2005 Annual Report of Accomplishments and Results

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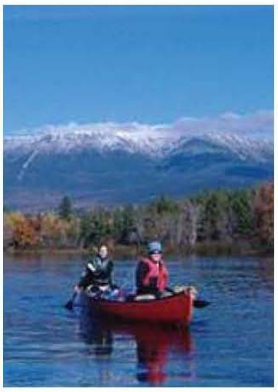

Prepared for: USDA / Cooperative State Research, Education, and Extension Service

This **Annual Report of Accomplishments and Results** summarizes the University of Maine Cooperative Extension programming from October 1, 2004 to September 30, 2005. 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 Dr. Lavon Bartel, Dean and Director, at 207-581-2811, or via electronic mail at lbartel@umext.maine.edu.

The University of Maine Cooperative Extension
Annual Report of
Accomplishments and Results
2005

Section A

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CSREES Goal 1

An Agricultural System that is Highly Competitive in the Global Economy

Executive Summary

Maine has the most diverse agricultural economy in New England. There are over 7,200 farms working over 1.3 million acres of land. Farm gate receipts are over $450 million annually, with a total economic value of over $1.2 billion. Agriculture is a significant contributor to the rural character of Maine. However, commodity-specific sectors are facing fierce competition within the region, nationally and internationally. What is emerging is an even more diverse agricultural community that is relying upon a blend of both traditional and new profit centers. By creating new ways to sell goods, reduce costs, and produce value-added products, Maine farmers are achieving a measure of sustainability. Maine agricultural producers look to UMaine Extension as a primary resource for reliable, researched-based educational information. Simply providing production-based information is no longer adequate to address the complex issues that factor into farm sustainability. For example, the audience we serve is changing, bringing new issues and new methods of dissemination to the fore. Maine has seen a dramatic increase in the number of farms led by women. Maine now leads the nation in the percentage of dairy farms producing a new product, certified organic milk. Producers of traditional commodities, such as potatoes and blueberries, are seeking new marketing strategies to bring higher returns. The horticulture industry has become the fasting growing sector of Maine agriculture.

This past year, educational programming conducted by UMaine Extension embraced the exciting opportunities available in contemporary Maine agriculture. Our staff and clients were at the forefront of change and innovation within commodities and across sectors of the industry. We continue to reach out to stakeholders and resource providers to form partnerships that augment our work, add efficiency and increase value for Maine farmers. Maine agricultural producers are improving the sustainability of their agricultural operations by: 1) implementing alternative production and marketing approaches, 2) finding ways for producers to reduce input costs, and 3) utilizing new tools developed by UMaine Extension.

In 2005, UMaine Extension conducted almost 200 educational events which served approximately 5,000 people in support of Goal 1. We held more than 2,000 individual consultations, along with a myriad of other program outputs. As a result of these efforts, many positive impacts were realized. For example, 283 farmers practiced resource conservation methods; 833 producers utilized new technologies; 235 growers adopted alternative crops; and more than 1,100 people implemented sustainable agricultural practices. More than 550 farmers implemented new farm management skills and 143 developed new markets as a result of being part of UMaine Extension programming. Many small-scale farmers made changes in their enterprises, and more than 425 farm workers received training in a wide variety of areas.

Organic Milk Production

The number of Maine dairy farms continues to decline. In 2005, the number dropped below 400 and the prospect of a sustainable future for many farmers seems remote. An alternative

production strategy is converting to certified organic milk. The higher price paid for this product has helped some farmers stay in business. However, organic production has many challenges and a few opportunities. A production strength for Maine is our capacity to produce abundant cool-season grasses. UMaine Extension is supporting the development of producer groups that identify production issues and work with us to find solutions. We have also spearheaded the creation of the Organic Livestock Research and Education Consortium. This new entity was formed by research and Extension personnel at the University of Maine, University of New Hampshire, Maine Organic Milk Producers, and USDA – Agricultural Research Service- New England Plant, Soil and Water Lab. The goal of the consortium is to offer research-based information to the growing organic dairy industry and farmers considering the transition to organic production methods. The consortium, with UMaine as the leader, was recently awarded $829,000 by the USDA's Integrated Organic Program to conduct research on alternative cropping systems to feed organic herds. With almost 20 percent of Maine dairy farmers producing certified organic milk, Maine dairy supporters hope to lead the nation in organic dairy research and education. In 2005, a first-of-its-kind, cost-production study was published for organic dairy producers in Maine and Vermont. One impact of this work is for organic producers to seek and acquire a higher price for their product. In another study, it was determined that 75 percent of the farms surveyed would not be in business had they not converted to organic production due to economic conditions. Continued applied research is critical as a recent preliminary study indicated that in 2004, the average organic dairy operation was not profitable, with a rate of return on farm assets of a *negative* 2.9 percent.

Maine Livestock Industry

Also in support of a highly competitive agricultural system is the Maine Cattle Health Assurance Program (MeCHAP), established by UMaine Extension. MeCHAP works with producers, veterinarians, and consultants to develop comprehensive handling and health protocols on dairy and beef farms. We also worked with Maine's largest beef producing county on the co-marketing of cull cows, resulting in a $200 per head increase over previous local marketing efforts. Beef back grounding, whereby one farmer raises livestock for another operation, is being researched and implemented as a new way to take advantage of our state's climate and abundance of quality forages. Other significant impacts are being realized by addressing individual livestock producer needs.

Maine assists producers by providing research-based information from trials, both on-farm and at the University. For example, a five-year Katahdin hair sheep research project was completed in 2005 and resulted in many new and innovative production and diagnostic techniques for Maine sheep farmers. The selectively breed flock of sheep produced in this study is being dispersed into the farming community with farmers working as collaborative research partners. The long-term goal is to improve the profitability of sheep farming for Maine farmers with the development of a hardy, disease-resistant, well-muscled meat breed of sheep ideal for small farms.

In addition, consultations with individual dairy farm- producers show dramatic reductions in production costs, sometimes$10,000 or more. The equine industry is a relatively new audience for UMaine Extension. Programming for this industry is raising awareness of unforeseen production costs and introducing areas for greater efficiency.

New Marketing Opportunities for Farmers
To boost producers' competitiveness in 2005, UMaine Extension helped organize a producers' group, the Maine Highland Farmers. The group implemented a survey of consumer preferences for local agricultural products and uncovered new marketing opportunities. One outcome of the survey is that UMaine Extension is being solicited by the Maine Department of Agriculture, Food. and Rural Resources for a contract to implement the study in another region of our state.

New Agricultural Audiences
Our programs continue to evolve, as Maine agricultural operators become more diverse. For example, a Somali immigrant to Maine started a goat and sheep enterprise with the help of UMaine Extension. We provided information and resources to help the new farmer gain knowledge and start up a small business. The individual is now successfully growing goats and sheep for a previously un-served culturally-specific market. Another example is our continued leadership to our state's Women's Agricultural Network. In the past year, this group hosted several on-farm educational programs that provided hand-on experiences to existing and aspiring women farmers. UMaine Extension was also a significant partner in the planning and implementation of a national conference for women in agriculture, held in Vermont during 2005.

Maine Horticulture
Our programs also addressed needs of the fastest growing sector of Maine agriculture: ornamental horticulture. These businesses require a steady flow of knowledge from research, due to a continuously changing marketplace. For instance, trials were conducted in 2005 to look at the effectiveness of different plant growth regulators to: 1) control powdery mildew on potted plants, and 2) increase the height of some poinsettia varieties. UMaine Extension research and education in the cut flower segment of the industry is a new area, as are season-extending technologies that can add profit and competitiveness at key times of the year. Invasive species, which represent a threat to profitability and sustainability of Maine agriculture is another area of our work. Educating growers of their role in the transport and establishment of invasive species is a role that we have undertaken in partnership with others. We are education members of the ornamental horticulture industry on insect and herbaceous species that are being imported, or are already established, in our state. The European fire ant is transported in root balls of nursery stock and poses a hazard to humans and animals. Research and education on this insect and others is protecting Maine from invasive species.

Support for Native American Potato Producers
All of UMaine Extension's agricultural programs take into account that building economic opportunity must be coupled with environmental sustainability. A fine example of this is in the largest potato producing region of Maine, where UMaine Extension is now working in partnership with the Native American community to introduce the use of cover crops to ensure soil integrity and prevent erosion. This simple tactic is saving soil and adding organic matter to potato cropland. The concept is being introduced to other growers in the region as well.

Integrated Pest Management
As in years past, Integrated Pest Management (IPM) programs are a major component of UMaine Extension's agricultural efforts. One of the best ways for farmers to reduce input costs is through an informed and progressive pest management plan. For the 2005 crop season, UMaine

Extension's IPM program was active in the apple, cranberry, blueberry, potato, sweet corn, canola, strawberry, raspberry and greenhouse crops. The impact of the Potato IPM program alone was savings of over $7.2 million to producers in our state. These savings were realized in cost avoidance of pesticide applications or in crop losses prevented by the timely application of pesticides. One episode of note was a timely green peach aphid warning made after the remnants of Hurricane Katrina passed through Maine. The warning helped seed growers protect late-season seed from an unexpected infestation. This protection created an estimated savings of $1.6 million to the Maine potato industry.

Maine Apple Production
Apple growers are under severe competition from foreign and domestic producers. Research done by UMaine Extension introduced a method of storage that reduces the post-harvest application of fungicides and improves storability. The outreach program based on this research led to the elimination of post-harvest fungicide applications on 105,000 bushels of apples. This represented a 43 percent reduction in post harvest fungicide use from previous practices.

Partnering Farmers with Seniors
Working in collaborative partnership is a requirement for successful programming with farmers. One example of partnering with positive outcomes is the Maine Senior Farm Share Program. UMaine Extension joined with Maine State Government and Maine Community Action Program Agencies to develop and implement the program, funded through the USDA, which partners an eligible, low-income senior with a local fruit and vegetable farmer, giving him or her "shares" that provide $100 worth of fresh, locally grown produce over a growing season. For more information, see *Farm Share Program Provides Low-Income Seniors with Fresh Produce* on page 8.

Estate Transfer Education
To create continuity and sustainability on Maine farms, UMaine Extension played a leadership role in providing technical assistance through the Maine Farms for the Future program. This collaborative effort of many agricultural service providers creates teams of consultants that work with a farm family to develop investment grade business plans. Extension programs in Northern New England have worked together to sponsor estate transfer programs for farm families. These well-attended regional sessions are helping families create plans for the successful transition of their farms to the next generation. Based upon client demand this multi-state program is continuing in 2006.

Poultry Industry Support
This past year brought the concern of Avian Influenza (AI) to Maine's poultry industry. Extension's Veterinary Diagnostic Laboratory, working in partnership with the Maine Department of Agriculture, county Extension offices and poultry producers put an effective AI monitoring program in place. An incident of highly pathological AI would be devastating to the poultry industry, valued at almost $80 million. Extension staff serve on the state's AI monitoring committee.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 1 Total	1,618	$218,811	- 0 -	$218,811	$437,622

Consolidated Plan of Work Performance Goals 1-1 through 1-3

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days: 1,618
50 percent of growers consulted with one-on-one will implement sustainable techniques based on consultation.	401
Agricultural producers will diversify crop production (acres).	320
Agricultural producers will participate in community management initiatives.	109
Agricultural producers will practice resource conservation methods.	283
Crop and livestock producers will increase integration of operations.	70
Farmers will develop new agricultural products.	52
Farmers will develop new markets.	143
Farmers will implement farm management skills.	558
Farmers will implement sustainable agricultural practices.	1,105
General public will understand and support production agriculture.	41,819
Greenhouse industry will organize liaison group to speak on behalf of entire industry and conduct industry-wide projects.	9
Individuals will be trained to be more productive and knowledgeable farm employees.	435
Maine green industry members who attend New England Greenhouse Conference will increase by 10 percent each conference.	21
Producers will adopt alternative crops to reduce pesticide inputs, increase rotation length, and increase soil organic matter.	235
Producers will adopt sustainable animal husbandry practices.	372
Producers will evaluate soil health.	134
Producers will form management teams.	36
Producers will identify yield limiting factors.	50
Producers will use new technologies.	833
Small farms will diversify.	371
Small-scale producers will make changes as a result of UMaine Extension programs.	767
Youth will demonstrate an understanding of the basic scientific principles that affect sustainable agriculture.	116

OUTPUT INDICATORS

Number of 1-hr. radio programs delivered.	12
Number of articles in news media.	42
Circulation of articles in news media.	208,009
Number of audio visual resources developed (video, slides, displays).	30
Number of consultations.	2,109
Number of groups formed (ad hoc or formally organized).	58
Number of issues of newsletters written.	90
Number of people attending the workshops/events.	6,987
Number of people involved in groups formed.	463
Number of people receiving newsletters within a year's time.	5,205
Number of publications distributed.	2,122
Number of publications written.	21
Number of volunteers trained.	51
Number of workshops/events.	193

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Agricultural Profitability, Agricultural Competitiveness, Integrated Pest Management

Potato Producers Save an Estimated $7.2 Million Due to Integrated Pest Management (IPM) Programs: The National Agriculture Statistics Service reports that the 2004 potato crop was valued at over $123 million, with an annual economic impact on Maine that exceeds $530 million. UMaine Extension supports the industry with a multidisciplinary, statewide team, which pools its expertise to create significant and positive measurable economic, social, and environmental impacts that improve the Maine potato industry.

Summary of Impacts: As a result of this integrated statewide program, growers saved an estimated $7.2 million during the 2005 crop season. Savings were attributed to effective pest detection systems, accurate treatment recommendations, IPM training for field scouts and growers, and fewer pesticide applications. Specific examples include an aphid warning that was sent after the remnants of Hurricane Katrina passed through the area, dropping late-season green peach aphids. This warning helped potato growers protect late-season crops from unexpected virus spread. This protection resulted in an estimated savings of $1.6 million to the industry. Scouting programs affirmed that aphid populations were low most of the season, saving growers approximately $1 million in fewer aphicide applications. With the late planting of the 2005 crop, and the widespread and comparatively early insect population, our IPM program disseminated information on European corn borer control that resulted in an estimated savings of $4.6 million. In addition, six growers, producing over 3,000 acres of potatoes, now scout for hairy night shade and have implemented control practices. The documented positive impacts of the IPM program have also led one pesticide supply company to hire its own IPM staff.

Scope of Impacts: Integrated Research and Extension

Key Themes: Agricultural Profitability, Agricultural Financial Management, Agricultural Competitiveness, Animal Production Efficiency, and Niche Market

Katahdin Hair Sheep Project Enters Phase Two: The primary health problem in efficient sheep production in the United States is a parasite known as *Haemonchus contortus* or the barber pole worm. This microscopic worm has caused the death of many sheep, and consequently put sheep producers out of business. Another important problem facing sheep is the threat of scrapie, a disease of sheep and goats that is similar to Bovine Spongiform Encephalopathy, commonly known as Mad Cow Disease, in cattle. Researchers from UMaine Extension and Bowdoin College partnered in 2000 to develop a flock of sheep that was naturally resistant to *Haenmonchus contortus*, genetically resistant to scrapie, and exhibits other positive growth traits. The researchers used Katahdin Hair Sheep as the base for this applied research, a breed that originated in Maine in the 1950s and has become more popular with producers due to its productivity and efficiency. Katahdin Hair Sheep do not produce wool, need not be sheared, are prolific, and have excellent maternal instincts.

Summary of Impacts: Using selective breeding techniques, this research resulted in a flock of approximately 100 prime ewes that were recently distributed to 10 different Northeast farms in mini-flocks, with each flock including a purebred Katahdin ram. A genetic profile of each sheep has been recorded. Phase II of the project is now underway as each participating farm will continue the process of selective breeding, record keeping, and parasite monitoring under supervision by our research staff. We have also conducted workshops to help each farmer become certified in a new technique to measure the clinical level of infection by the barber pole worm. The technique, known as FAMACHA, is highly correlated to standard methods of measuring levels of parasite infection and was used extensively in the project to identify sheep resistant to parasite infection. The flocks will be enrolled in the National Sheep Improvement Program, considered the industry standard for reliability, integrity, and accuracy in defining the best market and breeding animals for the commercial sheep industry. Over the next three years, further improvements will be made to the sheep, and greater numbers of Katahdin Hair sheep will be produced. Sheep producers and scientists nationwide are watching this research closely.

