in this area, saying that his work is critical to internationally acclaimed medium- and large-scale composting training for farmers and municipalities.

Source of Federal Funds: Smith-Lever Act funds, Hatch Act Funds, State matching funds
Scope of Impacts: Multi-State Integrated Research and Extension; AK, AL, CA, CO, DE, FL, IA, KS, KY, ME, NC, NE, NJ, NY, OH, OR, PA, SC, VA, WA, WI, WY, WV

Key Themes: Biofuels, Agricultural Profitability, Adding Value to New and Old Agricultural Products, Diversified/Alternative Agriculture

Biodiesel Production in Northern Maine: As part of a feasibility study for the Houlton Band of Maliseet Indians, UMaine Extension conducted research that will enable the local production of biodiesel fuel using oil seed crops grown in northern Maine. In research partially funded by a USDA Sustainable Agriculture and Research Education grant, our crops specialist worked with local growers to produce canola, soybean, and mustard oil seed crops that would be grown in rotation with potatoes, and be viable for use as fuel. The oil seed was test-processed by a local company, evaluated by the growers in their farm machinery, and marketed through a local fuel company. In a second component of project, we worked through a cooperative arrangement with Regent Associates, a local consulting firm, to evaluate the economic aspects of establishing a local biodiesel production facility to be owned by the tribe.

Summary of Impacts: Based on encouraging results of the research and feasibility study, the Houlton Band of Maliseet Indians have recently announced the intention to build a biodiesel processing plant in northern Maine. The proposed plant will produce five million gallons of biodiesel a year from soybeans and canola seed, and is expected to create a demand that could be a boon to farmers and make northern Maine a key supplier of refined biodiesel products. During the first year, the plant will process raw soy oil from out-of-state, gradually increasing its reliance on local oil crops. Maine's current 5,000 acres of canola will increase to as much as 20,000 acres in order to meet demand.

While oil from field crops will likely remain only a small piece of the nation’s energy puzzle, Maine has the potential to greatly increase its oil seed production, either as part of a potato rotation program or as its own cash crop. According to our specialist, “Within the potato

rotation in Maine, if we produce 10,000 to 15,000 acres of canola, then we could in theory produce approximately 800,000 to 1,200,000 gallons of biodiesel. Biodiesel has less toxic emissions, better lubricity for engines, and is more biodegradable than straight fossil fuels. It also contributes less to global warming because growing the plants and burning their oil just moves carbon dioxide through its natural cycle, rather than inputting new CO^2 into the atmosphere like oil that is pumped out of the ground. At a societal level, biodiesel is just a small percentage of what we use, but it's a step in the right direction."
Source of Federal Funds: Smith-Lever Act funds, State matching funds
Scope of Impacts: State Specific

Key Themes: Ornamental/Green Agriculture

Annual Flower Variety Trial for Commercial Greenhouses and Garden Centers: UMaine Extension and the Maine Agriculture and Forest Experiment Station conduct joint field trials of new annual flower varieties to determine their commercial viability as crops for Maine greenhouse growers. The trials are supported by a gift from New England Grows, an educational partnership with a network that includes more than 30 allied green industry organizations. During 2006, we included more than 200 new taxa of annuals in the trials, and offered field-day events to educate commercial greenhouse growers and garden centers about the potential for new and profitable varieties. During the trials, the public is encouraged to visit the sites and learn about new varieties. Many visitors take notes with the intention to ask for the plants by name the following spring when they shop at local garden centers.
Summary of Impacts: During 2006, our field days were attended by more than 20 growers, all of whom reported that the trials will influence their purchases of stock for their 2007 spring greenhouse crop, impacting total retail sales of over $2,100,000.
Source of Federal Funds: Smith-Lever Act funds, Hatch Act Funds, State matching funds
Scope of Impacts: Integrated Research and Extension

Key Themes: Agricultural Profitability, Organic Agriculture, Agricultural Financial Management

Organic Dairy Research Cost of Production Study: Maine and Vermont are leaders in organic dairy production. More than 90 percent of organic farmers surveyed indicate that they have transitioned to organic production for economic reasons, yet there is little hard data about what makes an organic dairy farm profitable. As members of the multi-state Organic Livestock Research and Education Consortium, Extension researchers from Maine and Vermont have completed a second year of data collection and analysis to establish production cost levels to produce organic dairy products. The study, which began in 2004, is being completed with funding from the USDA Integrated Organic Program and the USDA Sustainable Agriculture Research and Education program.
Summary of Impacts: Based on data from 2004, the average organic dairy operation was shown not to be profitable, with an annual rate of return on farm assets of a *negative* 2.9 percent. With evidence of unacceptable margins, organic producers demanded an increase in the prices paid to them. Buyers responded with an increase of nearly 25 percent, or an average net increase of about $44,000 per farmer.
Source of Federal Funds: Smith-Lever Act funds, Hatch Act Funds, State matching funds
Scope of Impacts: Multi-State Integrated Research and Extension: ME, VT

CSREES Goal 2

A Safe and Secure Food and Fiber System

Executive Summary

According to the United States Centers for Disease Control, there are 76 million cases of food-borne disease each year throughout the United States. While most cases are relatively mild, with symptoms that last for a day or two, in total, these cases cause 325,000 hospitalizations and 5,000 deaths. The very old, very young, and those with reduced immune system function are most vulnerable. The Maine Physical Activity and Nutrition Plan, developed collaboratively by stakeholders throughout the state, including UMaine Extension, includes food safety as a major issue to address. Moreover, a Nutrition, Food and Physical Activity Education Resource Survey conducted in 2005 identified UMaine Extension as one of the only statewide organizations dedicated to educating the public about food safety and safe food preservation.

Nutrition, Food Safety, and Food Preservation Call Team

There has been an ongoing need for a statewide system to provide timely responses to customer questions received in county Extension offices, all of which are not staffed with resources to respond. Of Maine's 16 counties, six do not have Extension staff qualified to answer food safety and preservation questions. In 2006, a pilot effort was established to provide customers with accurate and timely responses to their food safety and nutrition questions using a call team. When inquiries are received from the public and qualified faculty are unavailable to reply, a local staff secretary communicates via email to a designated team of faculty and specialists. An appropriate team member responds directly to the client and sends a follow-up email to the initiating staff and other members of the call team to inform them that the customer's issue has been addressed. An-eight month evaluation of the team efforts *-showed that 93 percent of questions were answered by qualified staff within 24 hours of receiving the call. Both customers and support staff reported a high degree of satisfaction with the system.

Responding to Avian Influenza

The U.S. government has taken steps to prevent birds infected with Avian influenza viruses, or their products, from entering the U.S. food supply. Two new fact sheets published by UMaine Extension affirm for the public that avian influenza currently represents little risk to humans, and that eating properly handled and cooked poultry is safe. "*What Maine People Need to Know About Avian Influenza*" provides information for the general public about the nature of avian influenza, the safety of poultry products and considerations when traveling internationally. "*What Small Flock Owners in Maine Need to Know About Avian Influenza*" explains how people with backyard poultry flocks can keep their birds healthy, lists the symptoms of avian influenza in infected birds, and provides instructions for having mortalities tested by the UMaine Veterinary Diagnostic Laboratory. Both Extension fact sheets explain that properly prepared poultry is safe to eat. Consequently, UMaine's Veterinary Diagnostic Laboratory became the front line detection site for the State of Maine.

Food Safety Knowledge for Volunteer Community Cooks

Maine has a rich history of public suppers at churches, granges, fraternal organizations, and food fundraising events that rely on the participation of volunteer cooks. To decrease the possibility of

a food-borne outbreak at these events, UMaine Extension educates volunteer cooks on the practice and responsibility of safe food handling through Cooking for Crowds workshops. The workshops aim to provide realistic planning methods that volunteer cooks can use at quantity food service events and ensure they are educated and will practice safe food handling procedures. Participants gain critical thinking skills to apply throughout the food handling process including: planning, purchasing, storing, preparing, transporting, holding, serving, and handling leftovers. From a single training session, there may be up to an additional 200 people learning food safety practices as participants share information with other volunteers at their site. Participants from one 2006 session reported that they have served over 2,000 people using the new food safety practices that they had learned. More than 110 volunteer cooks attended workshops offered in four counties in 2006.

Better Process Control School

The U.S. Food and Drug Administration (FDA) requires that food processors of low-acid canned and acidified foods have certified personnel present during processing. UMaine Extension and the UMaine Department of Food Science and Human Nutrition offer the Better Process Control School for food processors to meet FDA certification requirements. Together, we delivered the course to New England food companies, state regulatory agencies, faculty, staff, and students. Presentations were developed by the Food Processors Institute. A combination of lectures, slides, handouts, and hands-on experiences were delivered to help participants understand food safety, principles of thermal processing, sanitation, proper processing for acidified, low-acid canned foods, retorts, process instrumentation, and records. Certification was awarded by successfully passing examinations. The first School was attended by 28 people – participants included including UMaine faculty, FDA personnel, Maine state regulators, and food industry representatives.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 2 Total	216	$30,061.95	-0-	$30,061.95	$60,123.90

Consolidated Plan of Work Performance Goals

OUTCOME INDICATORS: Behaviors and Impacts

Total Days:	216
Consumers will adopt Extension recommendations for canning.	379
Consumers will adopt Extension recommendations for drying.	15
Consumers will adopt Extension recommendations for freezing.	169
Consumers will adopt proper practices in food storage (method and temperature).	30
Consumers will adopt proper practices in planning for and purchasing of food.	30
Consumers will adopt proper practices in thawing frozen foods.	30

People will be making sound choices regarding food safety labels on meat and poultry.	641
People will be making sound choices regarding food selection and purchasing.	688
People will be making sound choices regarding proper food cooking, holding and serving procedures.	893
People will be making sound choices regarding proper thawing methods.	893
Residents will adopt proper cooking times and temperatures.	150
Residents will adopt proper procedures for cleaning and sanitizing work areas and equipment.	150
Residents will adopt proper techniques for holding and serving of food.	151
Residents will adopt proper techniques for planning and purchasing of food.	150
Residents will adopt proper techniques for storing food (method and temperature).	158
Residents will adopt proper techniques for transporting food.	150
Residents will adopt proper thawing methods.	153
Residents will practice personal hygiene techniques related to food safety.	150

OUTPUT INDICATORS

Circulation of articles in news media.	480,000
Frequency of workshops and events per year.	10
Number of articles in news media.	3
Number of audio visual resources developed (video, slides, displays).	8
Number of consultations.	341
Number of display/exhibits developed/created.	2
Number of issues of newsletters written.	15
Number of people attending the workshops/events.	522
Number of people receiving newsletters.	6,533
Number of publications distributed.	820
Number of publications written.	3
Number of times displays were used.	7
Number of volunteers trained.	129
Number of workshops/events.	29
Web pages created/designed,	108

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Food Safety, Human Nutrition

Food Safety for Low-Income Children and Adults: UMaine Extension's Eat Well Nutrition Education Program (Eat Well) includes two federally funded nutrition education programs: the Expanded Food and Nutrition Education Program (EFNEP), and the Maine Family Nutrition Program

(MFNP). Approximately 40 nutrition aides deliver basic food and nutrition information to individual adults, children, senior citizens, and families in all counties of Maine. The goal of both programs is to provide nutrition education to limited-income citizens; EFNEP's audience includes families with young children and MFNP's audience is citizens who are participating in or are applying to participate in the Food Stamp Program. Participants receive lessons in basic human nutrition, food preparation, food safety, buying and budgeting, and practical meal management. Some participants receive this information in a home setting which they find conducive to learning. Other participants find receiving these lessons in group settings more valuable and meaningful. Some Eat Well clients are not aware of the dangers of food borne diseases. One nutrition aide writes: *"One of my clients is an 87-year-old lady whose food safety habits concerned me from the beginning of my first visit… After a couple of visits, I decided to focus mainly on safe handling of foods. I discussed the importance of refrigerating perishable foods and throwing away any foods that has been sitting out for more than two hours. Together, we checked her refrigerator for any expired items or food "gone bad." I recommended she take a black marker and write the date she opened the item if there was no expiration date. I encouraged her to use leftovers within three to four days or throw them out. I gave her a simple rule to remember: 'When in Doubt, Throw It Out!' On subsequent visits, I noticed a big difference in her food habits."*

Summary of Impacts: Eat Well Nutrition Aides reported that of the 666 statewide graduates of the program in 2006, 62 percent (413) showed improvements in food safety practices after participating in the Eat Well program.

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: State Specific

CSREES Goal 3

A Healthy, Well-Nourished Population

Executive Summary

Former U.S. Department of Health and Human Services Secretary Tommy Thompson stated that "poor eating habits and inactivity are on the verge of surpassing tobacco as the leading cause of preventable death in America." Obesity and inactivity contribute to chronic diseases that cause poor health, an inability to contribute to the workforce, a drain on the health-care economy and shortened lives in Maine and the United States Yet, the poor lifestyle habits at the root of these diseases can be modified.

Our goals are fourfold: 1) to measurably reduce adult, child, and adolescent obesity; 2) to increase the number of adults who eat according to the current Dietary Guidelines for Americans and the My Pyramid Food Guide; 3) to increase the number of Maine adults, adolescents, and children participating in regular physical activity; and 4) to increase the number of Maine citizens who lower their risk levels of preventable chronic disease and other health risks because of positive lifestyle changes.

Paradoxically, food security, and especially accessibility to healthy food, is also an issue in a state in which 29 percent of households have annual incomes close to the most recent federal poverty threshold. UMaine Extension's Master Gardener Program, in collaboration with our Eat Well Nutrition Education program and others, is contributing to food security solutions in creative, community-based ways. Our staff has a proven track record of promoting changes in the lifestyle habits of those with whom we work. Our close connection with the populations that we reach and influence is our strength. We are well positioned to work with partners, including the Maine Department of Health and Human Services and the Maine Nutrition Network.

Focusing on Youth

Poor dietary practices in youth have devastating consequences in terms of their quality of life as adults and in terms of costs to society. Increasing fruit and vegetable consumption among young adults, for example, is a challenge. Widespread calcium deficiency among youth is placing them at future risk of major health problems, including osteoporosis. UMaine Extension's programs for youth includes a highly collaborative "3-A-Day of Dairy Project," which results in long-term impacts in both knowledge and behavior changes related to calcium consumption. In addition, UMaine Extension and UMaine researchers joined a 10-state team to conduct a 12-month study evaluating the success of an educational intervention to improve the fruit and vegetable consumption of low-income young adults. The intervention group showed significant differences from the control group.

Data shows that 2006 youth-oriented nutrition education programs have been successful. After participating in nutrition education programming throughout the state, in school, after-school and summer programs, 75 percent (5,526) of youth in our Eat Well Nutrition Education Program reported that they now "eat a variety of foods." Fruits and vegetables are now a more common menu choice.

Addressing Obesity through Nutrition Education

In many ways across the state, we are incorporating the new Dietary Guidelines and MyPyramid to help residents address the epidemic of overweight and obesity in Maine. Examples include: the "Lose and Win" campaign in Hancock County, in which participants lost a total of 3,280 pounds; a series of trainings in Central Maine incorporating interactive discussions with props and games; and a variety of train-the-trainer workshops for our Senior Companions. In 2006, Eat Well nutrition aides across Maine incorporated the child-friendly MyPyramid, as well as several new educational methods, to demonstrate healthy lifestyles. Many aides used the MyPyramid visual to explain the idea of balancing calorie intake and exercise to attain and maintain healthy weight. One aide shared the success she had with a 40-year-old single mother. The aide reported that the mother and her 14-year- old daughter "…switched to eating whole grain breads and cereals and drinking more water instead of sodas and juice drinks. These changes resulted in a 30-pound weight loss for the daughter in the past year."

