

Annual Report
of
Accomplishments and Results
2003

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Section A
Planned Programs

Goal 1

An Agricultural System That is Highly Competitive in the Global Economy

Goal 2

A Safe and Secure Food and Fiber System

Goal 3

A Healthy, Well-Nourished Population

Goal 4

Greater Harmony Between Agriculture and the Environment

Goal 5

Enhanced Economic Opportunity and Quality of Life for All Americans

CSREES Goal 1

An Agricultural System That is Highly Competitive in the Global Economy

Executive Summary

This year the University of Maine Cooperative Extension (UMCE) has worked to help Maine agriculture develop more competitive and sustainable operations by improving efficiencies, developing new markets, and improving business and marketing practices. More than 1,000 beef producers, over 300 potato producers, 104 dairy producers, and nearly 2,000 greenhouse operators have increased profitability through development of new agricultural markets and products and through implementation of improved farm management skills. UMCE delivered over 300 workshops and events to nearly 15,000 people, who have used the information to become more competitive and successful.

New Markets

UMCE has helped more than 580 Maine farmers develop new markets this year, and helped 577 small farms to diversify. To help the needs of the increasing number of new Muslim immigrants in Maine, we published the *Maine Goat Meat Directory*, which lists over 50 producers, to connect new arrivals with producers of goat meat. We also planned an auction of meat goats that produced sales of 230 goats for 12 breeders and an appropriate food source for nearly 100 families. In the spring of 2003, UMCE began working with the *New American Sustainable Agriculture Project* to help recent immigrants learn to grow their traditional favorite vegetables in Maine, both for personal use and for sale at local markets. The program will be expanding in the coming year. We also have worked with existing livestock operations to respond to the new market demand for goat meat and other specialty products that meet the needs of the Muslim market. Fifty farmers participated in a farm tour to learn about this new market. We are educating producers about standards that can be used to quantify the level of care being given to their livestock, and have helped 675 producers adopt the standards this year. Among other things, educational efforts have led to goat auctions timed around specific ethnic holidays, as well as a directory of local sheep and goat products.

Livestock, Dairy and Poultry

In 2003, UMCE helped 117 crop and livestock producers increase efficiencies by integrating operations, resulting in increased profits and improved sustainability. Producers have reduced feed costs through the use of intensive grazing practices. Our livestock educators have developed a Web- and CD-based training program on pasture management that consists of lessons (with electronically submitted quizzes) that help producers develop a grazing plan. The Web-based course will be used as a training resource for the Natural Resources Conservation Service in Maine this year, with all field staff being required to complete the course.

Maine livestock and dairy producers faced many challenges and issues that affected profitability in 2003. Commodity milk prices remained low for an extended period of time, forcing some dairy producers out of business and opening farmland to potential development. UMCE provided educational support through individual farm counseling, meetings on

production and milk quality, and an enhanced program of risk assessment through the *Maine Cattle Health Assurance Program*. We presented a 12-session course entitled *Sustainable Beef Production*, which included a two-day tour of beef operations in northern Maine for 70 beef producers from around the state. Speakers gave special presentations on biosecurity and manure management. We also offered workshops—attended by 10 new breeding operations—on artificial insemination of goats to enhance meat production through targeted cross breeding. Educational events offered at the *New England Beef Expo* included our workshops for beef producers on factors that affect the value of their beef animals and thus the success of their operations.

UMCE worked to improve the economic stability of the dairy industry by serving on a Governor’s task force to address changes stemming from the collapse of milk price supports. Through the task force we encouraged an emphasis on value-added marketing. Organic dairy farms now make up 16 percent of the herds in Maine and UMCE is providing targeted technical expertise to this growing commodity group. New value-added businesses have been established after UMCE value-added workshops for artisan cheese makers, expanding opportunities for milk marketing.

UMCE participated in evaluating Maine poultry farms for avian influenza by providing testing support, and responded to outbreaks of two highly contagious poultry diseases—exotic Newcastle disease in California and avian influenza in Connecticut—we developed an effective network to teach appropriate biosecurity measures to Maine poultry producers and to inform them of the progress of disease control in affected states. These efforts were conducted in close cooperation with the Maine Department of Agriculture, Food and Rural Resources and USDA APHIS Veterinary Services.

Farms

Maine has an aging farmer population, with many farmers near or even past traditional retirement age. UMCE has partnered with the Maine Department of Agriculture, Food and Rural Resources and the Maine Organic Farmers and Gardeners Association to determine how to match farmers wishing to leave farming with new farmers wishing to start. The resulting *FarmLink* program has a database of farmland available to potential farmers and is beginning the process of matching land with new farmers. Currently there are 69 prospective farmers and 34 farms or farmland in the database.

UMCE also works with the Maine Department of Agriculture, Food and Rural Resources on the *Farms for the Future* program which provides extensive business and technical advice to enrollees. The statewide program is designed to improve farm profitability and reduce the need for farmers to sell property for development. In the pilot stage of the program, between 2001 and 2003, business plans were developed for 33 farms, more than \$200,000 was awarded to nine farms to help them implement their plans, and more than 6,900 acres were protected from nonagricultural development through farmland protection agreements. The program has increased net annual income at participating farms by an average of \$21,676. Recently, Maine voters approved an additional \$2 million for expansion of this highly successful cooperative program. Other efforts include partnering with the Maine Farmland Trust to deliver workshops titled *Farmland Preservation: How To Preserve the Family*

Farm, which teach strategies to help keep farmland productive and avoid the enormous pressure to develop family farmland.

Crops

In order to help farmers better understand and address their own unique issues, UMCE is partnering to provide training that will facilitate farmer-conducted research trials. Working with the University of New Hampshire, the Maine Organic Farmers and Gardeners Association, the Maine Department of Agriculture, Food and Rural Resources and the Natural Resource Conservation Service, the course is directed towards Extension educators and other agricultural professionals who work directly with farmers in Maine, New Hampshire and neighboring states. A series of two-day multistate workshops were conducted covering topics such as how to translate production and conservation problems into researchable questions, how to design experiments that are scientifically sound yet manageable, and how to analyze on-farm experimental data. Seventy-four participants have attended and will begin their research projects in the upcoming growing season.

UMCE is continuing work with potato farmers to develop a value-added rotational crop to use in Maine. Applied research partnerships with several growers are determining which varieties of canola will thrive in Maine's northern climate. An emphasis is being placed on non-genetically modified seed, which can produce a crop that demands a premium price in the marketplace.

Horticulture

Maine's green industry continues to expand and develop. UMCE helped facilitate the formation of the Ornamental Horticulture Council (OHC), which has developed an endowment fund at UMaine to support research and educational projects of value to the industry. The OHC funds recently supported development of a Web site that promotes industry projects [<http://www.ohcmaine.com/>], development of a display unit and computer touch-screen kiosk for use at trade shows and educational programs, and inauguration of a new program, *Plants for ME*, which promotes statewide sales of Maine-grown plants suitable for Maine gardens.

UMCE partnered with Extension programs and the floriculture industry trade associations from the six New England states to organize the New England Greenhouse Conference. The recent conference was attended by 2,000 growers and industry representatives, who acquired techniques for developing and sustaining a competitive advantage. Participants reported that as a result of what they learned at educational sessions, in 2003 they expected to reduce their business costs an average of \$2,390, to increase their sales an average of \$14,000, and to grow an average of nine new crops.

We also conducted field trials of vegetative annuals, as well as shrub roses, to define how well landscape crops grow in Maine. The trials help Maine homeowners and ornamental horticulture industry members information about what best to choose when ordering from out-of-state sources. The field trials were featured at field days that were attended by both home gardeners and ornamental horticulture industry members.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 1 Total	2,183	\$168,755	\$20,000	\$168,755	\$357,510

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

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:
	2,183
Agricultural producers will practice resource conservation methods.	503
Agricultural producers will participate in community management initiatives.	22
Community members will teach others about marine resource issues.	0
Community groups will initiate marine resources conservation strategies.	0
Crop and livestock producers will increase integration of operations.	117
Producers will adopt alternative crops to reduce pesticide inputs, increase rotation length and increase soil organic matter.	474
Producers will use new technologies.	1,054
Producers will adopt sustainable animal husbandry practices.	675
Small farms will diversify.	577
Producers will evaluate soil health.	416
Farmers will implement sustainable agricultural practices.	2,675
Greenhouse industry will organize liaison group to speak on behalf of entire industry and conduct industry-wide projects.	1
Maine green industry members who attend New England Greenhouse Conference will increase by 10 percent each conference.	128
50 percent of growers consulted with one-on-one will implement sustainable techniques based on consultation.	494
General public will understand and support production agriculture.	231,195
Potato harvesters will screen for bruise damage, which will result in improved harvesting operations (individual machines).	0
Potato harvester bruise levels will be reduced by 10 percent.	0
Farmers will develop new markets.	586
Farmers will develop new agricultural products.	1,188
Farmers will implement farm management skills.	847
Individuals will be trained to be more productive and knowledgeable farm employees.	355
Small-scale producers will make changes as a result of UMCE programs.	570

Producers will form management teams.	18
Producers will identify yield-limiting factors.	138
Producers will use futures/options markets.	0
Agricultural producers will diversify crop production (acres).	30
Producers will attend an intensive potato storage, design and management course.	0
Percent of potato harvester injuries reduced from baseline 119 (1988).	0
Youth will demonstrate sustainable agricultural practices.	40
Youth will demonstrate an understanding of the basic scientific principles that affect sustainable agriculture.	56

OUTPUT INDICATORS

Number of consultations.	1,362
Number of workshops/events.	3,469
Number of people attending the workshops/events.	14,599
Number of groups formed (ad hoc or formally organized).	42
Number of people involved in groups formed.	505
Number of volunteers trained.	0
Number of publications written.	13
Number of publications distributed.	2,506
Number of issues of newsletters written.	78
Number of people receiving newsletters within a year's time.	11,564
Number of audio visual resources developed (video, slides, displays).	45
Number of articles in news media.	52
Number of 1-hour radio programs delivered.	6
Circulation of articles in news media.	459,700

Selected Program Accomplishments Corresponding to Key Themes

Key Theme: Biosecurity, Animal Health, Animal Production, Bioterrorism, Risk Management

The Maine Cattle Health Assurance Program (MeCHAP): Healthy livestock means sustainable and profitable farms, with safer and more consistent food products for consumers. MeCHAP is part of a northeast regional group of 13 states called the *Regional Dairy Quality Management Alliance* that works together and shares information across states. The alliance offers disease prevention programs, diagnostic testing, and educational programs that help protect farm profits, the food supply, public health and animal biosecurity, with ramifications at the local, state, regional and national levels. MeCHAP is a cooperative project between UMCE, the Maine Department of Agriculture, Food and Rural Resources, practicing veterinarians and Maine livestock producers, which addresses livestock disease at all levels. UMCE's livestock specialist has served as a member of the MeCHAP leadership committee for four years, helping guide the growth of this program in Maine from a small initial grant to over \$400,000 in funding from a variety of sources.

Summary of Impacts:

- Development and printing of six informational brochures for distribution to dairy producers. Topics include Johne's disease, bovine lymphosarcoma virus, salmonella, mastitis, dairy beef quality assurance, and health considerations with purchased cattle.
- Completion of the MeCHAP core risk assessment on 45 dairy herds, bringing the total number of farms completing the core module to 63. This represents 15 percent of all Maine dairy producers.
- Development and presentation of a continuing education workshop for practicing veterinarians on salmonella and transmissible spongiform encephalopathies such as BSE (mad cow disease) and chronic wasting disease in deer.
- Development and presentation of five educational workshops for dairy producers throughout the state on mastitis identification, treatment and prevention.
- Purchase of a lactocorder to monitor milk flow and conductivity. Resulting data will enhance our ability to assess milking system efficiency and diagnose problems.
- Completion of bulk tank cultures for mastitis on 25 percent of dairy herds in Maine.
- Expansion of the program beyond dairy to beef, sheep, goats and deer.

Scope of Impacts: State Specific

Key Theme: Competitiveness, Agricultural Profitability, Innovative Farming, Developing Markets

The Maine Highlands Farm Products Promotion Group: Farmers in Piscataquis County had no established farmers' markets or cooperative agriculture markets to help market their products. However, they questioned whether an adequate population base existed in their county to support these types of value-added and direct marketing venues. As a result they chose to partner with farmers from Penobscot and Somerset counties, known as the Maine Highlands Region, as well as UMCE, the Piscataquis County Economic Development Council, and the UMaine Department of Resource Economics and Policy, to explore a cooperative marketing association. Working with UMCE, an informal group authored grants to help determine the feasibility of establishing a marketing organization in the region to expand marketing potential. Successful funding efforts enabled the group

to determine the best organizational system and the Maine Highlands Farm Products Promotion Group was formalized.

Summary of Impacts: The group now has twenty-six members. A number of farmers' markets and other marketing venues, such as multi-member farm stands, have been established throughout the region, with other joint marketing ventures under investigation. Marketing efforts have begun with the full-color Maine Highlands Region Farm Map as the centerpiece. Farmers are now direct-marketing pumpkins, apples, maple syrup, vegetables, soap, sheepskins, jams, jellies and baked goods. Preliminary survey results of rural residents have found that 72 percent of consumers purchased apples and 67.5 percent purchased sweet corn direct from the new farm markets. The group has taught farmers how to accept WIC coupons and food stamps, enabling them to better serve customers. The group has also been a clearinghouse for information relating to property tax on farmland and farm buildings. They have facilitated donations to local food pantries and are exploring participation in USDA farm programs.

Scope of Impacts: State Specific

Key Theme: Niche Market, Agricultural Profitability, Animal Production, Diversified/Alternative Agriculture, Innovative Farming Techniques, Small Farm Viability

New Agricultural Markets: In the spring of 2003, UMCE began working with the *New American Sustainable Agriculture Project* to help recent immigrants learn to grow their traditional favorite vegetables in Maine, both for personal use and for sale at local markets; and working with existing livestock operations to respond to a new market demand for goat meat and other specialty products. We are educating producers about meeting Muslim Halal specifications with on-farm slaughter and new animal standards that can be used to quantify the level of care being given to their livestock. UMCE has facilitated multistate farm tours as a way to present new ideas on housing, animal handling, food safety and customer service, and to display new breeds, such as the Boer meat goat. We published the *Maine Goat Meat Directory* with over 50 producers listed in an effort to connect producers and consumers of goat meat.

Summary of Impacts: UMCE organized the first auction in Maine designed to connect meat goat breeders with new ethnic audiences. We connected with three Maine mosques and invited the Muslim community to participate as consumers at these auctions. The auction produced sales of 230 goats for 12 breeders and an appropriate food source for nearly 100 families.

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

Key Theme: Agricultural Profitability, Managing Change in Agriculture, Small Farm Viability

Farms for Maine's Future: Poor economic stability is one of the leading factors in the steady decline of family farms in Maine and the resulting increase in urban sprawl. Dairy farms have declined from over 1,000 in 1986 to 398 in 2003. The *Maine Farms for the Future* program is a statewide economic development strategy targeting farm businesses. The program responds directly to one of the primary needs within the farming community: specialized business assistance. There are two components to the current program: phase one involves assembling a planning team for individual operators that helps evaluate the feasibility of the farm venture; phase two is implementation of the venture. For each component, farm owners are required to put their land in a conservation easement for five years. Coastal Enterprises Incorporated (CEI), a nonprofit financial intermediary, is the

program sponsor and UMCE provides expert technical assistance for the program. Initial funding came from a USDA Sustainable Agriculture Research and Education grant to CEI in 2000.