Scope of Impacts: Integrated Research and Extension

Key Themes: Human Health, Human Nutrition, Aging, Food Accessibility and Affordability, Agricultural Profitability

Farm Share Program Provides Low-Income Seniors with Fresh Produce: Maine's low-income elderly citizens face a high risk of nutrition-related disorders, largely due to a lack of fresh fruits and vegetables in their diet. However, fresh produce is locally available to most of these people through nearby farm stands and farmers' markets. UMaine Extension 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 Maine Senior Farm Share Program, funded through the USDA. This program partners eligible, low-income seniors with local fruit and vegetable farmers, giving them "shares" that provide them with $100 worth of fresh, locally grown produce over a growing season. Farmers and seniors work together to determine delivery methods and produce preferences. During the growing year, UMaine Extension worked with farmers to develop crop production and handling methods best suited for the clientele, and helped seniors make good choices in

produce selection and preparation to maximize the nutritional benefits of the fruits and vegetables they received.

Summary of Impacts: One hundred and seventy-two Maine farms participated in the Senior Farm Share Program in 2004, providing 6,683 low-income seniors with $100 worth of produce each and dramatically increasing consumption of fresh fruit and vegetables by participating seniors. More than 94 percent of those responding to a post-season survey improved their diet with more fresh produce. (More than half the respondents are on special diets requiring higher consumption of fresh produce.) Maine family farms received over $800,000 in Farm Share funds to grow and distribute the produce, funds which enhanced the local farm economy and were circulated in communities. Participation in the program also improved other sales at farm markets and stands, further improving economic benefits to local farms. Nearly 100 percent of both seniors and farmers want to participate in Senior Farm Share in the future, and feel they significantly benefited from the program.

Scope of Impact: State Specific

Key Themes: Agricultural Profitability, Agricultural Competitiveness, Adding Value to New and Old Agricultural Products

Post-Harvest Apple Treatment Improves Maine Crop Quality and Boosts Profits: UMaine Extension and the Maine Agricultural Center conducted an applied research project in response to the expressed needs of Maine apple growers. The project was intended to increase competitiveness of Maine-grown apples and to reduce use of post-harvest fungicides by adopting the timely use of MCP (1-methylcyclopropene, also known as SmartFresh), a new growth regulator that improves storability and eliminates the need for post-harvest fungicides in most apple varieties.

Summary of Impacts: In 2004 an estimated 336,000 bushels of McIntosh, Cortland, and Red Delicious apples were placed in long-term storage. Of these, 243,000 bushels were treated with MCP. As a result, post-harvest fungicide use was eliminated on 105,000 bushels of apples, or 43 percent of the crop that is normally treated with fungicide. Apple crispness is measured in pounds of pressure. Use of MCP maintained fruit quality so that fruit were one to two pounds firmer than untreated fruit. Eating quality remained near optimum into June 2005. MCP maintained firmness above the minimum market requirements at a time when large apples would normally be unmarketable. Results were presented to 20 apple growers from Maine and will be reported at future meetings.

Scope of Impacts: Integrated Research and Extension

Key Themes: Horticulture

Gardeners Behind Bars: UMaine Extension Master Gardeners are at work in the Kennebec County Correctional Facility helping inmates learn to grow food for themselves, the correctional facility, and the hungry in the area. The project started with a donation in 1996 of an acre to be used for inmate projects. The inmates were inspired, and seven years later had expanded the potential of the project to nearly 15 acres. As the scale of the project increased, correctional facilities officials sought expert assistance from the Extension Master Gardener Program. Correctional officers enrolled in the 40-hour program offered by Kennebec County Extension, learned the fundamentals of plant biology, soil composition, and insect and disease control. Then they shared that expertise with the inmates involved in the garden project.

Summary of Impacts: More than 150 Kennebec County inmates have participated in the farm project since its inception, with an average of 15 inmates per day traveling to the site. This past fall, inmates harvested enough produce to save the jail $9,200. In 2004, 8,000 pounds of potatoes were donated to 10 local food pantries, shelters and soup kitchens.
Scope of Impacts: State Specific

CSREES Goal 2

A Safe and Secure Food and Fiber System

Executive Summary

With food system trends moving towards an international system, consumers need to be made aware of the risks associated with foods, and gain skills and knowledge to reduce their risk. The food safety programs of the University of Maine Cooperative Extension provide a unique educational outreach program to the citizens of Maine. Through workshops, fact sheets, experiential-based learning, newsletters, Websites, media communications, and face-to-face contacts, UMaine Extension helps citizens gain skills to that reduce the risk and threat of food-borne illness.

Food Safety Knowledge for Volunteer Community Cooks and Gardeners

Nearly 70 people have been trained through participation in *Cooking for Crowds*, a food safety training for volunteer quantity cooks. The training uses Hazard Analysis and Critical Control Point case study models to present a logical and sequential approach to improving the food safety environment. Emphasizing the importance of time and temperature control helps participants become better prepared to make simple changes to improve their food safety standards. Volunteer quantity cooks from fraternal organizations, church groups, auxiliary groups, and granges attend the training.

UMaine Extension also worked with programs from four New England institutions in a research project to define the need to integrate food safety information and apply Good Agricultural Practices standards to home gardening. For more information, see *Project Survey Reveals Widespread Need for Food Safety Education Among Gardeners* on page 14.

Food Preservation

UMaine Extension offered food preservation workshops statewide for people to learn the latest and safest food preservation techniques. More than 190 people attended the workshops and learned hands-on preservation of foods by canning, drying, and freezing. More than 8,600 publications and newsletters were distributed in support of safe food preservation.

Improving Food Safety for Low-Income and Senior Citizens

UMaine Extension's Eat Well Nutrition Education Programs includes two federally funded 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 in Maine. While 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 are those citizens who are participating in or are applying to participate in the Food Stamp Program. Participants in Eat Well programs receive lessons in basic human nutrition, food preparation, food safety, buying and budgeting skills, and practical meal management. Some participants receive this information in a home setting which they find conducive to learning and making behavior change. Other participants, however, 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. I observed a tub of uncovered margarine, which was in the same place the next time I visited, glasses of juice and milk sitting around on various tables and other opened containers of food on the kitchen counter. I discussed the importance of refrigerating perishable foods and throwing away any foods that have 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.” Eat Well Nutrition Aides reported that of the 666 graduates of the program, 62 percent showed improvements in food safety practices after participating in the Eat Well program.

Food-borne illness is a special problem for many elderly because of decreased vision, one example being the difficulty of reading expiration dates. We also prioritize elders because the significance of a food-borne illness in a person with suppressed immunocompetence carries a greater health risk and health care costs. UMaine Extension’s Senior Companion Program trains and administers Senior Companion volunteers, individuals age 60 and older, to provide companionship and a link to educational resources for their elderly clients. We offer trainings to Senior Companions on food safety so that they can share educational materials with clients on proper food handling and food storage techniques.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 2 Total	92	$12,446	- 0 -	$12,446	$24,892

Consolidated Plan of Work Performance Goals 2-1 through 2-5

OUTCOME INDICATORS: Behaviors and Impacts

Total Days:	92
Consumers will adopt Extension recommendations for canning.	194
Consumers will adopt Extension recommendations for drying.	108
Consumers will adopt Extension recommendations for freezing.	169
Consumers will adopt proper practices in food storage (method and temperature).	516
Consumers will adopt proper practices in planning for and purchasing of food.	130
Consumers will adopt proper practices in thawing frozen foods.	549
People will be making sound choices regarding food safety labels on meat and poultry.	907
People will be making sound choices regarding food selection and purchasing.	916
People will be making sound choices regarding proper food cooking, holding and serving procedures.	917
People will be making sound choices regarding proper thawing methods.	907
Residents will adopt proper cooking times and temperatures.	32
Residents will adopt proper procedures for cleaning, and sanitizing work areas, and equipment.	33
Residents will adopt proper techniques for holding and serving of food.	32
Residents will adopt proper techniques for planning and purchasing of food.	42
Residents will adopt proper techniques for storing food (method and temperature).	62
Residents will adopt proper techniques for transporting food.	32
Residents will adopt proper thawing methods.	43
Residents will practice personal hygiene techniques related to food safety.	32

OUTPUT INDICATORS

Number of articles in news media.	5
Circulation of articles in news media.	65,000
Number of audio visual resources developed (video, slides, displays).	2
Number of consultations.	255
Number of display/exhibits developed/created.	2

Number of issues of newsletters written.	12
Number of people attending the workshops/events.	16,182
Number of people receiving newsletters.	5,033
Number of publications distributed.	3,792
Number of publications written.	3
Number of times displays were used.	5
Number of volunteers trained.	111
Number of workshops/events.	21
Web pages created.	40
Number of articles in news media.	5

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Food Safety, Food Handling, Good Agricultural Practices

Project Survey Reveals Widespread Need for Food Safety Education Among Gardeners: In the U.S., it is estimated that $14 billion worth of food is grown in home and community gardens. UMaine Extension has worked with Extension programs from four New England institutions in a research project to define the need to integrate food safety information and apply Good Agricultural Practices (GAP) standards to home gardening programs and practices. Using a professionally generated mailing list, a survey was designed and distributed to 5,000 random households of gardeners in five New England states. Respondents answered food safety related questions for all aspects of gardening and post-harvest handling.

Summary of Impacts: The survey revealed that knowledge levels were generally low on important topics, such as the use of fresh manure and compost, the safety of organically grown produce, cleaning produce, water safety, and home canning. Respondents were generally supportive of proper home gardening practices; however, the relationship between attitude and knowledge was lower than expected. Significantly higher levels of knowledge were found for respondents with higher income, more gardening years, or Master Gardener certification. However, the knowledge level of all subjects fell below what is considered acceptable. The results of this survey strongly indicate a lack of food safety knowledge among New England home gardeners and support the need for outreach programs and training. The second phase of the project will provide focus for the food safety informational needs of home gardeners through detailed interviews.

Scope of Impacts: Multi-state Integrated Research and Extension: CT, ME, NH, RI, VT

Key Themes: Food-borne Illness, Food Safety, Food Handling

Cooking for a Crowd: In response to concerns raised by the Maine Department of Health and Human Services relating to illness traced to a Penobscot County church supper for the public, UMaine Extension sponsored a multi-day training program called Cooking for a Crowd in March of 2005. The program taught proper food handling principles to 18 non-professional participants who are involved in the production of food for events such as large family gatherings, church suppers, service club meetings and community events. An estimated 2,660 meals are prepared and served monthly by the participants in these workshops.

Summary of Impacts: A three-month follow-up evaluation (75 percent return rate) determined that all have been practicing safe food techniques in their organization's kitchens in the following manner:

- Additional equipment purchased for their kitchen has included: thermometers, hot holding equipment, gloves, food grade containers, and plastic cutting boards.
- New food safety practices have been implemented: keeping record of food events; honoring the two-hour rule; thawing foods properly; cooking food to proper internal temperatures; ensuring proper hand washing procedures; and cleaning and sanitizing cutting boards.
- Workshop participants have shared skills and information with others with whom they work in the following ways: encouraged others to receive training from UMaine Extension; displayed food safety posters in their kitchen; conducted at least one training session for their workers; had informal discussions with their helpers and shared workshop materials.

Scope of Impact: State Specific

CSREES Goal 3

A Healthy, Well-Nourished Population

Executive Summary

The nutritional and physical activity status of all people — children, adults and elders— is the target of the University of Maine Cooperative Extension's programs to improve lifestyle habits and reduce the risk of chronic disease. Simple lifestyle practices that maintain good health throughout the lifespan are crucial to change the patterns of poor health and disease. Eating a healthy diet in moderate amounts and being physically active can decrease the risk of chronic disease. Understanding and practicing the recommended nutrition guidelines for health and wellness are essential. It is evident that as a population we are not physically active. Our nutrition educational programs help overcome the malaise in our citizens, support environmental changes to help people overcome barriers to adequate physical activity and healthy eating, and encourage greater understanding of the need to make healthy lifestyle choices.

Leading the Way to Improved Health and Nutrition
Our community-based staff has a proven track record of promoting changes in lifestyle habits of those with whom we work. Our history of community improvement provides a solid base and skill level for making personal and community changes. By using research-based information with a foundation of social change theory for developing and implementing programs, we achieve a greater success in reaching our targeted goals.

We have focused on educating the public about the MyPyramid, a new USDA symbol and interactive food guidance system in support of the federal HealthierUS initiative, designed to help Americans live longer, better, and healthier lives. It is part of an overall food guidance system that emphasizes the need for a more individualized approach to improving diet and lifestyle. Separate nutrient goals have been set for each food intake pattern, based on the nutrient standards for age/gender groups whose calorie needs matched that pattern.

Outcomes of our educational program objective that “Maine people are healthy and well nourished” include:

- 11,259 participants have knowledge, skills and ability to be well-nourished,
- 11,374 participants have increased their food buying skills
- 11,054 participants have increased their food preparation skills
- 40,756 increased their physical activity, and
- 12,410 participants engaged in community programs that enhance the health of seniors and other community members

This year, we conducted 85 workshops to improve the health and nutritional well-being of Maine citizens. Our efforts were further disseminated through the work of 87 newly trained volunteers. Over 13,996 research-based publications, fact sheets, and newsletters were distributed relating to health improvement.

In 2005, the UMaine Extension sponsored the first annual Nutrition, Food, and Physical Activity Symposium. The symposium was designed to examine research and programs in all areas of

community nutrition, physical activity, and food safety related to improving the health and well-being of Maine people and reducing obesity. The symposium also highlighted innovative work that will help Maine lead the way towards promotion of lifestyles to improve wellness and reduce the risk of chronic disease. Abstracts were electronically submitted for 28 programs or research projects that were featured as poster sessions or oral sessions at the Symposium. Over 170 professional colleagues and graduate students attended the event to network, earn continuing education credits, and engage in professional staff development.

A cutting-edge UMaine Extension newsletter, *Wellness Matters*, was designed to coincide with the work of the Nutrition, Food and Physical Activity Symposium. Over 25,000 copies of the newsletter were distributed to Maine citizens. The newsletter features the results of current research conducted at the UMaine as well as research-based and scientifically sound nutrition advice and practical lifestyle tips to improve health.

Moving Matters is a new 14-part physical activity curriculum developed by UMaine Extension for working one-on-one with individuals. The curriculum teaches the importance of physical activity, uses stages-of-change theory to help improve physical activity behaviors.

Improving Health and Nutrition for Low-Income Citizens

UMaine Extension's Eat Well nutrition aides delivered basic food and nutrition information to limited income adults, children, senior citizens and families in their homes, sometimes working in challenging situations. In one case, a local public health nurse contacted a nutrition aide with information on a mother and young daughter who had just moved into the area. The daughter had just been diagnosed with rickets, today a fairly uncommon nutrition-related disease. Both mother and daughter were in serious need of changing their diets, especially related to calcium since lack of adequate calcium and/or vitamin D can lead to rickets. The nutrition aide started working with the mother explaining the importance of a variety of foods in the diet, including the importance of dairy foods and green vegetables that contain calcium. The mother believed they would not like many of these "new" foods at the start, but after trying them, she found out differently. The mother now serves and eats cream soups, chowders, more veggies, etc., and one of their favorite new foods is fruit yogurt, which they now eat daily.

Eat Well Nutrition Aides reported that 1,821 families, made up of 4,050 individuals, participated in the Eat Well Nutrition Education Program last year. In addition, 10,712 preschool to high school aged children received basic nutrition information as participants in one of the Eat Well programs. Finally, the Eat Well Nutrition Program was supported by 1,031 volunteers who assisted the Nutrition Aides in delivering their nutrition lessons throughout Maine.