Back to the Land

In a rural state such as Maine, farming and gardening are more easily accessible and, in many areas, remain an important a part of the culture. Our programs build upon this accessibility and culture as we work with youth, adults, and seniors to increase food security and improve diets. For example, in the Eat Well Nutrition Education Program's Garden Project, 385 adults and youth participated in activities designed to teach the rewards of growing and preparing your own fresh vegetables and fruits. In a collaborative pilot project with the Orono Parks and Recreation Department, community volunteers, and the Penobscot County Master Gardeners, we created an "agriculture-supported community," converting unused town land into community gardens where food was grown for low-income seniors. Staff on the other side of the state, in Oxford County, created a 10-week "Celebrate the Harvest" program, which aimed to solve the food distribution issue in another way: volunteers grew the gardens and low-income residents were invited to pick what they needed directly from the garden site. Staff from our Eat Well Program assisted seniors with nutrition education.

Saving Money on Food

For low-income residents, food expense is often perceived as one of the few areas of the household budget where there is some flexibility. Nutrition aides in our Eat Well Nutrition Education Program help individuals and families find ways to save money on food purchases wherever possible. Aides regularly work with local food pantries throughout the state, sharing nutrition information, food safety hints, and recipes, and sometimes preparing food pantry foods to show visitors how to incorporate the foods into their diets.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 3 Total	672	$93,526.08	$344,953.60	$93,526.08	$532,005.76

Consolidated Plan of Work Performance Goals

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days: 672
Groups will be established to conduct community programs to reduce the risk of disease.	3
Participants will decrease saturated fat and total fat intake.	709
Participants will engage in community programs that enhance the health of seniors and other community members.	1,041
Participants will improve nutrient and food composition intake to lower the risk of disease.	907
Participants will increase food preparation skills.	905
Participants will increase food-buying skills.	1,343
Participants will increase intake of fruits and vegetables.	873
Participants will increase physical activity.	1,533
Participants will take steps to achieve and maintain healthy weight.	868
Participants, at all life stages, will have knowledge, skills, and ability to be well nourished.	3,634

OUTPUT INDICATORS

Number of articles in news media.	41
Circulation of articles in news media.	145,000
Number of audio visual resources developed (video, slides, displays).	11
Number of consultations/home visits.	6,320
Number of groups formed (ad hoc or formally organized).	122
Number of people attending the workshops/events.	3,568
Number of people involved in groups formed.	1,437
Number of people receiving newsletters.	16,340
Number of publications distributed.	3,382
Number of publications written.	9
Number of volunteers trained.	1,061
Number of workshops/events.	177

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Human Nutrition, Youth Development/4-H

Extension and Research Join Forces to Address a Critical Nutrition Issue: Fruit and vegetables are a good source of antioxidants and, when compared to other food groups, are higher in fiber and lower in fats and calories. Consequently, an adequate daily intake of fruit and vegetables helps maintain a healthy weight and is associated with a decreased risk of cancer and other chronic disease. In Maine, only 33 percent of young adults eat the recommended servings of five or more fruits and vegetables per day. UMaine Extension and UMaine researchers were part of a 10-state team consisting of Extension/research partnerships that recently conducted a 12-month study to evaluate the success of a specific education intervention strategy to improve the nutrition practices of low-income young adults. In the major component of the study, the target audience was assessed and mailed information about improving their intake of fruits and vegetables. An intervention group was also sent stage-tailored, individualized nutrition education materials, including specific details about their own fruit and vegetable intake, followed up by multiple educational phone calls. In Maine, the educational phone calls were delivered by Extension paraprofessionals from our Eat Well Nutrition Education Program. Similar teams in nine other states worked in conjunction with the Maine team.

Summary of Impacts: Of the 134 Maine participants who completed the study, 57 received the intervention and 77 served as controls. The intervention group showed differences from the control group by being more likely to maintain, and less likely to regress, in their readiness to eat the daily recommended amount of vegetables. As a result of the study, a magazine, stage-tailored newsletters, and a Web site [www.nutrisci.wisc.edu/fav] were developed for use in educating young adults. The study was chronicled in the Journal of Extension (available online at http://www.joe.org/joe/2004october/iw1.shtml).

Source of Federal Funds: Smith-Lever Act funds, Hatch Act Funds, State matching funds
Scope of Impacts: Multi-State Integrated Research and Extension: ME, AL, KS, IA, MI, NE, NY, OR, RI, WI

Key Themes: Food Security, Family Resource Management, Human Nutrition

Stretching the Food Dollar: In Maine, 29 percent of households have annual incomes of less than $25,000 (U.S. Census Bureau, 2004), which is dangerously close to the most recent federal poverty threshold of $19,350 for a family of four. According to the USDA Center for Nutrition Policy and Promotion, a family of four will spend a minimum of 21 percent of their annual income on food, making effective food budgeting vital to the quality of life for low-income families. Nutrition aides from our Eat Well Nutrition Education Program provide basic nutrition education to limited-income individuals in their own homes or in group settings. Groups are formed at food pantries, community rooms in housing complexes, Head Start Centers, and many other locations. The focus of our educational intervention is helping participants improve their food resource management practices by teaching them about effective planning, shopping, and food preparation.

Summary of Impacts: Between April 1, 2005 and March 30, 2006, 467 adults graduated from the Eat Well Nutrition Education Program. Based on responses to a pre- and post-program

behavior assessment, 70 percent (327) of participants demonstrated acceptable practices of food resource management, up from 39 percent at the start of the program.
Source of Federal Funds: Smith-Lever Act funds, State matching funds
Scope of Impacts: State Specific

Key Themes: Food Security, Human Nutrition, Family Resource Management

Celebrate the Harvest: A recent report from the University of Maine's Margaret Chase Smith Center for Public Policy states that the number of Mainers who receive Food Stamps grew by 50 percent between 2002 and 2005. For the past five years, UMaine Master Gardener volunteers in Oxford County have dedicated hundreds of hours growing and harvesting thousands of pounds of fruit and vegetables to help low-income individuals and families improve their access to healthy food. However, we found that growing the produce is the easy part; distribution is the challenge. Many segments of the distribution system present unique challenges to the efficient transfer of produce from grower to consumer. Challenges are presented by sporadic food pantries hours, a lack of volunteers, lack of storage space, lack of refrigeration, and an inability to communicate the availability of fresh food at appropriate times. Making the problem worse is a fundamental resistance to using charitable services by many of those in need. Faced with such challenges, we circumvented traditional distribution methods and invited low-income individuals to harvest what they need directly from the gardens. Working in partnership with UMaine Extension's Eat Well Nutrition Education Program, a 10-week Celebrate the Harvest program was offered to Food Stamp eligible clients. Low-cost recipes were prepared using fresh produce from the volunteer-grown community gardens. After each session, participants were invited to harvest produce to cook and eat with their families during the upcoming week. Master Gardener volunteers also issued an open invitation to harvest to the public through local Head Start and Maine Department of Health and Human Services offices.

Summary of Impacts: A total of 15 families participated in the Celebrate the Harvest program during 2006, our pilot year. All participants indicated that the course provided excellent nutrition and food preparation information, and access to healthy fruits and vegetables that would typically have been considered too expensive for their budgets. All participants were exposed to an understanding not only of what constitutes a healthy diet, but where the food comes from and how they could grow it themselves. Between five and 18 Head Start and Maine Department of Health and Human Services families were served each week during the season through the open invitation. Some returned to volunteer their help in harvesting and weeding with the intention of learning to grow a garden themselves.
Source of Federal Funds: Smith-Lever Act funds, State matching funds
Scope of Impacts: State Specific

Key Themes: Human Nutrition, Human Health

MyPyramid Food Guidance and U.S. Dietary Guidelines: According to the Maine Center for Disease Control and Prevention (2004), 61 percent of Maine adults are overweight or obese. Further, 27 percent of high school students, 30 percent of middle school students, 36 percent of kindergarteners, and 33 percent of children between 2 and 5 years of age in Maine are overweight or at risk of becoming overweight. According to a report prepared by the Governor's Office of Health Policy and Finance (2005), "*The higher prevalence of behavioral risk factors in central and northeastern Maine will contribute disproportionately to chronic*

disease conditions and demand for health care services." Early in 2005, the latest edition of the U.S. Department of Health and Human Services Dietary Guidelines for Americans was released, providing science-based advice to promote health and reduce the risk for major chronic diseases through diet and physical activity. Later in the same year, the MyPyramid Food Guidance System was unveiled by the U.S. Department of Agriculture as a more easily understood interpretation of the Dietary Guidelines. During 2006, UMaine Extension partnered with Maine Center for Disease Control and Prevention's Healthy Maine Partnerships, local elementary and middle schools, and Extension Homemaker groups to educate individuals at all life stages about how to use the Dietary Guidelines and MyPyramid Food Guidance System. Educational methods included interactive discussions with props, personal weight assessments, calorie level food guides, and physical activity plans. Our Eat Well Nutrition Program personnel across Maine incorporated the child-friendly version of MyPyramid as well as several new educational methods into lessons that introduce MyPyramid to low-income audiences.

Summary of Impacts: As a result of our programs, 83 percent of 39 adult participants from low-income families reported that they used their individual MyPyramid Food Guides to make healthier food choices, and 58 percent said they increased physical activity to at least 30 minutes on most days of the week. Eighty-eight percent of the 143 elementary and middle school students who participated said they planned to use their eating plans to make healthy food choices; 89 percent reported that as a result of the program they planned to increase physical activity to the recommended 60 minutes most days of the week. Ninety percent of the 66 Extension Homemakers said they learned new information that they planned to use. One of the participants said: "The pyramid helped me with selecting healthier food choices for my family, and exercising is helping with my diabetes." Another said: "Weight loss diets are a difficult subject for me, but you presented it in a non-pressuring way." Eat Well Nutrition Aides are receiving training so larger audiences may be reached with these methods.

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: State Specific

Key Themes: Human Nutrition, Human Health

Senior Companion Program: Nutrition Education to Address Obesity: According to the national Centers for Disease Control and Prevention, over 25,000 adults die each year as a result of obesity. UMaine Extension's statewide Senior Companion Program, in collaboration with local clinics, trains and oversees volunteers, individuals age 60 and older, to provide companionship and educational resources for elderly clients. Based on client need, training sessions specifically related to nutrition are often requested by Senior Companions. During 2006, 158 Senior Companion Program participants received direct training related to nutrition and its value to senior adult health.

Summary of Impacts: The U.S. Centers for Disease Control and Prevention states that a proper nutritional diet can prevent obesity, result in an improved quality of life and save $6,000 in medical costs per person, per year. This reduction, fully realized for clients of the Senior Companion Program in 2006, means a total cost savings of $948,000 statewide.

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: State Specific

CSREES Goal 4

Greater Harmony Between Agriculture and the Environment

Executive Summary

Youth Natural Resources Education

UMaine Extension provides natural resource education for youth statewide. The overall program is anchored by regional efforts in coastal, southern and central Maine.

In coastal Maine, Tanglewood 4-H Camp and Learning Center is a flagship program and serves youth from across the state, and beyond. We believe that increasing numbers of young people are leading nature-deprived lives – according to futurist Richard Louv, "Healing the broken bond between our young and nature is in our self-interest, not only because aesthetics or justice demand it, but also because our mental, physical, and spiritual health depend upon it."
The Tanglewood 4-H Camp and Learning Center is committed to a policy of "No Child Left Inside" by offering programs for young people ages 6 to 17. Campers get a chance to learn about, experience and understand the value of nature and the natural environment. In 2006, day camps at Tanglewood and its sister camp, Blueberry Cove Camp in Tenant's Harbor, Maine, reached 195 youth. Tanglewood also served 426 youth ages 8 to 14 through residential camps, and 48 teens ages 14 to 17 through experiential leadership trips. In 2006, an additional 73 young people participated on adventure discovery trips in Maine, where they experienced a specific focus, such as outdoor living, living with the Earth, farm living, coastal explorations, island and sea exploration, or a teen quest. On all discovery trips, the participants lived in tents as they learned about themselves as part of the natural environment.

In southern Maine, the Vaughn Island 4-H Environmental Camp offers low-impact, primitive camping programs that provide environmental education and leadership training for youth ages 9 to 17. In 2006, 108 people participated in three- and four-day residential programs at the camp. Each session involved 18 youth in an intensive camping and education experience. This program enhances the capacity of children to be aware of and skilled in sustainable natural resource stewardship practices. One parent cited diversity and self-confidence as major program impacts: "I was impressed with the diversity of campers. My daughter's tent mates were from Mexico and Texas — amazing! My daughter has always had some physical challenges, and she said she got to climb a tree, which made her so happy. She was noticeably proud of herself. This program has given her increased confidence, self awareness and has reinforced her love of the outdoors."

In central Maine, UMaine Extension helped a regional group of municipalities develop an outreach education plan to teach homeowners and local youth about storm water and the threats to the Penobscot River watershed. As part of the effort, we co-sponsored an AmeriCorps environmental educator, who worked with local schools, a Bangor-based children's museum, and local youth clubs. As a result of this collaborative effort, over 500 youth were introduced to storm water pollution concepts and gained an understanding of the dynamics of their watershed.

Natural resources education is also a component of UMaine Extension 4-H Clubs, school enrichment programs, and Tanglewood's Earth Connections school outreach programs. In 2006,

more than 2,000 youth participated in special interest and day camp programs related to natural resources education. More than 1,500 participated in overnight camps, and 2,600 received natural resources education through in-school and school enrichment programs.

Water Quality

Like the rest of the nation, Maine tackled its most severe water quality issues during the 1970s, using federal and state laws to reduce discharge of sewage and industrial chemicals into Maine's fresh and marine waters. These changes were brought about by government action and lawsuits from environmental organizations. In the last 15 years, individual citizens have shown a willingness to learn about more subtle forms of pollution and are taking action to monitor water quality and reduce pollution that comes, not from a single source, but many, and to tackle the most significant problems at the municipal level. UMaine Extension, along with our partner, Maine Sea Grant, have fostered a significant volunteer force for improving local environmental conditions and water quality along Maine's rivers, lakeshores, estuaries, and beaches. In 2006, over 131,000 acres of Maine land were covered by various watershed management initiatives connected to Extension activities. Citizens were engaged in monitoring existing conditions and tracking threats due to faulty septic systems, runoff from riparian properties, invasive species, toxic phytoplankton, and erosion.

Healthy Beaches and Lakes

UMaine Extension coordinated a major new initiative, the Maine Healthy Beaches Project, in partnership with the U.S. Environmental Protection Agency and various state and local entities. Working with volunteers trained in water quality testing protocols, and with municipal government, the project identified potential threats to human health on many salt-water swim beaches, and followed up to identify suspected sources of bacterial contamination and recommend remedial action. In Kennebunk and Biddeford, five sites on the beaches and in adjacent rivers and marsh areas were monitored. Employing dye tests, we helped town officials target possible sources that may be contributing to high bacteria readings on the beaches. Similar work in nearly 40 other communities is leading to greater awareness and action around swim-beach safety.