Summary of Impacts: During the pilot program UMCE provided technical assistance to 33 farms in the development of business plans. Ten farmers were awarded a total of \$200,000 to implement their new farm business plans. Over 6,900 acres have been protected from development through farmland conservation easements in two years of the program. The program was recently funded with a \$2-million bond through the Maine Department of Agriculture Food and Rural Resources. Thirty-nine new farms have enrolled in phase one for 2003/2004. One outgrowth of the expertise we provided is taking place at a sheep farm in Union: the farm will be diversifying by adding an organic pick-your-own blueberry operation as well as a sheep dairy that will sell liquid milk to cheese-makers. In another case, a small dairy in Whitefield is buying an additional farm that will be going into permanent non-development easement. This will allow them to expand their organic dairy operation.

Scope of Impacts: State Specific

Key Theme: Emerging Infectious Diseases, Plant Health, Plant Production Efficiency, Precision Agriculture, Small Farm Viability

Potato Late Blight Hotline: Potato late blight is the most threatening economic and biological disease facing the potato industry in Maine. UMCE maintains monitoring stations throughout the growing region. In cooperation with the Maine Potato Board and dealer/distributors of late blight protection materials, we also operate the Pest Management Hotline to inform growers of the presence of environmental conditions which encourage development of the disease. The hotline maps late blight distribution and recommends current control strategies.

Summary of Impacts: Over 800 calls came into the hotline during the summer growing season. Callers were surveyed through the hotline, with over 90 percent reporting a financial savings and reduction of pesticide applications due to the information they received. Over twenty percent reported a savings in excess of \$2,000 per year. Several growers have reported that they are still in business as a result of the information gathered and money saved from using the hotline. The program is in its eighth year.

Scope of Impacts: State Specific

Key Theme: Organic Agriculture, Small Farm Viability, Agricultural Viability, Innovative Farming

Food Waste as Organic Compost: The development of cost-effective alternative sources of plant-available nitrogen is important to the continued success of organic vegetable farms in Maine. UMCE, the Maine Agricultural and Forest Experiment Station (MAFES), the Maine Organic Farmers and Gardeners Association, and organic producers collaborated in a two-year research project exploring the utilization of food residual as a soil amendment for summer cover crops on organic vegetable farms. The project was supported in part by the Maine Agricultural Center and Northeast Sustainable Agriculture Research and Education (SARE). Using food residual from sardine and baked bean processing plants, trials were established at a commercial organic vegetable farm and at UMaine Highmoor experimental farm. Soil nitrate data was collected in both years of the project. During 2002/3 over 500 growers throughout the region participated in workshops

and seminars on the utilization of alternative sources of nitrogen for organic vegetable production.

Summary of Impacts: Using biomass data, significant differences were found in residual trials for total plant nitrogen in cover crops. However this did not translate into significant differences in cash crop production for the following year. It was determined that using food residual before a summer cover crop is not a mechanism to conserve nitrogen for the following year, due to unavailable nitrogen in the plant tissue or loss to the environment before plant utilization.

Scope of Impacts: State Specific

CSREES Goal 2 A Safe and Secure Food and Fiber System

Executive Summary

Food Safety at Home

UMCE is working with Extension programs from other New England institutions in a research project that will define the need to integrate food safety information and apply Good Agricultural Practices (GAP) standards to home gardening programs and practices. The project will use Master Gardener volunteers to sample produce grown in home and community gardens and assess it for microbiological contamination before and after GAP implementation. In the U.S., it is estimated that \$14 billion worth of food is grown in home and community gardens.

We have delivered timely information on proper food-handling practices, with special emphasis on cooking and food gifts for holidays. This year we developed target-mailed postcards emphasizing safe holiday cooking and staffed display booths at supermarkets and wholesale club food stores. The displays included food safety education messages emphasizing the two USDA national campaigns, *Food Safety from Farm to Table* and *Fight Bac – Keep Food Safe From Bacteria*.

Many Maine citizens depend on hunting as an important source of meat for their families. This year UMCE published a new fact sheet on safe field processing of game animals called *Hunting for Food and Fun: Do it the Food Safety Way*. The fact sheet provides step-by-step instructions for processing game animals to maintain the quality and safety of meat. It also gives information on proper handling, cooking, storing and preserving of game meat.

UMCE's Senior Companion Program supports volunteers that help senior citizens maintain their ability to live independently. Our training program for volunteers includes a focus on appropriate food safety practices for seniors, including proper food storage, summer food safety and keeping foods fresh in the refrigerator.

Food Processing

UMCE is part of the Northern New England Seafood Alliance, which includes partners from the Maine Department of Agriculture, Food and Rural Resources, the Maine Department of Marine Resources, UMaine, and the Maine Seafood Industry. The alliance offers three-day seafood *Hazard Analysis and Critical Control Point (HACCP)* courses to seafood processors that now include a section on standard sanitation operating procedures. This year we have made part of the course available on the Internet. Over seven hundred seafood industry personnel have participated and received HACCP certification. Over 80 percent of participants used their training to implement the FDA-mandated HACCP plan, which reduces the risk of food-borne illness.

UMCE continues to support the safe development of new-process food products through educational programs, product and process analysis and technical support. This year we hired an additional food science specialist to develop and conduct educational programs in new product development and food processing, provide technical support to the food processing industry and research new products. During the past year we performed one hundred thirty-

five processes and product reviews for acid and acidified food for individuals in Maine and New Hampshire involved in home-based food processing. Reviews include recipe and process evaluation as well as laboratory analyses for water activity, acidity, soluble solids and microbiological analyses.

Good Agricultural Practices

Along with a documented increase in the consumption of fresh fruits and vegetables in the U.S., public health officials have documented an increase in produce-related food-borne illnesses. UMCE is working with five other New England states to help small farmers incorporate voluntary GAP principles into on-farm production practices, particularly in operations that market directly to the consumer.

We are also working with Farm Fresh Connection, an organization linking locally produced food with Maine restaurants and food service operations, to distribute *Food Safety Begins on the Farm*, a publication designed to reduce the risk of microbiological contamination of produce. Growers are encouraged to apply GAP standards to production of products that participating food service institutions use in over 3,000 meals daily.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 2 Total	2,630	\$203,310	\$0.00	\$203,310	\$406,620

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

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:
	2,630
Residents will adopt proper techniques for planning and purchasing of food.	200
Residents will adopt proper techniques for transporting food.	200
Residents will adopt proper techniques for storing food (method and temperature).	200
Residents will practice personal hygiene techniques related to food safety.	0
Residents will adopt proper thawing methods.	500
Residents will adopt proper cooking times and temperatures.	200
Residents will adopt proper techniques for holding and serving of food.	200
Residents will adopt proper procedures for cleaning and sanitizing work areas and equipment.	0
People will be making sound choices regarding food selection and purchasing.	269

People will be making sound choices regarding food safety labels on meat and poultry.	49
People will be making sound choices regarding proper thawing methods.	158
People will be making sound choices regarding proper food cooking, holding and serving procedures.	0
Consumers will adopt Extension recommendations for canning.	1,266
Consumers will adopt Extension recommendations for freezing.	479
Consumers will adopt Extension recommendations for drying.	281
Participants will reduce the risk of chemical contamination of food by following the residue avoidance program.	20
Participants will reduce the risk of chemical contamination of food by following the IPM program.	3
Participants will reduce the risk of chemical contamination of food by following the salmonella reduction program.	5
Participants will reduce the risk of chemical contamination of food by following the completing milk and dairy beef drug prevention protocol.	0
Participants will reduce the risk of microbiological contamination of food by understanding the principles of HACCP.	0
Participants will reduce the risk of microbiological contamination of food by using microbiological reduction program.	5
Participants will reduce the risk of microbiological contamination of food by implementing a sanitation program.	5
Participants will reduce the risk of microbiological contamination of food by implementing a routine testing/monitoring procedure.	5
Participants will reduce the risk of physical contamination of food by implementing a quality control program.	20
Consumers will adopt proper practices in planning for and purchasing of food.	0
Consumers will adopt proper practices in transporting food.	0
Consumers will adopt proper practices in food storage (method and temperature).	109
Consumers will adopt proper practices in personal hygiene.	0
Consumers will adopt proper practices in thawing frozen foods.	223

OUTPUT INDICATORS

Number of consultations	687
Number of workshops/events	136
Number of people attending the workshops/events	731
Number of groups formed (ad hoc or formally organized)	0
Number of people involved in groups formed	0
Number of volunteers trained	67

Number of publications written	8
Number of publications distributed	3,208
Number of issues of newsletters written	16
Number of people receiving newsletters within a year's time	5,207
Number of audio visual resources developed (video, slides, displays)	8
Number of articles in news media	44
Number of 1-hour radio programs delivered	0
Circulation of articles in news media	495,846
Displays/exhibits	5
Times displays seen	15
Families receiving lessons	0
Frequency of workshops/events / year	2
Lessons taught	0
Phone inquiries	203
Web pages created	0
Web pages designed	0

Selected Program Accomplishment Corresponding to Key Themes

Key Theme: Food Safety, Food Resource Management, Food Security, Food-Borne Pathogen Protection

Good Agricultural Practices—Food Handling for Pick-Your-Own Produce Farms:

UMCE is part of a six-state consortium that is helping bring Good Agricultural Practices (GAP) information and skills to popular pick-your-own produce farms in New England. These practices reduce the risk that fresh produce will be contaminated with microorganisms that can make people sick. We have conducted workshops and one-on-one training sessions in each state, and presentations have been delivered at grower association events and to regulators and health officials. Fact sheets and PowerPoint presentations were developed and incorporated in a training manual for distribution to participants, and are also posted on the Internet. As part of the certification and marketing program, participants become GAP-certified and received a plaque, sign and stickers (for use on bags), as well as a consumer brochure, which helps explain GAP to their customers.

Summary of Impacts: Grower associations in all six states have distributed GAP guidelines. Over 1,800 samples were analyzed for microbiological contamination in the pre-GAP base line study of 61 farms in New England. Post-GAP testing is being conducted as the GAP standards are implemented on individual farms and data is compared to the baseline to help farmers monitor their success. Farmers are using successful post-GAP statistics as part of their marketing strategy.

Scope of Impacts: *Multi-state Extension; MA, ME, NH, NY, CT, VT*

CSREES Goal 3 A Healthy, Well-Nourished Population

Executive Summary

UMCE has conducted educational programs throughout the state designed to improve the health status of Maine citizens. Our goals were achieved through delivery of 270 workshops attended by more than 4,700 people, as well as over 1,500 consultations. More than 1,000 volunteer leaders were trained to support our programs and help Maine people reduce the risk of chronic disease, and become healthier and better nourished. Extension publications in support of nutrition, health and wellness reached many Maine citizens: more than 12,700 publications were used in programming and 65 newsletters reached over 38,000 citizens. Health and nutrition information was made available to 282,000 Maine citizens through targeted news media efforts.

Healthy Diets and Physical Activity

Chronic disease is the leading cause of death and disability in Maine. Maine's Department of Human Services/Bureau of Health reports that 70 percent of people in Maine die from four chronic diseases: cardiovascular disease, cancer, chronic lung disease and diabetes. Poor nutrition practices and lack of physical activity and obesity are prime factors associated with the risk of chronic disease. Obesity among Maine adults has increased by 50 percent in the past decade, while the rate for youth has increased by 100 percent over the same time period.

Because many of these diseases are preventable, educational interventions can be effective. As a result of this year's health and nutrition education programs, thousands of Maine citizens now have the knowledge, skills and ability to improve their health and be well nourished. More than 21,000 increased physical activity, 1,080 increased their intake of fruits and vegetables, 1,430 decreased saturated fat and total fat intake, 1,435 improved nutrient and food composition intake to lower risk of disease, and more than 18,000 increased food preparation skills.

UMCE is collaborating with UMaine Food Science and Human Nutrition faculty to find new ways to teach young adults to increase their intake of fruits and vegetables. Over 200 young adults were recruited to participate in our research efforts designed to determine effective methods and curricula for educating this hard-to-reach audience. Results will be available in 2004/05.

UMCE again participated in a coalition to implement *Move and Improve*, an annual 12-week statewide physical activity wellness program sponsored by Eastern Maine Medical Center. This year, 9,563 participants enrolled in the program, with 1,152 youth aged 18 and under, and 866 people over 60 years of age. Participants came from 362 towns.

Eat Well Nutrition Program

During 2003, we consolidated our nutrition education for limited-income participants under one management structure called the Eat Well Nutrition Program. The program combines two federally funded nutrition education programs: the Expanded Food and Nutrition

Education Program (EFNEP) and the Maine Family Nutrition Program (MFNP). This new structure has allowed us to more consistently report our outcome and output indicators and, for the first time during this Plan of Work cycle, to capture the contacts made by nutrition aides across Maine.

During 2003, forty UMCE nutrition aides delivered basic food and nutrition information to limited-income adults, children, senior citizens and families in all counties in Maine. The program was also supported by 885 volunteers who assisted our nutrition aides. Nutrition aides reported that 4,314 individuals in 2,937 families participated in Eat Well programs this year and nutrition information was presented to over 9,000 preschool through high-school-aged children as part of the programs.

To support the Eat Well Nutrition Program, UMCE produces *Eat Well: A Newsletter for Healthy Eating*, a quarterly publication for limited-income individuals who are current or former participants of the program. Topics in this year's easy-to-read issues support program objectives to improve the health and well being of program participants. Over 8,000 copies of the newsletter reached the audience with timely and seasonal information.

Senior Health

The Senior Companion Program (SCP), sponsored by UMCE and the Corporation for National and Community Service, helps senior citizens maximize and maintain their independence. Elderly who are isolated or homebound and living in Maine are at risk of malnutrition. They are often on a limited income and have transportation challenges or difficulty overcoming a lifetime of poor eating habits. As part of our SCP efforts, UMCE provides nutrition training and targeted programs with emphasis on specific health situations, such as diabetes management. As a result of our SCP training this year over 100 SCP volunteers were assigned through 34 nonprofit or governmental agencies and organizations to reach over 1,200 older adults on a regular basis throughout the year. The volunteers transported seniors to meal sites, helped serve meals, took them grocery shopping or out to eat at restaurants, made meals or snacks and shared nutrition information. As a result of training, about half of the SCP volunteers noted an increased food intake in the elderly clients they visited. Nearly 1,300 Maine seniors made dietary changes to reduce their risk of chronic disease. Nutrition programs will continue at future SCP training meetings with an emphasis on hands-on cooking activities.

One of the Maine Bureau of Health's "Healthy Maine 2010" goals is to reduce injuries, disabilities, and deaths due to accidents, suicide, and violence. Maine's seniors are at higher risk than other population groups, with approximately 3,500 hospitalizations and numerous deaths occurring each year. UMCE's educational programming efforts work to address these factors. During the year, programs have been offered to SCP volunteers and the general public in an effort to reduce the number of accidents among older adults.

UMCE is working with individuals, public safety groups and agencies in rural areas of Maine to design programs that focus on the health and safety needs of Maine's older residents. The resulting program is TRIAD, is a collaborative effort that improves this situation for older Mainers through a variety of means: the use of "Files of Life," which can help older adults

communicate important health-related information to emergency medical personnel; the distribution and use of emergency beacon lights to help emergency medical personnel locate people needing immediate medical assistance; and the development and distribution of newsletters and educational information to promote personal safety in and outside of the home.

UMCE delivered a workshop series titled *Safe and Secure Seniors*, presented in six sessions for 30 seniors. Topics included food needs after fifty, maintaining fitness and improving balance, estate planning and advance directives, scams and other crime, becoming insurance savvy and community services for seniors. Sessions were presented by guest lecturers with expertise on specific topics.

The Senior Resources Collaboration was formed by UMCE in January 2002 to establish a mechanism for organizations with senior audiences to communicate and coordinate services. As a result, participants have come to know the details of one another's services and coordinate them more effectively. The collaboration has enabled several new programs to be created by taking advantage of joint funding opportunities and staff pooling.

Volunteers are frequently engaged to extend the education of UMCE to people throughout the state. The Maine Extension Homemakers Council (MEHC) represents 77 local groups serving 1,362 members currently located in eleven of Maine's sixteen counties. These groups share Extension and other educational information with members and engage in community service, leadership development and education projects with the general public.