Eat Well Nutrition Aides reported that of the 666 graduates of the program, 90 percent (599) showed improvement in nutrition practices after participating in the Eat Well program. Specific nutrition practices included planning meals, making healthy food choices, preparing foods without adding salt, reading nutrition labels and having children eat breakfast.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 3 Total	1,104	$149,346	$405,941	$149,346	$704,633

Consolidated Plan of Work Performance Goals 3-1 through 3-5
OUTCOME INDICATORS: Behaviors and Impacts

Total Days:	1,104
Groups will be established to conduct community programs to reduce the risk of disease.	278
Participants will decrease saturated fat and total fat intake.	944
Participants will engage in community programs that enhance the health of seniors and other community members.	12,410
Participants will improve nutrient and food composition intake to lower the risk of disease.	967
Participants will increase food preparation skills.	11,054
Participants will increase food-buying skills.	11,374
Participants will increase intake of fruits and vegetables.	1,132
Participants will increase physical activity.	40,756
Participants will take steps to achieve and maintain healthy weight.	1,293
Participants, at all life stages, will have knowledge, skills, and ability to be well nourished.	11,259

OUTPUT INDICATORS

Number of articles in news media.	1,064
Circulation of articles in news media.	3,050,00
Number of audio visual resources developed (video, slides, displays).	24
Number of consultations	10
Number of consultations/home visits.	17,398
Number of groups formed (ad hoc or formally organized).	58
Number of issues of newsletters written.	54
Number of people attending the workshops/events.	3,717
Number of people involved in groups formed.	1,159
Number of people receiving newsletters within a year's time.	14,552
Number of publications distributed.	17,923
Number of publications written.	863
Number of volunteers trained.	2,218
Number of workshops/events.	166

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Human Health, Human Nutrition, Obesity

Improving Calcium Consumption for Youth; 3-A-Day of Dairy Project: Widespread calcium deficiency among America's youth is placing them at future risk of major health problems, including osteoporosis. Government data indicate that the diets of children and adolescents fall short of calcium recommendations. Poor food choices, specifically over-consumption of foods of minimal nutritional value and under-consumption of nutrient-rich foods such as milk, are partly to blame for the calcium crisis. UMaine Extension's *3-A-Day of Dairy Project* engaged over 70 students from ethnically diverse classrooms in Portland from September to December 2004. The project objective was to include students in experiential-based learning activities to improve their knowledge and dietary behaviors related to dairy foods. Project activities focused on the entire dairy production process, from farm to table and making a connection between dairy farming and dairy products through field trips and interactive classroom lessons. Members of the Cumberland County All-Star Dairy 4-H Club were included in the project as peer-teachers, an arrangement that fostered greater understanding of dairy farming and Maine's rich agricultural heritage for urban youth, as well as exposed members of the 4-H Dairy Club to Portland's growing ethnic population. The project finale included a student-led classroom event to share the group projects with fellow students who were educated and entertained through songs, poems, drawings and skits.

Summary of Impacts: Pre- and post-program dairy food frequency questionnaires indicated that students made significant positive changes in the variety and frequency of dairy food consumed. Baseline information indicated that 33 percent of participating students consumed less than the three recommended servings of dairy each day prior to this project. At the end of the program, close to 90 percent of the students were consuming at least three dairy servings each day. Assessments of dairy knowledge also demonstrated significant changes; a 70 percent improvement was demonstrated in the students' ability to identify three health benefits of consuming at least three servings of dairy each day. Students were also better able to identify dairy foods, dairy serving sizes, daily dairy serving requirements and dairy production techniques. A six-month post project assessment was conducted to evaluate the long-term impact and knowledge retention.

Question	Pre	Post	6-Month Post
Identify 3 Dairy Foods	42 percent	100 percent	100 percent
Identify 3 Health Benefits	8 percent	78 percent	89 percent
Identify Dairy Serving Sizes	9 percent	62 percent	58 percent
Identify Dairy Servings/Day	41 percent	79 percent	84 percent
Production/Origin	67 percent	77 percent	72 percent

4-H members who were involved as peer-teachers identified nine life skills from the 4-H Targeting Life Skills Wheel that they used and improved upon while participating in this project. The life skills they identified included social skills, sharing, leadership, teamwork, and healthy lifestyle choices.

Scope of Impacts: State Specific

Key Themes: Human Health, Human Nutrition, Obesity

"Lose and Win" Participants Make Lifestyle Changes: According to the U.S. Department of Health and Human Services, 61 percent of Maine adults are overweight or obese, 27

percent of Maine high-school students and 30 percent of Maine middle school students are overweight or at risk for overweight, and 36 percent of Maine kindergarten students are overweight or at risk of becoming overweight. The education committee of Healthy Hancock, and the county Healthy Maine Partnerships coalition, which includes the UMaine Extension, adapted the "Fight the Fat" program from the book, *The Town That Lost a Ton* to address obesity issues in Maine. We called our program the "Lose and Win" healthy weight loss campaign. The committee involved agencies, schools, businesses, community volunteers, and media representatives to plan and implement the program. A regional newspaper provided publicity, dietary journal printing, logo design, and a staff person to help. Lose and Win enrolled 357 adults on 51 teams for a 10-week series designed to build lasting lifestyle change. Weekly meetings included inspirational speakers on nutrition, food, physical activity, and health. Combined county weight loss statistics and recognition of the top five teams was announced each week. The Website included tip sheets from the speakers, photos of winning teams, a healthy recipe of the week, and announcements for the next weekly program.
Summary of Impacts: The Lose and Program resulted in a total loss of 3,280 pounds between January and March 2005. Pre- and post-test results, individual success stories, and participant feedback document successful lifestyle changes in addition to lost pounds.
Scope of Impacts: State Specific

Key Themes: Food Security, Nutrition, Community Gardening

Community Garden Food Distribution Project Feeds Low-Income Seniors: With the recent spike in energy prices, many seniors have to choose among medicine, food, and staying warm. They are also experiencing increased food costs related to the cost of energy, and other factors. For the past two years, UMaine Extension has partnered with the Orono Parks and Recreation Department, community volunteers, and Penobscot County Master Gardener volunteers to establish a pilot model of "agriculture-supported community" by converting unused town land into volunteer-managed gardens where food could be grown for low-income seniors. Specific project objectives were to provide quality fresh vegetables for low-income seniors, improve seniors' diets, and build community between senior residents and community volunteers. Additional funding was provided by the Maine Initiatives for Change, a Maine-based foundation supporting grassroots organizing for social change.
Summary of Impacts: More than 3,900 pounds of fresh vegetables, with an estimated value of $8,400, were distributed to 48 low-income seniors during 2005. Ninety-four percent of participants reported a positive improvement to their diet due to the inclusion of fresh vegetables that they would otherwise not be able to afford.
Scope of Impacts: State Specific

Key Themes: Nutrition, Youth and Nutrition

Eat Well Program Teaches Maine Youth about Good Nutrition: Where do Maine's young people learn about the importance of choosing the most nutritious foods to include in their diets? For more than 9,000 Maine youth from limited-income families, the place they learn about healthy food choices and food safety is UMaine Extension's Eat Well Nutrition Program. In 2004, Eat Well nutrition aides throughout Maine provided nutrition education to 502 groups of young people, ranging in age from 3 to 13. Eighty percent of the groups were at summer camps or school enrichment programs. When aides work with youth groups, they talk about the importance of fruits and vegetables in daily diets. Children in Head Start centers

help prepare healthy snacks using fruits and vegetables, often using varieties of produce new to them. In their lessons, aides also emphasize the importance of proper personal hygiene, including demonstrating hand-washing techniques.

Summary of Impacts: Of the 9,028 youth who participated in Eat Well programming in 2004, 79 percent reported that they now eat a variety of foods; 80 percent reported an increased knowledge of the essentials of human nutrition; 76 percent reported an increased ability to select low-cost, nutritious foods; and 77 percent reported an improvement in food preparation and food safety practices.

Scope of Impacts: State Specific

Key Themes: Food Security, Nutrition, Community Gardening

Eat Well Program Educates People with Successful Garden Project: There is widespread scientific consensus today supporting a national recommendation to increase fruit and vegetable consumption as part of a healthy eating pattern. Research has identified the relationship between increased fruit and vegetable intake and chronic disease prevention. Data collected in the 1996 Maine Behavioral Risk Factor Surveillance System (BRFSS) indicate that only 26 percent of Maine adults eat the recommended five or more servings of fruits and vegetables each day. Furthermore, more than 25 percent of Maine's adults consumed fewer than two daily servings of fruits and vegetables. For over 25 years, Eat Well Program nutrition aides and UMaine Extension master gardener volunteers have joined forces to provide Eat Well Family and Youth Garden Projects in low-income housing projects in Portland, Maine. The objectives of the project are to teach proper nutrition through increased consumption of fresh vegetables; to involve family members and neighbors as a way to enhance communities; to involve youth and adults in gardening as a way to improve self-esteem and self-sufficiency; and to teach new and experienced gardeners about sound gardening methods. Aides and volunteers make house and garden visits to participants during the growing season to provide nutrition and gardening education that coincides with garden progress. Weekly classes were included as well. Sixty-five percent of the families that completed program evaluations are currently participating in the Food Stamp Program. During the summer of 2004, 138 families (representing 433 family members) raised their own garden in their backyard, community raised- bed gardens or container gardens. A Garden Day event kicked off the program and provided gardeners with nutrition, food preservation and gardening education as well as seeds and seedlings. To better meet the diverse cultural needs of the participants, seed and seedling offerings included Asian eggplant, hot peppers, spinach, cabbage, and broccoli. The program evaluation tool was translated into five languages (Somolian, Sudanese, Kamir, Russian and Afghanistan) to improve the evaluation process. In addition, a research garden was grown to determine the market value of the produce grown with the standard seed and seedling package given to participating families.

Summary of Impacts: Eat Well Garden Project evaluations showed that:

- 82 percent of participants ate more fresh vegetables this summer than usual
- 73 percent plan to eat more fresh vegetables all year round
- 78 percent saved money on their grocery bill
- 85 percent had more food available to feed their family
- 93 percent plan to grow a vegetable garden again

When participants were asked to identify the most important outcome of the Eat Well Garden Project, 18 percent indicated that eating more vegetables than usual was the most important.

Other outcomes that were rated as the most important included: saving money on their grocery bill (15 percent); feeling good about growing their own vegetables (15 percent); and spending time with their family in the garden (15 percent).

Scope of Impacts: State Specific

CSREES Goal 4

Greater Harmony Between Agriculture and the Environment

Executive Summary

During 2005, UMaine Extension engaged in a wide variety of programming to meet agricultural needs in a timely fashion, while enhancing the environment through more sustainable farming and growing practices.

Water Quality
In 2005, most of our water quality-related work involved working with non-point source pollution issues in specific watersheds, developing new educational program areas, educating citizen watershed coalitions, and working with municipal officials and similar groups.

Through our Watershed Stewards Program, citizen groups learned the nature of threats to water quality in Maine lakes, and methods to reduce those threats. One group worked with municipalities located within the watershed to develop a source point protection plan and a new surface use ordinance designed to protect the lake from invasive aquatic plants. Three training programs were delivered to municipal officials to train them in the importance of protecting water resources as they develop their municipal growth plans. We have continued the work of the "Buffer Brigade," a team that has implemented specific restorations on high-risk pollution sites in lake watersheds. Logging over 1,000 hours of volunteer time, the crew implemented Best Management Practices on 18 sites, planting $6,000 worth of buffer plant material.

Past evaluations of the Watershed Stewards Program identified improvements that graduates could make to improve their capacity to work with lake issues. In response, UMaine Extension initiated a new educational program to help lake landowners work better with their neighbors and to develop outreach and education plans. For more information, see *Watershed Stewards Program Evaluation Leads to Greater Outreach Efforts* on page 35.

Maine Master Gardeners and Home Horticulture
The Maine Master Gardener program is offered in 15 of Maine's 16 counties. Since the program began in the late '80s, nearly 3,000 Master Gardeners have been trained, and in return, have volunteered their time and expertise in many ways within their communities. In 2005, our we sponsored 368 educational and community projects involving more than 5,500 Maine gardeners. This work was made possible by 17,600 hours of Master Gardeners' volunteer time. More than 3,100 people, including low-income groups, physically disabled gardeners, prisoners, and youth gardeners, reported significant improvement in gardening skills through participation in our garden programs. Sixty-nine Master Gardener graduates furthered their horticultural education through college classes or technical schools, and 26 started a horticulture-based business. Master Gardeners and UMaine Extension also supported volunteers in maintaining the Plant-a-Row program, a program dedicated to reducing hunger by encouraging gardeners to grow an extra row of produce and donate it to local food pantries and soup kitchens. In 2005, more than 280 people grew and donated 99,551 pounds of food, valued at $168,241, statewide.

Beginning in 2002, UMaine Extension and the Maine State Prison education department designed and implemented a horticulture vocational training program at the state prison in Warren, Maine. The program was developed in response to needs expressed by the green industry for more semi-skilled workers. Inmates in the program receive 30 hours of intensive classroom and hands on training in horticulture production and greenhouse management utilizing the facilities at the Warren Prison. Participants then nurture annual and perennial gardens that help feed the prison population. Several inmates have been granted work release privileges to work at local garden centers. Four participants have been fully employed with new careers in the green industry after serving their sentence. The program has successfully trained 142 inmates since its inception. A second prison program at the women's facility in South Windham was started in 2005, and provided horticulture vocational training for eight participants.

The Eastern Maine Native Plant Arboretum was created in 2004 to provide an outdoor classroom for the study of native tree and shrub species best suited for managed landscapes. The Arboretum will serve as the setting for annual workshops and field days conducted by UMaine Extension, as an outdoor classroom for the local K-12 school systems, and as an educational tool for professional horticulturists throughout the region. The species inventory is still relatively young, and is being monitored in its ability to thrive in a northern zone and urban environment. Master Gardener volunteers make weekly observations on plant growth stages, presence of insects or diseases, and wildlife usage.

Our home horticulture program will undergo a voluntary CSREES program review in August of 2006.

Maine Healthy Coastal Beaches Program

Water pollution is a threat to the health of the beach-going public. Pathogens in sewage-contaminated waters can cause a wide range of diseases, including gastroenteritis, dysentery, hepatitis and respiratory illness. UMaine Extension and our program partner, Maine Sea Grant, worked in collaboration with state and federal agencies, municipalities, and citizens to safeguard public health through the Maine Healthy Coastal Beaches Program. During 2005, the health of our public beaches was challenged by heavy rains and surface runoff; many beaches were found to be in violation of bacterial standards. Continued weekly sampling through the program identified high bacteria levels on beaches, leading to efforts to find the sources of contamination, correct the problem, and improve overall beach safety. To increase citizen understanding of these issues, we participated in the *Maine Beaches Conference 2005*. The conference was attended by many beach managers who have followed up with the Maine Healthy Coastal Beaches Program to implement protection measures discussed at the conference. For more information, see *The Maine Healthy Coastal Beaches Program* on page 35.

Youth Natural Resources Education

During the summer of 2005, UMaine Extension partnered with the UMaine Upward Bound Math and Science program and the Greater Pushaw Lake Association to teach 38 high school students from throughout New England science skills using water quality monitoring in a local watershed. The students collected water samples, and were introduced to field and laboratory methods, statistical analyses, GPS and GIS technologies, and research study design. They successfully located areas within the watershed that are contributing significant amounts of phosphorus

pollution to the main lake in the watershed. As a result of this partnership, lake association members now know the areas to focus resources, and participating students have a greater understanding of lake and laboratory science due to the experiential learning.

Studies show that the majority of teachers feel they are not prepared for conveying the broad spectrum of environmental issues in their classrooms. In addition, teachers find that the interdisciplinary nature of environmental education does not fit neatly into the discipline-oriented educational model in common use. Camps and discussion groups have been demonstrated as effective teaching tools for sustainable living and behavior change. The broad educational approach employed by the Tanglewood 4-H Camp and Learning Center and other UMaine Extension youth natural resources programs offer proven strategies to help Maine schools teach children about natural resources and environmental sustainability.
"*It was a truly memorable and life defining experience. Thank you!*" These are the words that an eighth-grade student from Presque Isle, Maine used to describe his three-day experience with the 4-H Earth Connections school program in the spring of 2005. The program provides experiential science education that is directly correlated to state curriculum learning standards and that is highly relevant to the classroom curriculum. The program also strives to foster something deeper; a delight in the wonder of nature, a belief in nature's inherent value and a true understanding of our fundamental interconnection. Students who participate in the 4-H Earth Connections school program successfully complete a year-long series of rigorous academic challenges in preparation for the three-day, two-night program held at Tanglewood 4-H Camp and Learning Center. At the close of the experience, one student commented, "*I learned a lot more than I would have in a classroom, because I actually got to experience and see things, which made them easier to understand.*" This year, 1,482 Maine students in grades K-12 participated in 4-H Earth Connections school programs. The programs are supported by more than $92,000 in grants, and funds from business sponsors and individual donors raised by the Tanglewood Camp and Learning Center Board of Directors.

During the summer of 2005, 946 youth attended Tanglewood 4-H Camp and Learning Center programs that included residential sessions, week-long discovery trips, multi-week leadership camps, and week-long day camp programs. Evaluations indicated that campers had positive, fun-filled learning experiences and acquired important life skills and knowledge of ecological concepts. Tanglewood programs help participants model sustainable living by including them in the process of producing some of the food that they eat, and the sustainable cycle of composting kitchen waste to use as soil enhancement for the camp's organic garden. The garden is tended by campers enrolled in the summer camp garden program. Campers also helped to create permanent, informative signs explaining ways to compost, and how and why chickens are raised at camp.