In our partnership with Maine Sea Grant, UMaine Extension has also supported the Maine Beaches Forum, held in 2006 in Southern Maine. Among other goals, this conference brings together volunteers, scientists, municipal officials, business owners, and property owners to learn about the regional nature of beach water quality. By connecting resources, differing groups have a greater chance of responding to the issue through coordinated state and local actions. Participants in the conference increased their understanding of the factors contributing to beach water quality, and a majority (74 percent) intended to apply this knowledge to improve local and regional conditions.

Working in cooperation with the Wells National Estuarine Research Reserve, our Marine Extension Team brought together municipal officials in four towns within the York River watershed to learn about and address non-point source pollution. Follow-up presentations to town governments resulted in endorsement for establishing a watershed council to deal with existing and emerging environmental issues in the region.

UMaine Extension worked with lake associations and partnered with agencies concerned with runoff containing phosphorus, which can lead to damaging algal blooms in freshwater lakes. In one such effort, we worked with the Maine Lakes Conservancy to help 63 lakefront property owners learn more about their shared resource. Plankton nets, underwater cameras, hydrophones, and sampling equipment were demonstrated. Participants reported they learned about water quality, sources of pollution, nutrient load, plankton and various impacts on water quality. Over half reported they understood how vegetation planted along lakefront property would reduce pollution from run-off, and a third indicated intentions to reduce fertilizer use or plant vegetation to improve water quality.

We have also continued the work of the Buffer Brigade, a team which has actively implemented specific restorations on high-risk pollution sites in lake watersheds. Logging over 1,300 hours of work this year, the crew implemented best management practices on 11 sites, including one large-scale demonstration project.

It is the traditional practice for individual landowners to control storm water runoff with a gutter/downspout directed away from a home. The practice contributes to erosive runoff and decreases groundwater recharge. A relatively new technology has the potential to significantly diminish the quantity of storm water runoff from individual lots, as well as decrease the pollutant load. Rain gardens are sunken gardens underlain with an engineered soil mix and planted with Maine native plants. Rain gardens trap the water and hold it long enough for the water to infiltrate into the ground, but not so long that they breed mosquitoes. UMaine Extension staff and student workers installed the first demonstration rain gardens in Maine in 2004. Due to the popularity of the technique, we have partnered with the Portland Water District and the University of Vermont/Lake Champlain Sea Grant to conduct rain garden design and installation trainings at events such as the New England Lakes Conference, Maine Garden Day, Rogers Farm Day, and at various garden clubs throughout Maine. This technique has the potential to create beautiful gardens and protect water quality throughout New England.

Farmed Fish Health Management

UMaine Extension and Maine Sea Grant coordinated the 14th Annual Northeast Farmed Fish Health Management Workshop to discuss key issues related to finfish aquaculture in New England and the Maritimes in 2006. The workshop addressed: the benefits of sustainable salmon aquaculture to markets; an understanding of USDA organic aquaculture standards; understanding the spread of Infectious Salmon Anemia using tidal current models; and issues related to diseases of marine finfish species in the aquaculture industry. The workshop was conducted as a collaboration among UMaine Extension, Maine Sea Grant, USDA Animal and Plant Health Inspection Service, UMaine Center for Cooperative Aquaculture Research, Maine Department of Inland Fish and Wildlife, Micro Technologies, Inc., the Maine Aquaculture Innovation Center, and the Maine Aquaculture Association.

Coastal Access

Recent, widespread shifts in coastal land ownership and uses are bringing about change in the traditional patterns of coastal access in Maine. These changes have important impacts on water-dependant industries as well as recreational and private property users. The Downeast Coastal Access Forum was held in 2006 to bring together people with diverse coastal access interests to

develop cooperative, collaborative, and mutually beneficial solutions to these issues in Downeast Maine. The forum was organized by a team that included staff from UMaine Extension, Maine Sea Grant, UMaine Machias, the Island Institute, Maine Coastal Program, Maine Sea Coast Mission, Coastal Enterprises Inc., and local governmental entities. More than 100 participants engaged in discussions on various topics, such as acquisition of coastal lands, improving waterfront facilities, resolving conflicts among diverse waterfront users, and innovative approaches to coastal management planning.

Home Horticulture

In 2006, our Home Horticulture and Master Gardener programs participated in a voluntary CSREES review to clarify their mission, improve connections with current and potential partners, and improve their ability to document impacts. The CSREES review team report indicated both positive comments about the programs and suggestions for future improvements. The review team, in its closing remarks, stated that "Maine is on a high plateau, poised to take off to new heights and engage in statewide, multi-disciplinary, multi-state cooperative activities." During 2006 and 2007, the programming team will address the issues raised during the review.

UMaine Extension horticulture offerings provide Maine citizens with exposure and encouragement to adopt new practical, sustainable, research-based horticultural practices. The objective is that these practices will improve people's home gardening success and lead to improved health and quality of life. Based on the assessed needs of the gardening public, our home horticulture and Master Gardener programs allowed 86 Master Gardeners to further their horticultural education through college classes or technical schools. Fifteen started a horticulture-based business. Our Master Gardener volunteers led 360 educational and community projects that involved more that 4,800 community members, and volunteered approximately 28,400 hours in support of these projects. More than 3,200 people related significant improvement in gardening skills through participation in public garden programs, and 268 Maine gardeners reported reduced pesticide use. Master Gardeners also coordinated 400 volunteers across the state in the "Plant-a-Row for the Hungry" program, which provided 71,931 pounds of nutritious fresh fruits and vegetables (with an estimated value of $121,563) to people who would not otherwise have access to fresh food.

In addition, 2006 saw the continuation of horticultural training programs for a variety of typically under-served audiences, such as various low-income groups, physically disabled gardeners, and prisoners.

For example, for the past two years, UMaine Extension has created a Horticulture Vocational Training Program at the Women's Correctional Facility in South Windham, Maine. In the first year of the program, we participated in the design and construction of a greenhouse facility on the prison grounds to provide a training area for inmates. In 2006, we utilized the greenhouse facility to help inmates plant and grow seedlings for sale to the correctional facility and to others for landscaping. Income from sales will help the vocational program be self-sustaining in the future. In its first year, eight residents completed the training program and raised and sold more than 3,000 seedlings.

Locally grown foods promote local economies, require less fuel, preserve land from development, and potentially improve the diet of those who consume the food. The UMaine Extension Environmental Sustainability Project is promoting increased consumption of local foods through the pilot Orono Community Garden Project. A community partnership, the project helps people understand food systems by participating in a food system at a fundamental level — from the garden to the table. The garden produced more than 3,600 pounds of vegetables in 2006, most of which was distributed to needy senior citizens.

Improving Management of Forest Resources

UMaine Extension offers a variety of programs designed to improve forest resource management. Habitat Stewards™ provides volunteer education and management to people living in the settled landscape; Women and the Woods educates natural resource entrepreneurs who manage woodlands.

Habitat Stewards™ is a program of the National Wildlife Federation, and in Maine is a joint effort with UMaine Extension. A core training of 30 hours is repaid by 30 hours of volunteer time, in the first year, doing education activities or projects, or service with non-profit entities that operate for the common good. Habitat Stewards™ participants may continue, after the initial year's commitment is fulfilled, by doing 15 hours of volunteer time and five hours of related education for themselves each subsequent year. UMaine Extension provides three workshops each year for continuing education for all Habitat Stewards™. The focus of the trainings and of the volunteer work is to enhance and manage wildlife habitat in yards, schoolyards, community green spaces, and business properties. In 2006, Habitat Stewards™ graduates logged in 493 hours helping 568 home and business owners to inventory, assess, and improve wildlife habitat on their properties. This work impacted the management of 101 acres. Volunteers also conducted classes for local adult education programs and garden clubs, and developed educational materials for use by the public.

Women and the Woods (WAW) is a collaborative program of UMaine Extension's Women's Agricultural Network (WAgN) and the Maine Forest Service. In the past, female natural resource entrepreneurs have found limited access to education and funding for their businesses. WAgN, and one of its focus programs, Women and the Woods, seeks to create learning networks among women natural resource entrepreneurs, and improve business and natural resource management. The goals of the WAW program are fourfold: 1) to increase the number of women woodland owners who are aware of forestland management options; 2) to educate women on all business aspects of woodland ownership; 3) to provide an environment that is designed to be supportive of women's preferred learning styles; and 4) to provide opportunities to network and learn with others. Since its inception in 2004, WAW has reached more than 200 women, who manage more than 30,000 acres, through educational events.

As a result of WAW programming, supportive networks have developed, allowing women to educate each other and increase their knowledge resources. Women have attended statewide, hands-on educational events on topics such as using chainsaws, operating a sugarbush, horse logging, compass and boundary work, forest stand inventory, GIS (Global Information System) use, and much more. We also hosted a four-day residential workshop to immerse participants in a total learning experience. This provided participants with both structured and unstructured time to share experiences, learn from experts, be mentored by other women, and practice hands-on

skills in an actual woodlot. The value of women-focused educational events has been reinforced by the comments of participants. These are some typical statements: “The communication is more open with a women’s only group. It allows everyone to ask questions until they really understand and provides a safe environment for learning. Women generate a cooperative learning environment, which is very different than a mixed group or male dominated group.” “I feel more comfortable in that type of learning environment because I can get ‘equal air time’ more easily. Men tend to dominate the course of conversations and leave women out. It’s important to have women-focused events because an increasing number of women are now managing woodlots and need to know the kind of information included in this conference.”

The State of Maine requires that any person who measures wood for the purpose of establishing a basis for payment for goods or services be licensed by the state. To obtain a license, an applicant must serve a two-year apprenticeship and pass a written examination. If the applicant completes an approved course of instruction, the apprenticeship requirement can be reduced from two years to six months. UMaine Extension, in cooperation with the UMaine School of Forest Resources, and the Maine Department of Agriculture, Food, and Rural Resources, offers multi-day Wood Measurement Training Programs. In 2006, 46 natural resource professionals were licensed as apprentices after participating in Wood Measurement Training Programs.

Extension educators from Maine, Vermont, and New Hampshire developed a three-day Maple Grading School. The goals were for participants to acquire knowledge and skills in the techniques and methods of grading maple syrup. As a result of the 2006 school, eighty-six percent of the 29 attendees felt that accurate grading of maple syrup was crucial in their business, and 100 percent expressed confidence in their ability to use the maple grading and quality control techniques that they learned.

UMaine Extension educators provided over 150 one-on-one consultations to forest products entrepreneurs during 2006. Of these, 74 implemented strategies to increase profitability as a result.

A demonstration of safe portable sawmill operation was presented to an audience of more than 500 at a state forestry exposition. Six additional sawmill safety and technique demonstrations were presented at local events throughout the year, and to 14 undergraduate forestry students as part of their degree requirements. We also worked with more than 200 forest managers and offered 12 workshops to a combined audience of about 200 to educate people about the proper use of sawmills.

To enhance citizen access to broad collection of forestry and wildlife educational resources UMaine Extension maintains the Web-based “Library of Educational Links; Forestry, Wood and Wildlife Resources,”. The site received over 28,000 visits in 2006 and is located at http: //www.umaine.edu/umext/forestry/.

Integrated Pest Management (IPM)
UMaine Extension delivered programs to address Maine’s agricultural issues relating to the management of pests, disease, and the safe handling of pesticides. In 2006, our work included educational meetings for growers, environmental monitoring, applied research, school programs,

telephone hotlines, ecology camps, and newsletters. We worked with more than 2,000 producers who use IPM practices to improve their crop production levels. We also helped more than 11,000 Maine citizens, 4,000 of whom were homeowners, make informed decisions about pesticide handling and application. Our pest management Web site helped visitors access research-based information to minimize their use of pesticides and limit damage from harmful pests. The site logged more than 950,000 visits in 2006, and is located at http://www.umext.maine.edu/topics/pest.htm.

As part of the National Plant Diagnostic Network, more than 400 Maine citizens learned about the First Detection Network, which was established as a first defense against exotic pest introductions. In 2006, 31 individuals were trained as First Detectors - individuals who in the course of their duties are in a position to notice an unusual outbreak, a pest of concern, or symptoms of a pest of concern. Other endeavors included numerous insect and/or plant disease talks for grower groups, gardening groups, and children at K-12 schools.

In recent years, wild blueberries grown in Maine have contributed between $18.7 million (2004) and $44.7 million (2000) to the state's economy (depending upon growing conditions). UMaine Extension promotes best management practices that help blueberry growers successfully minimize pesticide and herbicide use. Since the introduction of IPM to monitor and control blueberry pests, growers have reported up to a 70 percent reduction in their use of insecticide applications.

For the past 10 years, we have partnered with Extension programs from Vermont and New Hampshire to conduct IPM workshops for more than 130 regional greenhouse operators.

The average value of Maine's commercial apple production is $13 million per year. In 2006, the UMaine Extension Apple IPM Program provided 19 newsletters to 190 commercial and hobbyist apple orchardists, with updates on current and upcoming pest threats and management information. We worked directly with 25 orchards, providing weekly or biweekly farm visits to monitor for pests during the May-to-August growing season. Through the IPM Web site, we provided daily updates of 64 pest development, horticulture, and weather models. In the most recent survey, growers estimated per acre savings from IPM Program services at $112 per acre, or a total estimated savings of $224,000 in 2006.

In 2006, UMaine Extension staff were in contact with more than 100 commercial strawberry growers to help them apply pesticides appropriately. We worked directly with eight volunteer farms to monitor problems on a weekly basis during the pre-bloom through harvest period and provided management recommendations based on the findings through a weekly newsletter, posted on our Web page at: http://pmo.umext.maine.edu/strwbery/strwbery.htm. Monitoring indicated that black vine weevil and strawberry root weevil are increasing as a problem in Maine. Estimated savings in 2006 due to reduced applications were $100 per acre.

Our IPM field staff operated 125 field-monitoring potato sites in 2006. Through monitoring and insect trapping, Maine potato growers avoided crop losses from European corn borer and aphids, which can be major pest problems for growers. These efforts are estimated to have saved the industry $3.2 million. Our potato late blight forecasting program provides vital information to

growers, and in 2006, prevented more than $10 million in crop losses by timely recommendations. Insecticide applications were reduced through field scouting and monitoring, which resulted in the elimination of applications for growers. Less application means cost savings for growers and fewer chemicals introduced into the food system. This year, potato growers in Maine saved approximately $3 million, and an estimated 1,500 gallons of insecticide were never applied. We estimate that the potato IPM program saved the producers approximately $13.5 million in 2006.

Maine is the lead state in New England for the *Northeast Pest Management Center*, which provides a virtual resource over the Internet for the best pest management resources from each state. The site is located at http://pronewengland.org . Our online *Maine Potato Pest Management Guide* provides potato growers with information on disease, insect, and weed control, along with information on vine desiccation, storage disinfections, and seed treatments. During 2006, the site, located at http://www.mainepotatopestguide.com/, had more than 72,000 visits.

Sweet corn grown in Maine has an economic value to growers of nearly $4 million. This year, we worked with 22 volunteer corn farmers to minimize insecticide use through weekly pest monitoring, and distributed a weekly IPM report to more than 100 growers. Post-season evaluations indicated that over 90 percent of the growers improved their crop quality, and 90 percent altered their pesticide usage based on our efforts. More than 50 percent of the participants reduced the number of sprays. Approximately, 80 percent of the farmers found that the program information helped them reduce their costs, with estimates of up to $100 per acre.