Understanding Welfare

UMCE is the lead organization in a series of *Welfare Simulation* programs designed to raise participants' awareness of the feelings, values and decisions of those living in poverty. The program is delivered both directly and as a train-the-trainer program, and teaches people to be less judgmental and more patient with those that live in poverty. This year's month-long program was delivered to the Western Maine Community Action Association, a coalition of social service organizations with responsibilities in three southern Maine counties.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 3 Total	5,713	\$441,638	\$404,634	\$441,638	\$1,287,910

Consolidated Plan of Work Performance Goals 3-1 through 3-5

OUTCOME INDICATORS: Behaviors and Impacts

Total Days:	5,713
Groups will be established to conduct community programs to reduce the risk of disease.	522
Participants will decrease saturated fat and total fat intake.	1,640
Participants will engage in community programs that enhance the health of seniors and other community members.	2,362
Participants will improve nutrient and food composition intake to lower the risk of disease.	1,735
Participants will increase food preparation skills.	20,062
Participants will increase food-buying skills.	2,179
Participants will increase intake of fruits and vegetables.	1,627
Participants will increase physical activity.	24,155
Participants will take steps to achieve and maintain healthy weight	1,853
Participants, at all life stages, will have knowledge, skills and ability to be well nourished.	25,098
People will be involved in public policy issues related to food recovery.	0
People will increase their food recovery, gleaning and donations of food to food pantries.	0
People will increase their food supply from gardens and home production.	0
People will participate in programs organized to raise awareness about hunger and poverty at the community level.	120
Pounds of food donated to food pantries, food banks and kitchens	0
Super Cupboards will be organized.	0
Value of food donated to food pantries, food banks and kitchens	0

OUTPUT INDICATORS

Number of consultations/home visits.	1,829
Number of workshops/events.	425
Number of people attending the workshops/events.	4,769
Number of groups formed (ad hoc or formally organized).	22
Number of people involved in groups formed.	1,125
Number of volunteers trained.	1,945
Number of publications written.	152
Number of publications distributed.	33,778
Number of issues of newsletters written.	81
Number of people receiving newsletters within a year's time.	63,718

Number of audio-visual resources developed (video, slides, displays).	14
Number of articles in news media.	58
Circulation of articles in news media.	482,229

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Human Nutrition, Human Health, Food Quality

Eat Well Nutrition Program; Fruits and Vegetables Make a Difference: Research shows that the simple act of eating five servings of fruits and vegetables a day contributes significantly to disease prevention and overall good health. In Maine, limited-income populations are particularly at risk from under-consumption of fruits and vegetables. UMCE’s Eat Well Nutrition Program aides provide nutrition education to limited-income individuals, including children, through home visitation or in group settings. Groups are formed at food pantries, community rooms in housing complexes, Head Start centers and many other locations throughout Maine. A major emphasis in the lessons is on healthy ways to include more fruits and vegetables in daily diets. For example, at some food pantries, nutrition aides demonstrate healthy recipes and preparation techniques for fruits and vegetables that individuals can use in their daily meal planning. At Head Start centers, children help prepare healthy snacks using fruits and vegetables, and are often introduced to new varieties of produce in the process.

Summary of Impacts: This year more than 500 individuals graduated from the Eat Well Nutrition Program. At graduation, the number of participants consuming two or more servings of fruits daily had nearly doubled, from 23 percent to 44 percent. The number consuming two or more servings of vegetables also increased from 59 percent to 73 percent. Additionally, 93 percent of all graduates made a positive change in at least one food group as a result of the program. As a result of the lessons taught by our nutrition program aides, graduates of the program are now taking steps to improve their own and their families’ health by including more fruits and vegetables in their daily menus and improving their overall diet.

Scope of Impacts: State Specific

Key Themes: Human Nutrition, Human Health, Gardening, Food Quality

Nutrition and Gardening for Micmac Tribal Youth and Elders: Diabetes and obesity rates are rising among Maine's Native Americans, contributing to declining health. The Micmac tribal dietitian in Presque Isle, Maine contacted UMCE with a request for assistance educating tribal youth and elders about necessary dietary changes to improve overall health. UMCE worked with the tribe's dietitian to create a series of nutrition lessons centered around gardening that incorporated the traditional practice of intergenerational instruction between youth and elders. The lessons included time-honored gardening practices such as companion planting and planting by the signs, as well as more advanced gardening practices such as soil nutrient analysis, plant growth cycles and organic methods. Both youth and elders produced crops, and elders shared their gardening skills with the youth. Participants were taught the value of including quality vegetables in their daily meals. A harvest supper was held featuring only foods from the garden.

Summary of Impacts: Research shows that eating more fruits and vegetables contributes to disease prevention and improved health. Post-gardening surveys indicate that tribal

members are consuming an increased amount of vegetables as a result of our ongoing nutrition and gardening program.

In addition, more participants report trying new foods more frequently or trying familiar foods prepared in more healthful ways. The tribal dietitian has also noted an increased awareness of the value of good nutrition practices to improve health.

Scope of Impacts: State Specific

Key Themes: Food Accessibility and Affordability, Food Quality, Human Health, Human Nutrition, Workforce Preparation

Cookbook for Special Needs Nutrition Education: The MDI (Mount Desert Island) Sheltered Workshop provides employment opportunities for over 40 special-needs adults, some of who gain life skills by preparing a weekly meal for staff and other workers. Many of MDI's special-needs workers have limited incomes, and many are on specialized diets for diabetes, weight control or other health issues, however they all benefit from exposure to inexpensive and healthy meals. MDI's supervising staff had limited training in nutrition, cooking and food safety, and thus were unable to meet the food preparation training needs of their special-needs workers. MDI asked UMCE to help by offering a biweekly nutrition and cooking activity for workers and their supervising staff. Working with the supervising staff, UMCE's nutrition aides adapted lessons for workers with physical and mental challenges. They developed pictorial recipes for dishes that nonreaders could prepare on their own. Lessons were delivered on food choices, the importance of eating from all food groups, and food safety practices.

Summary of Impact: The special-needs workers at MDI Sheltered Workshop have acquired life skills for making healthy food choices and preparing a variety of healthy meals on their own. The workshop staff will continue to use the healthy recipes with future special-needs workers and have gained much-needed training skills. The work also resulted in a published pictorial cookbook of recipes for non-readers and special-needs audiences, which will be used by the UMCE Eat Well Nutrition Program and other educational programs across Maine and nationally. Publication of the cookbook was supported by the Healthy Acadia Coalition, a regional coalition of organizations working together for better health.

Scope of Impacts: State Specific

CSREES Goal 4 Greater Harmony Between Agriculture and the Environment

Executive Summary

During 2003, UMCE offered many educational programs to address Maine's agriculture and natural resource issues including applied research trials, grower meetings, pest management hotlines, newsletters, ecology camps, school trips and environmental monitoring efforts.

Pest Management

UMCE worked with more than 1,500 agricultural producers who used integrated pest management (IPM) practices in producing apples, potatoes, sweet corn, blueberries, cranberries and in greenhouses. Over 100 were new users of IPM. We helped more than 4,600 Maine citizens make informed decisions regarding pesticide application in homes, farms, businesses and schools. Over 700 were homeowners who received information relating to pest control in their home gardens and yards. UMCE maintains online pest management information where visitors can access research-based information to minimize pesticide use while limiting damage from harmful pests. There were over 300,000 hits to the site in 2003. [<http://www.umext.maine.edu/topics/pest.htm>].

The Maine Potato Integrated Pest Management program operated 130 grower field sites in 2003. These sites were used to survey potato pest populations and implement pest threshold information and disease forecasting strategies. UMCE employed twenty-six summer program aides who produced 1,300 individual field scouting reports with area potato growers. Growers used these reports to develop successful treatment strategies that reduced pesticide application from traditional calendar application schedules.

European corn borer has become a major pest problem for Maine potato growers, as populations and range have dramatically increased. With the help of our IPM scouts, growers avoided crop losses through an increased insect trapping effort. In a joint project with the University of Maine Agricultural and Forest Experiment Station and Cornell University, UMCE is exploring the use of biocontrol to manage European corn borer populations in potatoes, with the goal of reducing damage without using chemicals.

Maine experienced a dramatic rise in aphid populations during the late part of the potato-growing season this year. With advance warning of the aphid population change by UMCE scouts, seed growers were able to protect seed stock and potatoes intended for processing, saving the industry from large potential economic losses.

UMCE developed the *Maine Potato Pest Management Guide* as a new online resource that provides potato growers with accurate, up-to-date information on pest control methods as part of our IPM program. Information on disease, insect and weed control is provided along with information on vine desiccation, storage disinfections and seed treatments. The site describes the efficacy of different control methods for common problems, and has a list of chemicals with information on application rates and methods. We estimate that the site [<http://www.mainepotatopestguide.com/>] has had greater than 24,000 hits in its first year.

Thanks to advances in IPM provided by research done at UMaine and the effective educational outreach program provided by UMCE, Maine's blueberry growers are better able to minimize pesticide and herbicide use. Over 9,200 acres of blueberries, 14 percent of Maine's total crop acreage, were not treated with any herbicide last year. Since the introduction of the IPM program to monitor and control blueberry fruit fly, wild blueberry's most destructive pest, growers have reported a 70 percent reduction in their use of blanket insecticide applications. Research-based action threshold levels developed at UMaine enable growers to prevent crop loss and use less toxic alternatives to control spanworm. Best management practices are helping growers to successfully treat crops using alternative herbicides that do not leach into the groundwater. Minimized impact from the use of these herbicides has been a factor in the increase in Maine's wild blueberry yield from 20 million pounds in 1983 to 75 million pounds in 2003.

Maine's apple growers face difficult economic challenges. Apple prices have declined for over a decade, and quality standards have become more stringent due to heightened scrutiny, regulation and customer concerns about pesticide use. UMCE's Apple IPM program provides training, scouting visits and twice-daily online pest forecasts to help growers keep up with current pest threats and management options.

Over 185 commercial and small-scale growers subscribe to our *Apple IPM Newsletter*. With financial support from the Maine State Pomological Society, our program included weekly visits to 28 orchards for on-site pest updates. Over 90 percent of growers surveyed in 2003 reported that the program helps them reduce crop damage. The most recent average savings that growers attributed to the Apple IPM program was \$112 worth of pesticide per acre and 30 percent less pest damage. Statewide this represents \$390,000 in savings on pesticides and potential prevention of over \$660,000 worth of damage.

Individuals vary widely in their sensitivity to pesticides, but children are among the most vulnerable to the risks of chemical exposure. Proportionally, children eat more food, drink more water, and breathe more air than adults; when they are exposed to pesticide residues, they potentially receive larger doses. UMCE, in cooperation with the Maine Department of Agriculture, Food and Rural Resources, implemented the Maine School IPM program with a grant provided by the EPA. The program educates school staff about the hazards of pesticide exposure. It introduces IPM as a well-organized and comprehensive approach to preventing pests from reaching unacceptable levels, and advocates low-risk control strategies when necessary. The program continues to assist schools as they make the transition from conventional pest control to IPM, helping to make schools safer for children.

This year UMCE worked with Maine's largest cranberry producer to diagnose widespread vine die-back and browning. Our staff identified inadequate irrigation rates as the cause of the problem. The grower adjusted the irrigation rates, preventing an estimated loss of \$63,000.

Greenhouse IPM

A 2002 survey of needs for the regional greenhouse industry determined that knowledge in insect and disease identification, biology and damage symptoms ranked as the highest needs. Growers indicated their need for hands-on training in these and other areas. In January 2003, UMCE, the University of Vermont Cooperative Extension and the University of New Hampshire Cooperative Extension conducted three greenhouse IPM workshops for New England operators. The workshops provided hands-on training to 40 Maine participants in on-site disease testing; pH management; insect, mite and disease management of herbs; and scouting for pest diseases and abiotic problems. In addition, up-to-date information on how a key greenhouse pest over-winters in commercial greenhouses was provided.

UMCE also offered the Small Scale Greenhouse Business School in 2003 to help participants learn the basics of successfully running a greenhouse operation. Fifteen people completed the 10-session course. Evaluations showed that knowledge was gained in operational strategies, horticultural practices, business and marketing.

Commercial and Home Horticulture

UMCE's home horticulture program continues to expand in response to expressed needs from clients. In 2003 over 11,000 clients attended 238 workshops and events dedicated to home horticulture. Educational programs and activities at farmers' markets reached 1,700 Maine citizens.

The Master Gardener program is the largest home horticulture education program offered by UMCE. This year 242 new Master Gardeners were trained. Participants agree to work for 40 hours to develop community projects and deliver educational programs in exchange for the learning that they receive, and many return in subsequent years to participate as volunteers. Statewide, our volunteers donated more than 14,000 hours of their time to develop and run 250 community projects. They organized and provided training for many of the 238 horticultural workshops and events held in 2003. UMCE and Master Gardener volunteers maintain demonstration gardens in 10 counties. Statewide, Master Gardener volunteers reached 13,000 people through community projects and educational programs. These gardens are outdoor classrooms, used to train volunteers, teach garden principles to the general public and conduct research trials. Master Gardeners started 15 new horticulture-based businesses during 2003 using expertise developed from their Master Gardener experiences, stimulating rural economic development.

UMCE has recently initiated a Junior Master Gardener pilot project in conjunction with Great Salt Bay School of Damariscotta. The project is designed to develop character and teach environmental awareness to youth through lessons in gardening. Master Gardener volunteers taught 19 students the basic principles of gardening. The students in turn shared their new skills and knowledge with 20 residents of an assisted living facility by growing flowers and conducting other gardening projects. They donated approximately 100 pounds of their fresh garden crops to a local food pantry to assist needy neighbors. Master Gardener volunteers are currently evaluating the program and developing a workbook of activities that will be available statewide.

UMCE is committed to helping people achieve food security by enhancing their ability to access nutritional and safe food. To address this statewide goal, Master Gardener volunteers and UMCE coordinate the Plant-a-Row for the Hungry program, in which volunteers grow produce, organize gleaning projects and coordinate donations to local food cupboards from home gardeners. This year, volunteers donated 51,465 pounds of food valued at over \$86,000 to food cupboards and soup kitchens from the gardens and farms of participants. Because of these donations across the state, people without adequate food supplies are receiving nutritious fresh fruits and vegetables.

UMCE and the Maine State Prison have developed a vocational training program in horticulture for inmates at a medium- and maximum-security detention facility. The goal of the program is to teach participants work skills for an industry that needs a trained labor force. One hundred and twenty inmates have participated in the program since January of 2001, with 96 completing the program.

Water Quality

UMCE's work on water-quality-related projects involved working with nonpoint source pollution issues in specific watersheds, developing new educational program areas, educating watershed coalitions and working with municipal officials. Specific watershed activities included continuing our work with existing watershed steward groups and initiating work in new watersheds. Highlights from our recent efforts include the following: we successfully raised the capacity of program participants to take on leadership roles on local watershed boards as well as the statewide Congress of Lakes Association; we developed groups that have implemented programs to effectively address invasive plant introduction in Maine lakes; and we addressed issues at new survey sites. This year volunteers from our Master Gardener program partnered with local watershed stewards to design and plant a lakefront buffer for water quality protection that is both beautiful and functional. By drawing upon the expertise of both volunteer groups, we developed a project that demonstrates how lakefront buffers that help stabilize water quality can be attractive and effective. The demonstration site has generated interest from people in this and other watersheds.