Tanglewood's operations expanded this year with the purchase of the Blueberry Cove Camp in Tenants Harbor, Maine. Blueberry Cove Camp's first year was initiated with a weeklong youth day camp attended by 103 campers. A capitol campaign is underway to provide improvements that will make it become a sustainable living education center for youth with a focus on marine studies.

In 2005, 110 youth participated in the Vaughn Island 4-H camp. The experience enhances the capacity of children to be aware of and skilled in sustainable natural resource stewardship practices.

School Community and 4-H Mapping Projects
UMaine Extension recently acquired software grants and teacher guides valued at over $40,000 from ESRI (Environmental Systems Research Institute) to help Maine youth develop skills in emerging technologies such as Geographic Information Systems (GIS) and Global Positioning Systems (GPS). During 2005, we partnered with schools to provide teacher training and support, which were passed on to 120 fourth- and fifth-grade students at one school and nine high school students at another. The younger students are developing their knowledge and skills by using the software and GPS hand-held units to conduct community mapping projects. The projects have math, science and history components. The high school-aged students have developed a partnership with a Bowdoin College Environmental Studies professor and her students who are helping to map a nature preserve and retirement community. Virtual walking tours of trails in the preserve and streets in the retirement community have been developed. Both schools are contributing postings to the National 4-H's "My Favorite Places" Website, and both intend to continue the projects in future years.

Some of our 4-H GIS/GPS project participants recently worked with firefighters to map the locations of fire hydrants in two counties. As a result, the exact location of one fire hydrant was disclosed to a senior firefighter who was unaware that it existed, contributing to a successful emergency response to the fire.

Integrated Pest Management (IPM)
During 2005, UMaine Extension delivered programs that address Maine's agricultural issues relating to the management of pests, disease, and the safe handling of pesticides. Our work included educational meetings for growers, environmental monitoring, applied research, school programs, telephone hotlines, and newsletters. We worked with more than 1,200 producers who used IPM practices to improve their crop production levels, and helped more than 10,000 Maine citizens, 3,900 of whom were homeowners, make informed decisions about pesticide handling and application. Our pest management Website helped visitors access research-based information to minimize their use of pesticides, while limiting damage from harmful pests. The site logged more than 700,000 visits this year, and is located at http://www.umext.maine.edu/topics/pest.htm.

Our IPM field staff operated 125 field-monitoring sites in 2005. Through monitoring and insect trapping, Maine potato growers avoided crop losses from European corn borer and cutworms, which are major pest problems for growers. These efforts are estimated to have saved the industry $4.6 million. Our potato late blight forecasting program provides vital information to growers, and this year prevented over $1.5 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 $1 million and an estimated 10,000 gallons of insecticide were never applied. We estimate that the potato IPM program saved the producers over $7.2 million in 2005.

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 2005, the site, located at http://www.mainepotatopestguide.com/, had more than 80,000 visits.

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. UMaine Extension promotes best management practices that help growers successfully minimize pesticide and herbicide use. Since the introduction of IPM to monitor and control blueberry pests, growers have reported a 70 percent reduction in their use insecticide applications.

Our Apple IPM program provides training, monitoring, and twice-daily online pest forecasts to help 190 commercial and small-scale growers in Maine keep up with current pest threats and management options. Ninety-five percent of growers surveyed in 2005 reported that the program helped them reduce crop damage. They attributed $112 worth of pesticide saving per acre, per year, to the program, representing an estimated savings of $325,000 statewide.

Sweet corn grown in Maine has an economic value to growers of nearly $4 million. This year, we worked with 24 volunteer corn farms to minimize insecticide use through weekly pest monitoring, and distributed a weekly IPM report to over 100 growers. Post-season evaluation indicated that 95 percent of the growers improved their crop quality, and 75 percent altered their pesticide usage base on our efforts. Approximately 83 percent of the farmers found that the program improved profitability.

In 2005, UMaine Extension worked with over 100 commercial strawberry growers to help them apply pesticides appropriately. We worked with 10 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 due to reduced applications was $100 per acre.

For the past nine years we have partnered with Extension programs from Vermont and New Hampshire to conduct IPM workshops for over 120 regional greenhouse operators. This year, we started a virtual poinsettia IPM program at our Greenhouse IPM Web site. Growers can access a weekly two-minute tape that can help them to more effectively identify and manage pests and diseases in their greenhouse crop. The site is at http://pmo.umext.maine.edu/greenhse/Grnhouse.htm.

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 management. During 2005, approximately 1500 physical samples were processed with an

additional 1500 phone and e-mail requests. As an annual effort, our lab partners with the Maine Department of Agriculture, Food and Rural Resources, and USDA- Animal and Plant Health Inspection Service - Plant Protection and Quarantine, to conduct a survey of Maine nurseries for the pathogen that causes sudden oak death. This year, 508 plants were sampled from 34 nurseries and processed through our lab. Results have shown no presence of the pathogen, satisfying regulatory agencies that Maine nursery plant stock is certifiable for export. As part of the National Plant Diagnostic Network, presentations informed approximately 400 Maine citizens of the First Detector Network which has been established as a first defense against exotic pest introductions. Other endeavors include numerous insect and/or plant disease talks to Master Gardeners, grower groups, gardening groups, and K-12 schools.

Forest Management and Agroforestry

UMaine Extension documented over 2,000 consultations on forest management in 2005 and offered five workshops to a combined audience of about 100 individuals. Nearly 1,000 publications were distributed and media presentations circulated to an estimated 50,000 people. Of 109 individuals who developed goals and objectives for their forest, 14 were new clients who developed forest management plans, affecting 3,250 acres. Our virtual library of educational links to forstry, wood, and wildlife resources, received more thanr 21,000 visits during the year. The site is located at http://www.umaine.edu/umext/forestry/.

Extension educators from Maine, Vermont and New Hampshire host an annual three-day Maple Grading School to help producers gain knowledge and skills in the techniques and methods of grading maple syrup. This year, 31 maple producers attended. After attending maple workshops, field days, annual schools, and marketing seminars, Maine maple producers are processing and retailing a greater share of their maple syrup by producing value-added maple products, such as candy, butter, and spreads. For more information see *Maple Producers Earn Higher Dollar as a Result of Educational Efforts* and *Maple Syrup Grading School Increases the Potential for Profits* on page 37.

Based on stakeholder input from a UMaine Extension-sponsored statewide agroforestry conference, we sponsored tours to showcase timber and non-timber forest products. The 2005 tours included four examples of forestry and agroforestry businesses that are successfully combined with tourism. Participants learned ways they could add a tourism feature to their woodlots. Another tour was planned to focus on tourism and wildlife.

Also in 2005, the needs of Maine's logging and lumber industry were addressed through seminars on log scaling, wood measurement, and wood machining, and portable sawmill demonstrations. More than 4,000 people at a national trade show participated. Sawmill operation education was also provided to UMaine forestry students as part of their degree requirements. More than 250 consultations with forest product business owners were conducted in 2005.

Marine Resource Management

UMaine Extension enjoys an effective partnership with Maine Sea Grant to address the needs of Maine's coastal residents as they understand, manage and utilize marine resources. Created through a memorandum of understanding in 1999, work is carried out by shared staff under the banner of the Marine Extension Team. In 2005, the work of team members was diverse, with a

focus on community and regional planning to deal with impacts of land-based activities on marine resources, environmental management, and fisheries management.

The Marine Extension Team helped plan and facilitate discussions with citizens, scientists, and resource managers at the Gulf of Maine Summit in St. Andrews, New Brunswick in late 2004. Sponsored through the bi-national Gulf of Maine Council, the summit drew 250 participants from New England coastal states and Canadian Maritime Provinces. Participants gained a better understanding of the connections among agricultural, forestry, industrial, commercial, and residential land use and the health of marine resources, which led to policy recommendations for improvements. The final summit report, published in 2005, featured summaries by Marine Extension Team members urging continued leadership by the Council in ongoing assessment of the Gulf of Maine ecosystem. It encouraged greater collaboration among governments and the private sector to address environmental and community conditions. One of the features of the Summit was a report by the Marine Extension Team on the 2004 Gulf of Maine Expedition, an educational journey by kayak from Cape Cod in Massachusetts, along the coasts of New Hampshire and Maine and around the Fundy Bay coastlines of New Brunswick and Nova Scotia. The report noted intense coastal development, focused in the south but moving north. Reflecting that trend, marine Extension work in the southern-most county of Maine has focused on understanding coastal development pressures. One project has brought citizens, local organizations, and government together for a series of forums under the banner Our Future by Design. Participants considered demographic and development trends and explored “smart growth” alternatives to continued sprawl into rural areas. Recommendations were presented to local governments in the region, urging better use of regional growth centers to contain commercial and housing growth.

Environmental Management

Based on environmental assessments, many coastal communities, organizations, and government entities charged with addressing environmental issues are beginning to question the narrow ways that coastal and marine resources have been managed. In 2005, the Maine State Legislature directed the State Planning Office’s Maine Coastal Program to design an integrated strategy for managing human activities around the state’s bays, including residential and commercial development, agricultural and forest production, and activities on and in the bay, such as fishing, aquaculture, and recreation. The Marine Extension Team participated as resource specialists and facilitators in three regional forums on bay management, helping citizens, resource users, and planners better understand the impacts of human activities on marine resources and to aiding in the design of approaches for more holistic management strategies. The state also designated pilot sites for development of these approaches, and the Marine Extension Team has assisted local committees with these projects.

The Marine Extension Team also collaborated to help communities restore valuable habitat found in coastal salt marshes, which serve as nurseries for many fish species. Using a Maine Sea Grant supported publication, the Team helped citizens understand the value of salt marsh ecosystems. This led to a positive recommendation to proceed with restoration efforts in two Maine areas. Others projects included understanding threats by marine species to plant and animal life using an assessment of marine invasives, and assisting coastal communities with beach management by training and coordinating volunteers (see *The Maine Healthy Coastal*

Beaches Program on page 35.) The Marine Extension Team coordinated the 2005 Maine Beaches Conference for coastal property owners, recreational users, beach monitors, and state and local government officials, who learned about beach management strategies and the economic contribution of beaches to state and local economies.

Working with fishing industry members, university, and government scientists and state managers, the Marine Extension Team facilitated essential discussion of management strategies for a number of important commercial species. In addition, we are working with industry members to develop fishing gear that is both more effective and more selective, reducing by-catch and impact on habitat.

Sea urchins were once the second most valuable fishery in Maine, but highly efficient harvesting techniques have decimated once plentiful stocks. In a belated effort to increase sea urchin stocks, state managers have severely restricted harvests, angering industry members. An April 2005 workshop brought scientists, managers and industry members from Canada and Maine together to discuss collaborative strategies to restore the fishery and manage it for a sustainable yield.

Scallops make up another important commercial fishery, but inshore stocks are in apparent decline. At a scallop enhancement workshop, Team members worked with the Maine Department of Marine Resources and the commercial fishing industry to present ideas on collecting juvenile wild scallops for placement in optimum habitats, assessment techniques, and policy options.

As a hand-in-hand effort to complement the work in fisheries management, the Marine Extension Team has participated in applied research on fishing gear, for the purposes of increased selectivity and reduced impact to habitat. As in other programs, applied research is done with a collaborative and cooperative approach. Industry members are full partners in all projects. To date, projects have focused on the size selectivity of scallop drags, on size/species selectivity of trawl nets, as well as their impacts on bottom habitats, and the potential of fish pots to catch ground fish, such as cod and cusk.

UMaine Extension is participating in livestock carcass research trials at Highmoor Farm, the UMaine Experimental Station Farm in Monmouth, Maine. The project is focusing on developing best management practices and is an effort of the Maine Compost Team, a partnership among UMaine Extension, the Maine Department of Agriculture Food and Rural Resources, and the Maine Department of Environmental Protection. Compost methodology has been developed for routine and emergency disposal, and shared at a national composting symposium held in Portland, Maine during 2005, with over 110 people attending. The research results presented by the Maine Compost Team have been used by two states to develop legislation on carcass disposal methods.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 4 Total	5,112	$691,550	$101,156	$691,550	$1,484,256

Consolidated Plan of Work Performance Goals 4-1 through 4-11
OUTCOME INDICATORS: Behaviors and Impacts

Total Days:	5,112
Acres will be covered in watershed management initiatives.	94,809
Agricultural producers will implement Integrated Pest Management programs in Maine.	1,080
Agricultural producers will reduce herbicide use with increased use of cultivation, cultural management, band spraying, or lower-rate products.	169
Agricultural producers will start composting.	6
Citizens accessing pest management information from Pest Management Office Websites	284,290
Community groups will be involved in watershed management initiatives.	55
Crop producers will identify yield-limiting factors and increase long-term productivity.	1,651
Educational and community projects will be developed and/or run by Master Gardeners.	368
Farmers and homeowners within source water protection areas will assess and take action to prevent water contamination.	800
Horticultural therapy programs will be started.	4
Households will start composting.	10
Maine citizens will be involved in leadership training to protect natural resources.	136
Maine citizens will complete lake watershed surveys.	40
Maine citizens will conduct coastal watershed surveys.	44
Maine citizens will have increased awareness of the threats to drinking water.	817
Maine citizens will have increased awareness of threats to marine habitats.	1,862
Maine citizens will monitor coastal water quality and phytoplankton for public health concerns and research support.	580
Maine citizens will protect wildlife habitat in suburban and rural settings.	50
Maine citizens will take action to protect Maine's natural resources, by becoming inland and costal watershed stewards.	195
Maine citizens will take action to protect shellfish resources.	122

Maine citizens will use appropriate home horticulture practices to protect water resources.	524
Maine coastal groups will learn capacity building techniques to protect marine resources.	79
Maine residents will protect wetland and riparian habitats.	134
Management plans will be written as a result of UMaine Extension efforts.	57
Master Gardener volunteers will be trained in composting education.	329
Master Gardeners will further their education through college classes or technical programs.	69
Master Gardeners will start a horticulture-based business.	26
Municipalities will start composting.	5
Number of acres enhanced as wildlife habitat as a result of Habitat Stewards ™ volunteer efforts, and other Extension wildlife habitat programs.	99
Number of acres included in community forest management plans.	0
Number of acres of forest included in forest management plans.	3,250
Number of contact hours of continuing education instruction delivered by Extension staff or in collaboration with partners.	252
Number of environmentally appropriate forest management practices adopted and the number of acres affected.	36
Number of firms implementing changes in management as a result of developing strategic goals and objectives.	221
Number of firms implementing strategies or practices to increase product value or dollars earned.	288
Number of firms incorporating strategic planning, record keeping, and predictive models in their management practices.	204
Number of individuals and groups who develop goals and objectives for their forest.	208
Number of individuals or groups who develop a forest management plan.	14
Number of individuals who implement their forest management plan.	24
Number of Maine citizens making an informed decision on a pesticide management issue after consultation with pest management staff.	3,901
Number of Maine citizens trained in pest identification, biology and appropriate management methods.	1,766
Number of Maine citizens who become certified pesticide applicators.	253
Number of manufacturers who can describe the relationship of production, economic and environmental variables in making management decisions.	294
Number of manufacturers adopting safety practices.	33
Number of Master Gardeners who are able to successfully identify beneficial and pest organisms, and utilize appropriate management techniques.	335
Number of natural resource professionals who obtain their apprentice wood scaling license as a result of attending Extension programs.	21

Number of natural resource professionals, educators, and service providers attending continuing education instruction delivered by Extension staff or in collaboration with partners.	21
Number of natural resource professionals, educators, and service providers incorporating new knowledge and adopting new practices in their work.	21
Number of participants who consider alternative income opportunities for their land.	43
Number of producers improving pesticide application techniques as a result of pesticide safety education programs	3,261
Number of producers using integrated pest management practices for crop, livestock, and landscape management	991
Number of volunteer hours given by Habitat Stewards™ to educate the public on wildlife habitat.	295
Participants and volunteers will increase their confidence and participation in resolving family, organizational, or community issues.	4,000
Participants and volunteers will increase their educational and leadership skills	5
People will adopt ecologically sound landscape practices that enhance wildlife habitat.	439
People will donate vegetables to food pantries.	284
People will expand their garden space.	102
People will gather and organize information.	2,007
People will graduate from the UMaine Extension Compost School.	36
People will make informed decisions demonstrating environmental stewardship, and sustainable marine resource practices.	1,286
People will participate in Master Gardener educational events, and community projects.	5,766
People will recognize significant improvement in gardening skills through participation in public garden programs.	3,128
People will report reduced pesticide use.	312
People will start a garden.	194
People will take steps to achieve personal, and community goals.	1,185
People will use adaptive gardening techniques.	400
Potato and blueberry producers will understand and use thresholds for pest treatment.	1,129
Pounds of produce will be donated to food pantries.	74,008
Private compost facilities will be established.	3
Private composters will attend programs.	50
Producers will adopt testing strategies as a part of management practices and use results in their management process.	159
Producers will change pesticide application techniques and attitudes using Pesticide Applicator Training practices.	102