The UMaine Extension Insect and Plant Disease Diagnostic Laboratory responds to the needs of commercial growers and citizens so they can make informed and timely decisions about pest management. During 2006, approximately 2,000 samples were processed, with an additional 1,500 phone and e-mail requests. In addition, UMaine Extension partners with the Maine Department of Agriculture, Food, and Rural Resources, and USDA- Animal and Plant Health Inspection Service - Plant Protection and Quarantine annually to conduct a survey of Maine nurseries for the pathogen that causes sudden oak death. This year, 428 plants were sampled from 29 nurseries and processed through our lab. Results have shown the presence of the pathogen in only one sample. We also processed 76 screening samples for the Ralstonia organism, which can be a serious problem for potatoes.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 4 Total	6,100	$848,971.82	$94,004.04	$848,971.82	$1,791,947.68

Consolidated Plan of Work Performance Goals
OUTCOME INDICATORS: Behaviors and Impacts

	Total Days: 6,100
Acres included in watershed management initiatives.	131,083
Agricultural producers will implement Integrated Pest Management programs in Maine.	2,043
Agricultural producers will reduce herbicide use with increased use of cultivation, cultural management, band spraying, or lower-rate products.	545
Agricultural producers will start composting.	19
Citizens accessing pest management information from Pest Management Office Web sites	969,895
Community groups will be involved in watershed management initiatives.	42
Crop producers will identify yield-limiting factors and increase long-term productivity.	2,278
Educational and community projects will be developed and/or run by Master Gardeners.	360
Farmers and homeowners within source water protection areas will assess and take action to prevent water contamination.	41
Households will start composting.	133
Maine citizens will be involved in leadership training to protect natural resources.	74
Maine citizens will complete lake watershed surveys.	6
Maine citizens will conduct coastal watershed surveys.	15
Maine citizens will have increased awareness of the threats to drinking water.	465
Maine citizens will have increased awareness of threats to marine habitats.	4,385
Maine citizens will monitor coastal water quality and phytoplankton for public health concerns and research support.	305
Maine citizens will protect wildlife habitat in suburban and rural settings.	12
Maine citizens will take action to protect Maine's natural resources, by becoming inland and coastal watershed stewards.	160
Maine citizens will take action to protect shellfish resources.	285
Maine citizens will use appropriate home horticulture practices to protect water resources.	231

Maine coastal groups will learn capacity building techniques to protect marine resources.	52
Maine residents will protect wetland and riparian habitats.	290
Management plans will be written as a result of UMaine Extension efforts.	8
Master Gardener volunteers will be trained in composting education.	227
Master Gardeners will further their education through college classes or technical programs.	86
Master Gardeners will start a horticulture-based business.	15
Municipalities will start composting.	11
Number of acres enhanced as wildlife habitat as a result of Habitat Stewards™ volunteer efforts, and other Extension wildlife habitat programs.	66
Number of acres of forest included in forest management plans.	1,250
Number of alternative income opportunities adopted.	3
Number of contact hours of continuing education instruction delivered by Extension staff or in collaboration with partners.	533
Number of environmentally appropriate forest management practices adopted and the number of acres affected.	10
Number of firms implementing changes in management as a result of developing strategic goals and objectives.	5
Number of firms implementing strategies or practices to increase product value or dollars earned.	74
Number of firms incorporating strategic planning, record keeping, and predictive models in their management practices.	2
Number of individuals and groups who develop goals and objectives for their forest.	184
Number of individuals or groups who develop a forest management plan.	5
Number of individuals who implement their forest management plan.	3
Number of Maine citizens making an informed decision on a pesticide management issue after consultation with pest management staff.	4,031
Number of Maine citizens trained in pest identification, biology and appropriate management methods.	1,924
Number of Maine citizens who become certified pesticide applicators.	397
Number of manufacturers who can describe the relationship of production, economic and environmental variables in making management decisions.	51
Number of manufacturers adopting safety practices.	18
Number of Master Gardeners who are able to successfully identify beneficial and pest organisms, and utilize appropriate management techniques.	642
Number of natural resource professionals who obtain their apprentice wood scaling license as a result of attending Extension programs.	46

Number of natural resource professionals, educators, and service providers attending continuing education instruction delivered by Extension staff or in collaboration with partners.	131
Number of natural resource professionals, educators, and service providers incorporating new knowledge and adopting new practices in their work.	91
Number of new or expanded market opportunities for forest products.	7
Number of participants who consider alternative income opportunities for their land.	87
Number of people citing improved quality of life as a result of participation in Extension's wildlife habitat programs.	205
Number of people reporting reduced use of pesticides	183
Number of people that enhance and manage their property as wildlife habitat, as a result of Extension education programs.	135
Number of producers improving pesticide application techniques as a result of pesticide safety education programs	2,801
Number of producers using integrated pest management practices for crop, livestock, and landscape management	713
Number of volunteer hours given by Habitat Stewards™ to educate the public on wildlife habitat.	493
People who adopted ecologically sound landscape practices that enhance wildlife habitat.	171
People who donated vegetables to food pantries.	418
People who expanded their garden space.	266
People who gathered and organized information.	3,732
People who graduated from the UMaine Extension Compost School.	77
People who made informed decisions demonstrating environmental stewardship, and sustainable marine resource practices.	2,273
People who participated in Master Gardener educational events, and community projects.	4,810
People who recognized significant improvement in gardening skills through participation in public garden programs.	3,245
People who reported reduced pesticide use.	268
People who started a garden.	124
People who took steps to achieve personal, and community goals.	2,417
People who used adaptive gardening techniques.	43
Potato and blueberry producers who understood and used thresholds for pest treatment.	1,865
Pounds of produce donated to food pantries.	59,071
Value (in dollars) of food donated to food pantries.	156,804
Private compost facilities established.	13
Private composters attending programs.	172

Producers adopting testing strategies as a part of management practices and using results in their management process.	40
Producers changing pesticide application techniques and attitudes by using Pesticide Applicator Training practices.	338
Producers implementing pesticide and nutrient Best Management Practices to protect surface water and groundwater systems.	361
Producers maintaining pesticide certification by attending pesticide recertification programs.	1,643
Producers reducing negative impacts of livestock on streams.	15
Producers using strategic planning, record keeping, and prediction models in their management practices.	1,875
Number of residents attending home composting programs.	391
Responses made to public requests.	4,446
Soil tests interpreted.	475
Soil tests submitted.	1,798
Specimens collected.	962
USDA and EPA received accurate information on pesticide and other pest management tactics used in Maine. Number of reports produced.	16
Volunteer hours given by Master Composters for community projects.	50
Volunteer hours given by Master Gardeners to provide horticulture information to the public and to develop community horticulture projects.	28,443
Youth demonstrating a knowledge of the laws of ecology and/or an understanding of their connections with the Earth.	7,531
Youth demonstrating environmental stewardship and/or sustainable natural resource practices.	3,489

OUTPUT INDICATORS

Number of articles in news media.	272
Circulation of articles in news media.	1,782,010
Number of audio-visual resources developed (video, slides, displays).	150
Number of columns written for news media.	2
Number of consultations.	15,828
Number of groups formed (ad hoc or formally organized).	107
Number of issues of newsletters written.	116
Number of Master Gardener volunteers successfully completing training.	223
Number of people attending the workshops/events.	36,041
Number of people contacted by Habitat Stewards™ in their volunteer efforts.	365
Number of people involved in groups formed.	4394
Number of people reached through Farmers' Markets.	1100
Number of people receiving newsletters.	44,422
Number of publications distributed.	877,838
Number of publications written.	104

Number of radio program listeners.	15,000
Number of radio programs produced.	1
Number of television segments produced.	17
Number of volunteers trained.	1,820
Number of workshops/events.	879

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Water Quality, Community and Economic Development

The Maine Beaches Forum: Maine experienced a record number of high bacteria scores at beach sites during 2005, with 82 advisories and closures posted on many of the 42 beaches served by the program. The Maine Beaches Forum, sponsored by Maine Sea Grant and UMaine Cooperative Extension, was established in 2000 to provide an opportunity for communication and information exchanges among beach stakeholders with diverse interests. The goal of the Forum is to improve participants collective understanding of the regional nature of beach water quality so citizens can facilitate the development of proactive regional municipal approaches to controlling pollution and preventing beach closures. In past years, the conference has focused on themes such as beach data trends, shorefront construction techniques, economic impact of beaches, coastal access, local beach management strategies, and many others. The 2006 session was held in southern Maine and provided clear information and discourse on municipal and state responsibilities for water quality monitoring and pollution source identification, and actions needed to protect beach water quality.

Summary of Impacts: Seventy-eight percent of participants increased their scientific understanding of factors contributing to beach water quality after attending the Forum. A total of 74 percent intended to apply this knowledge in their work related to maintaining beach water quality, and 77 percent reported an increased awareness of opportunities for collaboration to solve beach water quality issues. Beyond the event, municipalities held public workshops on maintaining beach water quality, and informed citizens and town leaders of the positive economic and environmental value of coastal water quality monitoring. Participants developed specific action strategies for individual beaches based upon regional collaboration among municipalities and the state, and specific actions to implement in their towns to identify and eliminate sources of pollution that can cause beach closures. Participants are continuing to pursue remediation of pollution sources, and networking on a regional basis on shared pollution issues.

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: State Specific

Key Themes: Youth Development/4-H, Environmental Education

Vaughn Island 4-H Camp - UMaine Extension in York County works in cooperation with the Kennebunkport Conservation Land Trust and Maine Island Trails Association to sponsor low-impact camping programs that provide environmental education and leadership training for youth ages 9 to 17. During 2006, 108 youth participated in three- and four-day residential programs, each of which involved 18 youth in an intensive outdoor education experience. This program, which occurs on Vaughn Island near Kennebunkport Maine, enhances the capacity of children to learn sustainable natural resource stewardship practices with a focus on

the four essential elements of 4-H; belonging, independence, generosity and mastery.

Summary of Impacts: Parents of program participants were surveyed on their perception of changes in elemental behaviors in their children. With a return rate of 23 percent, 100 percent reported positive attitude changes in their children attributable to the Vaughn Island camping experience program. Seventy-eight percent said they noticed changes relative to their children's sense of belonging (making friends, building trust in relationships, valuing diversity, understanding culture); 91 percent said they noticed changes in their children's sense of independence (sense of inner peace, self awareness, self confidence, sense of joy); 91 percent said they noticed changes in their children's sense of mastery (nature study, curiosity about the environment, learning new outdoors skills); and 87 percent said they noticed changes in their children's sense of generosity (individual and group action, teamwork, interest in protecting and caring for the environment).

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: State Specific

Key Themes: Youth Development/4-H, Environmental Education

Creating a School-Based Outdoor Learning Center: While many public schools in Maine have access to outdoor areas that can provide rich learning opportunities, teachers often lack the time and expertise to fully utilize these resources. Consequently, students lack opportunities for meaningful outdoor learning experiences that complement and enhance the classroom curriculum. The 4-H Earth Connections School Programs at Tanglewood Camp and Learning Center are designed to complement and enhance public classroom curricula by teaching youth about ecosystem principles and environmental issues through hands-on experiences. 4-H Earth Connections programs help students to make the connection between theoretical and classroom-based learning by providing students with multi-day learning experiences as a foundation for longer term, hands-on projects that apply to their real lives. All lessons are correlated to help schools meet learning levels required by the State of Maine Learning Results standards.

Summary of Impacts: In one such example, teachers from the St. George Elementary school in Tenant's Harbor, Maine approached the School for help in applying elements of their earth science education to a project involving the rehabilitation of an overgrown trail located on their school grounds. The students participated in a three-day forestry camp at Camp Tanglewood where they learned skills applicable to their project and conducted a natural resources inventory by collecting and analyzing data on forest composition, soil types, and wildlife habitat. The students were then able to use the knowledge and skills they had gained to inventory their own school forest property and plan a trail that highlighted areas of interest and natural beauty while respecting the ecological balance of the area. Their finished project included learning stations that explained various ecological features of the forest, making the trail usable to other students and the community as an outdoor learning center. In June 2006, the school held a ribbon-cutting ceremony to officially mark the opening of the new trail. The St. George students were among 2,073 students who attended a 4-H Earth Connections school program at Tanglewood during the 2005/2006 school year.

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: State Specific

Key Themes: Forest Resource Management

Women and the Woods: Forestry management and woods work have not been traditional roles for women. In our changing society, women are increasingly in control of private woodlands, and some women are unprepared to manage, steward, or work their woods. Through a partnership between the UMaine Extension's Women's Agricultural Network (WAgN) and the Maine Department of Conservation - Maine Forest Service, the Women and the Woods Program brings female woodland owners together to network and gain new knowledge and skills about forestry stewardship in a supportive learning environment. The Program was created in direct response to needs expressed by women landowners for a forestry program specifically designed for women. Supportive networks have been started by training women to host educational gatherings in their homes and woodlots, thus educating each other and increasing the network of women who own woodlands. More than 100 people have attended 15 "kitchen table meetings" hosted by women woodland owners. An annual, residential four-day conference immerses participants into a total learning experience that provides structured and unstructured time to share experiences, learn from experts, be mentored by other women, and practice in an actual woodlot with hands-on learning.

Summary of Impacts: During 2006, more than 200 women have attended our educational events, learning stewardship, conservation, and regulatory practices, and have begun to effectively manage more than 30,000 acres. Women increased their skills and knowledge in such areas as: using chainsaws, horse logging, compass and boundary work, doing stand inventories, and more. As one participant said, "What we learned felt real and relevant. Openness of conversation and the whole atmosphere was relaxed and non-critical, with enough time to network and bounce ideas off each other. Educators were willing to keep working with us individually and as group(s) until we understood."

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: State Specific

CSREES Goal 5

Enhanced Economic Opportunity and Quality of Life for All Americans

Executive Summary

4-H Youth Development

In 2006, more than 15,000 youth participated in the UMaine Extension's 4-H Youth Development program. An estimated 25,000 learning projects were completed by youth through a variety of delivery modes, including the 4-H club model, school enrichment programs, out of school programs, and 4-H camps. Our program utilized more than 3,500 trained volunteers to serve as mentors, teachers, and leaders. Current research projects include a longitudinal study that looks at building community capacity for school-aged childcare and educational enrichment, and a study of the impacts of 4-H on the home schooling population. Over $1.5 million in grants and special funds was received to support these and other 4-H programming initiatives across Maine.

4-H Animal Science

Forty adult and youth volunteers from around the state make up the Animal Sciences Committees that help our 4-H Youth Development program provide educational experiences for youth with animal projects in all counties across Maine. Members contribute to Maine 4-H Days, and assemble teams of youth to compete with their animals in regional events like the Eastern States Exposition and take them to national livestock events. The Committees also exist to provide recommendations, direction and advice to the state 4-H office on statewide animal science 4-H programming.

Eighty-three youth were chosen this year to represent the Maine 4-H program in one of seven commodity competitions at the Eastern States Exposition in West Springfield, Massachusetts. Involvement on the team develops leadership, group process, and planning skills, and this year our team members demonstrated superior abilities in showmanship and sportsmanship at these competitive events.

Thirteen members of the Maine 4-H Horse Team attended the Eastern National 4-H Round Up in Louisville, KY. One Maine team member placed first out of 20 states in the public speaking contest, earning a scholarship from the American Quarter Horse Association.