Youth Environmental Education

Maine's economy is based on abundant natural resources, yet there are minimal opportunities for youth to learn about ecology and the management of these resources, particularly in a traditional classroom setting. UMCE, in collaboration with the Tanglewood 4-H Camp and Learning Center, trained 9,755 youth and 478 teachers and youth leaders in 2003. The nonprofit Tanglewood Inc. board of directors raised more than \$150,000 to make these programs affordable and accessible. Ninety percent of participants were from Maine; the balance came from twenty-three other states and countries. Program offerings included summer camps, school programs and teacher workshops. In addition to gaining knowledge and skills in ecology, outdoor living, citizenship, healthy lifestyles, communication and conservation, Tanglewood youth participants reported reductions in food and paper waste at their schools as a result of participation in Tanglewood's Earth Connections ecology programs. Teachers said they learned strategies for outdoor teaching activities to strengthen their curriculum, and reported increased capacity to meet Maine state learning standards.

Marine Extension Team

Five years ago, UMCE and Maine Sea Grant aligned their staff to create the Marine Extension Team (MET). The alliance includes ten UMCE-Sea Grant staff members involved in projects relating to fisheries and fishing technology, local resource management, aquaculture demonstration projects, coastal monitoring, eco-tourism, coastal access and habitat restoration efforts.

The MET administers the Maine Shore Stewards, a statewide umbrella organization for coastal environmental monitoring programs. The stewards' work encompasses bacterial monitoring of shellfish and recreational waters in support of public health, phytoplankton monitoring as an early warning system for harmful algal blooms, and beach profiling to assess geologic changes. All programs rely on volunteers, scientists, educators and state agency personnel to provide quality data to coastal communities as well as state and federal agencies. Results from the Microbial Source Tracking program in two southern Maine watersheds indicate that humans are the largest single contributing source of contamination in both watersheds. As a result of the monitoring efforts, some community remediation plans efforts are being implemented. The Maine Healthy Beaches program expanded this year by increasing coastal community participation by 60 percent, creating an education and outreach campaign, and developing resources and policies to ensure safe water recreation. A statewide online database has been developed and implemented to provide managers with information upon which to base their decisions—the first of its kind on the coast of Maine.

The MET aquaculture and fisheries programs involved applied fishing gear research projects and workshops. We provided information to stakeholders to develop and enhance marine resource management strategies. Collaborative studies with the fishing industry included assessing the selective properties of knotless codend twine for groundfish, evaluating the selectivity of scallop drags, and researching the effectiveness of fish traps. Five meetings on sustainable fisheries practices covered topics on reducing the harvest-related mortality of green sea urchins, using marine protected areas for fishery management, and learning more about rights-based fisheries management. The meetings were attended by 230 participants. Aquaculture efforts included presentations on farmed fish health, public participation in the marine leasing process, and an active involvement on the Maine Aquaculture Task Force, which presented its policy recommendations to Maine's Governor in January 2004.

Forestry

UMCE's Yankee Woodlot Forestry Camp teaches skills that help small forest landowners manage their resources effectively for long-term sustainability. Over 300 graduates are managing in excess of 60,000 acres of forestland in New England. It is projected that, by virtue of improved management practices, they are realizing an increase of between \$.08 and \$5 per acre per year, depending on harvest choices. We have also offered a series of workshops called Sustainable Forests for Midcoast Maine, to educate community residents and local decision-makers about sustainable forest issues.

This year witnessed the debut of UMCE's statewide Maine Tree Club, an educational project that teaches members how to care for trees to maximize their value to communities and the environment. Members join for two-year periods, receive educational newsletters, and attend

workshops and forest outings. This year, members distributed over 250 white spruce seedlings as a part of the Maine Arbor Week Celebration. The seedlings were given to school children and others along with lessons in proper handling and care of tree seedlings. The Maine Tree Club has a current membership of over 250 individuals and families.

Seventy-four natural resource professionals received continuing education instruction via forestry-related courses delivered by UMCE and our collaborators. Participants qualified for apprentice wood scaler licenses in our Approved Wood Measurement Training programs and learned to safely and efficiently operate a sawmill in the Portable Sawmill workshops. Nearly 4,000 spectators visited a portable sawmill demonstration featuring 13 sawmills. A special issue of a multinational periodical with a circulation of 65,000 featured the demonstration project.

In response to industry requests, UMCE staff offered workshops for maple syrup producers and developed the *Maple Syrup Quality Control Manual* in collaboration with the Maine Department of Agriculture, Food and Rural Resources. The manual is available in both print and Web-based versions [<http://www.umaine.edu/umext/maplesyrupproduction/>]. Participants reported that they have improved management practices as a result of attending the workshops, and 64 percent have increased their production or profit.

UMCE has developed a new Web site to provide links to forestry, wood and wildlife resources. In the first 4 1/2 months, the *Library of Educational Links- A Resource to Forestry, Wood and Wildlife Links* Web site received over 9,000 visits [<http://www.umaine.edu/umext/forestry/index.htm>].

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 4 Total	6,728	\$520,103	\$167,179	\$520,103	\$1,207,385

Consolidated Plan of Work Performance Goals 4-1 through 4-11

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:
Agricultural producers will reduce herbicide use with increased use of cultivation, cultural management, band spraying or lower-rate products.	6,728
Producers will implement pesticide and nutrient Best Management Practices to protect surface water and groundwater systems.	863
Management plans will be written as a result of UMCE efforts.	488
Producers will reduce negative impacts of livestock on streams.	415
	18

Producers will adopt testing strategies as a part of management practices and use results in their management process.	1,026
Crop producers will identify yield-limiting factors and increase long-term productivity.	2,735
Potato and blueberry producers will understand and use thresholds for pest treatment.	2,628
Producers will use strategic planning, record keeping and prediction models in their management practices.	2,887
Agricultural producers will implement Integrated Pest Management programs in Maine.	2,854
Producers will maintain pesticide certification by attending pesticide re-certification programs.	2,399
Producers will change pesticide application techniques and attitudes using Pesticide Applicator Training practices.	590
Producers will evaluate nonchemical pest control methods because of the Pesticide Impact Assessment Program.	0
Poultry and aquaculture producers will adopt Integrated Pest Management practices.	0
Citizens will take action to protect Maine's natural resources by becoming inland and costal watershed stewards.	102
Citizens will form weekend watershed conservation teams to take action to correct easily correctable problems with the assistance of UMCE staff.	0
Maine citizens will use appropriate home horticulture practices to protect water resources.	165
Maine citizens will complete lake watershed surveys.	79
Maine citizens will have increased awareness of the threats to drinking water.	275
Maine citizens will take action to protect shellfish resources.	264
Maine citizens will monitor water quality and monitor phytoplankton as an early warning system for toxins affecting public health.	942
Community groups will be involved in watershed management initiatives.	30
Acres will be covered watershed management initiatives.	137,778
Maine citizens will be involved in leadership training to protect natural resources.	160
Maine residents will protect wetland and riparian habitats.	165
Maine citizens will protect wildlife habitat in suburban and rural settings.	315
Farmers and homeowners within source water protection areas will assess and take action to prevent water contamination.	1
Maine citizens will conduct coastal watershed surveys.	14
Maine citizens will have increased awareness of threats to marine habitats.	1,575

Maine coastal groups will learn capacity building techniques to protect marine resources.	74
People will graduate from UMCE Compost School.	35
Agricultural producers will start composting.	24
Municipalities will start composting.	10
Private compost facilities will be established.	4
Households will start composting.	212
Volunteer hours will be given by Master Composters for community projects.	0
People will participate in Master Composter projects.	0
Master Composter projects will be created.	0
Private composters will attend programs.	434
Master Gardener Volunteers will be train in composting education.	ed
Residents will attend home composting programs.	220
Master Composters will be trained.	0
People will recognize significant improvement in gardening skills through participation in public garden programs.	4,542
Volunteer hours will be given by Master Gardeners to provide horticulture information to the public and develop community horticulture projects.	14,384
Educational and community projects will be developed and/or run by Master Gardeners.	250
People will participate in Master Gardener educational events and community projects.	13,000
Master Gardeners will further their education through college classes or technical programs.	19
Master Gardeners will start a horticulture-based business.	163
Specimens will be collected.	871
People will start a garden.	179
Soil tests will be submitted.	811
People will expand their garden space.	136
Soil tests will be interpreted.	366
People will report reduced pesticide use.	204
People will donate vegetables to food pantries.	275
People will adopt ecologically sound landscape practices that enhance wildlife habitat.	364
Pounds of produce will be donated to food pantries.	51,465
Value (in dollars) of food will be donated to food pantries.	86,000
Responses will be made to public requests.	5,721
Horticultural therapy programs will be started.	2
People will use adaptive gardening techniques.	12

Youth will demonstrate environmental stewardship and/or sustainable natural resource practices.	2345
Youth will demonstrate a knowledge of the laws of ecology and/or an understanding of their connections with the earth.	7,980
Number of producers using Integrated Pest Management practices in apples, potato, sweet corn, greenhouses and cranberries.	817
Number of producers changing pesticide application techniques and attitudes using pesticide application practices.	624
Number of producers evaluating non-chemical pest control methods because of the Pesticide Impact Assessment Program (PIAP).	36
The USDA receives accurate information on pesticide use in Maine. Information gathered through a PIAP survey of the agricultural community. Number of surveys conducted.	2,718
Number of Maine producers implementing pesticide best management practices to protect the environment.	279
Number of Maine citizens who become certified pesticide applicators.	181
Number of Maine citizens making an informed decision regarding a pesticide application.	4,653
Number of gardeners and others who understand the ecology of beneficial and pest organisms and/or pest issues related to a specific commodity, crop or household situation.	911
Number of Master Gardeners who are able to successfully identify beneficial and pest organisms and utilize appropriate management techniques.	367
Number of Maine citizens who address a pest management issue after consultation or diagnosis by Pest Management Office staff.	4,443
Maine citizens will access up-to-date information on the Pest Management Office Web site and UMCE Web page (# of hits).	308,387
Number of individuals and groups who develop goals and objectives for their forest.	150
Number of individuals or groups who develop a forest management plan.	13
Number of acres of forest included in forest management plans.	1,440
Number of individuals who implement their forest management plan.	16
Number of environmentally appropriate forest management practices adopted and the number of acres affected.	25
Number of environmentally appropriate forest management practices adopted and the number of acres affected.	1,325
Number of participants who consider alternative income opportunities for their land.	29
Number of alternative income opportunities adopted.	0
Number of BMPs adopted and the number of acres affected.	0

Number of erosion control measures adopted and acres affected.	0
Total dollars saved or earned as a result of implementing management changes learned through UMCE programs to enhance economic viability.	0
Total dollars saved or earned as a direct result of implementing new management changes learned through UMCE programs to utilize forest products more effectively.	0
Number of manufacturers adopting safety practices.	123
Number of manufacturers who can describe the relationship of production, economic and environmental variables in making management decisions.	54
Number of firms implementing strategies or practices to increase product value or dollars earned.	17
Total dollar value from value-added strategies to local communities.	0
Number of new or expanded market opportunities for forest products.	0
Number of firms incorporating strategic planning, record keeping and predictive models in their management practices.	27
Number of firms implementing changes in management as a result of developing strategic goals and objectives.	0
Number of municipalities who develop and implement components of comprehensive urban forest management plans.	1
Number of urban forest resource management plans developed and implemented.	0
Number of participants completing the Covert Projects training.	0
Number of volunteer hours given by Coverts Cooperators to provide wildlife and forest resource information to the public and develop community outreach projects.	0
Number of youth and adults participating in Coverts Project outreach efforts.	0
Number of acres affected as a result of Coverts Cooperator outreach projects.	0
Number of environmentally appropriate practices adopted as a result of Coverts Cooperator outreach projects.	0
Number of communities starting a public policy process involving wetlands, timber harvest, endangered species and other resource issues.	0
Number of acres protected and enhanced by implementing strategies acquired as a result of public policy educational programs on sustaining renewable natural resources.	0
Number of acres protected but not enhanced by implementing strategies acquired as a result of public policy educational programs on sustaining renewable natural resources.	0
Number of contact hours of continuing education instruction delivered by UMCE staff or in collaboration with partners.	790

Number of natural resource professionals, educators and service providers attending continuing education instruction delivered by UMCE staff or in collaboration with partners.	68
Number of natural resource professionals, educators and service providers incorporating new knowledge and adopting new practices in their work.	74
Number of acres affected by the adoption of current or new practices.	0
Number of natural resource professionals who obtain their apprentice wood scaling license as a result of attending UMCE programs.	32
Number of loggers attending safety workshops.	0
Number of loggers adopting safety practices.	0
Number of safety practices adopted.	0
Number of natural resource professionals and service providers implementing BMPs as a result of attending UMCE programs.	0
Acres affected as a result of implementing BMPs.	0
People will gather and organize information.	1,857
People will make informed decisions demonstrating environmental stewardship and sustainable marine resource practices.	1,400
People will take steps to achieve personal and community goals.	1,174

OUTPUT INDICATORS

Number of consultations.	31,947
Number of workshops/events.	895
Number of people attending the workshops/events.	48,679
Number of groups formed (ad hoc or formally organized).	114
Number of people involved in groups formed (above).	3,336
Number of volunteers trained.	2,369
Number of publications written.	96
Number of publications distributed.	30,0941
Number of issues of newsletters written.	146
Number of people receiving newsletters within a year's time.	23,446
Number of audio- visual resources developed (video, slides, displays).	107
Number of articles in news media.	181
Circulation of articles in news media.	2,600,591
Number of Master Gardener volunteers successfully completing training.	242
Number of people reached through farmers' markets.	1,700
Number of radio program listeners.	14,000
Number of radio programs produced.	7
Number of television segments produced.	23
Number of horticultural therapy adaptive gardening workshops/consultations.	7

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Water Quality, Pesticide Application, Agricultural Profitability

Best Management Practices Reduce Groundwater Contamination: Public perception of groundwater contamination has exerted pressure on the Maine Board of Pesticides Control to limit the use of hexazinone, an herbicide used by Maine's wild blueberry growers to control competition from broadleaf weeds and grasses on portions of the 60,000 acres of wild blueberries. UMCE responded by developing guidelines for the use of hexazinone in blueberry fields, and by implementing an educational program to deliver Best Management Practices to wild blueberry growers. Success of the effort is monitored by a groundwater sampling program. The Maine Board of Pesticides Control developed a hexazinone state management plan for the protection of groundwater in Maine as mandated by the EPA and incorporated UMCE's Best Management Practices as an integral part of the document.

Summary of Impacts: Data demonstrates that the use of Best Management Practices has resulted in a decrease in the level of hexazinone in the groundwater. Grower survey data indicates a significant decrease in use of hexazinone, from the previous rate of 1.2 pounds per acre in 2001 to 0.4 pounds per acre in 2002. Documented reductions are important in allowing for the continued use of hexazinone, which is a key component in the increase in Maine's wild blueberry yield from 20 million pounds in 1983 to 75 million pounds in 2003, and allowing Maine's growers to be competitive with blueberry growers in Canada and other states.

Scope of Impact: Joint Research and Extension

Key Themes: Aquaculture, Integrated Pest Management

Farmed Salmon Integrated Pest Management: Sea lice, if not controlled, can create serious financial losses for the salmon industry, transmitting diseases to fish or rendering them susceptible to other diseases, as well as posing a risk to wild salmon. The salmon industry implemented an integrated pest management program in 1996 in cooperation with UMCE, the Maine Aquaculture Association and state agencies. The program was based on the use of cypermethrin, a chemical that kills sea lice but leaves salmon unharmed. Treatment for sea lice using cypermethrin was pioneered by UMCE's veterinarian.

Summary of Impacts: Maine salmon farms have demonstrated a high level of commitment to IPM practices, which has resulted in the complete interruption of the sea lice life cycle, and in a related reduction of cypermethrin treatments. Farmed salmon in Cobscook Bay, Maine's primary aquaculture region, are free of sea lice and are posing no risk to infecting wild salmon. Aquaculture is Maine's fourth most important commodity, with a value of over \$37 million in 2002.