Producers will implement pesticide and nutrient Best Management Practices to protect surface water and groundwater systems.	138
Producers will maintain pesticide certification by attending pesticide recertification programs.	1,084
Producers will reduce negative impacts of livestock on streams.	222
Producers will use strategic planning, record keeping, and prediction models in their management practices.	1,154
Residents will attend home composting programs.	132
Responses will be made to public requests.	4,720
Soil tests will be submitted.	1,115
Specimens will be collected.	896
USDA and EPA received accurate information on pesticide and other pest management tactics used in Maine. Number of reports produced.	12
Value (in dollars) of food will be donated to food pantries.	93,146
Volunteer hours will be given by Master Gardeners to provide horticulture information to the public and develop community horticulture projects.	17,600
Youth will demonstrate a knowledge of the laws of ecology and/or an understanding of their connections with the earth.	8,354
Youth will demonstrate environmental stewardship and/or sustainable natural resource practices.	2,677

OUTPUT INDICATORS

Circulation of articles in news media.	2,199,171
Circulation of news media in which columns appear.	34,000
Number of articles in news media.	142
Number of audio-visual resources developed (video, slides, displays).	348
Number of columns written for news media.	8
Number of consultations.	34,955
Number of educational workshops, seminars, or conferences conducted by Extension, program participants and volunteers.	18
Number of educational workshops, seminars, or conferences conducted by UMaine Extension staff.	38
Number of groups formed (ad hoc or formally organized).	106
Number of horticultural therapy adaptive gardening workshops/consultations.	18
Number of issues of newsletters written.	96
Number of Master Gardener volunteers successfully completing training.	410
Number of one-on-one consultations or trainings conducted by Extension program participants and volunteers.	2
Number of one-on-one consultations or trainings conducted by UMaine Extension staff.	31
Number of participants completing the Habitat Stewards™ training	15
Number of people attending the workshops/events.	34,729

Number of people contacted by Habitat Stewards™ in their volunteer efforts	337
Number of people involved in groups formed (above).	2,688
Number of people reached through Farmers Markets.	10
Number of people receiving newsletters.	33,417
Number of publications distributed.	20,250
Number of publications written.	70
Number of radio program listeners.	7,500
Number of radio programs produced.	2
Number of television segments produced.	8
Number of volunteers trained.	2,289
Number of workshops/events.	837

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Water Quality

Watershed Stewards Program Evaluation Leads to Greater Outreach Efforts: Since 1996, UMaine Extension's Watershed Stewards Program has provided Maine lake landowners with educational programs to help them identify water pollution sources and initiate action plans. In exchange for the training, nearly 300 graduates have delivered at least 20 hours of watershed-related community service in their watersheds. To assess the program's effectiveness and determine if program changes were necessary, we recently conducted a comprehensive program evaluation.

Summary of Impacts: Results of this evaluation indicated that our Stewards have a statistically significantly higher knowledge level about lake processes and threats, and spend more time in pollution prevention activities than lakefront landowners who did not participate in our programs. It also showed that graduates had difficulty translating their new knowledge to other lake landowners because they lacked the skills and confidence to develop educational outreach plans. In response, UMaine Extension collaborated with the University of New Hampshire Extension and Maine Sea Grant to offer a series of workshops for lake groups. The 29 workshop participants included representatives from 10 lake groups, each of which now has plans for an outreach and education project. The lake groups plan to implement their projects during 2005/2006. The workshops have enhanced the effectiveness of the Stewards Program overall and will give lake groups the necessary tools to conduct outreach activities with measurable outcomes.

Scope of Impacts: Multi-state Extension; ME, NH

Key Themes: Water Quality

The Maine Healthy Coastal Beaches Program (MHCBP) is providing the state of Maine with a system to monitor Maine's public fresh and salt-water beaches and notify the public when there is a potentially hazardous condition. The program, funded by the U.S. Environmental Protection Agency, is a partnership that includes the Maine State Planning Office/Coastal Program, the Maine Bureau of Health, the Maine Departments of Conservation and Environmental Protection, UMaine Extension/Sea Grant, local municipalities and the beach-going public. MHCBP works with dozens of coastal and inland beach communities,

performing standardized monitoring of beach-water quality, notifying the public if health risks are detected, and educating residents and visitors on what can be done to avoid water-related illness. In 2005, the MHCBP directed and conducted several special studies to determine potential and actual pollution sources affecting swimming areas. The studies included intensive monitoring, sanitary shoreline surveys, dye tests, and water current flow evaluations. Following are examples of two such studies:

The Mount Desert Island Water Quality Coalition (MDIWQC): In 2005, the MDIWQC, a local level member of the partnership, confirmed that swimmers were at risk at the public beach in the town of Seal Harbor due to high counts of *Enterococcus*. The town posted swim advisories and closed the beach several times. A group of Seal Harbor residents, frustrated with advisories and closures, approached the Coalition for help in identifying and mitigating pollution sources responsible for poor water quality.

Summary of Impacts: The MDIWQC initiated a shoreline and watershed survey to identify and remediate pollution sources with the help of residents who raised over $13,000 to fund the project. MHCBP staff provided training and resources necessary to implement the monitoring and a community forum was held on the outcome of the survey. Teachers and students also conducted an optical brightener study in a local brook to determine if septic leakages or sewer line breaks could be responsible for high *Enterococcus* counts. As a result of the survey project, the town of Mount Desert set up its own *Enterococcus* lab to monitor the stream and beach. The combined data of the town and the citizen monitoring efforts have helped to develop a picture of when and where pollution events are occurring, and mitigation planning is underway.

The Community of Lincolnville Takes Action to Improve Water Quality: Regular weekly monitoring by communities and volunteers indicated elevated bacteria levels in the mouth of Frohock Brook, and the adjacent Lincolnville Beach public swimming area in mid-coast Maine. Currently, there is no public municipal sewer system available in the town of Lincolnville, Maine. In response, a partnership among the community of Lincolnville, the Maine Healthy Beaches Program, and the Maine Department of Environmental Protection was formed to conduct a sanitary shoreline survey of the beach area, and a partial watershed survey of Frohock Brook. The team also surveyed 70 properties as part of the project. Local inspectors examined the plumbing and connections for all adjacent private sewer systems along the U.S. Route 1 corridor.

Summary of Impacts: Prioritized in-ground systems within close proximity to the tidal wetlands were fluorescent-dye tested, revealing visible breakout of dye within 24 hours from six systems. Three of the failing systems have been replaced or upgraded during the summer of 2005. The remaining three systems are awaiting permits and/or have plans for replacement by spring 2006. Twenty-five properties with questionable systems will be revisited, and additional dye tests are scheduled for spring 2006. The survey has been an effective tool in educating the community and local stakeholders about best practices, and remediating pollution problems. Due to the collaboration with the Maine's Healthy Beaches Program and its partners, the community of Lincolnville is taking further action to improve water quality and protect public health.

Scope of Impacts: State Specific

Key Themes: Integrated Pest Management

Integrated Pest Management in Maine Schools: Recently, the Maine Department of Agriculture, Food and Rural Resources, in cooperation with UMaine Extension, developed

the Maine School Integrated Pest Management (IPM) program. In 2003, the Maine Board of Pesticides Control (BPC) issued *Standards for Pesticide Applications and Public Notification in Schools* to protect a vulnerable group, our youth, from unnecessary pesticide exposure. Among other things, the new rule required all Maine schools to use IPM -- a common-sense approach designed to minimize pesticide use. Pesticides, if needed at all, are used as a last resort. UMaine Extension partnered with the BPC to establish pilot programs in the Orono and Lewiston school districts. The work was funded by a grant from the U.S. Environmental Protection Agency (EPA). Weekly visits by our IPM staff person led to specific recommendations for pest management processes. Monthly meetings were held with school superintendents, principals, maintenance supervisors, custodial staff and others to develop and implement training sessions and appoint staff to conduct various aspects of the program. Educational displays were also featured at parent meetings to inform the community about the IPM program.

Summary of Impacts: The demonstration program was well received in both school districts but was particularly successful in Lewiston, home to Maine's second largest school district, which serves more than 4,600 students. As a result of the program, Lewiston Public Schools were awarded the IPM STAR Certification from the IPM Institute of North America, in partnership with the EPA Pesticide Environmental Stewardship Program. Lewiston is one of only 13 schools in the nation to earn this award, one of just two in New England and the first in Maine. The Lewiston schools head custodian reports, "We're saving money. IPM helps us to keep the schools cleaner and in good repair, and we know it's best for kids' health."

Scope of Impacts: State Specific

Key Themes: Agricultural Profitability, Niche Market

Maple Syrup Grading School Increases the Potential for Profits: The accurate grading of maple syrup is very important to producers by helping them to use appropriate grades of syrup in ways that produce the highest potential profits, particularly when evaluating syrup for blending or producing value-added products such as maple candy. There is also a need for maple industry experts to serve as contest judges at county and state fairs and at agricultural trade shows and industry expositions. To respond to these needs, UMaine Extension, the University of New Hampshire Cooperative Extension and the Vermont Agency of Agriculture, Food and Markets, developed a three-day Maple Grading School for producers. Lectures, handouts and experiential activities enabled participants to learn and adopt correct techniques for grading maple syrup.

Summary of Impacts: Data from post-training evaluations show that 74 percent of the 31 regional producers who attended felt that accurate grading of maple syrup was crucial in their business and 94 percent increased their confidence in maple grading and quality control techniques. Ninety percent felt that the workshop was moderately to very effective.

Scope of Impacts: Multi-State Extension; ME, VT

Key Themes: Agricultural Profitability, Niche Market

Maple Producers Earn Higher Dollar as a Result of Educational Efforts: Bulk wholesale syrup sales account for the lowest per gallon profit level to the producer of any sales categories. Increased retailing and techniques for producing value-added products can significantly increase profitability. Since 1998, Maine has been selling approximately 85 to 90 percent of its maple syrup crop as bulk wholesale syrup. In 1998, the all-sales (retail,

wholesale, and bulk wholesale) per gallon equivalent price for Maine producers was $20.60 according to the New England Agricultural Statistics Service. In contrast, Vermont, the leading state in maple production, had an all-sales per gallon equivalent price of $29.00, and Connecticut had an all-sales per gallon equivalent price of $41.10. UMaine Extension is addressing this gap with maple production workshops, field days, annual schools, and marketing seminars for producers.

Summary of Impacts: In recent years, Maine producers have been processing and retailing a greater share of syrup, and producing value-added maple products, such as maple candy, butter and spreads. As a result, Maine's all-sales per gallon equivalent price in 2003 (the latest year for which data is available) has increased by 16 percent since 1998. In comparison, the all-sales gallon equivalent price for Vermont and Connecticut increased only 3 percent during the same period.

Scope of Impacts: State Specific

CSREES Goal 5

Enhanced Economic Opportunity and Quality of Life for All Americans

Executive Summary

Small and Home-Based Business

During the past year, UMaine Extension's Small and Home-Based Business Education Program helped 3,900 potential and existing Maine entrepreneurs access research-based information to improve their knowledge, skills, and business management practices. Our educational initiatives helped Maine entrepreneurs improve their chances for success, so their businesses can grow and prosper.

Through small business clinics, workshops, conferences, Internet Websites, individual consultations, interagency collaborations, and publications, we taught Maine people how to evaluate, start, and grow small and home-based businesses. We partnered with business owners and other business-assist organizations to offer educational programs that focused on increasing the visibility and accessibility of educational resources. UMaine Extension's unique online Virtual Resource Library has had more than 12,500 visits during the past five years. According to ten visitors who completed the voluntary online survey in 2005, the Library helped them 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.

In 2005, more than 600 Maine citizens attended UMaine Extension's 61 small and home-based business education workshops and programs on topics such as: pricing your products and services, balancing business and family, customer service, starting an herbal products food business, recordkeeping, business planning, financial analysis, and marketing. Our small business clinic program, conducted through county Extension offices, helped 137 people access reliable information about starting and growing a small or home-based business. We helped child care providers learn how to keep good financial records, small and part-time farmers evaluate alternative enterprises, and specialty food producers market and price their products profitably. Ninety-six people who attended our programs wrote business plans, 83 wrote marketing plans, and 88 developed sound record keeping systems. Nearly 400 people reported adopting one or more business management practices as a result of attending our business educational programs. UMaine Extension also provided leadership in planning and organizing the third annual Washington County Business Conference and Marketplace, which was attended by more than 300 people. This successful model of regional networking and education for small and home-based business owners will be replicated in three other regions of the state beginning in the fall of 2006 with support from the Governor's office.

During the past year, UMaine Extension collaborated with representatives from two other business-assist organizations to form the Downeast Micro-Enterprise Network. The Network received a $164,000 grant from the Maine Department of Economic and Community Development to provide residents of an economically distressed region of the state with a year-long series of intensive educational programs focused on strengthening the entrepreneurial infrastructure and stimulating small business development and job creation in the region. To

date, more than 600 people, representing more than 160 small businesses, have participated in this successful small business education program.

UMaine Extension has also cooperated with researchers at UMaine in diverse economic development applied research projects and outreach efforts. We partnered with faculty members in the Department of Resource Economics and Policy to organize a daylong conference on the economic and business climate in Maine. It was attended by 80 business leaders, economic developers, and state and regional policy makers. We also worked with researchers from the Margaret Chase Smith Center for Public Policy at UMaine, the UMaine Business School, and the UMaine Department of Resource Economics and Policy on a small business viability project for the Maine Highlands Region. We are currently collaborating with researchers from the UMaine Resource Economics and Policy Department, and the Maine Department of Agriculture, Food and Rural Resources on an agritourism project in Maine.

4-H Youth Development

In 2005, 14,590 youth participated in the Maine 4-H Youth Development program. Youth completed just over 25,000 educational learning projects through the 4-H club program, school enrichment programs, out-of-school programs, and 4-H camps. The 4-H program continues to partner with skilled and caring volunteers who serve as mentors, teachers, and leaders. In the past year, CSREES convened a national team to conduct a review of the UMaine Extension 4-H Youth Development program, resulting in a comprehensive examination and strengthening of our statewide program. This year, youth development program research projects included: a comprehensive study of 4-H volunteers in Maine, a qualitative study with 4-H alumni exploring how the 4-H program had impacted and influenced their adult lives, a study examining how participation in the Citizenship Washington Focus program influenced high school graduates' career aspirations, and a project that examined the impacts of 4-H on home-schooled students and their parents. UMaine Extension secured over $1.1 million in grants and special funds to support 4-H programming initiatives across the state.

In 2005, 2,300 youth were enrolled in 191 4-H clubs in Maine. Youth involved in the clubs learned life skills by participating in hands-on learning projects. Documented life skills learned were leadership, citizenship, decision making, entrepreneurial, conflict resolution, goal setting and character development. Highlights include:

- Maine 4-H Clubs from York, Cumberland, Knox-Lincoln, Franklin, and Penobscot counties joined the Maine Llama Association, the Maine Alpaca Association, and the Maine Sheep Breeder's Association in planning and implementing the 2005 Fiber Frolic held at the Windsor, Maine Fairgrounds. 4-H youth participated in public education (both teaching and learning) on a variety of topics including lamb, llama, alpaca, goat and rabbit care; and fiber craft production, as well as other animal products.
- A newly created 4-H project is the Maine 4-H GIS/GPS (Geographic Information Systems/Global Positioning Systems) community mapping project.
- Youth involved in the 4-H horse clubs in Kennebec County indicated that their involvement in 4-H has allowed them to secure jobs in the equine field and enhance their leadership, communication, team work, and decision making skills.
- Results from a long-range Citizenship Washington Focus (CWF) impact survey indicated the following impacts from past participants:

  - One former delegate indicated that the life skills she learned at CWF motivated her so that she is now working for Senator Olympia Snowe in her Bangor office.
  - Another person wrote that CWF introduced him/her to politics and eventually influenced a decision to study international relations in college.
  - One older youth wrote that the CWF experience helped him/her meet the goal of becoming class president.
  - Many participants indicated that CWF had improved their public speaking skills, increased their knowledge and involvement in citizenship, and had enhanced their self-confidence.
- Eight hundred sixty-two adult volunteers across the state provided numerous educational opportunities for youth in the 4-H program. Four hundred twenty-six volunteers were trained in contemporary youth development, creating partnerships within communities to provide program sustainability, engaging teens with adult mentors, initiating and managing 4-H clubs, leadership, civil rights, and low risk management.
- A quote from a seven-year 4-H club member: "I have learned how to be a leader. It is very satisfying to be able to share your knowledge and to help people who are in need. These skills can be put to use not only in 4-H but all through life."