The Maine 4-H Dairy Team, made up of 18 youth, competed with 170 others from across New England in a variety of dairy competitions at the Eastern States Exposition. In the dairy knowledge exam, one Maine youth took top honors with the highest score in the senior division (ages 16 to 18). Maine's Dairy Judging Team placed first in Holstein and milking shorthorn breeds and was the high team overall in the contest. This year, for the first time in 12 years, a Maine team of four Maine 4-H youth traveled to Madison, Wisconsin and the World Dairy Expo to compete in the National 4-H dairy cattle judging contest. Competing against 30 other state teams from across the United States, the team placed 15th overall.

4-H Workforce Preparation
The 4-H Leadership teams at three southern Maine schools created Wellness Leadership Days, which consisted of goal setting workshops for their entire school's staff and students. More than 2,200 students learned about the importance of goal setting, career education, and the steps to success in school and work. During 2006, more than 200 Maine youth participated in Mini-Society™, an entrepreneurial simulation experience designed specifically for hands-on learning by youth. Some teachers involved with the experience have recently attended training sponsored by the National Council on Economic Education with the intention of expanding the program district wide. They are also pursuing longitudinal research projects connected with this learning experience to determine the impacts of the Mini-Society™ program.

In Maine, a 20-hour tractor safety course is mandated for 14- and 15-year olds who use the equipment on their family farms, or as part of a job. In 2006, 42 youth and adults successfully completed our six-session farm tractor safety training. Each gained skills and knowledge in safe equipment operation and earned credentials through written and hands-on testing.

The Oxford County 4-H program had 42 middle school youth participate in a career education program this year sponsored, in part, through a workforce development grant with the National 4-H Council. In 2006, the group conducted interest and skills surveys on-line, completed career job shadow assignments, created resumes and portfolios, and went on a career and global education trip to New York city for four days. Participants demonstrated an increased knowledge in career exploration, learned how to conduct job searches and pursued future career and talent interests.

4-H Leadership
Twenty-nine Maine youth participated in Citizenship Washington Focus, National 4-H Congress, and the National 4-H Conference in 2006. These three leadership initiatives offer 4-H members the opportunity to get involved with National initiatives, bring back leadership opportunities to the state of Maine, and gain a life changing experience. Local counties have seen the impact of these national initiatives when youth return and begin practicing leadership skills within the local county 4-H programs.

The "traveling thematic day camp" model has been successful in Washington County for the past five years. During the summer of 2006, we implemented a leadership component for alumni campers who had gotten too old to attend 4-H summer day camps. Alumni ages 12 and older were invited to work as youth leaders by volunteering 20 hours of service and using a team approach to lead science activities with younger campers. Youth leaders learned life skills in the areas of leadership, organization, teamwork, communication, and cooperation.

The Houlton High School 4-H Civil Rights Team, made up of 26 members, identified the prevalence of unkind, derogatory, and threatening language in their school as a problem that affected the climate of the school. In 2006, team members worked to develop strategies to address the problem. They organized and carried out two lunchtime events at Houlton Southside School that involved 190 fourth and fifth grade students, and organized an elementary level Civil Rights Team. The team initiated youth-led, small group activities and discussions for

approximately 125 teachers. The feedback indicated that the staff is willing to work with the students to help make language in the schools more welcoming to all.

Tanglewood 4-H Camp and Learning Center's leadership program now has four program components, which allows a teenager to participate in nine weeks of residential programming over a four-year period. All programs are designed to create learning opportunities based on principles of positive human development. These progressive leadership opportunities enable teens to practice working with youth through counseling campers, leading activities, and assisting experienced staff in working with youth. In addition to learning by doing, these teens get feedback and guidance from experienced adults and also receive first aid and waterfront safety skills training. In 2006, 32 teens participated in the program.

In Maine, community leaders, educators and parents have expressed the need to develop after-school programming beyond the realm of childcare into enriching, educational experiences with and for youth. They have also expressed the need to create leadership opportunities for teens, and to prepare middle school youth for the workplace. UMaine Extension obtained a grant to implement "Mentor ME after School." This initiative explores unique approaches to after-school mentoring and workforce preparation, and evaluates the relative efficacy of the approaches. County 4-H faculty in Kennebec, Oxford, and York counties are using this grant to provide programming in eight community and school sites, training 100 teens and adults to mentor 770 middle school youth.

New Youth Development Initiatives

In 2006, UMaine Extension worked with a team of partners that include the Maine National Guard, American Legion, Maine Department of Education, Boys and Girls Clubs of Maine, and the Maine After-school Network to implement a $50,000 grant from the U.S. Army and CSREES to provide support for children who have a parent deployed overseas. Components of this grant include training for 4-H and military teens to educate peers, schools, and community organizations about the challenges of military deployment; provide "Hero Backpacks" to children with a parent deployed to Iraq or Afghanistan; and training to communities to give them information and resources to support Maine military children. Fifty 4-H members representing five 4-H clubs filled 300 Hero Packs for children with a parent overseas. These 4-H members included hand-written thank-you cards to each child to thank him or her for sharing a parent on behalf of our nation. A second round of grants for 2007 has been awarded.

4-H Discovery Arts was created in response to research that suggests arts education programming can be a means for youth to receive life skills in belonging, mastery, independence and generosity, the essential elements of 4-H. In 2006, this initiative provided direct programming to 225 youth in settings that included school classrooms, communities and nature. The program expanded to include collaboration with Hospital Oncology Treatment Centers, under the name Art HOPE. Art HOPE is a program that trains older 4-H teens in the arts and ways to work with cancer patients. These youth then work with a collaborating arts instructor, Extension staff, and oncology staff, to create art during monthly gatherings. As much as they are about creating art, these gatherings are even more so about human connection, intergenerational wisdom and vibrancy, compassion, and heart.

Oxford County has taken a lead role in youth governance programming by hosting two statewide leadership and youth and adult partnership trainings, as well as supporting a regional grant for eight youth in governance teams. The teams are all demonstrating a full understanding of the asset-based community development process for positive change in their communities, with a focus on local issues. The process includes the setting of a local goal for change, but the ultimate goal is to teach young people how to engage in their community, have a voice and be part of a growing movement to involve young people in community-based organizations focused on positive change. The teams are made up of youth and adult members.

The first Maine 4-H GIS (Geographic Information Systems) Camp was conducted at UMaine Extension's Blueberry Cove Camp in June, 2006, with 15 youth from across the state attending the camp. The campers gathered data using GIS and GPS (Global Positioning System) to make recommendations for the placement of proposed structures, including a parking lot, some new cabins, and a dock. They created sophisticated maps using geospatial technologies and made presentations to the camp staff and parents on the last day of camp. The young people gained hands-on knowledge and provided a valuable service to the camp.

For the first time, five Maine youth attended the National 4-H Technology Leadership Conference in Lincoln, Nebraska. Each young person selected a "track" for the week and participated in rehabilitating old computers, which were then given to families who did not have a computer. The youth reported that the conference was one of their most valuable learning experiences ever.

Parenting and Family Education

Parent educator training is designed to enhance the skills of educators who are working in diverse childcare and child education settings. UMaine Extension's parent educator training offers participants a comprehensive set of skills applicable to their programs. The training also helps educators recognize the benefits of teaching parents how to parent well, and learn how human life-span development affects families. During 2006, 472 parent educators adopted at least one new practice or skill to use when leading a class or working individually with parents, and 55 childcare providers adopted new practices that enhanced their ability to care for children and/or work with parents. Almost 17,000 people received our parenting publications; more than 8,400 received newsletters, and many more were reached through 13 articles in the print news media.

In addition, nearly 2,000 individuals attended our 170 workshops on parenting and other human development topics. While we continue to present workshops that support healthy child development and positive parenting skills, individuals are also using UMaine Extension staff as educational consultants (more than 2,136 contacts), and are accessing and learning from our Center for Parenting Education Web site. The Web site is designed for parents, for people who care for or work with children, and for parenting educators. It is located at http://www.umext.maine.edu/parentcenter/intro.htm.

Through Waldo County's successful program, Parents Are Teachers Too (PATT), UMaine Extension is a key collaborator in the statewide parenting education home visitation delivery system. The PATT program is now offered across Maine, delivering parenting education to any

first-time family. Knox County's Teen Parent Program, and the Parent Education and Family Services Project are also part of this statewide effort to enhance family functioning and promote positive parent-child interaction and healthy childhood growth and development. A total of 245 families enrolled in the Waldo and Knox County programs in 2006; 112 were new to the program. The families received more than 1,400 home visits from UMaine Extension parenting education professionals. Other programs in Maine replicating the PATT program employ 21 professionals, who are supported by UMaine Extension. These programs served 1,372 additional first-time families. The Knox and Waldo County programs continue to serve young families whose mothers are an average age of 22.7 years. One of the most important means by which to measure benefits provided by the programs is the level of satisfaction among the families they serve. Often the parents note the peace of mind that comes from having a resource to turn to and increased confidence gained in their parenting ability. The primary benefits mentioned by respondents include: parental confidence, improved knowledge about child development and educational needs, and relief from isolation.

Based in York County, UMaine Extension's Turn Beauty Inside Out (TBIO) Program is a collaborative, public-awareness, community development program focusing on body image, self-esteem, media literacy, and leadership development for girls and women. The goal is to challenge the media messages that tell girls they must be thinner, prettier, or sexier to be OK, and to create a new cultural definition of beauty as "good hearts, great works and activism." Some highlights of the fourth year of this program (2006) include: 250 parents, teachers, and volunteers have been trained to use our educational resources with young people either at workshops or through individual consultations; more than 150 youth participated in local activities last year, including those celebrating May, 2006 as the third annual *Turn Beauty Inside Out* month, as recognized by the state of Maine; and our film "Real Girls… Turning Beauty Inside Out," was shown to more than 600 adults and youth statewide as part of educational and volunteer training programs. In addition, during the past three years, 36 women have participated in the women's collaborative leadership project, attending The Eleanor Days retreats each June with the goal of becoming advocates for the principles of TBIO. We continue to distribute community gender awareness kits and other resources to teachers, group leaders, and volunteers to adapt and use in their communities. This year we took TBIO to local agricultural and community fairs where we reached more than 600 adults and young people from around the state.

Business and Economic Development

Since its inception, UMaine Extension's Small and Home-Based Business Education Program has helped thousands of Maine people access research-based information and improve their knowledge, skills, and business management practices. Our educational efforts have helped Maine entrepreneurs improve their chances for success, enhancing their economic opportunities and quality of life.

In 2006, we helped 4,500 people by providing cutting-edge educational programs, collaborative projects, workshops and seminars, business clinics, web-based offerings, community radio programs, conferences, publications, and special projects. We taught Maine people how to evaluate, start, and grow their own small and home-based businesses. We partnered with small business owners and other business-assist organizations, and participated in a wide range of

activities to increase the visibility and accessibility of educational resources for individuals considering starting or growing a small and home-based business in Maine. Since 2000, our highly successful on-line Virtual Resource Library [http://www.umext.maine.edu/hbbsite/html/index.html]has offered an estimated 14,000 visitors the opportunity to become more knowledgeable about their business, develop and strengthen their business management skills, increase their awareness of available business resources, and/or improve their business decision-making capabilities.

During 2006, UMaine Extension helped potential and existing small and home-based business owners acquire new knowledge and skills to improve their business management practices and decision-making capabilities. More than 1,700 Maine people attended our 76 small and home-based business education workshops and programs on topics such as: understanding financial statements; pricing specialty food products; balancing business and family; customer service; starting a horticulture business; record keeping; business planning; and marketing. UMaine Extension's Women's Agricultural Network (WAgN) organized two On-Farm Experiential Weekends attended by more than 65 women interested in establishing or enhancing careers in agriculture. Our small business clinic program, conducted through county Extension offices, helped 119 people access reliable information and answered questions about starting and growing a small or home-based business. We helped small-scale and part-time farmers evaluate alternative enterprises, technology-based entrepreneurs research their markets, specialty food producers market and price their products profitably, and child care providers learn how to keep good financial records. For example, to help child care providers grow and prosper, a county Extension educator wrote a business management curriculum for the child care industry in Maine. The numbers attest to our success. Seventy-six people who attended our programs wrote business plans, 60 wrote marketing plans, and 93 developed sound record keeping systems. About 300 people reported adopting one or more business management practices as a result of attending UMaine Extension's small and home-based business education programs.

UMaine Extension also provided leadership in planning and organizing the fourth annual Washington County Business Conference and Marketplace, which was attended by approximately 250 people. This conference has recently become the model for developing regional small business conferences across the state and served as the first Governor's Regional Conference on Small Business and Entrepreneurship. Our successful model of regional small business support is part of a new statewide initiative being piloted in four locations across the state during the next two years. This effort has the support of the Governor's office and is led by a statewide planning team consisting of representatives from UMaine Extension, the Maine Community College System, the Maine Small Business Development Center, the U.S. Small Business Administration, and the Maine Department of Economic and Community Development.

During 2006, the Downeast Micro-Enterprise Network, a collaboration between UMaine Extension and two other business-assist organizations, completed a year and a half-long grant-funded project to provide residents of an economically distressed region of the state with focused educational programming aimed at strengthening the entrepreneurial infrastructure and stimulating small business development and job creation in this region of Maine. The Network

provided education and training to 338 potential and existing micro-entrepreneurs throughout the region.

During the past year, we also provided leadership and educational support to a regional tourism task force that enhanced cultural and natural resource tourism opportunities throughout the Highlands region of Maine. UMaine Extension engaged 225 people in small business and tourism stakeholder networks with educational presentations and community building activities on tourism economic development. With our help, the tourism task force completed the publication of 1,500 maps and interpretive guides for outdoor recreation cultural heritage and is currently working on publishing the first ever Maine Highlands Nature Tourism Guide.

UMaine Extension has also strengthened existing linkages and developed new partnerships with small and home-based business owners and other business-assist organizations in Maine during the past year. We initiated or participated in 21 collaborative and/or cooperative efforts that resulted in more than 50 educational activities being conducted across the state.