Scope of Impact: Joint Research and Extension

Key Themes: Natural Resources Management, Fisheries,

Improving the Management of Maine's Lobster Fishery: The Maine lobster fishery is Maine's most valuable fishery, with a dockside value of \$200 million shared by 6,000 individual fishing businesses and 6,000 additional support jobs statewide. The lobster fishery is also vital to Maine's coastal tourism businesses and essential to sustaining a strong Maine economy and healthy coastal communities. In 1996, the Maine Legislature

created a new form of fisheries co-management to directly involve fishermen in the creation of lobster fishery regulations. Fishermen participate through involvement within their regions (called “Zones”) and are organized under management councils. Since 2000, UMCE and UMaine Sea Grant, in partnership with the Maine Department of Marine Resources (DMR) have worked with the Zone D Lobster Management Council and completed a series of projects focused on strengthening the role of Zone D's role in lobster management and regulation. These efforts have included district meetings for fishermen in order to facilitate and encourage the voting process, and a series of issue-based workshops focused on improving the zone process and finding ways to reduce territorial conflicts. Based on an expressed need for information, we published and distributed a newsletter to inform fishermen of the management council's activities and seek their input.

Summary of Impacts: UMCE and Maine Sea Grant have produced white papers from each issue-based workshop that have served as the basis for council actions, and the resultant recommendations to state regulators. After distribution of the newsletter, Zone D fishermen's informed testimony to DMR increased by a factor of ten compared to their participation in the same process before the newsletter existed. Speaking of facilitated meetings to address fishery conflicts, leaders on the Lobster Management Council reported that "the situation is much improved and relations between the two harbors are the best I have seen in a long time. I believe the meetings helped . . . the meeting helped reduce tensions and the situation is much improved in town."

Scope of Impact: State Specific

Key Themes: Coastal Access, Land Use, Conflict Management

Coastal Access: Like all coastal states in the U.S., Maine's population is concentrated along the coast. Maine has a long tradition of public access to private property both inland and along the coast. User conflicts over access to Maine's coastal lands and to the water itself are increasing. This loss of coastal access is reducing the quality of life in Maine by reducing the coastal sites available for public recreation and raising the cost of doing business for commercial fishing and tourist-related businesses that depend on waterfront access. Through the Marine Extension Team, UMCE and Maine Sea Grant work together to offer educational programs, facilitate community development projects, and conduct applied research projects in coastal Maine. The projects focus on aquaculture, fisheries, ecosystem health and coastal access. MET members are addressing coastal access issues at the local level through the newly formed Working Waterfront Access Coalition, which seeks to raise public awareness of community needs and address emerging conflicts. Partners working with the MET on the coalition include the Maine State Planning Office, Coastal Enterprises Inc., the Maine Department of Marine Resources, the Maine Marine Trades Association and others.

Summary of Impacts: This year UMCE and Maine Sea Grant conducted a workshop on coastal access law and policy. The gathering provided valuable information to communities and stakeholders on the public trust doctrine, coastal private property issues and the “fishing, fowling and navigation” laws. We also participated in the Working Waterfront Access Forum, 2003, hosted by the Gulf of Maine Foundation with support from the Maine Coastal Program and the Island Institute, to share information and experiences across industries and communities about the tools available to shape the future of Maine's working waterfront. The goal of the forum is to highlight the value of Maine's diverse waterfront and identify challenges and solutions for waterfront-dependent

communities and businesses. We have also played an active role in the Washington County Community College Waterfront Management Committee, which was instrumental in planning and securing funding to successfully renovate an important access point to Cobscook bay for fishermen, fish farmers and recreational boaters.

Scope of Impact: State Specific

Key Themes: Pesticide Application, Agricultural Profitability

Pesticide Applicator Training – Online: In Maine, Pesticide Applicator Training (PAT) events are most often held in one of two locations, both of which are far from Maine's cranberry growing region. Due to distance and weather concerns (many PAT events are held in winter) many growers have a hard time traveling to acquire the six pesticide recertification credits that are needed every three years to maintain their pesticide applicator licenses. UMCE and the Maine Board of Pesticides Control are partnering to offer online workshops that enable growers to earn pesticide recertification credits from their office or home computer.

Summary of Impacts: In the past two years, nearly one-third of Maine's cranberry growers have reduced time and expenses related to traveling to PAT workshops by using our online workshops for recertification.

Scope of Impact: State Specific

Key Themes: Youth Farm Safety, Agricultural Profitability

Blueberry Harvester Safety: A regional blueberry producer approached UMCE to develop an age appropriate machinery education and blueberry harvester safety course for youth that would meet U.S. Department of Labor regulations. Regulations require youth who are 14 and 15 years of age to have participated in a tractor safety course in order to operate motorized farm equipment. Our staff worked closely with the farm manager and grower's representative to develop a safety course to meet those specific needs. The 20-hour pilot course included instructors from the Maine State Trooper's office speaking on the "rules of the road" for harvesters on public roadways, first-aid professionals from a local blueberry processing plant, fire safety instruction including the proper use of fire extinguishers, and instruction on routine safety and maintenance checks for mechanical blueberry harvesters. Participants had hands-on training on an obstacle course, which included driving with implements such as trailers and burners attached.

Summary of Impacts: Twelve youth participated in the pilot course and all passed driving and written exams with high scores. Eleven of the youth were employed during the 2003 blueberry harvest, and reported no accidents or injuries. This pilot course is now available statewide and is anticipated to open additional harvester labor pool to producers.

Scope of Impact: State Specific

Key Themes: Agricultural Education

Maine State Prison Training Program – Horticulture as a Vocation: The home landscaping and horticulture industry is one of the fastest growing segments of agriculture in Maine, with sales of over \$24.8 million last year. The lack of semi-skilled and knowledgeable labor is currently a problem for this industry. UMCE and the Maine State Prison have developed a vocational training program in horticulture for inmates at the medium- and maximum-security facility in Warren, Maine. This train-the-trainer program involves a minimum of 30 hours of classroom instruction and a hands-on volunteer work component that requires planning, developing and maintaining gardens outdoors and in a

greenhouse environment. Participants can move to work-release programs with local garden centers through the minimum-security facility.

Summary of Impacts: Developing applicable work skills increases the chance of participants becoming productive citizens and reduces recidivism, saving an average annual inmate cost of \$35,000. According to the prison director of education, “the benefits of this program are more than the beautification of the grounds in the prison. This program has demonstrated positive therapeutic value. This vocational training program develops semiskilled labor for the growing horticulture industry and increases participants’ self esteem and confidence.” One hundred and twenty inmates have participated in the program since January of 2001, with a completion rate of 80 percent. One program participant said, “It is the first time I have been able to sleep since I came to the facility. I worked so hard and learned so much I am exhausted at night. But I can’t wait to do it again the next day.”

Scope of Impact: State Specific

Key Themes: Forest Crops, Forest Resource Management, Diversified/Agriculture, Niche Market

Improved Production for Maine’s Maple Syrup Producers: In 2003, Maine’s maple syrup production was valued at \$4.5 million. Since 1999, UMCE, UMaine and the Maine Department of Agriculture, Food and Rural Resources have offered a series of quality control workshops and an annual maple school for producers to help improve their quality, efficiency and productivity. A workshop was also delivered in Connecticut. We have also published the *Maple Syrup Quality Control Manual*, which is available both in print and online at <http://www.umext.maine.edu/onlinepubs/htmlpubs/7038.htm>.

Summary of Impacts: As a result of effective educational programs provided by UMCE and our partners, Maine's maple producers are improving their management practices and increasing production and profit. In a recent evaluation, 90 percent of producers reported that they have improved management practices as a result of attending one or more workshops, 56 percent increased their production or profit by up to 25 percent, and 8 percent increased their production or profit by up to 50 percent.

Scope of Impact: Multi-state Extension – CT, ME, NY, VT, Canada

Key Themes: Forest Resource, Land Use, Natural Resources Management

Yankee Woodlot Forestry Camp: Over 90 percent of Maine’s land area is forested. Maine’s forest is a mosaic of stands that vary in age, health, and species and potentially offer a range of ecological, economic, and aesthetic values. Land ownership patterns and land uses suggest that choices made by the majority of Maine landowners related to their forested land have considerable impact on forest health, habitat integrity, water quality, wildlife travel corridors, landscape aesthetics and future wood supply. This year UMCE, the Maine Forest Service, and the Small Woodland Owners Association of Maine sponsored the 20th annual weeklong Yankee Woodlot Forestry Camp at the Tanglewood 4-H Camp and Learning Center in Lincolnville, Maine. The goal of Yankee Woodlot Forestry Camp is to increase the acreage of land in Maine that is managed for long-term sustainability. This year's participants studied and practiced the techniques of managing woodlands for the multiple benefits of improved wildlife habitat, recreation, forest products, biodiversity, aesthetics and long-term sustainability. They also learned how to make a compass map, pace distances, read aerial photographs, use Geographic Positioning

Systems, identify trees and shrubs, evaluate forest soils, recognize wildlife habitat and conduct a timber inventory.

Summary of Impacts: Graduates reported their intention to have a management plan made for their forestlands and to practice the sustainable forest skills that they had learned. It is estimated that managed forestlands will produce 40 percent greater return than unmanaged forests. Since its inception, over 300 people have graduated from the Yankee Woodlot Forestry Camp and have increased the potential of their forest resource through management ownership of over 60,000 acres. If harvested for pulpwood, this could produce as much as \$48,000 per year—if harvested for sawtimber, \$1.2 million. Participants have also expressed intent to share what they learned with others. One participant for this year has conducted a two-day Forest Ecology Training for Teachers and several youth forestry camps for middle school students modeled after the Yankee Woodlot Camp.

Scope of Impact: Multi-state Extension – MA, MD, ME, NH, NJ, NY, RI

Key Themes: Youth Development 4-H, Sustainable Living, Natural Resources, Forestry, Leadership Training and Development, Environmental Education, Teacher Trainings

Tanglewood 4-H Camp and Learning Center is a partnership between UMCE, the Maine Department of Conservation's Bureau of Parks and Lands, and the nonprofit Tanglewood Inc. Tanglewood offers residential and day camps, school programs and teacher trainings with an emphasis on citizenship, healthy lifestyles, leadership, natural resources and caring for the environment.

Summary of Impacts: In 2003, 2,069 students from 25 Maine schools learned about natural resources, sustainable living and citizenship. This training helped schools meet previously unmet Maine state learning standards for ecology and natural resources. Nearly 500 teachers and youth leaders acquired skills in teaching environmental education and sustainable living skills.

Residential overnight camp programs were offered to over 950 youth, who reported gaining knowledge and skills in ecology, outdoor living, citizenship, healthy lifestyles, communication and conservation. Youth and their parents also reported significant attitude and behavior changes. These changes included improved eating and exercise habits, more self-confidence, more composting and recycling activities, more time hiking and playing outdoors, improved relationships with others and an increased awareness of and respect for the environment. Tanglewood and the UMaine Center for Research and Evaluation conducted a five-year evaluation of summer campers and their parents.

Approximately 2,000 questionnaires were distributed. Of the 572 responding,

- Sixty percent of campers said they learned specific skills as a result of attending Tanglewood. Specifics included camping and outdoor survival skills, knowledge of natural history, and skills in activities such as crafts and kayaking. Campers also mentioned skills in leadership, cooperation, respect and listening.
- Forty-three percent of campers said they experienced a positive change in attitude as a result of attending Tanglewood. Many mentioned being happier, more at ease and confident, more relaxed, more respectful of nature, more independent, and more open-minded about individual differences.
- Thirty percent of campers recognized positive changes in their own behavior that they attributed to their Tanglewood experience. Behavior changes listed included eating

more healthfully, enjoying outdoor activities, being more independent, recycling, taking care of the environment, being nicer to others and being more caring.

- Seventy-two percent of campers indicated they had learned more about the environment at the camp. Their examples of what they had learned ranged from detailed information about specific animals and plants to global concepts about nature and conservation.
- Seventy percent of parents reported changes in their children's skills and 62 percent attributed a positive change in their children's attitudes to the Tanglewood experience. The most frequently observed attitude changes were associated with health.
- Eighty-four percent of parents said that their children learned more about the environment at Tanglewood. The lessons ranged from small changes that individuals could make to lessen negative impacts on the earth, to more global concerns about how the ecosystem works.

This study of campers and their parents revealed that Tanglewood had a positive effect on campers' skills, attitudes, behavior, environmental knowledge, and future goals.

Scope of Impact: Multi-state Extension –CA, CO, CT, DE, FL, GA, MA, ME, NH, NM, NY, OH, PA, RI, TX, VA, VT, WA; Countries: Thailand, United Kingdom, France, South Africa

CSREES Goal 5

Enhanced Economic Opportunity and Quality of Life for All Americans

Executive Summary

4-H Youth Development

UMCE's 4-H Youth Development programs create a safe environment in which Maine youth can live and grow through mutual learning and respect. We offer a wide range of programs to foster youth development, including character education, health and substance education, leadership training, conflict resolution, life-skills training, goal setting, and diversity education through cultural exchange programs.

Acquiring lifelong skills and applying them is a crucial component of youth development. UMCE offered character education for over 5,500 young people in seven Maine counties, community service programs for over 2,900 youth participants in 14 counties, and leadership education and youth/adult partnerships with more than 1,600 participants in seven counties. As a result more than 2,400 youth became involved in volunteer projects in their own communities, 2,600 youth set appropriate and reasonable goals for themselves, and more than 1,600 demonstrated their ability to provide leadership to others.

Each year the Tanglewood 4-H Camp and Learning Center hires more than 30 young adults to serve as counselors and leaders for special programs. Typically, about 60 percent are graduates of Tanglewood's leadership programs, and many participate as instructors in leadership education for our emerging leaders. All staff must complete an intensive training of up to two weeks. As a result of this training, staff developed the following competencies:

- Skills in handling situations involving conflict, fear, aggression and homesickness.
- Methods for addressing special issues such as child abuse and drug use.
- Basic first aid and emergency procedures.
- Group-building and role-modeling skills.
- Awareness of human diversity including personality types, learning styles, abilities, disabilities and cultural uniqueness.
- Understanding of 4-H Earth Connections global and environmental education, philosophy, principles and activities.

During 2003, our environmental education staff delivered educational programs and served as role models for more than 700 campers from throughout the U.S.

UMCE and the state 4-H Teen Council planned and carried out a conference for 103 Maine teenagers called Health Rocks. The program was designed to help youth make healthy choices by raising awareness through hands-on demonstrations and activities. Conference evaluations showed that the majority of participants

- increased their ability to value their health and well-being,
- understood the consequences of health-related decisions that they make,
- could identify healthy choices that would meet their needs, and
- understood the effects of alcohol and drugs.

Youth from Maine's limited economic environments and rural communities can have low aspirations or unrealistic expectations about their choices for the future. UMCE offers a variety of programs and activities designed to expand these horizons. The RESPECT team is a youth and adult partnership in Oxford County that worked with 450 youth to identify and acquire the key elements of positive character traits. Oxford County Extension also offers the Area Resources for Kids program, which exposes more than 250 young people to the visual and performing arts, international culture and the sciences.

Economic education is overlooked in many schools, a fact that may limit young people's perception of their career and life choices. UMCE helped Maine youth acquire skills in entrepreneurship, economics and citizenship through the Mini-Society™ program, a role-playing experience in which participants identify their financial goals and create opportunities to meet them, including new business ventures. Mini-Society™ training was provided for staff from public and private schools as well as 4-H club leaders, contributing to success in meeting Maine learning standards. As a result, over 450 youth demonstrated the qualities and skills needed to run businesses successfully, and over 750 youth documented workplace skills and competencies. More than 500 youth successfully learned to organize and maintain their personal financial information. One thirty-hour Mini-Society™ learning opportunity was conducted for the Passamaquoddy Tribe at Pleasant Point, in which over 95 percent of the youth participants created businesses. The school staff observed an increase in the self-esteem of students and indicated that nearly half had demonstrated increased responsibility for their own actions during the course. Statewide, over 225 workshops and events designed to help youth reach their full potential were conducted for nearly 4,400 participants, helping nearly 3,000 youth broaden their personal goals and aspirations.