In 2005, UMaine Extension's 4-H youth development program worked with 102 school enrichment programs reaching 7,700 youth. This included teachers using 4-H curricula, 4-H staff conducting educational programs in schools, and teachers forming 4-H clubs in their classrooms. Highlights include:

- Oxford County 4-H staff have presented nine school-based workshops on character education to over 180 youth in grades 3-6. Evaluation results indicated that over 85 percent of students noted their behavior toward others would change for the positive as a result of the workshops co-taught by adults and teens.
- Fifteen youth in grades 3-5 at Bowdoinham Community School used GIS/GPS technology to create an indoor and outdoor walking trail that is listed on the Healthy Maine Walks Website. The trail is now used by Bowdoinham community residents.
- In Oxford County, 45 teen-age youth involved in three Youth and Adult Partnerships gained the skills necessary to become engaged in quality community development work in their schools and in the larger community. To date, more than 400 videos have been distributed to educators across the state. In addition, two school and community presentations for 800 youth and 100 adults were created in partnership with the Maine Center for Hate Crime Prevention.
- In York County, a Youth Vision Summit involving 110 High School students and advisors from four schools helped to create a more collaborative sense of community among students from different schools. As a result of this daylong summit, a vision plan was created to help participants experience the four essential elements of 4-H, including Belonging, Independence, Generosity, and Mastery.
- The Oxford Hills Respect Team comprised of 40 teens and adults taught character education and bullying prevention to 980 students in grades 3-6, and offered workshops on respect and kindness using puppets for children in pre-K to grade 2. Impacts documented by members on the teams include: 1) increase in confidence to become involved with community issues; 2) enhanced interest in their future goals, education, and ability to make a difference; 3) expanded interest in others' well-being; and 4) belief they could make a difference in the

community. One teen team member was accepted to be an intern with National 4-H Council and will attend college the following fall. Another youth will complete an AmeriCorps term, and then go on to college.

In Maine, community members, educators and parents have expressed the need to move after-school programming beyond the realm of childcare into an enriching, educational experience for youth. In 2005, over 5,400 youth participated in UMaine Extension's after-school and special interest programs:

- Four counties piloted a new *4-H After-School Initiative* with the help of a JC Penney After-School grant. UMaine Extension trained 92 local, after-school staff members and developed resource kits for 24 school-based sites that engaged 988 youth. All 24 sites are using at least one 4-H curriculum, and 19 sites have initiated at least one new 4-H club.
- *Mentor ME After-School* is a UMaine Extension initiative piloting in three counties that offers three unique approaches to after-school mentoring and workforce preparation. The program will evaluate the relative efficacy of the individual approaches, which include a community-based approach, a school system-wide after-school approach, and a traditional after-school approach. UMaine Extension trained 100 teens and adults to mentor 770 middle school youth in this initiative.
- After-School Teams in one Maine school district co-sponsored 44 enrichment programs for 1,103 middle school students. As a result, 35 students have joined the after-school teams and participate in weekly after-school leadership opportunities.
- Parents and school administrators at the James Bean School in Sidney, Maine wanted to expand their limited after-school enrichment program. After two years, the program has expanded to include 4-H after-school clubs, and into a local middle school.
- In Oxford County, UMaine Extension has worked with 14 elementary and middle school after-school sites. The projects began in 1991 and have been self-sustaining since 1995, serving 20 to 85 young people each day. Ninety percent of parents surveyed reported that the programs are of great value, and over 80 percent of the young people who participated in academic support and enrichment improved their performance assessments by a half level grade or more.
- In York County, 121 youth participated in the *4-H Arts Discovery Program,* designed to help youth "discover the art of life." The goal of the program is to provide youth with opportunities to learn and experience expressive arts, learn about themselves, their communities and the world around them, and use the arts to learn valuable life skills.

In 2005, 922 youth participated in Maine 4-H camps. The camps included overnight and day experiences held in various counties, at the Tanglewood 4-H Camp and Learning Center, and at Vaughn's Island 4-H camp. Highlights include:

- To help address the issue of childhood obesity in Washington County, UMaine Extension conducted a three-day summer camp in three locations for 85 youth ages 6 to 10. As a result of attending the camp, youth indicated they had increased their daily aerobic exercise and were now drinking more water. Some of the youth reported their family members had also increased their levels of exercise as a result of learning from the day campers. Comments from parents included: "The children cut down on their juice consumption and started to drink more water, eat less junk food and read food labels;" and "Thanks to my daughter's

motivation with the pedometers after attending your camp, she has challenged her father to walk with her at night. He increased his exercise from zero to four or five nights of walking."

- Youth who participated in the Leadership II program at the Tanglewood 4H Camp and Learning Center created the "Everything Goes Somewhere" Trail. Located along the original sewer line of the camp, the trail demonstrates various methods of waste disposal and rates of decomposition. A "Garbology test site" was also created as part of the project. This area is set aside for a variety of objects to be partially or completely buried, dated, and observed over time. Campers researched information and created displays to inform others along this self-guided trail.
- In 2005, 110 youth participated in the Vaughn Island 4-H camp experience, a successful 30 year-old program that enhances the capacity of children to be aware of and skilled in sustainable natural resource stewardship practices. One parent said, "Being able to step out of the "electronic" world into nature is very valuable. Kids are so dependent on cell phones, computers, TV and such, that being away for five days with other like-minded kids is rewarding."

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 2005, 1,127 parent educators adopted one new practice or skill to use when leading a class or working individually with parents, and 68 childcare providers adopted new practices that enhanced their ability to care for children and/or work with parents. Almost 23,000 people received our parenting publications; over 5,000 received newsletters and many more were reached through 15 articles in the print news media.

Parenting can be stressful for many caregivers. Nearly 5,000 individuals attended our 250 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 as educational consultants (more than 2,131 contacts), and are accessing 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 *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 446 families enrolled in the Waldo and Knox County programs; 83 of these families were new to the program this year. The families received 1,370 home visits from UMaine Extension staff. Other programs replicating the PATT program served more than 1,000 additional first-time families. Nearly all enrolled children have access to a primary health care provider and 97 percent have public or private health insurance. Nearly 13 percent of the children enrolled were identified with

developmental delays during 2005. Of these, more than 75 percent received remedial services. Program participants are surpassing state and national rates for breastfeeding at year one.

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. Some highlights of the third year include creating the film "Real Girls… Turning Beauty Inside Out," which has been shown to more than 1,100 people. In addition, more than 300 adults attended 15 workshops and conferences around the state designed for participants to bring TBIO information and activities back to their community groups and classes. As a result, 500 young girls participated in *TBIO* after-school programs, classroom and community discussions, and art camps. May, 2005 was proclaimed the second annual *Turn Beauty Inside Out* month in Maine by Governor John Baldacci. We continued to distribute community awareness kits and other resources to teachers, group leaders, and volunteers to adapt and use in their communities. We participated in local fairs where we reached more than 600 adults and young people from around the state. TBIO sponsored two concerts: Cosy Sheridan performing "The Pomegranate Seed, an Exploration of Appetite, Body Image and Myth in Modern Culture" for 175 people, and Libby Roderick in Bath for 200 people. The event was filmed by CNN for a national news report. Enthusiastic agency collaborators and volunteers are now integrating the educational project in programs for young people and families around the state.

Education and Support for Maine's Older Citizens

UMaine Extension's Senior Companion Program (SCP) provides volunteer opportunities for 74 low-income individuals who are at least 60 years of age. The SCP is part of the National Senior Service Corps, an initiative of the Corporation for National and Community Service, the federal agency responsible for overseeing domestic volunteer service programs. Senior Companions are friendly visitors who provide support and companionship to homebound adults. The SCP seeks to reduce loneliness and to help homebound elders maintain their independence. Senior Companions often provide transportation for their clients to medical appointments, grocery stores, pharmacies, and other errands, helping to meet a critical need in their communities. UMaine Extension Senior Companions in 13 Maine counties reached 253 homebound individuals. UMaine Extension provided monthly, regional professional development trainings for Senior Companions in nutrition, identity fraud, financial management, physical balance, and communication skills to enhance their working relationships with the elderly clients they visit on a regular basis.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] &[c]	Smith/Lever [3d]	State Funds	Total Funding per Performance Goal
Goal 5 Total	7,523	$1,017,622	- 0 -	$1,017,622	$2,035,244

Consolidated Plan of Work Performance Goals 5-1 through 5-16
OUTCOME INDICATORS: Behaviors and Impacts

Total Days:	7,523
Adults will adopt a least one new growth-enhancing skill.	1,087
Adults will adopt at least one new parenting skill.	1,656
Adults will develop strategies to strengthen family and other important relationships.	623
Adults will incorporate new information that enhances a child's development.	1,701
Adults will participate in community-based efforts to reduce violence.	251
Adults/older youth will demonstrate acceptance of differences.	816
Adults/older youth will demonstrate essential communications skills.	1,410
Adults/older youth will demonstrate fairness and equity.	912
Adults/older youth will demonstrate peaceful conflict resolution skills.	790
Adults/older youth will demonstrate that they are responsible, contributing members of their community.	1,386
Adults/older youth will teach acceptance of differences.	826
Adults/older youth will teach essential communication skills.	962
Adults/older youth will teach peaceful conflict resolution skills.	659
Adults/older youth will use developmentally appropriate hands-on, experiential educational methods.	1,480
Child care providers will adopt at least one new parenting skill.	67
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.	68
Child care providers will incorporate new information that enhances a child's development.	85
Collaborative groups will be formed.	13
Cooperative groups will be formed.	7
Educational activities resulting from cooperative/collaborative efforts.	45
Enterprises will be retained/expanded.	124
Enterprises will report increased revenues and/or decreased costs.	61
Enterprises will transition to closure.	6
Jobs will be created.	58
New enterprises will be created.	110
Non-viable businesses will not be started.	27
Number of adults/older youth who demonstrate leadership.	1,399
Number of adults/older youth who teach fairness and equity.	849
Number of adults/older youth who teach leadership.	1,373
Parent educators will adopt at least one new practice or skill in leading parenting classes or groups.	316
Parent educators will adopt at least one new practice or skill in working	811

with parents.	
Participants and volunteers will increase their confidence and participation in resolving family, organizational, or community issues.	1,785
Participants and volunteers will increase their educational and leadership skills.	1,170
Participants and volunteers will use their educational and leadership skills to bring about change in their family, organization, or community.	1,205
Participants will attain a driver's license, business license or other bridge to employment opportunities.	1
Participants will cease/decrease in unhealthy or anti-social behavior, addiction or lifestyle pattern, including necessary or desirable weight reduction or weight gain.	36
Participants will demonstrate increasing order, organization or cleanliness in the home environment.	55
Participants will demonstrate positive reading habits by describing increasing reading activities (reading, finger rhymes, talking about books, etc.) with child/children.	38
Participants will demonstrate positive reading habits by describing increasing reading for self.	38
Participants will demonstrate positive reading habits by describing/demonstrating increased positive family relationships through reading, and reading related activities.	35
Participants will demonstrate positive reading habits by expressing increased enthusiasm for reading, and ideas found in books.	36
Participants will demonstrate positive reading habits by increasingly having books visible in the home.	46
Participants will demonstrate positive reading habits by increasingly having general reading materials (newspapers, magazines, etc.) in the home.	40
Participants will demonstrate positive reading habits by reporting increasing visits to a local library.	25
Participants will express positive goals (aspirations) for the future.	54
Participants will increase in contacts to community, social, or educational agencies to access needed resources or skills.	64
Participants will increase network of support persons/resources.	62
Participants will increase participation in school, church or community programs, events and opportunities, including volunteer efforts.	22
Participants will increase responding to a need with action toward solving/addressing it through use of community resources.	41
Participants will initiate job training/job seeking/literacy skills.	18
Participants will reduce debt or start saving money.	39
Participants will report or demonstrate increased positive communication in the home.	31
Participants will report or demonstrate increased positive feeding	29

relationship with children (e.g., applied knowledge of children's serving sizes, improved mealtime atmosphere, family eating together, children assisting with cooking or food shopping, etc.).	
People gathering/organizing personal, financial information.	345
People making informed decisions.	348
People taking steps to achieve personal and goals.	204
People will adopt one or more business management practices (e.g. developing a pricing strategy, etc.).	408
People will contact business-assist organizations.	306
People will develop record keeping systems.	88
People will report ease in understanding and accessing small business educational resources.	332
People will take part in networking opportunities.	560
People will write business plans.	96
People will write marketing plans.	83
People will write customer service plans.	71
The number of adults enhancing their knowledge and/or skills to provide necessary care for aging family members.	386
The number of coalitions with UMaine Extension involvement that support healthy child development, and position parenting skills.	80
The number of UMaine Extension parent educators incorporating nutrition education materials into their programs.	31
UMaine Extension nutrition aides and educators will incorporate parent education materials into their programs.	84
UMaine Extension involvement coalitions that facilitate building systems needed for adults will engage in positive, growth-enhancing behaviors.	18
Youth will demonstrate and document the ability to work in diverse settings.	81
Youth will demonstrate and document workplace skills, and competencies.	127
Youth will demonstrate character development (self-discipline, managing feelings, self-responsibility, self esteem, integrity, honesty, reliability, loyalty).	2,627
Youth will demonstrate empathy, and concern for others (nurturing relationships, sharing, charity).	1,931
Youth will demonstrate responsible citizenship (self-motivation, teamwork, contributions to group effort, community service/volunteering, and accountability).	1,586
Youth will demonstrate the qualities necessary to run a successful business.	254
Youth will demonstrate the skills necessary to run a successful business.	282
Youth will demonstrate their ability to lead others.	998
Youth will demonstrate their ability to resolve conflict through peaceful means.	1,523

Youth will demonstrate tolerance and acceptance of differences (peaceful conflict resolution, social skills, cooperation, courtesy, communication, respect, fairness, and justice).	2,019
Youth will develop and use safe and peaceful means to resolve disputes in their communities (town, neighborhood, and school).	1,391
Youth will develop mutually caring relationships with peers.	1,216
Youth will engage in activities related to their short- and long-term goals.	7,685
Youth will engage others in being supportive in their communities.	2,175
Youth will help their communities embrace diversity.	1,546
Youth will identify personal goals, values, and aspirations.	7,471
Youth will make appropriate decisions and resolve problems effectively in their daily lives.	2,523
Youth will make healthy lifestyle choices.	5,782
Youth will make informed financial decisions.	200
Youth will organize and maintain appropriate personal financial information.	105
Youth will practice appropriate safety procedures in home, work, or recreational activities.	869
Youth will serve effectively on teams with peers and adults.	1,138
Youth will set appropriate and reasonable goals for themselves and others.	1,665
Youth will take steps to achieve personal financial goals.	98
Youth will use peaceful means to resolve disputes with others.	1,520
Youth will value differences in their peers.	5197
Youth will volunteer in their communities.	1,222

OUTPUT INDICATORS

Estimated audience involved in broadcast.	65,000
Number of articles in news media.	7,117
Circulation of articles in news media.	2,336,598
Number of audio visual resources developed (video, slides, displays).	95
Number of collaborative efforts initiated.	7
Number of consultations.	5,193
Number of cooperative efforts initiated.	16
Number of economic reports disseminated.	15
Number of educational radio, TV and internet programs given.	14
Number of educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	58
Number of educational workshops, seminars, or conferences conducted by UMaine Extension staff.	69
Number of enterprises assisted.	504

Number of existing small business owners participating in UMaine Extension educational programs.	561
Number of groups formed (ad hoc or formally organized).	192
Number of home budget plans written.	10
Number of home visits by parent educators.	1,037
Number of home visits.	823
Number of individual consultations held.	246
Number of individuals participating in collaborative efforts.	107
Number of individuals participating in cooperative efforts.	221
Number of issues of newsletters distributed.	3,156
Number of issues of newsletters written.	3,959
Number of one-on-one consultations or trainings conducted by Extension program participants and volunteers.	32
Number of one-on-one consultations or trainings conducted by UMaine Extension staff.	226
Number of organizations involved in collaborative efforts.	82
Number of organizations involved in cooperative efforts.	50
Number of participants in educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	863
Number of participants in educational workshops, seminars, or conferences conducted by UMaine Extension staff.	1,560
Number of people attending small business clinics.	137
Number of people attending the workshops/events.	23,389
Number of people attending UMaine Extension educational workshops.	613
Number of people attending UMaine Extension-sponsored networking programs.	350
Number of people involved in groups formed.	3,380
Number of people receiving newsletters	17,538
Number of people requesting business-related information.	308
Number of people requesting home budgeting information.	57
Number of potential small business owners participating in UMaine Extension educational programs.	195
Number of promotional/informational articles distributed.	3,400
Number of promotional/informational articles written.	9
Number of publications distributed.	26,393
Number of publications written.	28
Number of small and home-based business owners participating in collaborative efforts.	29
Number of small business clinics held.	50
Number of Trade Area Analyses conducted.	3
Number of UMaine Extension educational workshops held.	61
Number of UMaine Extension-sponsored networking programs held.	6
Number of UMaine Extension-sponsored networking programs held.	20

Number of volunteers trained.	957
Number of workshops/events.	1,088
Participants and volunteers will be involved in public policy issues affecting families, organizations, and communities in Maine.	734
People gathering/organizing personal, financial information.	345
People making informed decisions.	348
People taking steps to achieve personal goals.	204

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Small and Home Based Business, Economic Development

***Business Conference Boosts Economic Development in Maine's Poorest County*:** Despite Washington County's abundance of natural resources, and recent initiatives to introduce additional income-generating opportunities for its residents, its economy lags far behind other Maine counties, with 20 percent of all residents living below the poverty line according to the 2000 U.S. Census. Small and micro-businesses (those with five or fewer employees) are the engine that drives the Maine economy, especially in rural areas. In Washington County, nearly 30 percent of the workforce is employed by businesses with fewer than five employees. UMaine Extension, in cooperation with other business-assist organizations, business owners, and sponsors, has organized the Washington County Business Conference and Marketplace since 2003. The conference was created with over $70,000 in sponsorships, and more than 50 organizations, businesses, and agencies contributed to its success. The main goals of the annual, two-day conference were to highlight resources needed to create new businesses, increase the profitability of existing businesses, and help businesses expand to create additional jobs. Each conference featured a marketplace of approximately 50 Washington County businesses with products on display for sale to the general public. More than 900 people participated in the 2003, 2004 and 2005 business conferences, as workshop attendees, presenters or marketplace exhibitors/visitors. Conference topic areas included planning, financing, marketing strategies, employee relations, insurance, using technology, economic development, record keeping, e-commerce, and taxes.