We also cooperated with researchers at UMaine on a variety of important economic development applied-research projects. We partnered with faculty members in the Department of Resource Economics and Policy to analyze the economic importance and impacts of micro-businesses to the New England economy. We also collaborated with the Department of Resource Economics and Policy, the Center for Tourism Research and Outreach, and the Maine Department of Agriculture to investigate the opportunities, challenges, and linkages facing the agritourism industry in Maine.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 5 Total	6,555	$912,296.77	-0-	$912,296.77	$1,824,593.54

Consolidated Plan of Work Performance Goals

OUTCOME INDICATORS: Behaviors and Impacts

Total Days:	6,555
Adults will adopt a least one new growth-enhancing skill.	1,544
Adults will adopt at least one new parenting skill.	856
Adults will develop strategies to strengthen family and other important relationships.	1,526
Adults will incorporate new information that enhances a child's development.	807
Adults will participate in community-based efforts to reduce violence.	361
Adults/older youth will demonstrate acceptance of differences.	777
Adults/older youth will demonstrate essential communications skills.	1,057

Adults/older youth will demonstrate fairness and equity.	684
Adults/older youth will demonstrate peaceful conflict resolution skills.	554
Adults/older youth will demonstrate that they are responsible, contributing members of their community.	1,105
Adults/older youth will teach acceptance of differences.	599
Adults/older youth will teach essential communication skills.	659
Adults/older youth will teach peaceful conflict resolution skills.	438
Adults/older youth will use developmentally appropriate hands-on, experiential educational methods.	1,225
Child care providers will adopt at least one new parenting skill.	52
Child care providers will adopt at least one new practice or skill that enhances their ability to care for children and/or work with parents.	55
Child care providers will incorporate new information that enhances a child's development.	218
Collaborative groups will be formed.	16
Cooperative groups will be formed.	6
Educational activities resulting from cooperative/collaborative efforts.	51
Enterprises will be retained/expanded.	96
Enterprises will report increased revenues and/or decreased costs.	50
Enterprises will transition to closure.	4
Jobs will be created.	51
New enterprises will be created.	97
Non-viable businesses will not be started.	19
Number of adults/older youth who demonstrate leadership.	1,109
Number of adults/older youth who teach fairness and equity.	461
Number of adults/older youth who teach leadership.	1,167
Parent educators will adopt at least one new practice or skill in leading parenting classes or groups.	220
Parent educators will adopt at least one new practice or skill in working with parents.	252
Participants and volunteers will be involved in public policy issues affecting families, organizations, and communities in Maine.	605
Participants and volunteers will increase their confidence and participation in resolving family, organizational, or community issues.	1,865
Participants and volunteers will increase their educational and leadership skills.	1,143
Participants and volunteers will use their educational and leadership skills to bring about change in their family, organization, or community.	1,429
Participants will demonstrate positive reading habits by describing increasing reading activities (reading, finger rhymes, talking about books, etc.) with child/children.	18
Participants will demonstrate positive reading habits by describing increasing reading for self.	16

Participants will demonstrate positive reading habits by describing/demonstrating increased positive family relationships through reading, and reading related activities.	6
Participants will demonstrate positive reading habits by expressing increased enthusiasm for reading, and ideas found in books.	12
Participants will demonstrate positive reading habits by increasingly having books visible in the home.	21
Participants will demonstrate positive reading habits by increasingly having general reading materials (newspapers, magazines, etc.) in the home.	14
Participants will demonstrate positive reading habits by reporting increasing visits to a local library.	11
People gathering/organizing personal, financial information.	244
People making informed decisions.	536
People taking steps to achieve personal and goals.	758
People will adopt one or more business management practices (e.g. developing a pricing strategy, etc.).	295
People will contact business-assist organizations.	493
People will develop record keeping systems.	93
People will increased their confidence and participate in organizational or community affairs related to small business.	21
People will report ease in understanding and accessing small business educational resources.	296
People will take part in networking opportunities.	1,692
People will write business plans.	76
People will write marketing plans.	60
People will write customer service plans.	31
The number of adults enhancing their knowledge and/or skills to provide necessary care for aging family members.	390
The number of coalitions with UMaine Extension involvement that support healthy child development, and positive parenting skills.	54
The number of UMaine Extension parent educators incorporating nutrition education materials into their programs.	16
UMaine Extension nutrition aides and educators will incorporate parent education materials into their programs.	8
Youth will demonstrate and document the ability to work in diverse settings.	475
Youth will demonstrate and document workplace skills, and competencies.	461
Youth will demonstrate character development (self-discipline, managing feelings, self-responsibility, self esteem, integrity, honesty, reliability, loyalty).	3,375
Youth will demonstrate empathy, and concern for others (nurturing relationships, sharing, charity).	2,446
Youth will demonstrate responsible citizenship (self-motivation,	4,244

teamwork, contributions to group effort, community service/volunteering, and accountability).	
Youth will demonstrate the qualities necessary to run a successful business.	84
Youth will demonstrate the skills necessary to run a successful business.	68
Youth will demonstrate their ability to lead others.	1,264
Youth will demonstrate their ability to resolve conflict through peaceful means.	1,582
Youth will demonstrate tolerance and acceptance of differences (peaceful conflict resolution, social skills, cooperation, courtesy, communication, respect, fairness, and justice).	3,479
Youth will develop and use safe and peaceful means to resolve disputes in their communities (town, neighborhood, and school).	635
Youth will develop mutually caring relationships with peers.	2,265
Youth will engage in activities related to their short- and long-term goals.	1,708
Youth will engage others in being supportive in their communities.	2,688
Youth will help their communities embrace diversity.	529
Youth will identify personal goals, values, and aspirations.	1,666
Youth will make appropriate decisions and resolve problems effectively in their daily lives.	3,043
Youth will make healthy lifestyle choices.	2,504
Youth will make informed financial decisions.	293
Youth will organize and maintain appropriate personal financial information.	93
Youth will practice appropriate safety procedures in home, work, or recreational activities.	1,940
Youth will serve effectively on teams with peers and adults.	1,440
Youth will set appropriate and reasonable goals for themselves and others.	7,019
Youth will take steps to achieve personal financial goals.	159
Youth will use peaceful means to resolve disputes with others.	779
Youth will value differences in their peers.	805
Youth will volunteer in their communities.	2,315

OUTPUT INDICATORS	
Circulation of articles in news media.	363,462
Estimated audience involved in broadcast programs.	44,501
Number of articles in news media.	2,921
Number of audio visual resources developed (video, slides, displays).	102
Number of collaborative efforts initiated.	15
Number of consultations.	4,482
Number of cooperative efforts initiated.	6

Number of economic reports disseminated.	13
Number of educational radio, TV & internet programs given.	51
Number of educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	150
Number of educational workshops, seminars, or conferences conducted by UMCE staff.	190
Number of enterprises assisted.	466
Number of existing small business owners participating in UMCE educational programs.	455
Number of groups formed (ad hoc or formally organized).	158
Number of home budget plans written.	30
Number of home visits.	99
Number of home visits by parent educators.	1,254
Number of individual consultations held.	209
Number of individuals participating in collaborative efforts.	549
Number of individuals participating in cooperative efforts.	28
Number of issues of newsletters distributed.	672,000
Number of issues of newsletters written.	286
Number of one-on-one consultations or trainings conducted by Extension program participants and volunteers.	141
Number of one-on-one consultations or trainings conducted by UMCE staff.	334
Number of organizations involved in collaborative efforts.	16
Number of organizations involved in cooperative efforts.	74
Number of participants in educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	1,749
Number of participants in educational workshops, seminars, or conferences conducted by UMCE staff.	2,675
Number of people attending small business clinics.	23,178
Number of people attending the workshops/events.	119
Number of people attending the workshops/events (for the aides).	3
Number of people attending UMCE educational workshops.	1,705
Number of people attending UMCE-sponsored networking programs.	1,380
Number of people involved in groups formed.	2,097
Number of people receiving newsletters.	22,462
Number of people receiving newsletters/calendars.	1,525
Number of people requesting business-related information.	280
Number of people requesting home budgeting information.	252
Number of potential small business owners participating in UMCE educational programs.	172
Number of promotional/informational articles distributed.	10,188
Number of promotional/informational articles written.	5
Number of publications distributed.	20,070

Number of publications written.	19
Number of small and home-based business owners participating in collaborative efforts.	65
Number of small and home-based business owners participating in cooperative efforts.	4
Number of small business clinics held.	103
Number of Trade Area Analyses conducted.	3
Number of UMCE educational workshops held.	76
Number of UMCE-sponsored networking programs held.	30
Number of volunteers trained.	1,187
Number of workshops/events.	1,184

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Youth Development/4-H, Character/Ethics Education, Workforce Preparation - Youth and Adult

Maine 4-H Geographic Information Systems (GIS) and Global Positioning Systems (GPS) Project: According to the U.S. Department of Labor's Employment and Training Administration (2004), "The geospatial industry is an emerging high growth sector of the U.S. economy that is expected to reach more than $21 billion in revenue over the next few years. There is an immediate and anticipated need to fill tens of thousands of positions in geospatial technology and related fields." Philip Bond, Under Secretary of Commerce for Technology, United States Department of Commerce, acknowledged that developing technological literacy will require early education with technology as a focus of study. Unfortunately, technology education has not been a primary area of focus in grades K-12 in Maine. As a result of emerging needs, UMaine Extension created the Maine 4-H GIS/GPS Project for youth. Participants learn and demonstrate leadership skills, gain technological expertise in geospatial technologies, and become more involved in their communities. Youth engage in community mapping projects by critically examining community issues, gathering data and applying the resulting data sets within GIS applications.

Summary of Impacts: The projects are typically done for municipalities and community agencies, and usually involve making follow-up recommendations. Some examples of projects include; mapping fire hydrants for emergency service agencies; mapping and creating community walking trails; mapping local food sources; mapping the location of vernal pools in a community; and identifying and mapping historical places in towns. The GIS software company Environmental Systems Research Institute (ESRI) has partnered with National 4-H to offer grants to 4-H groups to support their community mapping projects. To date, we have received 22 grants with an estimated cash equivalent of $880,000. More than 200 youth and adults are learning geospatial skills and working with community mapping projects. Of these, 50 are working specifically with local fire departments. The projects have helped to educate community members about their environment and to improve emergency response capacity. Two recent participants are choosing to study Spatial Information Science and Engineering at universities in Maine. Youth participants have developed a foundation to explore important and relevant career aspirations related to an emerging and marketable technology. The success

and growth of this program will continue because we know that engaging youth, educating adults, and promoting the use of technology for community development are ongoing needs.
Source of Federal Funds: Smith-Lever Act funds, State matching funds
Scope of Impacts: State Specific

Key Themes: Youth Development/4-H, Character/Ethics Education

Maine 4-H International Exchange Program: The population of Maine is predominantly white and rural. Consequently, few citizens experience contact with individuals from other countries and cultures. Through the Maine 4-H International Exchange Program, Maine families host Japanese delegates ages 12 to 18 for a month during the summer, or for a full year of high school. The same opportunities are available to Maine youth interested in traveling to and living in Japan.

Summary of Impacts: Since 1990, approximately 250 families have hosted Japanese exchange students in Maine. Former host families were recently surveyed about their experiences hosting. Of the 31 participants responding, 95 percent reported knowledge gained about diversity, culture, global understanding, and geography, with noticeable positive impacts on their family, neighborhood, school or community following the experience. Most notable is the increased acceptance of other cultures. Some responses were: "We are more accepting of other religious views." "[We have] more respect for another nationality." "The Japanese people have become a country of unique individuals vs. a distant land of look-alikes." Of the youth traveling to Japan, five reported interest in or pursuing a career path that included international components. After returning from Japan, one young man gave a speech to middle school students studying Japan. When asked what was the best part of her month in Maine one Japanese delegate said "Being [an] accepted family member. I have a home in Maine."

Source of Federal Funds: Smith-Lever Act funds, State matching funds
Scope of Impacts: State Specific

Key Themes: Child Care/Dependent Care, Community Development

Building Community Capacity for School-Aged Child Care and Enrichment: Maine, like most states across the nation, has a growing latch-key population. Maine children need a safe, nurturing environment that begins before, and extends beyond, the traditional school day. In 1991, UMaine Extension began a pilot project to help communities develop self-sustaining child care and enrichment programs to serve the needs of youth and their families. Our model helps communities develop programs with a strong community and school partnership that are locally owned, educationally significant, and sustainable. In each site, we help develop a board, offer assistance in program implementation, help structure business and sustainable fiscal management, and work with the board to develop short- and long-term goals. There are currently 20 successful sites in Maine communities, which serve more than 400 families.

Summary of Impacts: In 2000, we began a new cycle of funding, with five project sites in two new districts. We worked closely with communities within the districts to identify their needs and implement our multi-step development model. Since 2000, all five elementary school sites have demonstrated significant gains in program development, quality, and student achievement. Programs are regularly evaluated using the Wesley College ASQ (Assessing School-age Childcare Quality) assessment tool and the University of Maine Parent Perception of Student Performance Tool developed in 1993. Results have shown greater student

academic achievement as a result of the program's increased focus on quality hands-on educational enrichment, and increased parental satisfaction. Over 95 percent of parents at all five schools within the districts reported that their child's needs for enrichment offerings were being met, with 63 percent reporting that the programs have directly improved their child's academic performance. All parents at all sites report that they believe the program offers a safe place and good experiences for their children, and 95 percent report that the staff are friendly, caring, respectful and have a good relationship with their children. One parent described the program as the "Best program I have ever had (for) my kids." Another said, "The program has helped my daughter more than I could ever say. Before, she would never want to come to school and was absent more than she was present. Now she has an excellent relationship with staff, and this has made all the difference."

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: State Specific

Key Themes: Home-based Business Education

Virtual Resource Library Helps Entrepreneurs: Maine is home to more than 100,000 micro-businesses. These very small businesses are embedded in communities throughout the state and are an important source of employment and income for many families. Often having limited time and resources, business owners need access to reliable information that will help them make informed business decisions and improve their bottom lines. Begun in 2000, the UMaine Extension Small and Home-Based Virtual Resource Library (VRL) helps micro-entrepreneurs access reliable information through links to small business management publications, business-assist organizations, trade associations, economic and demographic data, lending agencies, and a calendar of events.

Summary of Impacts: During the past five years, our Library has had an estimated 12,800 visits. About 80 percent of the visitors who completed the online survey indicated that the VRL helped them become more knowledgeable about their business, develop and strengthen their business management skills, increase their awareness of available business resources, and/or improve their business decision-making capabilities. All of the survey respondents indicated that they plan to return to the VRL and refer others to the site. One of the survey respondents liked the design and content of the VRL and used the information she found to "start-up my business." Another VRL user remarked, "I was able to find the information I was looking for without leaving my home." The site is located at: http://www.umext.maine.edu/hbbsite/html/index.html.

Source of Federal Funds: Smith-Lever Act funds, State matching funds

Scope of Impacts: Multi-State: All States

Key Themes: Aging

Options to Long-term Care for Seniors: According to the American Association of Homes and Services for the Aging, there are 1.6 million residents in nursing homes. Of these, 23 percent could live independently if some services are available to them in their home. Without an informed understanding of the options, seniors might be placed in a long-term care facility when it may not be necessary. The Senior Companion Program (SCP), sponsored by UMaine Extension, in cooperation with local clinics and social service agencies, provides training on the alternatives to long-term residency care. Training sessions offer information about independent living options for seniors or adults with chronic illness.