During 2003, UMCE staff in one county contacted recent graduates of 4-H to assess the impact of their participation in the program. All 41 respondents indicated their participation had improved their self-esteem, and 75 percent said they had become more responsible. Fifty percent thought 4-H participation had positively influenced their career choices, and 98 percent said they were actively practicing things they had learned during their 4-H years.

Adult volunteers are critical to the success of our 4-H programs. This year we trained 568 new volunteers, and worked with over 2,200 volunteers statewide in developmentally appropriate, hands-on experiential programs to help over 17,000 Maine youth in 4-H programs.

Parenting and Family Education

UMCE has two outstanding home visitation parent education programs: Parents are Teachers, Too and the Knox County Teen and Young Parent Program. Both are based on the philosophy that parents are their children's first and most important teachers. These programs teach parents to nurture children in ways that promote optimal development during the critical early years of life, laying the foundation for subsequent healthy development. The programs are tailored to the needs of each family.

Since 1993, UMCE has partnered with WERU, a nonprofit community radio station serving five counties in midcoast Maine, to produce Family Radio Forum. This partnership has produced over 200 one-hour public affairs programs on local and state-wide issues. Between 7,500 and 9,500 people listen to each show. Shows air live and listeners are encouraged to call in to ask questions and share insights and experiences. Recent program topics have included foster parenting, the role of television in family life, gender socialization and examples of organizational collaboration. Over two dozen resource people, citizens and community leaders have been interviewed this year.

Turn Beauty Inside Out Maine is a UMCE collaborative public awareness and community development program focusing on body image, self-esteem, media literacy and leadership development for girls and women. The program's goal is to challenge cultural and media messages that tell females they must be thinner, prettier and sexier, and to create a new definition of beauty based on "good works, great hearts and activism." Activities during the last year include cosponsoring a multistate conference on the influence of media, organizing community groups in four regions of Maine, conducting weekend workshops, designing and marketing T-shirts, and creating a new Girl Scout achievement patch.

UMCE developed and supports the new *Center for Parenting Education* Web site for parents, educators and other adults who work with children [<http://www.umext.maine.edu/parentcenter/intro.htm>]. The Web site disseminates research-based information on critical parenting practices and is included in the federal *Children, Youth and Families Education and Research Network (CYFERNet)* online project.

During 2002, UMCE joined a team that initiated the Senior College at UMaine's Hutchinson Center, in which volunteer faculty offer eight-week courses for seniors. Academic courses, field trips, musical and dramatic presentations and other special events are offered as well. In 2003, we continued our role as the Senior College expanded to now serve over 400 seniors.

Economic Development

UMCE's small and home-based business education programs continue to expand employment opportunities by helping Maine people access reliable, research-based information and improve their entrepreneurial knowledge, skills and business practices. During the past year, more than 4,000 Maine citizens received educational support through our workshops, conferences, Web sites, video conferencing, business clinics, individual consultations and educational materials. We taught Maine people how to evaluate, start and grow their own small and home-based businesses and partnered with numerous business assistance organizations in resource sharing roundtables and workshops. Our efforts have enhanced economic opportunities for thousands of Mainers, helping many families secure and sustain a livable income and improve their quality of life.

During 2003, we helped hundreds of potential and existing small and home-based business owners improve their business management practices and decision-making capabilities. More than 1,500 Maine people attended 90 small and home-based business education workshops on topics such as product pricing, customer service, starting a greenhouse business, record keeping, and financial management. UMCE's small business clinic program, conducted

through county offices across the state, helped close to 200 people access reliable information and identify and answer questions about starting and growing a small or home-based business. We taught child-care providers how to keep good financial records, small farmers how to evaluate alternative enterprises, and specialty food processors how to develop new marketing outlets. UMCE also provided leadership in planning and organizing two highly successful small business conferences: the annual Mid-Coast Home-Based Business Conference and the Washington County Business Conference and Expo. More than five hundred Maine people attended these two events. Approximately 1,000 citizens reported adopting one or more business management practices as a result of participating in UMCE's small and home-based business programs.

During the past year, UMCE strengthened existing linkages and developed new partnerships with small and home-based business owners and other business-assist organizations in Maine. We initiated or participated in 40 collaborative and/or cooperative efforts that resulted in more than 45 educational activities being conducted across the state, including the following:

- Maine Entrepreneurship Working Group
- Business Outreach on Community Radio
- Maine Rural Development Council Native American Entrepreneurship Project
- National Home-Based & Microbusiness Design Team
- Incubator Without Walls Entrepreneurship Programs
- Farms for the Future Program
- Cultural and Nature-Based Tourism Development Project

During the past year, UMCE cooperated with researchers at UMaine in a variety of important economic development applied research projects. We are collaborating with researchers in the Department of Resource Economics & Policy on a multiyear Fund for Rural America project focusing on strengthening grocery store retailing in rural communities. We worked with UMaine researchers to develop a methodology for calculating the importance of microbusinesses to local economies throughout the U.S. This methodology is currently featured on the Association for Enterprise Opportunity's Web site, www.microenterpriseworks.org. We are also working with UMaine researchers to conduct "tourism attitudes" research in a rural area of Maine.

In 2003, Great Northern Paper Company in Millinocket declared bankruptcy, resulting in the layoff of nearly 1,300 workers in this small rural community in northern Maine. In an effort to assist small businesses and residents affected by the mill closing, Project KEEP (Katahdin Entrepreneurship Education Program) was developed by a coalition of Maine small-business-assist organizations, including UMCE. More than 30 workshops were offered through Project KEEP on topics ranging from *Managing in Crisis Times* to *Business Planning*. More than three hundred individuals from the region attended this highly successful training program.

The Maine Rural Development Council (MeRDC), an affiliate program of UMCE, sponsored a listening forum for businesses, residents and local officials of central and western Maine along with legislators, candidates for public office, and representatives of statewide agencies and organizations. Speak Out Rural Maine; Charting a Course for Thriving Communities was

presented in partnership with Western Mountains Alliance, the River Valley Growth Council, Western Maine Development, and Mountain Counties Heritage. This listening forum was a regional event that focused on supporting positive rural development policy, practice and legislation. Seventy-five central and western Maine residents attended the evening forum, choosing to focus on healthcare, tax reform, poverty, business development, education and training. Participants talked about the challenges confronting rural communities, major barriers to community sustainability, workable programs, approaches to rural development, and approaches to policy changes. Information gathered at the forum framed MeRDC's annual forum, The Future of Rural Maine, and influenced a policy paper for the new state governor calling for a state of Maine rural policy.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 5 Total	8,082	624,772	0.00	624,772	1,249,544

Consolidated Plan of Work Performance Goals 5-1 through 5-16

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:	8,082
People will contact business-assist organizations.		248
People will take part in networking opportunities.		1,579
People will report ease in understanding and accessing small business educational resources.		208
Enterprises will be retained/expanded.		156
New enterprises will be created.		214
Nonviable business will not be started.		42
Enterprises will transition to closure.		10
Enterprises will report increased revenues and/or decreased costs.		58
Jobs will be created.		104
People will write business plans.		112
People will write marketing plans.		106
People will write customer service plans.		69
People will develop record keeping systems.		68
People will adopt one or more business management practices (e.g. developing a pricing strategy).		930
Cooperative groups will be formed.		22
Collaborative groups will be formed.		17

Educational activities resulting from cooperative/collaborative efforts.	48
People will report mentoring other business owners.	2
People will present/facilitate educational activities at conferences, etc.	41
People will increase their confidence and participate in organizational or community affairs related to small business.	0
People will report increased understanding of personal leadership skills.	0
People will report increased understanding of others' leadership skills.	0
People will use leadership skills to bring about change in their businesses, and change in those with whom they interact.	38
People will use leadership skills to enhance small or home-based businesses in Maine.	38
People will be involved in public policy issues affecting small or home-based businesses in Maine.	0
Parent educators will adopt at least one new practice or skill in leading parenting classes or groups.	11
Parent educators will adopt at least one new practice or skill in working with parents.	88
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.	16
Adults will adopt at least one new parenting skill.	1,850
Adults will incorporate new information that enhances a child's development.	1,863
Child-care providers will adopt at least one new parenting skill.	255
Child-care providers will incorporate new information that enhances a child's development.	245
UMCE nutrition aides and educators will incorporate parent education materials into their programs.	42
The number of UMCE parent educators incorporating nutrition education materials into their programs.	27
The number of coalitions with UMCE involvement that support healthy child development and position parenting skills.	61
Adults will adopt a least one new growth-enhancing skill.	1,836
Adults will develop strategies to strengthen family and other important relationships.	1,517
The number of adults enhancing their knowledge and/or skills to provide necessary care for aging family members.	850
With UMCE involvement, coalitions that facilitate building systems needed for adults will engage in positive, growth-enhancing behaviors.	63
Youth will demonstrate and document workplace skills and competencies.	773
Youth will organize and maintain appropriate personal financial information.	539

Youth will make informed financial decisions.	589
Youth will take steps to achieve personal financial goals.	470
Youth will demonstrate and document the ability to work in diverse settings.	309
Youth will demonstrate the qualities necessary to run a successful business.	63
Youth will demonstrate the skills necessary to run a successful business.	420
Youth will demonstrate character development (self-discipline, managing feelings, self-responsibility, self-esteem, integrity, honesty, reliability, loyalty).	5,524
Youth will demonstrate the ability to resolve conflict through peaceful means.	1,190
Youth will make appropriate decisions and resolve problems effectively in their daily lives.	2,688
Youth will demonstrate tolerance and acceptance of differences (peaceful conflict resolution, social skills, cooperation, courtesy, communication, respect, fairness and justice).	589
Youth will volunteer in their communities.	2,437
Youth will demonstrate responsible citizenship (self-motivation, teamwork, contributions to group effort, community service/volunteering and accountability).	2,904
Youth will demonstrate empathy and concern for others (nurturing relationships, sharing, charity).	1,882
Youth will demonstrate the ability to lead others.	1,673
Youth will set appropriate and reasonable goals for themselves and others.	2,648
Youth will serve effectively on teams with peers and adults.	1,614
Youth will make healthy lifestyle choices.	2,107
Youth will use peaceful means to resolve disputes with others.	543
Youth will develop and use safe and peaceful means to resolve disputes in their communities (town, neighborhood and school).	582
Youth will develop mutually caring relationships with peers.	1,184
Youth will value differences in their peers.	1,946
Youth will engage others in being supportive in their communities.	836
Youth will help their communities embrace diversity.	1,082
Adults will participate in community-based efforts to reduce violence.	696
Youth will practice appropriate safety procedures in home, work, or recreational activities.	752
Adults/older youth will use developmentally appropriate hands-on, experiential educational methods.	2,245
Adults/older youth will demonstrate that they are responsible, contributing members of their community.	2,047

Adults/older youth will demonstrate essential communications skills.	2,063
Adults/older youth will teach peaceful conflict resolution skills.	875
Adults/older youth will teach essential communication skills.	904
Adults/older youth will demonstrate peaceful conflict resolution skills.	1,168
Adults/older youth will teach acceptance of differences.	1,365
Adults/older youth will demonstrate acceptance of differences.	1,823
Adults/older youth will demonstrate fairness and equity.	1,745
Number of adults/older youth who teach fairness and equity.	1,071
Number of adults/older youth who demonstrate leadership.	1,771
Number of adults/older youth who teach leadership.	861
Youth will identify personal goals, values and aspirations.	2,969
Youth will engage in activities related to their short- and long- term goals.	2,453
People gathering/organizing personal, financial information.	16
People making informed decisions.	15
People taking steps to achieve personal and goals.	16
Participants will increase contacts to community, social, or educational agencies to access needed resources or skills.	101
Participants will initiate job training/job seeking/literacy skills.	52
Participants will attain a driver's license, business license or other bridge to employment opportunities.	16
Participants will cease/decrease unhealthy or antisocial behavior, addiction or lifestyle patterns, including necessary or desirable weight reduction or weight gain.	69
Participants will express positive goals (aspirations) for the future.	111
Participants will reduce debt or save money.	52
Participants will demonstrate increasing order, organization or cleanliness in the home environment.	75
Participants will report or demonstrate increased positive communication in the home.	52
Participants will report or demonstrate increased positive feeding 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).	49
Participants will increase network of support persons/resources.	84
Participants will increase participation in school, church or community programs, events and opportunities, including volunteer efforts.	48
Participants will increase attempts to address needs and solve problems through use of community resources.	67
Participants will demonstrate positive reading habits by increasingly having books visible in the home.	56

Participants will demonstrate positive reading habits by increasingly having general reading materials (newspapers, magazines, etc.) in the home.	0
Participants will demonstrate positive reading habits by reporting increasing visits to a local library.	21
Participants will demonstrate positive reading habits by describing increasing reading activities (reading, finger rhymes, talking about books, etc.) with child/children.	49
Participants will demonstrate positive reading habits by describing increasing reading for self.	42
Participants will demonstrate positive reading habits by expressing increased enthusiasm for reading and ideas found in books.	43
Participants will demonstrate positive reading habits by describing/demonstrating increased positive family relationships through reading and reading-related activities.	47
Participants will demonstrate positive reading habits by contacting an agency to access literacy assistance for self.	0
Participants and volunteers will increase their confidence and participation in resolving family, organizational or community issues.	2,611
Participants and volunteers will increase their educational and leadership skills.	1,225
Participants and volunteers will use their educational and leadership skills to bring about change in their family, organization, or community.	1,186
Participants and volunteers will be involved in public policy issues affecting families, organizations and communities in Maine.	769

OUTPUT INDICATORS

Circulation of articles in news media	2,937,086
Estimated audience broadcast audience	45,500
Number of articles in news media	784
Number of audio-visual resources developed (video, slides, displays)	80
Number of consultations	5,455
Number of cooperative efforts initiated	22
Number of economic reports disseminated	72
Number of educational radio, TV & Internet programs given	168
Number of educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	84
Number of educational workshops, seminars, or conferences conducted by UMCE staff.	86
Number of enterprises assisted	761

Number of existing small business owners participating in UMCE educational programs	828
Number of groups formed (ad hoc or formally organized)	193
Number of home budget plans written	2
Number of home visits	3,880
Number of home visits by parent educators	1,048
Number of individual consultations held	406
Number of individuals participating in collaborative efforts	492
Number of individuals participating in cooperative efforts	198
Number of issues of newsletters/calendars written	388
Number of issues of newsletters distributed	12
Number of one-on-one consultations or trainings conducted by Extension program participants and volunteers.	104
Number of one-on-one consultations or trainings conducted by UMCE staff.	154
Number of organizations involved in collaborative efforts	172
Number of organizations involved in cooperative efforts	94
Number of participants in educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	1,957
Number of participants in educational workshops, seminars or conferences conducted by UMCE staff.	1,058
Number of people attending small business clinics	186
Number of people attending the workshops/events	23,633
Number of people attending the workshops/events (for the aides)	2,285
Number of people attending UMCE educational workshops	1,612
Number of people attending UMCE-sponsored networking programs	794
Number of people cooperatively and collaboratively planning educational events	1
Number of people involved in groups formed	2,555
Number of people receiving newsletters/calendars within a year's time	61,772
Number of people requesting business-related information	743
Number of people requesting home budgeting information	8
Number of potential small business owners participating in UMCE educational programs	327
Number of promotional/informational articles distributed	190
Number of promotional/informational articles written	52
Number of publications distributed	38,397
Number of publications written	37
Number of resources loaned	387
Number of small and home-based business owners participating in collaborative efforts	205

Number of small and home-based business owners participating in cooperative efforts	28
Number of small business clinics held	142
Number of Trade Area Analyses conducted	2
Number of UMCE educational workshops held	92
Number of UMCE-sponsored networking programs held	15
Number of volunteers trained	2,555
Number of workshops/events	1,219
Number of workshops/events (for the aides)	16

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Leadership Training and Development

Women’s Collaborative Leadership Project: UMCE is helping to create a sustainable network of women to support each other in their personal leadership journeys. This nine-month educational series provides a format for women to experiment with their full, competent, powerful selves to practice effective leadership. Women explore leadership issues in both their personal and professional lives by looking for models of leadership that are female-centered and supportive of working in collaboration with other women toward creating social change. The ongoing project is in its fifth year with 40 women currently in the network.