Summary of Impacts: Approximately 570 people reported that they improved their business management skills as a result of conference participation. Conference workshop attendees expected to increase their daily sales by a minimum of $200 and anticipated an annual increase of $21,400. Thirty-seven people who participated in the workshop "Selling Your Products at Farmers' Markets, Farm Stands and Garden Centers" planned changes in their marketing techniques that would result in a combined sales increase of $146,520. The success of the program was recognized by the Small Business Administration (SBA), which selected the conference core planning team as Maine's "2005 Home-Based Business Champion." In a press release citing the award, Charles E. Summers, SBA New England regional administrator, said, "This team has had an impact on small business in Washington County. They have developed a model that I hope will be replicated throughout Maine." In addition, an Extension representative was officially recognized by the 122nd State of Maine Legislature, and a state interagency planning committee was formed to "institutionalize" the Washington County Business Conference and Marketplace experience to serve as a model for

regional business conferences statewide. Extension staff are participating on this team, which recently developed a proposal to fund similar business conferences in 2006.

Scope of Impacts: State Specific

Key Themes: Children, Youth and Families at Risk, Parenting

Parenting Through Separation and Divorce: U.S. Census Bureau estimates indicate that half of all new marriages today will end in divorce. Approximately 8,000 divorces are filed annually in Maine, and even more couples form and separate without legalities, resulting in a large number of families in transition. To help families and children navigate through these difficult transitions, UMaine Extension, in cooperation with the University of New Hampshire Cooperative Extension, offered a four-part workshop series called *Parenting Through Separation and Divorce*. It was held in two locations during 2005. The workshop was designed to help parents support their children throughout the difficult transition of separation/divorce and focused on four key areas: understanding the effects of separation and divorce; helping children – what they need and don't need; moving from conflict to cooperation; and communicating effectively – getting through the anger, jealousy and revenge. The main goal of the series is for parents to adopt behaviors that will minimize the struggles of divided loyalties that children of separated parents typically experience. Twenty parents participated in the workshops.

Summary of Impacts: Of the evaluations returned, all indicated that attendees had made behavior changes to reduce feelings of divided loyalties in their children. Specifically, 71 percent made improvements in the area of criticizing the other parent; 86 percent made improvements in the area of sounding like a victim of the other parent's behavior; 43 percent made improvements in the area of having children deliver messages to the other parent; and 43 percent made improvements in the area of quizzing their children for information about the other parent. Parents also reported significant improvements in communications with the other parent: 86 percent reported improvements in avoiding being derailed; and 57 percent reported improvements in the use of "you" messages when talking with the other parent. All parents reported that the workshop helped them understand how their children experience separation/divorce, and support children as they adjust to the separation/divorce. Seventy one percent said they noticed changes in the behavior, attitude or atmosphere in their children or family since the series.

Scope of Impact: Multi-State Extension; NH

Key Themes: 4-H Youth Development

Youth Arts Initiative Teaches the Four Essential Elements of 4-H: Research shows that learning to respond to, create, and perform works of art teaches children and young people skills, values, and habits of mind crucial to their personal growth and development. In York County, regular school- and community-based arts programs did not meet the full demands for art programming for youth. To fill program gaps, UMaine Extension staff created the 4-H Arts Discovery Programs for 4-H members and other York County youth. The programs were designed to help youth "discover the art of life," and, more specifically: learn and experience expressive arts; learn about themselves, their communities and the world around them; and use the arts to learn broader, valuable life skills. In 2005, 121 youth participated in programs, including Nature Camp, Art Saturdays, and the Community Banners Program. Staff

collaborated with the UMaine Extension Eat Well program nutrition staff to also offer healthy eating education to art program participants.

Summary of Impacts: The program was evaluated based on the four essential elements of 4-H: Belonging, Independence, Generosity and Mastery, and included parental feedback with a 22 percent return. All survey respondents reported positive attitude changes in their children attributable to the programs. Results specific to the four essential elements showed:

- Eighty-six percent said they noticed changes in a "sense of belonging" (making friends, building trust in relationships, valuing diversity, understanding culture);
- Ninety-one percent said they noticed changes in a "sense of independence, inner self" (sense of inner peace, self awareness, self confidence, sense of joy and beauty and wonder in the world);
- Eighty-one percent said they noticed changes in a "sense of generosity" (individual and group action, teamwork); and
- Ninety-three percent said they noticed changes in a "sense of mastery" (appreciation of nature, curious about the environment, learning new artistic skills, learning new information about healthy eating).

One parent said: "My son had a wonderful time. I liked the deeper approach involving life skills and teamwork. The nutrition program was a terrific component!"

Scope of Impacts: State Specific

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 implementing, 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 to provide advice and direction on priority programs. County educators meet with their County Executive Committee at least six times a year to evaluate and review programs and discuss current and future public issues, needs and programming. This year, County Executive Committees began work on program planning along with County educators who are developing future plan of work intentions based on a recently completed statewide needs assessment. The plans are under review early in 2006.
- 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 2005, 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 managing program priorities. They provided specific advice and support regarding the Federal intention to reduce and eventually eliminate formula funding for the Experiment Station. The Board is in the planning stage to update the long-range plan for the Maine Agricultural Center (MAC) and is reaching out to commodity groups and agricultural organizations to strengthen their recommendations. MAC is a joint venture of UMaine Extension and the Maine Agricultural and Forest Experiment Station dedicated to integrating outreach education and applied research in support of Maine agriculture.
- 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 state agencies, pesticide distributors, professional applicators, educators, and farmers. Approximately 264 individuals completed PSEP training and more than 2,946 individual pesticide recertification credits were given to farmers attending UMaine Extension pesticide education programs in 2005.
- 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 a board of directors composed of business leaders, educators, biologists, foresters, and other civic leaders. The board participates in long-range strategic fund raising and financial planning and purchased the Blueberry Cove Camp in Tenants Harbor, Maine. In the past two years, Tanglewood has raised more than $850,000 toward its $1.1 million goal of purchasing and renovating of the Blueberry Cove Camp 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 for 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 and shares 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.
- 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 20 representatives from various health and aging agencies and public and private social service agencies, as well as elected officials, religious leaders, community leaders, business leaders, educators, and Senior Companions. The Council advises the project director and staff on statewide policy, operational procedures, and practices consistent with program policies. Additionally, the council periodically interviews program clients to assess the program’s value and impacts in the community for use in continuous program improvement.
- 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 with 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 new strategic plan for the period from 2006-2010 has just been completed using input from the sources listed above and in cooperation with Plan of Work development activities at UMaine Extension over the past 18 months.
- The Maine Fishermen's Forum began in 1976 as a partnership among Maine fishermen, UMaine Extension, and Maine Sea Grant. The responsibility for the event was absorbed by

the Maine fishing industry in 1982. The annual Forum connects the Maine fishing industry, with legislators, regulatory agencies and academic researchers to learn, network and address common issues. The UMaine Extension/Maine Sea Grant partnership plays an important role each year through planning, facilitation, and presentations by members of our Marine Extension Team.

- This year, the Hancock County Master Gardener Volunteer program created an advisory committee to work closely with the local educator and the County Executive Committee to improve communication among volunteers and strengthen volunteer support. The committee has reviewed and revised the process and criteria for selecting Master Gardener Volunteer projects, and given advice about prioritizing existing projects.
- This year, the UMaine Extension/Maine Sea Grant partnership and the Maine Department of Marine Resources responded to issues raised by Maine Scallop Advisory Council by offering workshops on scallop enhancement strategies to address a decline in the inshore scallop fishery in Maine. The workshops invited experts to present on wild spat collection, re-seeding methods, assessment techniques, and policy implementation. Participants then collaborated on future directions for scallop enhancement efforts in Maine, which the advisory council will work to develop over the coming year.
- 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:

- The Maine Compost Team (MCT) implemented livestock mortality composting research to develop best management practices for routine and emergency livestock carcass disposal. Research results were disseminated at a national composting symposium, organized by MCT, in Portland, Maine during 2005, were used in both Colorado and Washington to develop legislation on carcass disposal methods. The MCT is a partnership among UMaine Extension, the Maine Department of Environmental Protection, and the Maine Department of Agriculture, Food, and Rural Resources.
- 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, 21 participants qualified to progress to the next component of licensing requirements by completing the training.
- The UMaine Extension/Maine Sea Grant partnership has worked with Our Future By Design, a regional planning process for the towns of Kittery, Eliot, York and South Berwick in fast-growing southern Maine. Our work has involved facilitating a process to develop a draft series of recommendations for regional environmental actions for public comment and submission to the state legislature as a component in a broader pilot program for regional cooperation.

- In 2004, the Maine Sea Grant Program was awarded National Sea Grant funding to initiate education and outreach on the use of Marine Protected Areas (MPAs) as a tool for fisheries and other marine management. The UMaine Extension/Maine Sea Grant partnership has conducted focus groups to compile input from Maine stakeholders to submit to the Marine Protected Areas Federal Advisory Committee, which is developing recommendations regarding MPAs and their management within U.S. waters. This work builds on two successful sessions on MPAs conducted at the Maine Fishermen's Forum in 2003 and 2004.
- Sustainable management of the shrimp fishery in Maine, Massachusetts, and New Hampshire has been hampered by a lack of cooperation among fishermen, scientists and regulators. To improve collaboration among these stakeholders, the UMaine Extension/Maine Sea Grant partnership conducted three interactive workshops to bring fishermen together with scientists and regulators. The workshops stimulated sharing of information, trust building and articulated specific plans for future collaboration to improve the management of the shrimp fishery. The workshops produced a series of recommendations to improve the shrimp survey and stock assessment process, some of which were implemented during the 2005 shrimp season.
- The UMaine Extension/Maine Sea Grant partnership provided facilitation for a community participation process to get input on management strategies for Wells Bay. The forum was sponsored by the Maine State Planning Office Coastal Program, the Maine Department of Environmental Protection, the Maine Department of Marine Resources, and the Wells National Estuarine Research Reserve. It provided participants with a forum to share their experience with issues in the coastal areas and near-shore waters of the local bay, identify specific sites where the issues are occurring and discuss successes and challenges of current management efforts. The public input will be used by lead agencies to produce a draft Wells Bay Management Plan that will be forwarded to forum participants, as well as other key stakeholders and the general public, for review and final revision.

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. For more information, see *Farm Share Program Provides Low-Income Seniors with Fresh Produce* on page 8.
- To gain citizen and stakeholder input on approaches to bay management, the UMaine Extension/Sea Grant partnership worked with a team of state and local organizers to design workshops, training and facilitation for events sponsored by the Maine Department of Marine resources and the Maine State Planning Office Coastal Program. One outcome of the workshops has been a series of positive interactions between aquaculturists and riparian property owners in Maine's Frenchman Bay area, helping to mitigate long-standing conflicts between the groups.

- The Maine Healthy Beaches Program is a partnership between the Maine State Planning Office Coastal Program, the Maine Bureau of Health, the Maine Departments of Conservation and Environmental Protection, the UMaine Extension/Maine Sea Grant partnership, and local municipalities to establish swim beach standards for the state of Maine. The program is funded by the U.S. Environmental Protection Agency through the Beaches Environmental Assessment, Closure and Health Act of 2000 and works with local groups to monitor coastal water quality to identify contamination and establish risk levels that relate to outbreaks of swimming illness.
- UMaine Extension worked with the Maine Organic Farmers and Growers Association and the Maine Department of Agriculture, Food and Rural Resources to created the Maine Grass Farmers Network. The effort helps producers sell their pasture raised livestock products through education, SARE funded research and an annual grazing conference.
- 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 U.S. Forest Service.

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

Acadia National Park
Agricultural Council of Maine (AGCOM)
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 NetworkEastern 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
Friends of Schoodic
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
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
Lobster Zone Management
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 Greenhouse Industry Growers
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 D
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
Notre Dame De Lourdes
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 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 2005 our 4-H Youth Development 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. As a result, the Program has embarked on a strategic planning process in which, with the aid of a consultant, the staff is soliciting broad-based input into the program's mission, vision, and programming directions for the next five years. Volunteers, youth, community collaborators, and faculty and staff from UMaine Extension and UMaine are involved in providing input, and representatives will attend a two-day retreat in April, 2006. Additionally, the leadership structure of our 4-H Youth Development Program is being broadened into an executive committee structure, which includes the program administrator, the Pine Tree State 4-H Foundation director, 4-H Youth Development program coordinator (a new position), director of our 4-H environmental education camp, and representatives of the four program initiatives which have emerged from our recent Plan of Work process. The strategic plan is expected to provide future direction for programming, volunteer training, staff orientation and ongoing development, and connections to the broader University and state of Maine collaborators.

Our home horticulture program will undergo a voluntary CSREES program review in August of 2006.

As part of the ongoing preparations for a new plan of work beginning in 2007, UMaine Extension staff have been evaluating their current and future work based in part on a recent statewide needs assessment. During 2005, the formation of the individual and group plans that will make up the Maine state plan of work were discussed in a series of statewide meetings that established planned programs with common outcomes to be achieved which address the 18 Maine issue areas identified in the needs assessment. As planning progresses into 2006, the intentions of individuals and groups are being reviewed by both internal and external stakeholders.

Section D

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

Multi-State Extension

National Business Skills Conference: UMaine Extension was a member of a planning team that organized the two-day National Business Skills Conference in Texas for outreach professionals across the country who work with entrepreneurs. Supported by a $25,000 USDA grant and logistical assistance from the Southern Rural Development Center, members of the National Home-based and Micro-business Design Team organized this train-the-trainer conference to help expand the technical skills and enhance the educational programming for outreach professionals. About 72 participants from 28 states participated in this conference and had the opportunity to sharpen their technical skills in areas such as e-commerce, marketing, financial planning, business planning, business operations, and customer service. Participants came from a variety of organizations including Extension, local and state government, and tribal and other colleges. Conference evaluations indicated that participants rated the conference highly. The proceedings from this highly successful conference can be found at http://srdc.msstate.edu/bst/proceedings.htm .

Gulf of Maine Summit: UMaine Extension and Maine Sea Grant were instrumental in planning and facilitating the Gulf of Maine Summit, which brought together coastal experts, concerned citizens, fisheries and aquaculture representatives, businesses, and leaders from Maine, Massachusetts, New Hampshire, New Brunswick and Nova Scotia to celebrate 15 years of partnerships, assess current environmental conditions, share knowledge, and develop plans for future actions needed to continue improving the environmental quality of the Gulf. For more information, see *Marine Resource Management* on on page 28.