Summary of Impacts: More than 630 seniors received this training directly or indirectly through UMaine Extension's Senior Companion Program volunteers, and expressed a desire to remain independent. If they choose to do so, the cost savings over long-term residency care would amount to more than $29,000 per day (based on a minimum $203 cost per day per person). Training sessions continue annually to inform Senior Companion Program participants, family members and communities at large, regarding options to long-term residency care.
Source of Federal Funds: Smith-Lever Act funds, State matching funds
Scope of Impacts: Multi-State: All States

Section B

Stakeholder Input Process

The University of Maine Cooperative Extension has an established process for soliciting stakeholder input in the development and assessment of research and Extension programs. In many instances, this takes the form of project planning and implementation, with stakeholders serving as partners and key members of focus groups, county boards, and advisory groups. These selected examples illustrate our public input process:

- Each of Maine's county offices has a County Executive Committee made up of county citizens who provide advice and direction on priority programs. County educators meet with their Committee at least six times a year to evaluate and review programs and discuss current and future public issues, needs, and programming.
- The UMaine Board of Agriculture continues to provide counsel and advice to UMaine Extension on our agricultural priorities. The Board represents commodity groups, organizations, state government, and related industries. During 2006, the Board met twice and provided specific recommendations to the University regarding the use and upgrading of Experiment Station farms, state bond funding for capitol projects at the farms, staffing, research initiatives, and management of program priorities. The Board also provided specific advice and support regarding the federal intention to reduce and eventually eliminate formula funding for the Experiment Station. In addition, the Board authorized a survey of farmers and agricultural service providers to assess research and outreach needs to update long-range plans for the Maine Agricultural Center (MAC).
- UMaine Extension continues to offer the Pesticide Safety Education Program (PSEP) for applicator licenses and re-licensing credits for private and commercial applicators. Our activities are directed by the PSEP Advisory Committee, a group that includes a variety of public stakeholders, including state agency staff, pesticide distributors, professional applicators, educators, and farmers. Approximately 210 individuals completed initial PSEP training and individual pesticide recertification credits were given to 2,650 farmers attending UMaine Extension pesticide education programs in 2006.
- The Maine Board of Pesticides Control, a group of seven individuals appointed by the governor, provides guidance for and input into UMaine Extension's Pesticide Safety Education Program as well as our efforts in school and homeowner Integrated Pest Management (IPM) programs. The board is made up of representatives from the forestry and medical industries, a commercial pesticide applicator, a private applicator (farmer/grower), a UMaine faculty member with knowledge of IPM, and two citizens with environmental expertise.
- The Forest Resources Advisory Committee (FRAC) includes representatives of natural resource agencies, university faculty, organizations, and businesses. The Committee advises the forestry and wildlife departments of the UMaine College of Natural Sciences, Forestry and Agriculture, with an emphasis on research and outreach. UMaine Extension faculty are actively pursuing opportunities to enhance programming and grant funding through collaboration with FRAC partners.
- The Tanglewood 4 H Camp and Learning Center is advised by an independent board of directors composed of business leaders, educators, biologists, foresters, and other civic leaders. The board participates in long-range strategic planning, including development

and financial planning. In 2006, Tanglewood raised more than $130,000 to complete its $1.1 million campaign to purchase and renovate the Blueberry Cove Camp in Tenants Harbor and an additional $180,000 toward financial aid for low-income families and annual support. Through this educational partnership, UMaine Extension greatly expands its educational programs, serving an additional 4,000 Maine youth and adults with an emphasis on sustainable living, forestry and marine-based environmental education.

- The Pine Tree State 4-H Foundation works in partnership with UMaine Extension to enhance and enrich youth development experiences through the Maine 4-H Youth Development program. Foundation staff share input received from funding recipients, stakeholders and supporters with UMaine Extension staff. Foundation priorities are set by a board of trustees consisting of community and business leaders, 4-H volunteers and youth, all of whom have a strong commitment to community youth development and the success of 4-H. The staff and trustees of the 4-H Foundation are actively engaged in joint work with UMaine Extension through planning committees and task forces.
- Forty adult and youth volunteers from around the state make up the 4-H Animal Sciences Committees whose role it is to help provide educational experiences for 4-H youth in Maine with animal projects. Members also provide recommendations, direction and advice to the state 4-H office on statewide animal science 4-H programming.
- The UMaine Extension Senior Companion Program (SCP) Statewide Advisory Council gives advice and assistance to UMaine Extension staff with the goal of moving SCP toward continued growth. The Council consists of 13 representatives from various health and aging agencies, public and private social service agencies, religious leaders, community leaders, business leaders, educators, and Senior Companions. The Council advises the project director and staff on statewide policy, and helps evaluate operational procedures and practices to maintain consistency with program policies. Additionally, the council periodically interviews program clients to assess the program's value and the impact on communities.
- UMaine Extension and Maine Sea Grant work together in a unique partnership to deliver educational programs and conduct applied research projects in coastal Maine relating to coastal communities, aquaculture, fisheries, and ecosystem health. Marine Extension Team (MET) members have access to local advice on programming via close connections with stakeholders, participation in local committees, and, in some cases, through the formation of individual advisory committees that help direct the development of their individual plans of work. Through these connections, MET members are more effective in their work and have a broader sense of the needs of their constituents. In addition to these local connections, the Sea Grant program also has a Policy Advisory Committee made up of members from partner organizations across the state. The committee includes a mix of state and federal agencies, industry, academic institutions, and non-governmental organizations. This group meets at least three times annually to provide input to program managers, and they have an important role in developing the strategic and implementation plans. A strategic plan for the period from 2006-2010 was developed using input from the sources listed above and in cooperation with recent Plan of Work development activities at UMaine Extension.
- UMaine Extension's Oxford County School-Age Child Care and Enrichment Education program supports 14 sites at the elementary and middle school levels. Each site seeks to offer quality enrichment opportunities and academic support to young people in a safe, fun

and nurturing environment, and to support working families. Successful sustainability depends upon a model that meets local needs as determined by a local advisory board of community members and school personnel.

UMaine Extension often responds to legislated educational needs in priority populations and subject areas. Here are some examples:

- The Maine Compost Team (MCT) implemented poultry mortality composting research to develop best management practices for routine and emergency poultry mortality. This was specifically in response to the need for an emergency response plan for Avian Influenza as requested by the Maine Department of Agriculture, Food, and Rural Resources. The MCT worked in collaboration with USDA-APHIS, U.S. Environmental Protection Agency, Pennsylvania State University, Cornell Waste Management Institute, Iowa State University, and the North Carolina Department of Agriculture and Consumer Services to organize an international carcass disposal symposium in Beltsville, Maryland during 2006. Information from the symposium has been transferred to 38 states and nine foreign countries. We have recently helped develop four compost operations in Jamaica that will be able to redirect over 350 cubic yards of organic material per week when fully functional. The MCT is a partnership among UMaine Extension, the Maine Department of Environmental Protection, the Maine Department of Agriculture, Food, and Rural Resources, and the Maine State Planning Office. More information can be found on page 6.
- The state of Maine requires that any person who measures wood for the purpose of establishing a basis for payment for goods or services be licensed by the state. UMaine Extension partners with the UMaine College of Natural Sciences, Forestry and Agriculture, and the Maine Department of Agriculture, Food, and Rural Resources, to help applicants partially fulfill licensing requirements by conducting Approved Wood Measurement training. This year, 46 participants qualified to progress to the next component of licensing requirements by completing the training.

UMaine Extension learns directly and indirectly about stakeholders' issues and needs by collaborating with other agencies and organizations. Here are selected examples of UMaine Extension's collaborative efforts:

- UMaine Extension has joined with the Maine Department of Agriculture, Food, and Rural Resources, the Maine Department of Human Services and Maine Community Action Program Agencies to develop and implement the USDA funded Maine Senior Farm Share Program. This program partners eligible, low-income seniors with local fruit and vegetable farmers.
- UMaine Extension worked with the Maine Organic Farmers and Growers Association and the Maine Department of Agriculture, Food, and Rural Resources to create the Maine Grass Farmers Network. The effort helps producers sell their pasture raised livestock products by providing producer education, SARE funded research and an annual grazing conference.
- The Organic Livestock Research and Education Consortium is a collaboration of UMaine Extension, UMaine, University of New Hampshire, and the Maine Organic Milk Producers, with funding from USDA – Agricultural Research Service (ARS) New England Plant, Soil and Water Lab. The partnership has led to the successful funding of

several major grants, bringing in over $1.4 million dollars to support organic dairy research and Extension activities. Work continues with regional efforts, such as the University of New Hampshire's organic dairy research facility, and research on organic grain production with the University of Vermont, USDA/ARS and UMaine Extension. This program won the Northeast Extension Directors Award of Excellence in 2006. More information is available on page 8.

- UMaine Extension has worked in a three-way partnership with crop growers and the Houlton Band of the Maliseet Indian Nation to produce oil crops and determine the economic feasibility of building a biodiesel production plant. A pilot project has led to the successful production of small batches of biodiesel. Based on the results of our work, the tribe has decided to proceed with the construction of a five- million-gallon oil production facility. More information can be found on page 7.
- UMaine Extension works in partnership with Coastal Enterprises, Inc., the Maine Organic Farmers and Gardeners Association, the Maine Department of Agriculture, Food, and Rural Resources, USDA Natural Resource Conservation Service and the Small Business Development Councils of Maine to provide a wide range of expertise for Maine farmers who are looking to invest and make changes to their operations to remain profitable in the future. Since 2001, we have provided technical assistance to 122 farms as part of the Farms for the Future Program, placing 17,505 acres under protective conservation easements. More information can be found on page 6.
- The Women and the Woods Program was created in response to requests from women landowners who suggested they could benefit from a forestry program specifically designed for women woodland owners. The program helps to educate women on all business aspects of woodland ownership, and is a partnership among UMaine Extension's Women's Agricultural Network, Tanglewood 4-H Camp and Learning Center, and the Maine Forest Service, with financial support from the U.S. Forest Service.
- The spread of the avian influenza virus in birds from Asia to Europe in 2006 elevated concerns about the virus spreading to North America. In response, UMaine Extension worked with the Maine State Departments of Agriculture, Food and Rural Resources and the Health and Human Services to strategically address the dissemination of information to the public. UMaine Extension developed a series of fact sheets that were distributed widely to poultry producers, health officials, emergency management agencies, agricultural professionals, and the public through feed stores, town offices, hospitals, community agencies, and our county Extension offices. County Extension offices across the state are now equipped with appropriate packaging and safe handling instructions for transporting bird mortalities to UMaine's Veterinary Diagnostic Lab for testing.

Many stakeholders have been included in our programs and processes, including the following (listed alphabetically):

Acadia National Park
Agricultural Council of Maine
Androscoggin County Commissioners
Androscoggin County Extension Association
Androscoggin Healthy Families
Androscoggin Home Care and Hospice
Aroostook County Action Program
Aroostook Agency on Aging
Aroostook County Commissioners
Aroostook County Community Action Program
Aroostook County Extension Association
Bangor Area Visiting Nurses

Bangor Regional Food Safety Committee
Bangor State Fair Administration and Board
Bigelow Laboratory for Ocean Sciences
Blue Hill Heritage Trust
Blue Hill Peninsula Chamber of Commerce
Bowdoin College
Bucksport Community Concerns
Bureau of Elderly and Adult Services
Casco Bay Estuary Program
Catholic Charities of Maine
Center for Marine Conservation
Central Maine Sheep Breeders Association
Chewonki Foundation
Coastal Conservation Association
Coastal Economic Development
Coastal Enterprises, Inc.
Coastal Swim Beach Committee
Cobscook Bay Fishermen's Association
Cobscook Bay Management Area Group
Cobscook Bay Resource Center
Communities for Children
Community Health and Counseling
Conservation Law Foundation
Corporation for National and Community Service
Cove Brook Watershed Council
Craig Brook National Fish Hatchery
Cumberland County Commissioners
Cumberland County Extension Association
Darling Marine Center
Downeast Community Hospital
Downeast Institute for Applied Marine Research and Education
Downeast Lobsterman’s Association
Downeast Micro-Enterprise Network
Eastern Area Agency on Aging
Eastern Association of Veterinarians in Aquaculture
Eastern Maine Development Corporation
Eastern Maine Medical Center
Eastport Health Care Center
Education Advisory Committee of the Wells National Estuarine Research Reserve
Eleanor Widener Dixon Memorial Clinic
Farm Fresh Connection
FarmLink
Federal Farmland Protection Program
Finance Authority of Maine
First Congregational Church of Calais
First Congregational Church of North Anson
Forest Resources Advisory Committee
Four Directions Development Corporation
Franklin County Commissioners
Franklin County Extension Association
Friends of Acadia
Friends of Casco Bay
Friends of Medomak Watershed
Georges River Shellfish Management Committee
Good Shepherd Food Bank
Governor's Task Force on Fishing Vessel Safety
Great Northern Paper Company
Great Works Watershed Coalition
Gulf of Maine Aquarium
Gulf of Maine Council on the Marine Environment
Gulf of Maine Expedition Board
Gulf of Maine Foundation
Gulf of Maine Ocean Observing System
Gulf of Maine Research Collaborative
Hancock County Commissioners
Hancock County Extension Association
Hancock County Planning Commission
Hancock County Soil and Water Conservation District
Head Start
Healthy Families Maine Network
Healthy Island Project
Holt Research Forest
Houlton Band of the Maliseet Indian Nation
Indian Township
Island Connections
Island Homes for Students

Island Institute
Isleboro Island Trust
Kaufman Foundation
Kennebec County Commissioners
Kennebec County Extension Association
Kennebec Plaza
Kennebunkport Conservation Land Trust
Knox County Children's Services
Knox County Commissioners
Knox County Extension Association
Land for Good
Laudholm Trust
Lincoln County Commissioners
Lincoln County Extension Association
Lobster Conservancy
Lobster Zone Management Council
Maine Agricultural and Forest Experiment Station
Maine Agricultural Center
Maine Alternative Poultry Association
Maine Aquaculture Association
Maine Aquaculture Innovation Center
Maine Beef Industry Council
Maine Beef Producers Association
Maine Beef Producers Council
Maine Board of Pesticides Control
Maine Bureau of Mental Health
Maine Bureau of Parks and Lands
Maine Center on Aging
Maine Center for Invasive Aquatic Plants
Maine Centers for Women, Work and Community
Maine Children’s Task Force
Maine Coalition on Aging Initiative
Maine Coastal Program
Maine Commission for Community Service
Maine Community Foundation
Maine Correctional Center
Maine Cranberry Growers Association
Maine Dairy and Nutrition Council
Maine Dairy Industry Association
Maine Dairy Promotion Board
Maine Emergency Management Agency
Maine Deer and Elk Producers Association
Maine Department of Agriculture, Food, and Rural Resources
Maine Department of Conservation
Maine Department of Conservation’s Bureau of Parks and Lands
Maine Department of Economic and Community Development
Maine Department of Education
Maine Department of Environmental Protection
Maine Department of Health and Human Services
Maine Department of Inland Fisheries and Wildlife
Maine Department of Labor
Maine Department of Marine Resources
Maine Department of Professional and Financial Regulation
Maine Department of Transportation, Civil Rights Division
Maine Division of Quality Assurance and Regulations
Maine Environmental Education Association
Maine Fair Association
Maine Farm Bureau
Maine Farmland Trust
Maine Fish Health Technical Committee
Maine Fishermen's Forum Board
Maine Forest Service
Maine Geological Survey
Maine Gourmet and Specialty Food Producers Association
Maine Grass Farmers Network
Maine Greenhouse Industry Growers Association
Maine Humanities Council
Maine Island Trail Association
Maine Landscape and Nursery Association
Maine Lobsterman’s Association
Maine Maple Producers Association
Maine Marine Trades Association
Maine Math and Science Alliance
Maine Nutrition Network
Maine Organic Farmers and Gardeners Association