Summary of Impacts: Participants were surveyed at the end of the series and sixty-two percent indicated they had deepened their knowledge of personal power and had gained more understanding about their potency and the effect of their actions on others. Fifty percent of the women identified the ways in which their internalized oppression and sexism inhibits their leadership capacity; twenty-five percent are using their personal power in service of bringing about social change; and sixty-two percent feel connected to the larger network of women who are exploring leadership aspirations and issues. When queried, participants mentioned specific ways that they have integrated the program’s learning and insights into the way they lead. These include: “having a better sense of what my power feels like in my body”; “knowing the unease of feeling disempowered and knowing that I have a choice about whether or not to speak”; “speaking up more in groups, feeling okay about disagreeing with others and being less judgmental of others”; “aware of leading from a place of wholeness rather than a place of weakness.”

Scope of Impacts: State Specific

Key Themes: Impact of Change on Rural Communities, Community Development

Facilitating a Shared Future: UMCE played a role in the formation of Schoodic Futures, a nonprofit group formed in 1996 to promote community dialogue and planning in the face of the June, 2002 closure of the U.S. Naval Radio Station at Winter Harbor, Maine. The base formerly contributed \$11.5 million annually to local economic activity in six towns. UMCE continues to facilitate regular public forums on issues of concern and opportunities for volunteer involvement. We also play a critical role in helping the communities examine issues collectively and strategize around the role of development in the region.

Summary of Impacts: As a result of the efforts of Schoodic Futures, local residents understand the connection between communities, natural resources and the economy, and participate in local efforts to create a collective vision for the region. These efforts include plans by Acadia National Park to use the former Navy facilities for an environmental research and education center, the use of community assets to promote health, and evaluation of the potential benefits of regular ferry service between Bar Harbor and the Schoodic Peninsula. Mindful of its role as an incubator of community projects such as the highly successful “Schoodic Arts for All,” the Schoodic Futures steering committee helped create Friends of Schoodic, an organization to support Acadia National Park’s efforts to promote and protect the natural resources of the region. In addition, the town of Winter Harbor was able to work with a private development effort to accept, refurbish and sell or lease housing units once owned by the Navy.

Scope of Impacts: State Specific

Key Themes: Impact of Change on Rural Communities, Community Development

Communities for Tomorrow: Following a multistakeholder community planning effort coordinated by UMCE, citizens of the four towns on Mount Desert Island (MDI) published a detailed description of a “preferred future” in 1991. Over the next ten years, UMCE helped to create the effort known as *MDI Tomorrow*, which comprised a series of conferences to frame issues and opportunities for action, resulting in a variety of successful projects:

- Kid’s Corner Day Care, supported by employers and local government
- Island Connections, a multipurpose community organization assisting elders with daily needs
- Island Homes for Students, providing temporary housing for high school students estranged from their families
- MDI Community Health Plan, a health maintenance organization created by local employers and health care providers to promote health and manage insurance costs for employers and small businesses
- The Island Explorer, a propane-powered bus system, which begins its fourth year of operation in 2003

After a decade of explosive growth, citizens again sought community development assistance from UMCE. With our help, citizens developed a process and framed issues in six broad areas: community design and land use, transportation, housing, economic prosperity, community health and youth. An island-wide economic summit was held to identify public opinion on issues around living and working in the community. Over two hundred citizens contributed their thinking. The community conference also sought feedback on an updated vision statement for the future of Mount Desert Island and its communities. These positive results on Mount Desert Island prompted an effort to replicate the process in another fast-growing region of the county. UMCE and the Blue Hill Peninsula Chamber of Commerce helped host an initial meeting of citizens in their six-town region and formed Peninsula Tomorrow. In public meetings, citizens expressed support for the unique natural, cultural and human resources of the region. They also expressed concerns about the effects of over development on natural resources, the challenge of maintaining a healthy, year-round economy, and growing risks to the health of adults and young people. They elected to work on issues relating to the economy,

youth, community infrastructure, community health, land and marine resource conservation, and housing.

Summary of Impacts: *MDI Tomorrow* expanded bike and pedestrian pathways, developed markets for locally grown and harvested foods, developed town by town illustrations of how land-use ordinances shape rural and in-town areas and how they might be improved, and helped to produce *The State of the Island*, a report detailing issues leading to a housing summit meeting. The summit meeting resulted in cooperation between The Mount Desert Community Trust and MDI Housing Authorities on projects that will make up to 100 housing units available over the next five years. Peninsula Tomorrow working committees have stimulated a number of community projects, including an inventory of current and potential walking trails, a weekly activity night for teens, a clean air campaign, organization of an area roadside clean-up, creation of a youth council and an examination of recycling options.

Scope of Impacts: *State Specific*

Key Themes: Environmental Education

Forest Ecology for Teachers: Elementary education teachers often lack effective resources and training to help their students successfully meet the science and technology standards for Maine state learning standards, particularly those related to ecology. This year in response to repeated requests from educators, Tanglewood 4-H camp and Learning Center offered Forest Ecology Adventure for Teachers, a two-day experience designed to equip educators with the tools necessary to address the state learning standards through experiential environmental education techniques. Professionals and faculty from UMaine and Project Learning Tree joined Tanglewood's staff of environmental educators in facilitating the training. Grant funding was secured from the Maine Forest Service to assist in the development of this training and provide scholarships to Maine teachers.

Summary of Impacts: Participants learned about the Maine forest from a historical and cultural perspective. They learned the basics of forest ecology, map & compass techniques, tree identification skills, and forest, soil and wildlife habitat mapping. They discovered the connections between healthy classrooms and healthy forest ecosystems. One teacher who participated in the training and integrated the lessons into her sixth through eighth grade science curriculum reported that students completed a comprehensive Youth Forestry Camp and demonstrated their new knowledge through the creation of museum exhibits. The exhibits were assembled into a school-based museum for the community. Feedback received from the training was overwhelmingly positive and included the following comments: "The Earth Connections model has helped me understand the process of environmental education, and I believe it will help me as I design curricula for our school;" "Absolutely fantastic experience!"; "Please continue to offer this workshop in future years. It was a great success."

Scope of Impacts: *State Specific*

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

Parenting Education for Children, Youth and Families at Risk: In 1988, the Parents are Teachers, Too (PATT) Program was piloted in Waldo county. The program provides information, encouragement and support to first-time parents through home visits, parenting groups and access to educational materials and community resources, to enable parents to give their children the best possible start. In 1999, legislation was passed to create a statewide system of home visitation to first-time parents, funded by the Maine

State Bureau of Health. This legislation brought two national health and parenting education models (Parents as Teachers and Healthy Families) together with PATT into an integrated program. The program is now being offered through a diverse group of organizations, including a hospital, a regional community action program, a health services agency, the state's parent information and resource center and a public health nursing program.

The Knox County Teen & Young Parent Education (KCTYPE) project provides home visitation parenting education to approximately 86 first-time or teen families and includes a program specific to teen and young parents. The young parent component of the program was the first in the state to train all staff in both Parents as Teachers and Healthy Families models, thus setting the stage for the statewide multimodel training of home visitation providers.

Summary of Impacts: An evaluation carried out on the first five years of the PATT project showed positive outcomes for the children of participants, including reduced incidences of child abuse, more positive home environments, improved parent-child interaction and a reduction in low birth weights. In 2001, PATT received the Maine Public Health Association's Program Recognition Award. Since 1999, PATT staff have worked with local coalitions to help establish six new sites.

KCTYPE has focused on the identified health problem of child exposure to tobacco through maternal smoking during pregnancy, as well as child illness due to second-hand smoke. Outcome data indicates that 44 percent of enrolled caregivers or parents have reduced the use of tobacco and 33 percent of caregivers stopped using tobacco.

A five-year comprehensive evaluation of all home-visiting sites is underway, with indicators of child and family health, child development and injury and accident prevention being measured. Positive health outcomes for the children of participants have been documented in this first year of evaluation.

Scope of Impacts: State Specific

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

The Center for Parenting Education Web Site: Parents, educators and other adults who work with children want and need research-based, timely and concise information on critical parenting practices. Parenting educators face difficult demands as they teach and support parents. UMCE answered these challenges by combining and expanding the National Extension Parent Education Model and the National Extension Parent Educators' Framework to create the *Center for Parenting Education* Web site. The site provides concise and easy-to-understand information on child development and critical parenting practices, and provides research-based learning modules on critical education processes to enhance the skills of parenting educators. Substantial secondary materials and links to other resources are incorporated. The site is located at [<http://www.umext.maine.edu/parentcenter/intro.htm>].

Summary of Impacts: In January 2003, the *Center for Parenting Education* Web site was submitted for peer review and accepted for inclusion in the online federal *Children, Youth and Families Education and Research Network (CYFERNet)* project. In April 2003, the *Center for Parenting Education* Web site was the most frequently accessed resource in the Parent/Family section of CYFERNet. Also in 2003, the *Center for Parenting Education* Web site was used as one component in two national Extension teleconference trainings

titled *Emergence of the Professional Parenting Educator*. Maine's icons for the educator processes section of the Web site have been adopted by the national Extension System.

Scope of Impacts: Multi-state Extension - All

Key Themes: 4-H Youth Development, Life Skills

4-H Life Skills Model: UMCE's 4-H Youth Development program creates a learning environment where youth and adults have an opportunity to learn and practice life skills. The 4-H Life Skills Model defines 35 life skills based on the head, heart, hand and health themes of 4-H. Recently 60 Maine 4-H graduates (1999-2003) and 43 adult volunteers were interviewed via telephone and asked to identify the most important life skills they had acquired through their 4-H experience.

Summary of Impacts: Maine 4-H graduates and adult volunteers identified specific life skills learned and demonstrated as a result of their involvement in the 4-H program. Graduates articulated specific life skills developed in 4-H that they now use in their lives as college students and employees. The most frequently mentioned skills included leadership, communication, learning, taking responsibility, planning, record-keeping, goal-setting, cooperation, teamwork, community service and self-esteem. When adult volunteers were asked what life skills they believed 4-H youth gained from their involvement in 4-H, the most frequently mentioned responses included self-esteem, concern for others, cooperation, teamwork, problem solving, planning/organizing and taking responsibility.

Scope of Impacts: State Specific

Key Themes: Rural Communities, Jobs/Employment, Business Education

Entrepreneurship in Tribal Communities: Maine's Native American tribal communities are located in the most rural areas of the state. Tribal poverty and unemployment are higher than in nontribal communities in Maine. An affiliate program of UMCE, the Maine Rural Development Council, initiated a statewide project to encourage entrepreneurship among Maine's five Native American tribal communities. Partners included USDA Rural Development, the Maine Department of Transportation Civil Rights Division and the Four Directions Development Corporation—a native-focused community development corporation and financial institution. The Council convened and facilitated a listening session for Maliseet and Micmac people to engage with tribal leadership on issues and concerns related to small business development in these communities. The listening session addressed entrepreneurship within a context of tribal status and cultural aspirations. Twenty-five service providers and tribal community members attended the session.

Summary of Impacts: The session created project opportunities for partnership and networking among tribal, local and statewide community and economic development providers. The Northern Maine Development Commission, Aroostook County Action Program, and the Natural Resource Conservation Service are now providing technical assistance and business development services that are more tailored to tribal needs. The tribal entrepreneurship project is an ongoing statewide initiative.

Scope of Impacts: State Specific

Key Themes: Home-Based Business, Business Education

Maine Herb Growers Short Course: The demand for organically grown culinary and medicinal herbs increased steadily during the late 1990s. UMCE responded to numerous

requests for herbal business assistance by creating a thirteen-week course that focused on growing and processing herbs, developing a business plan and marketing herbal products. As part of the course, participants visited and learned from established herb growers, buyers and retailers throughout Maine. A total of 66 people received training over a two-year period.

Summary of Impacts: Two years after completion of the program, participants were surveyed to determine how the course influenced their business development decisions. Of the 24 who responded, eight (33 percent) had chosen to continue market research before proceeding with their business plans, four (16.5 percent) had written a business plan, and two (8.5 percent) had started new herbal businesses. Six (25 percent) individuals had changed the way they grew or processed herbs, and five (20.8 percent) had changed the way they marketed their herbal products. Four (16.5 percent) participants indicated that their businesses had either increased revenues or decreased costs since taking the course. Nine (37.5 percent) individuals decided not to start an herbal business as a result of what they learned in the course. Responses included these comments: "I feel like the course was personally tailored to my needs. It was more helpful than I could have hoped for. I took the course the summer before I planned to open up my business so the timing could not have been more perfect"; "The course gave [me] a good dose of reality which I reluctantly swallowed. The tough economics of growing and selling were well presented . . . Taking the course did convince me I didn't want to start an herb business exclusively."

Scope of Impacts: State Specific

Key Themes: Impact of Change on Rural Communities, Community Development

Cultural Heritage And Natural-Resource-Based Tourism Development: Due to the decline of natural resource industries in central-interior Maine, diversifying rural commerce through tourism has become the number one opportunity. UMCE is working in partnership with county and regional tourism councils to offer a series of educational programs on community approaches to cultural heritage and natural-resource-based tourism development. One hundred ten participants in eight workshops gained knowledge about the essential tasks and processes for successful community tourism-based economic development.

Summary of Impacts: Informal, post-workshop assessment through county and regional partnerships indicates that most participants have adopted strategic changes in their tourism plans. One specific change documented a shift from the tradition of general tourism marketing to an exploration of niche tourism markets. Approaches include eliciting community and regional dialogue about assets, strengths, weaknesses and values in order to define community-supported tourism development activities. As one participant remarked, "this program has opened my thinking about tourism possibilities, and that communities need to talk about tourism options that fit, and don't fit, with our rural quality of life."

Scope of Impacts: State Specific

Key Themes: Character/Ethics Education, Conflict Management

Family Issues - Violence Prevention: Human ecology researcher Dr. James Garbarino of Cornell University states that "Kids today are in trouble." Sharp increases in 45 of the 113 emotional and behavioral problems of the Child Behavior Checklist support Garbarino's assessment that many children and youth live in a socially toxic environment of which violence is one component. During the last two years, UMCE published four editions of

our applied research newsletter, *Family Issues*, on violence prevention. Each of the editions addressed a different facet of the effect of violence on children's lives, and each was widely distributed among Maine educators, including over 550 school guidance counselors.

Summary of Impacts: Guidance counselors were surveyed in 2003 to assess the influence of the publications on staff development, school programming, policies, practices and the lives of children. Forty counselors responding to the survey reported the following developments as a result of the information delivered in the newsletters:

- Students were made more aware of the impact of violence on themselves and others.
- Bullying and teasing programs were created or augmented.
- Safer climates were created in which students feel more supported, incidents are addressed quickly and effectively, and staff take bullying seriously.
- Staff development and civil rights training efforts were increased.
- Students became more willing to come forward, as the targets of violence and as the perpetrators;
- Peer mediation, peer training, tolerance teams and faculty-student committees were established, as well as student civil rights teams to monitor and address peer violence.
- Confrontations and incidents of violence were reduced.

As a result of this *Family Issues* series, staff and students are more informed and proactive, new programs and policies have been instituted to address and reduce violence, and schools have become safer and less toxic environments for children, youth and adults. One school counselor wrote, "These different publications give credence to the problems. The Cooperative Extension is a credible, reliable source and we pay attention when you bring up these issues."