Parenting Through Separation and Divorce: To help families and children navigate through the issues surrounding separation and divorce, UMaine Extension, in cooperation with the University of New Hampshire Cooperative Extension, offered a four-part workshop series to help parents adopt behaviors to minimize the struggles of divided loyalties that children of separated parents typically experience. For more information, see *Parenting Through Separation and Divorce* on page 51.

Farm Estate Planning: UMaine Extension joined with partners from Extension programs in all six New England states to help people learn the basics of estate planning, with an emphasis on the transfer of valuable farmland to the next generation. Seventy-eight people attended workshops held in Connecticut, Maine, New Hampshire, and Vermont. Topics included the basics of asset transfer and the communication steps necessary in the planning process. A local estate planning attorney presented legal aspects of asset transfer at each location and each had a farmer panel presenting their individual transfer situation, what planning steps they went through and what they would do differently. A level II program will be offered during 2006 to build upon the knowledge gained in the first workshops.

Good Agricultural Practices Among Gardeners: UMaine Extension has worked with Extension programs from four New England institutions in a research project to define the need to integrate food safety information and apply Good Agricultural Practices (GAP) standards to home gardening programs and practices. For more information, see *Project Survey Reveals Widespread Need for Food Safety Education Among Gardeners* on page 14.

High Profile Web Sites: Each year, we log thousands of visits to UMaine Extension Web sites where visitors from all 50 states and beyond access research-based information that helped them to improve their lives. Samples of our most popular Websites are:

***PRONewEngland*:** This site provides citizen access to timely and important pest management resources for New England. The site is located at http://pronewengland.org/. See *Multi-State Extension and Multi- Institutional Extension* below, page 65.

Pesticide Applicator Training: This site is a partnership with the Maine Board of Pesticides Control and offers both private and commercial users the study materials they need in order to become certified or maintain a pesticide application or handling license. The site is located at: http://pmo.umext.maine.edu/patrain/prices.htm .

Virtual Resources for Small Business: Maine is home to more than 100,000 micro-businesses. These small businesses are embedded in communities throughout the state and are an important source of employment and income for many families in Maine. Micro-entrepreneurs are looking for convenient ways to access reliable information that will help them improve their bottom lines. In 2000, UMaine Extension created the online Virtual Resource Library (VRL) to help Maine small businesses access reliable business publications and resources. UMaine Extension's unique online Virtual Resource Library has had more than 12,500 visits during the past five years. The site is located at: http://www.umext.maine.edu/hbbsite/html/index.html.

UMaine Extension Books and Publications Online: This new site consolidates access to thousands of research-based educational resources produced by UMaine Extension and other Maine and U.S. publishers. All materials have been either developed or reviewed by Extension staff and other experts. The site is located at: http://extensionpubs.umext.maine.edu/ePOS/store=413&form=shared3/index.html&design=413 .

Multi-State Extension and Multi-Institutional Extension

Organic Livestock Research and Education Consortium: Maine has a vibrant and growing organic dairy industry that is leading the country in the ratio of organic to conventional dairy farms. The market in Maine for organic products has experienced an average growth rate of 20 percent per year for the past 10 years. Other New England states are experiencing similar or higher rates as well, and this growth is expected to continue for at least the next decade. The Organic Livestock Research and Education Consortium is a newly formed entity and is a partnership of the UMaine Extension, the UMaine Departments of Plant and Soil Science, University of New Hampshire Agricultural Experiment Station, Maine Organic Milk Producers, and the USDA – Agricultural Research Service New England Plant, Soil and Water Laboratory, whose goal is to offer relevant research-based information to the existing organic dairy industry and farmers considering the transition to organic. This is the largest single award ever made by the program. In addition, Stonyfield Farms has agreed to provide

startup funding for an organic dairy herd at the University of New Hampshire, creating the first organic dairy herd at a land grant university, and helping establish New England as the national leader in organic dairy research and education.

PRONewEngland: The PRONewEngland network is a cooperative effort among Extension programs from the six New England states to coordinate understanding and communication about pest management education across the region. The project's PRONewEngland Website [http://pronewengland.org/] gives citizens a single point of entry to access the online pest management offerings of the six states, which includes regional pest forecasts and specifics on biotechnology, crops and livestock, indoor and structural pests, invasive pests, organic pest management, ornamental pest management, and pesticide safety.

Maple Syrup Grading School: UMaine Extension worked with the University of New Hampshire Cooperative Extension and the Vermont Department of Agriculture, Food and Markets to develop a three-day Maple Grading School for maple producers from Maine, New Hampshire and Vermont. For more information, see *Maple Syrup Grading School Increases the Potential for Profits* on page 37.

Watershed Stewards Program: UMaine Extension's Watershed Stewards Program provides Maine lake landowners with information that helps them identify water pollution sources and initiate action plans. Our staff collaborates with the University of Cooperative Extension and Maine Sea Grant to offer workshops that give groups the necessary tools to conduct outreach activities with measurable outcomes. For more information, see *Watershed Stewards Program Evaluation Leads to Greater Outreach Efforts* on page 35.

Joint Research and Extension

Growing Winter-Tender, High-Value Fruit in High Tunnels: Blackberries and related hybrids are not commercially grown in Maine because of poor winter survival and long growing season requirements. However, the demand for specialty fruit such as these is very high and successful crops would command profitable prices at local markets. UMaine Extension, the Maine Agricultural and Forestry Experiment Station, and the UMaine Department of Plant, Soil and Environmental Sciences, are collaborating on a project funded by the Maine Agricultural Center to determine the feasibility of growing blackberries in a succession high tunnel system using five varieties of blackberries. Harvest and growth data will be taken for the 2005 through the 2007 seasons. As part of an extended study, we will evaluate timing of placing the dormant plants into the high tunnel in the spring, the number of fruiting canes allowed per pot, and how new cane suppression affects subsequent growth and yield.

The Effect of Agritourism in Maine: Agritourism is growing in importance in the United States both as a diversification strategy for smaller farms and as a source of economic development in rural communities. Between 1997 and 2007, nature and agricultural-based tourism is expected to grow by 30 percent, making it the fastest growing segment of the travel and tourism industry. The heightened level of interest in Maine agritourism suggests a clear need for better information to support policy and program development aimed at encouraging the growth of agritourism at the farm level. UMaine Extension is working in collaboration with the Maine Agricultural and Forestry Experiment Station, and the UMaine Department Resource Economics and Policy, and the Maine Department of Agriculture, Food, and Rural

Resources, to conduct a study of Maine farmers who are currently involved in agritourism. The project is surveying farms engaged in agricultural tourism activities to enable us to develop a profile of farms involved in agritourism; assess the importance of agritourism-related activities to farm income; identify the business development and promotional needs of farmers engaged in agritourism; explore the existence and potential for agritourism clustering and networking among agritourism farms and with other non-farm tourism resources; develop information that will help Maine farmers determine the economic feasibility of developing agritourism activities; and establish baseline data for agritourism activity in Maine to track changes over time. We plan to disseminate the results of this study through the newly formed UMaine Center of Tourism Research and Outreach, the Maine Department of Agriculture Food, and Rural Resources, and in UMaine Extension publications.

Commercial Quinoa Production in Maine as a Cash and Rotational Crop for Farmers: Initial experiments in commercial fields located in Western Maine and at the UMaine's Experiment Station Farm demonstrate that quinoa can be grown in Maine as a commercial crop and be used successfully in rotation with potatoes and corn. Quinoa, a high-quality and high-value crop, replaces oats or rye, both low-value crops, currently used in traditional rotations. Trials to date have yielded promising, though mixed results. A number of production barriers presented themselves when trying to adapt western-developed quinoa strains to Maine. Pest infestations from tarnished plant bug and diamond back moth, weed control, and our short growing season are significant obstacles. UMaine Extension, the Maine Agricultural and Forestry Experiment Station, and the UMaine Department of Plant, Soil and Environmental Sciences, are developing a strain of quinoa adapted specifically to Maine's growing conditions. In 2003, UMaine's researchers began development of a Maine strain of quinoa and associated production management techniques. This work continued in 2004. In 2005, we evaluated five elite selections and three populations for plant growth, yield and pest infestation. The initial development phase of Maine quinoa strains is expected to be complete in two to three more years at which time small plot trials will then begin by a group of row crop farmers. Strain selection will continue on growers' farms to develop elite strains. Details regarding insect and weed control, fertility, moisture management, and planting and harvesting techniques will be investigated in Experiment Station experiments and on grower's farms.

Determining Consumer Preferences of Beefsteak Tomatoes Grown in High Tunnels: Maine has a relatively large and diverse group of vegetable growers that farm in excess of 11,000 acres and are responsible for over 20 million dollars in gross revenue. Our growers face several difficult challenges to economically viable vegetable production, not the least of which is Maine's short growing season. Maine growers utilize many methods to extend the growing season including unheated greenhouse structures commonly referred to as high tunnels, used to grow high value warm season crops such as tomatoes. UMaine Extension, the Maine Agricultural and Forestry Experiment Station, and the UMaine Department of Plant, Soil and Environmental Sciences, are conducting a study that seeks to identify tomato varieties that have excellent horticultural attributes and superior eating quality suitable for Maine growers producing tomatoes in high tunnels. Fifteen commercial tomato varieties will be seeded in the greenhouse and transplanted. Fruit will be harvested at vine ripe maturity and data collected on fruit size, number and quality. Samples of each variety will be taken at peak

harvest and transported to the Food Science Center at the UMaine campus for sensory analysis. Horticultural and sensory evaluation data will be statically analyzed and summarized for publication. Results of these vegetable variety trials will be summarized for presentation to growers at the Maine Vegetable and Small Fruit Growers Association Meeting and the New England Vegetable and Berry Growers Winter Meeting during 2006.

Evaluating the Potential for Biodiesel Production in Northern Maine: UMaine Extension in participating in a multi-component project to evaluate and promote the local production of biodiesel. The first component, partially funded by a USDA Sustainable Agriculture and Research Education grant, involves working with local growers to produce biodiesel fuel from oil seed crops grown in northern Maine, specifically canola and mustard seed. The farmers have each grown ten acres of oil seed crops during 2005 which will be processed by a local company and evaluated by the growers in their farm machinery. Excess will be marketed through a local fuel company. The second component involves working through a cooperative arrangement with a local consulting firm to evaluate the business aspects of establishing a biodiesel production facility to be owned by the Houlton Band of Maliseet Indians. The proposed facility would produce five million gallons of biodiesel per year for distribution in the state of Maine. While the state's current production of oil seed crops is too low to support such a facility at present, the processing plant would create a demand that could be a boon to Maine farmers and could make northern Maine a key supplier of refined biodiesel products.

Reduction of Post-harvest Fungicides in Maine Grown Apples: UMaine Extension and the Maine Agricultural Center conducted an applied research project in response to the needs of Maine apple growers. The project goal was to reduce the use of post-harvest fungicides on apples while increasing their storability, resulting in increased competitiveness of Maine-grown apples. For more information, see *Post-Harvest Apple Treatment Improves Maine Crop Quality and Boosts Profits* on page 9.

Plant Growth Regulators for Poinsettias: UMaine Extension is working on a research project to evaluate use of Florel™, an inexpensive plant growth regulator, on poinsettias to control height, rather than more expensive plant growth regulators. The project involves collaborators from the UMaine department of Plant, Soil, and Environmental Sciences, and Central South Forestry University in Changsha, Hunan Province, China. This work is supported by funds from New England Grows, and will be completed in 2006.

Potato Integrated Pest Management Programs: UMaine Extension supports the industry with a multidisciplinary statewide team who pool their expertise to create measurable economic, social, and environmental impacts that improve the Maine potato industry. For more information, see *Potato Producers Save an Estimated $7.2 Million Due to Integrated Pest Management (IPM) Programs* on page 7.

Multi-State Joint Research and Extension

Livestock Mortality Composting: UMaine Extension is participating in research that is focused on developing best management practices for routine and emergency carcass disposal for livestock. The project is an effort of the Maine Compost Team, a partnership among UMaine Extension, the Maine Department of Agriculture Food and Rural Resources, and the Maine Department of Environmental Protection. Twenty-three trials were completed at

Highmoor Farm, the UMaine Experimental Station Farm in Monmouth, Maine. Compost methodology was developed and shared at a national composting symposium held in Portland, Maine during 2005, with over 110 people attending. The research results presented by the Maine Compost Team have been used by two states to develop legislation on carcass disposal methods.

Cost and Returns to Organic Dairy Farming in Maine and Vermont: There has been a lack of rigorous, quantified studies to identify the costs of producing organic milk in the United States, despite growth and interest in the farming activity. The information is particularly important to the rapidly growing organic dairy sector in the Northeast and upper Midwest. During 2004, UMaine Extension worked with partners from the UMaine Department of Resource Economics and Policy, the University of Vermont Extension, and the University of Vermont Department of Community Development and Applied Economics to identify the average production costs and returns (using 2004 data) from a sample of 30 organic dairy farms (13 from Vermont and 17 from Maine). The study compared farm revenues with operating and depreciation costs, and with the considerations of equity change and inflation, established a breakeven landmark for 2004, and projected landmark for 2005. This research is based upon contracted work supported by the USDA/CSREES, with additional financial support from the University of Vermont Agricultural Experiment Station, the University of Vermont Extension, and the John Merck Fund.

Multi-Institutional Extension and Joint Research and Extension

The Farmer Research Education Program, a project funded by USDA's Sustainable Agriculture and Research Education (SARE) program, is designed to create teams of farmers, research-scientists, and Extension staff who work collaboratively to examine new production ideas through farmer-initiated projects. The goal is to increase the capacity of farmers to engage in applied research projects that will benefit them and others. In this project, farmers are involved in the comprehensive process, from deciding which ideas are worth investigating, to how to implement research trials on their farms or on Experiment Station farms. Workshops have dealt with how to form farmer research groups, how to design on-farm experiments that are scientifically sound yet manageable, and how to analyze on-farm experimental data. In conjunction with the workshops, we have provided up to $2,000 for each of 13 farmer groups to buy research supplies, analyze samples, and hire additional labor. The project is a collaboration between UMaine Extension and the University of New Hampshire Extension. Participants have initiated on-farm projects in Maine, New Hampshire, Connecticut, Massachusetts, New York, Vermont, and Pennsylvania.

Katahdin Hair Sheep Research: Researchers from UMaine Cooperative Extension and Bowdoin College partnered in 2000 to develop a flock of sheep that was naturally resistant to specific chronic sheep infections, and that exhibit other positive growth traits. The researchers used Katahdin Hair Sheep as the base for this applied research, a breed that originated in Maine in the 1950s and has become more popular with producers due to its productivity and efficiency. For more information, *Katahdin Hair Sheep Project Enters Phase Two* on page 8.

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

Effectiveness of Plant Growth Regulators in Controlling Powdery Mildew: UMaine Extension is working on a field research project to assess the effectiveness of plant growth

regulators in controlling powdery mildew, a common disease of herbaceous perennials and a serious problem in greenhouse production of potted perennials. The work is supported by grants from Maine Agricultural Center and New England Floriculture. The project will be completed during 2006.

Multidisciplinary Extension

Community Garden and Feeding Low-Income Seniors: For the past two years, UMaine Extension has facilitated volunteer-managed gardens where food could be grown for low-income seniors. More than 3,900 pounds of fresh vegetables were distributed to low-income seniors during 2005. For more information, see *Community Garden Food Distribution Project Feeds Low-Income Seniors* on page 20.

Section E

Integrated Research and Extension Activities: Multistate

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 Multistate Extension and Integrated Activities

Fiscal Year: 2005

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

	Integrated Activities (Hatch)		Multistate 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			$156,818			
Title of Planned Program Activity						
New England Consortium Activities:						
-Faculty & Staff Time on New England Activities			$140,600			
-Additional Staff Time on Multistate Activities			$72,202			
Total			$212,802			
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.

Lavon L. Bartel — **Director**

March 29, 2006 — **Date**

Section F

Integrated Research and Extension Activities: Multistate

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 Multistate Extension and Integrated Activities

Fiscal Year: 2005

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

	Integrated Activities (Hatch)		Multistate 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					$156,818	
Title of Planned Program Activity						
Contribution to Maine Agricultural Center					$25,000	
Faculty with Joint Extension/Research Appointments					$332,827	
Faculty Engaged in Integrated Activities					$179,833	
Administrative Support					$58,596	
Total					$596,256	
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.

Lavon L. Bartel — **Director**

March 29, 2006 — **Date**