Maine Organic Milk Producers
Maine Parent Federation
Maine Phytoplankton Monitoring Program Advisory Board
Maine Public Health Association
Maine Resource, Conservation and Development Associations
Maine Rural Partners
Maine Science and Technology Foundation
Maine Sea Grant
Maine Sea Urchin Zone Council and Lobster Zone Council
Maine Seacoast Mission
Maine Shore Stewards
Maine Shore Stewards Advisory Board
Maine Small Business Development Centers
Maine Soft-shell Clam Advisory Council
Maine State Florists and Growers Association
Maine State Housing Authority
Maine State Legislature
Maine State Planning Office
Maine State Pomological Society
Maine State Prison
Maine State Prison Farm
Maine Tele-medicine Service
Maine Urchin Harvester's Association
Maine Vegetable and Small Fruit Growers Association
Maine Wild Blueberry Commission
Margaret Chase Smith Center for Public Policy
Marine Conservation Center
Marine Explorers Club
Meals for ME
Merrymeeting Bay Advisory Committee
Microbial Source Tracking Project Advisory Committee
Mount Desert Island Community Health Plan
Mount Desert Community Trust
Mount Desert Island Housing Authority
Mount Desert Island Biological Laboratory
Mount Desert Island Sheltered Workshop
Mudge Foundation
National Home-based and Micro-business Design Team
National Sea Grant Extension Growth Committee
Natural Resources Conservation Service
Nature Conservancy
New American Sustainable Agriculture Project
New England Farmed Fish Health Management Workshop Planning Committee
New England Floriculture, Inc.
New England Regional Monitoring Committee
New England Vegetable and Berry Growers Association
New Moon Magazine
National Oceanic and Atmospheric Administration Habitat Restoration
North Atlantic Marine Alliance
Northeast Aquaculture Conference and Expo Planning
Northeast Center for Food Entrepreneurship
Northeast Center for Risk Management Education (University of Delaware)
Northeast Consortium
Northeast Loggers' Association
Northeast Regional Aquaculture Center
Northeast Sustainable Agriculture Research and Education
Northeastern Regional Aquaculture Center's Technical Industry Advisory Council
Northern Maine Development Commission
Northwest Atlantic Marine Alliance Board of Trustees
Organic Livestock Research & Education Consortium
Ornamental Horticulture Council
Orono Land Trust
Oxford County Commissioners
Oxford County Extension Association

Partners for Ending Hunger
Passamaquoddy Indian Reservation
Peninsula Tomorrow
Pennsylvania State University
Penobscot Bay Marine Volunteers
Penobscot Bay Network
Penobscot County Commissioners
Penobscot County Extension Association
Penobscot River and Bay Institute
Penobscot River Keepers
Pine Tree State 4-H Foundation
Piscataquis County Commissioners
Piscataquis County Economic Development Council
Piscataquis County Extension Association
Project KEEP (Katahdin Entrepreneurship Education Program)
Plants for ME
Pleasant Point Preservation Committee
Professional Employees Advisory Council
Project Learning Tree
Regional Dairy Quality Management Alliance
Sagadahoc County Commissioners
Sagadahoc County Extension Association
Salvation Army
Schoodic Futures
Sea Urchin Zone Council
Sebasticook Valley Hospital
Senior Spectrum
Service Corps of Retired Executives
Shore Stewards Collaborative
Small Woodland Owners Association of Maine
Somerset County Commissioners
Somerset County Extension Association
Southern Aroostook Soil and Water Conservation District
Southern Kennebec Child Development Corporation
Southern Maine Community College
Southern Rural Development Center
State of Maine's Beaches Conference Steering Committee
Stonington Fisheries Alliance
Sunrise County Home Care Services
Sustainable Agriculture Society
Tanglewood 4-H Camp and Learning Center Board of Directors
United Way of Maine
University of Connecticut
University of Delaware
University of Florida
University of Massachusetts
University of Minnesota
University of New Mexico
University of New Hampshire
University of Southern Maine Muskie School of Public Service
University of Vermont
USDA APHIS Veterinary Services
USDA APHIS Plant Protection and Quarantine
USDA Infectious Salmon Anemia Standards Committee
USDA Organic Transition Program
USDA Sustainable Agriculture and Research Education
U.S. Department of Agriculture
U.S. Small Business Administration
Waldo County Commissioners
Waldo County Extension Association
Waldo County Triad
Walker Trust Foundation
Washington County Business Conference
Washington County Commissioners
Washington County Community College
Washington County Extension Association
Washington-Hancock Community Agency
Wells National Estuarine Research Reserve
Wells National Estuarine Research Reserve, Education Advisory Committee
Western Maine Community Action
Western Mountains Alliance
Wild Blueberry Growers Association
Wolfe's Neck Farm Foundation
Women’s Agricultural Network
Working Waterfront Access Coalition

Section C

Program Review Process

There have been no significant changes to the Program Review Process for the current Plan of Work. In the Plan of Work, the process is titled *Merit Review Process*.

During 2006, our Extension Home Horticulture Program underwent a voluntary CSREES program review. In preparation for the review, program staff and administrators engaged in an intensive introspective examination of the program's history, issues, structure, and performance. The review process generated very positive results, praise for the program and an invitation from the CSREES review team to be used as a "good example" for other programs. The review also produced a number of observations and recommendations for improving and furthering the impacts of the program.

This year we submitted a new letter of intent for our Expanded Food, Nutrition, Education Program. The process included review and approval by USDA/CSREES.

As a result of our participation in a four-state planning and reporting consortium, Maine is preparing this year, along with UMass Extension and the University of Vermont Cooperative Extension, to participate in a regional review of the University of New Hampshire Cooperative Extension plans of work. The review will be conducted by program specific teams and will be part of a reciprocal process that includes revolving review of one state's plans of work each year.

Section D

Multi-State, Multi-Institutional, Multidisciplinary and Joint Research and Extension Activities

Multi-State Extension and Multi-Institutional Extension

Maple Grading School: Extension educators from Maine, Vermont, and New Hampshire have developed an annual three-day Maple Grading School that teaches quality control and methods for grading maple syrup. In 2006, the school was attended by 29 maple syrup producers from New England, all of whom expressed confidence in their newly acquired ability to use quality control and grading techniques, critical components in the success of their businesses.

Joint Research and Extension

The Maine Agricultural Center (MAC) is an effort to bring together the agriculturally related programs of the UMaine Extension, the College of Natural Sciences, Forestry, and Agriculture, and the Maine Agricultural and Forest Experiment Station. MAC's intentions are:

- to create a unified, highly visible agricultural entity within the University of Maine;
- to ensure responsiveness to the needs of Maine agriculture; and
- to ensure coordination between the Experiment Station and Cooperative Extension.

MAC's goal is:

- to coordinate and expand research and educational services provided to Maine agriculture by the University of Maine.

MAC's mission is:

- to develop close working relationships between MAC and the industry to identify current and future needs;
- to provide the research and education resources needed for Maine agriculture to remain competitive;
- to develop the knowledge, technologies, and policy options needed by Maine agriculture to provide high-quality products in an economically viable and environmentally sustainable system; and
- to improve the delivery of agricultural research and Extension to Maine.

Effect of Compost and Cover Crops on Soil Health in an Organic Vegetable Production System When Combined with Minimal Tillage: UMaine Extension and the Maine Agricultural and Forest Experiment Station are collaborating on a replicated study evaluating side-by-side plots using conventional and reduced tillage techniques. Two different cover crops and two compost application rates are being used to compare different sources of organic matter and its effect on soil organic matter. Three different crops will be used in the trials, with marketable crop yields determined for each crop.

Effectiveness of Sodium Acid Sulfate (SAS) to Reduce Enzymatic Browning and Acrylamide Formation in Maine Potatoes: UMaine Extension and the Maine Agricultural and Forest Experiment Station are collaborating on a project to determine Sodium Acid Sulfate (SAS)’s effectiveness in controlling enzymatic browning in cut potatoes. Fresh-cut,

cubed Maine potatoes are exposed to four concentrations of SAS dips at different contact times, then analyzed to measure the degree of browning over contact time. Texture analyses are performed to determine any potential changes in potato texture due to the proposed treatments or contact times. Potatoes are packaged from each treatment and stored 21 days. Then microbial analyses are performed at multiple points to determine changes in standard microbial plate counts, and browning is measured at these storage times to determine degree of browning over storage time. This project has attracted an additional $10,000 in external funding.

Sanitation and Microbial Control for Maine Potatoes and Maine Wild Blueberries: UMaine Extension and the Maine Agricultural and Forest Experiment Station are collaborating to develop a new method using a one-step chorine dioxide pouch system to control microbial contamination in post-harvest Maine potatoes and Maine wild blueberries.

Better Process Control School: The U.S. Food and Drug Administration (FDA) requires that food processors of low-acid canned and acidified foods have certified personnel present during processing. UMaine Extension and the UMaine Department of Food Science and Human Nutrition offer the Better Process Control School for food processors to meet FDA certification requirements. UTogether, we offer the three-day Better Process Control School (BPCS), which was attended by New England food companies, state regulatory agencies, faculty, staff, and students in 2006. The School offers classroom and hands-on experiences that help participants understand food safety, principles of thermal processing, sanitation, processing techniques, retorts, process instrumentation, and records.

Business and Economics Collaborative Research: UMaine Extension's Business and Economics Team has cooperated with the UMaine Department of Resource Economics and Policy to analyze the economic importance and impacts of microbusinesses to the New England economy. The team also collaborated with the UMaine Department of Resource Economics and Policy, the UMaine Center for Tourism Research and Outreach, and the Maine Department of Agriculture, Food, and Rural Resources to investigate the opportunities, challenges, and linkages facing the agritourism industry in Maine.

Ornamental Horticulture Research: Our ornamental horticulture team is working with the UMaine Department of Plant, Soil, and Environmental Sciences in a variety of collaborative research projects. In 2005, we began a project to evaluate use of Florel^{TM}, an inexpensive plant growth regulator, on poinsettias to control height, rather than more commonly used and more expensive products. The project is being done in collaboration with a graduate student from Central South Forestry University, Changsha, Hunan Province, China. We are also working together on a multi-year field project to assess the effectiveness of growth regulators in controlling powdery mildew, a common disease of herbaceous perennials and a serious problem in greenhouse production of potted perennials. This work is supported by internal grants from the Maine Agricultural Center and New England Floriculture. In 2006, we initiated two research projects to address the problem of lily leaf beetle, a serious pest of the genus Lilium, which includes garden lilies. One project involved the use of parasitoids to determine the rate of parasitism; in the second, we conducted feeding studies of lily leaf beetles on garden lilies to determine if some lilies tolerate/resist feeding by the beetles.

New Varieties of Annuals for the Horticulture Industry: Each year, UMaine Extension works with the Maine Agricultural and Forest Experiment Station to evaluate more than 200 new taxa of annuals for use in the bedding plant industry. More information can be found on page 8.

Cut Flowers in Passive Solar High Tunnels: UMaine Extension is researching alternative methods of growing specialty crops under protected structures, called high tunnels, using various active and passive solar collection methods. High tunnels have shown great promise for extending Maine's short growing season and allowing producers to grow high value crops, such as tomatoes and cut flowers, not typically grown in Maine. The project is being conducted at Highmoor Farm, a shared facility that is operated in partnership with the Maine Agricultural and Forest Experiment Station and is being supported with funding from the Maine department of Agriculture, Food, and Rural Resources.

The Maine Grass Farmers Network (MGFN) helps growers produce meat and livestock products at low cost while using environmentally sound techniques, resulting in a healthier product for consumers. UMaine Extension and the Maine Organic Farmers and Gardeners Association were instrumental in forming the MGFN with help from two grants: 1) a Natural Resources Conservation Service grant to establish a soil suitability index for different forages and combinations of forages for developing conservation plans, and 2) a Sustainable Agriculture Research and Education grant to develop a support network of educators, technical field staff and farmers trained in pasture management for livestock production.

A Systems Approach to Optimize Organic Crop Production: UMaine Extension is working with the Maine Agricultural and Forest Experiment Station, UMaine Department of Plant, Soil, and Environmental Sciences and the USDA Agricultural Research Service on a research project to improve crop production through the integration of sustainable practices promoting soil regeneration, reduction of disease pressure, and enhancement of plant growth. As a part of the project, a cost/benefit analysis is being conducted to determine the relative economic feasibility of the sustainable treatments.

Multi-State Extension, Multi-Institutional and Joint Research and Extension

Addressing Biohazard; Safe Disposal of Animal Carcasses: The Maine Compost Team has developed an internationally recognized and accepted safe methodology specifically for the composting of large animal mortalities. More information can be found on page 6.

Organic Dairy Research Cost of Production Study: Extension researchers from UMaine Extension and the University of Vermont Cooperative Extension have worked together for a second year to collect and analyze data to establish production cost levels to produce organic dairy products. More information can be found on page 8.

Multi-State Extension, Multi-Institutional and Joint Research and Extension

Improving Nutrition in Low-income Young Adults: UMaine Extension and UMaine researchers were part of a 10-state team working to evaluate the success of a specific

education intervention strategy to improve the nutrition practices of low-income young adults. More information can be found on page 16.

Multi-Institutional Extension

Avian Influenza Preparedness: The spread of the H5N1 virus in birds from Asia to Europe in 2006 elevated the concern of Avian Influenza in North America and in Maine. UMaine Extension, the Maine State Departments of Agriculture, Food, and Rural Resources, and the Department of Health and Human Services agreed upon the need for Maine-based relevant educational resources on Avian Influenza. A series of fact sheets were produced by UMaine Extension and distributed widely to poultry producers, health officials, emergency management staff, and agricultural professionals. A statewide "Pandemic Influenza Avian Influenza Preparedness Summit" was held and attended by more than 1,100 participants. Extension resources were featured with information from the American Red Cross. The University of Maine's Veterinary Diagnostic Laboratory became the frontline detection site for the state of Maine.

Section E

Integrated Research and Extension Activities: Multi-State

U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Actual Expenditures of Federal Funding for Multi-State Extension and Integrated Activities

Fiscal Year: 2006

Select One: ☐ **Interim** ☒ **Final**
Institution: University of Maine Cooperative Extension
State: Maine

	Integrated Activities (Hatch)		Multi-State Extension Activities (Smith-Lever)		Integrated Activities (Smith-Lever)	
Established Target percent		**percent**	6	**percent**		**percent**
This FY Allocation (from 1088)			$2,613,644			
This FY Target Amount			$156,808			
Title of Planned Program Activity						
New England Consortium Activities:						
-Faculty & Staff Time on New England Activities			$155,425			
-Additional Staff Time on Multi-State Activities			$82,589			
Total			$238,014			
Carryover			-Not applicable-			

Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays represented here accurately reflect allowable expenditures of Federal funds only in satisfying AREERA requirements.

John Rebar — March 30, 2007

John Rebar, Interim Director — **Date**

Section F

Integrated Research and Extension Activities: Multi-State

U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Actual Expenditures of Federal Funding for Multi-State Extension and Integrated Activities

Fiscal Year: 2006

Select One: ☐ **Interim** ☒ **Final**
Institution: University of Maine Cooperative Extension
State: Maine

	Integrated Activities (Hatch)		Multi-State Extension Activities (Smith-Lever)		Integrated Activities (Smith-Lever)	
Established Target percent		**percent**		**percent**	6	**percent**
This FY Allocation (from 1088)					$2,613,644	
This FY Target Amount					$156,808	
Title of Planned Program Activity						
Contribution to Maine Agricultural Center					$25,000	
Faculty with Joint Extension/Research Appointments					$269,200	
Faculty Engaged in Integrated Activities					$200,330	
Administrative Support					$54,382	
Total					$548,912	
Carryover					-Not applicable-	

Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays represented here accurately reflect allowable expenditures of Federal funds only in satisfying AREERA requirements.

John Rebar — March 30, 2007

John Rebar, Interim Director — **Date**