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.
- The University of Maine Board of Agriculture continues to provide counsel and advice to UMCE on our agricultural priorities. The board represents commodity groups, organizations, state government and related industries. During 2003, the board met twice and provided specific recommendations to the University regarding staffing, research initiatives and agricultural programming priorities in times of extremely tight budgets. The Board also approved an updated long-range plan for the Maine Agricultural Center (MAC). MAC is a joint venture of UMCE and the Maine Agricultural and Forest Experiment Station dedicated to integrating outreach education and applied research in support of Maine agriculture.
- The Wild Blueberry Commission of Maine serves the needs of Maine's wild blueberry growers and processors and administers a recently expanded state wild blueberry tax of over \$1,200,000 for 2003. The commission employs a full-time executive director and appoints the Wild Blueberry Advisory Committee, which is composed of six growers and/or processors who define research priorities and make research recommendations. The committee also evaluates proposals on the CSREES research grant of \$220,000 and recommends funding based on priority needs of the wild blueberry industry. UMCE's blueberry specialist meets with the Wild Blueberry Commission throughout the year and includes commission updates in the Wild Blueberry Newsletter.
- UMCE continues to offer Pesticide Applicator Training (PAT) for applicator licenses and re-licensing credits for private and commercial applicators. Our activities are directed by the PAT Advisory Committee, a group that includes state agencies, pesticide distributors, professional applicators, educators and farmers. Approximately 170 individuals completed PAT training and over 200 individual pesticide recertification credits were given to farmers attending UMCE pesticide education programs in 2003.
- UMCE staff regularly meets with the Maine Potato Board, composed principally of potato farmers, to discuss priority issues and needs for Maine's potato growers. The Maine Potato Board education and research committee often supports UMCE research and Extension activities through grants. In 2003, the board defined priority needs with input from growers, processing interests, the Maine Department of Agriculture, Food and Rural Resources, USDA Agricultural Research Service, the Maine Agricultural and Forest Experiment Station, Soil and Water Conservation Districts and UMCE. As a result, the board provided funding for a UMCE-produced growers' newsletter, as well as for evaluation of canola as a rotational crop, evaluation of growth regulators and

- their potential to increase potato yields, a micronutrient survey and evaluation of the effects of paper fiber mulch on the water holding capacity of soil.
- The Maine Board of Pesticides Control—a group of seven individuals appointed by the governor—provides guidance for and input into UMCE’s Pesticide Applicator Training program as well as our efforts in school and homeowner 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 a knowledge of IPM and two citizens with environmental expertise.
 - The Forest Resources Advisory Committee (FRAC) includes representatives of forest resource agencies, university faculty, organizations and businesses. The Committee advises the forestry and wildlife departments of the UMaine College of Natural Resources, Forestry and Agriculture, with an emphasis on research and outreach. UMCE faculty are actively pursuing opportunities to enhance programming and grant funding through collaboration with FRAC partners.
 - The Maine Master Gardener program targets homeowners, garden hobbyists, and small or part-time horticultural business owners. Program development input is obtained from across the state through ongoing multiple needs assessment processes, including county Executive Committee advisory boards, current and past Master Gardener program participants, surveys from the general public and discussions amongst UMCE Home Horticulture staff. The Master Gardener/Home Horticulture team meets quarterly to review and refine the Master Gardener course and educational needs. This team establishes learning criteria, minimum competencies and volunteer expectations to create a consistent statewide program.
 - 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 this year signed an agreement to raise the funds necessary to purchase the Blueberry Cove Camp in Tenants Harbor, Maine, by setting a \$1.1 million fund goal for January 2005. Through this educational partnership UMCE greatly expands its educational programs for Maine people.
 - The Pine Tree State 4-H Foundation works in partnership with UMCE to enrich youth experiences through the Maine 4-H Youth Development program and shares input received from funding recipients, stakeholders and supporters with UMCE 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 youth development and the success of 4-H. The staff and trustees of the 4-H Foundation are actively engaged in joint work with UMCE through planning committees and task forces.
 - The UMCE Senior Companion Program (SCP) Statewide Advisory Board gives advice and assistance to UMCE staff with the goal of moving SCP toward continued growth. The board consists of between 20 and 25 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 board supports the project director in forming statewide policy, as well as planning and developing operational procedures and practices consistent with

- program policies. Additionally the board seeks input to share with SCP from local advisory committees and SCP representatives.
- The Maine Rural Development Council (MeRDC), an affiliate program of UMCE, regularly sponsors listening forums and community visitations to provide an opportunity for citizens, stakeholders and programmers to work together, listen and respond to one another's needs. In 2003, MeRDC forums focused on rural tribal entrepreneurship and place-based economic development. Assessing current and emerging issues were community leaders and representatives of local, state and federal agencies and nonprofit organizations invested in rural community capacity building. Community action agencies and members of the Maine State Legislature were also part of the community forums that contributed to state rural policy development for the new state administration. In addition, the MeRDC helped Western Maine Development Corporation secure a capacity-building grant from HUD through the Rural Housing and Economic Development program. This grant is enabling the corporation to invest in professional staff development, board and volunteer training, and organizational development for itself and other community-based organizations in the region. MeRDC convened a state Forum on Rural Community Development with a focus on community capacity building, rural development policy, and the promotion of Maine Rural Partners—the nonprofit organization that MeRDC became as a result of USDA Rural Development structural requirements. The Forum provided an opportunity for local organizations to present how they have developed place-based strategies and implemented local projects with assistance from MeRDC.
 - UMCE and Maine Sea Grant work together in a unique partnership to deliver educational programs and conduct applied research projects in coastal Maine relating to aquaculture, fisheries and ecosystem health. Marine Extension Team (MET) members have access to localized advice on programming via individual advisory committees that help direct the development of their individual plans of work. The advisory committees are generally made up of four to five stakeholders representing diverse backgrounds and often include community, industry and academic members. The process provides a mechanism to help MET members be more effective in their work and have a broader sense of the needs of their constituents. One example is the Maine Shore Stewards Advisory Board, which has representatives from the Maine Coastal Program, the Maine Department of Environmental Protection, the Maine Department of Marine Resources, Maine Sea Grant and UMCE. This board advises the work of the water quality/phytoplankton coordinator and the statewide marine educator, enabling collaboration, communication, awareness and the sharing of methods, techniques and technical resources. The advisory board has a subcommittee that contributes to, and oversees the production of, a newsletter that is published three times a year and distributed to 3,100 individuals. Other examples include the Maine Phytoplankton Monitoring Program Advisory Board, the Maine Softshell Clam Advisory Council, the Merrymeeting Bay Advisory Committee, the Microbial Source Tracking Project Advisory Committee and the Education Advisory Committee of the Wells National Estuarine Research Reserve.
 - The Maine Sea Grant Policy Advisory Committee helps set research priorities through the creation of guidelines for project funding and proposal review. The committee is

made up of representatives from marine industry associations, state agencies, research institutions and educators.

UMCE often responds to legislated educational needs in priority populations and subject areas:

- We are working with Maine food producers to help them understand their obligations under new food bioterrorism regulations and to develop processes to comply. Each food production facility must register, track and report their ingredients forward and backward one step in the supply chain.
- In 2002 the Maine state legislature mandated the formation of the IPM Council of Maine, which met for the first time this year. The council comprises stakeholders representing broad interests, ranging from natural resource conservation to community IPM, agriculture and forestry. The group is administered jointly by the Maine Department of Agriculture, Food and Rural Resources and UMCE, and is charged with identifying IPM priorities and goals for promoting and expanding IPM adoption in Maine.
- In 1996, the Maine Legislature created a new form of fisheries co-management involving fishermen directly in the creation of lobster fishery regulations. Fishermen participate through involvement within their region or “zone.” Since 2000, UMCE and Maine Sea Grant, in partnership with the Maine Department of Marine Resources, have worked with the Zone D Lobster Management Council. More information is available on page 33.
- In 1999 state legislation was passed to create a system of home visitation to first-time parents. This legislation brought two national health and parenting education models (Parents as Teachers and Healthy Families) together with our Parents are Teachers, Too program. The program is now being offered through a group of organizations that include a hospital, a regional community action program, a health services agency, the state’s parent information and resource center and a public health nursing program. More information is available on page 51 - “Parenting Education for Children, Youth and Families at Risk.”
- UMCE and the Maine Department of Agriculture, Food and Rural Resources implemented the Maine School IPM program in response to a new regulation by the Maine Board of Pesticide Control requiring IPM practice in schools. The program educates school staff about the hazards of pesticide exposure and introduces IPM as a comprehensive approach to prevent pests from reaching unacceptable levels. The program continues to help schools make the transition from conventional pest control to IPM, contributing to safer school environments.

UMCE learns directly and indirectly about stakeholders’ issues and needs by collaborating with other agencies and organizations. Here are some of UMCE’s collaborative efforts:

- The Maine Organic Farmers and Gardeners Association (MOFGA) is “an internationally recognized advocate for food production that enhances and protects the ecological as well as economic vitality of rural communities.” Their primary mission is to help farmers and gardeners grow organic food.¹ UMCE partners with MOFGA in

¹ Maine Organic Farmers and Gardeners Association home page, <http://www.mofga.org/> (accessed February 11, 2004).

multiple of ways. We collaborate on the FarmLink program, matching farmers wishing to leave farming with new farmers wishing to start; and on a two-year research project exploring the utilization of food residual as a soil amendment for summer cover crops on organic vegetable farms. For more information on this research see page 7.

- UMCE is working with the New American Sustainable Agriculture Project to help recent immigrants learn to grow their traditional favorite vegetables in Maine. See *New Agricultural Market Goats* on page 8.
- UMCE partners with the Maine Farmland Trust to deliver statewide workshops titled *Farmland Preservation: How To Preserve the Family Farm*, which address strategies to help keep farmland productive and avoid the enormous pressure to develop family farmland.
- UMCE participated with farmers from three rural Maine counties, regional Economic Development Councils, and the UMaine Department of Resource Economics and Policy to explore a cooperative marketing association for the region known as the Maine Highlands. Successful grant funding efforts enabled the group to formalize as the Maine Highlands Farm Products Promotion Group. More information is available on page 7.
- UMCE provides specialized business assistance to Maine farmers as a partner in the Maine Farms for the Future program, a statewide economic development strategy targeting farm businesses. The program is sponsored by Coastal Enterprises Incorporated, a nonprofit community development corporation. More information is available on page 8.
- UMCE is working with Farm Fresh Connection, a program of the Maine Sustainable Agriculture Society that supports the use of locally grown fruits and vegetables in Maine restaurants and food service operations. Our role is to educate producers in methods to reduce the risk of microbiological contamination of their produce.
- The Maine Agricultural Center (MAC) is a partnership between UMCE and the Maine Agricultural and Forest Experiment Station. MAC's function is to promote, coordinate and manage joint faculty positions that support agriculture in Maine. MAC awards funds for faculty projects in Extension education and applied research that address the high priority needs of Maine agriculture. To date, over \$135,000 has been awarded. MAC leadership serves as staff to the University of Maine Board of Agriculture. This board is legislatively empowered to advise the Chancellor of the University of Maine System and the President of the University of Maine regarding the University's support of Maine agriculture.
- UMCE is part of the Northern New England Seafood Alliance, which includes partners from the Maine Department of Agriculture, Food and Rural Resources, the Maine Department of Marine Resources, UMaine, and the Maine seafood industry. The Alliance offers three-day seafood HACCP (Hazard Analysis and Critical Control Point) courses to seafood processors. This year part of the course available on the Internet at <http://seafoodhaccp.cornell.edu> .
- UMCE participated in a coalition of hospitals and health care organizations in Maine to implement Move and Improve, an annual 12-week statewide physical activity wellness program sponsored by Eastern Maine Medical Center. More information is available on page 16.
- UMCE's Eat Well Nutrition program aides provide nutrition education to limited-income individuals, including children, through home visitation or in group settings.

Groups are formed as the need arises at food pantries, community rooms in housing complexes, Head Start centers and many other locations throughout Maine. More information is available on page 20.

- This year UMCE worked with the Micmac tribal dietitian to create a series of nutrition lessons centered around gardening that incorporated the traditional practice of intergenerational instruction between youth and elders. More information is available on page 20.
- A partnership of UMCE and the Maine Sea Grant program, the Maine Shore Stewards is a statewide umbrella organization for coastal environmental monitoring programs. The stewards' work encompasses bacterial monitoring of shellfish and recreational waters in support of public health, phytoplankton monitoring, and beach profiling to assess geologic changes.
- UMCE and Maine Sea Grant are addressing coastal access issues through the Working Waterfront Access Coalition. The coalition comprises many partners, including the Maine State Planning Office, Coastal Enterprises Inc., the Maine Department of Marine Resources, the Maine Marine Trades Association and others. More information is available on page 34.
- UMCE partnered with other northeast Extension programs and the floriculture industry trade associations from the six New England states to produce the New England Greenhouse Conference. This year's conference was attended by 2,000 growers and industry representatives.
- UMCE and the Maine State Prison have developed a horticulture vocational training program for inmates at a state medium- and maximum-security detention facility. More information is available on page 35.
- During the past year, UMCE strengthened existing linkages and developed new partnerships with small and home-based business owners and other business-assist organizations in Maine. These include the following:
 - Maine Entrepreneurship Working Group
 - Business Outreach on Community Radio
 - Maine Rural Development Council Native American Entrepreneurship Project
 - National Home-Based & Micro-Business Design Team
 - Incubator Without Walls Entrepreneurship Programs
 - Cultural and Nature-Based Tourism Development Project
- As an affiliate program of UMCE, the Maine Rural Development Council is working to initiate a statewide project to encourage entrepreneurship among Maine's five Native American communities. Partners include USDA Rural Development, the Maine Department of Transportation Civil Rights Division and the Four Directions Development Corporation—a native-focused community development corporation and financial institution. More information is available on page 53.
- UMCE is working in partnership with county and regional tourism councils in central Maine and has conducted a series of educational programs on community approaches to cultural heritage and natural resource-based tourism development. More information is available on page 54.
- UMCE's 4-H Youth Development faculty and professionals are involved in many short-term and ongoing collaborations with local and statewide youth-serving institutions, agencies and organizations. These collaborations have included schools, YM-YWCAs,

Boys and Girls Clubs, Boy and Girl Scouts, FFA, recreation programs and youth centers, among others. Resulting programs have addressed issues such as bullying and teasing, valuing diversity, providing after-school programs and character education.

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

Acadia National Park	Cumberland County Extension Association
Agricultural Council of Maine (AGCOM)	Darling Marine Center
Androscoggin County Commissioners	DMR Lobster Zone Management Committees A and B
Androscoggin County Extension Association	Down East Community Hospital
Androscoggin Healthy Families	Downeast Institute for Applied Marine Research and Education
Androscoggin Home Care & Hospice	Downeast Lobsterman's Association
Aroostook County Action Program	Eastern Area Agency on Aging
Aroostook Agency on Aging	Eastern Association of Veterinarians in Aquaculture
Aroostook County Commissioners	Eastern Maine Development Corporation
Aroostook County Community Action Program	Eastport Health Care Center
Aroostook County Extension Association	Education Advisory Committee of the Wells National Estuarine Research Reserve
Bangor Area Visiting Nurses	Eleanor Widener Dixon Memorial Clinic
Bangor State Fair Administration and Board	Farm Fresh Connection
Bigelow Laboratory for Ocean Sciences	First Congregational Church of Calais
Blue Hill Heritage Trust	First Congregational Church of North Anson
Blue Hill Peninsula Chamber of Commerce	Forest Resources Advisory Committee
Bucksport Community Concerns	Four Directions Development Corporation
Bureau of Elderly and Adult Services	Franklin County Commissioners
Casco Bay Estuary Program	Franklin County Extension Association
Catholic Charities of Maine	Friends of Acadia
Center for Marine Conservation	Friends of Casco Bay
Central Maine Sheep Breeders Association	Friends of Medomak Watershed
Chewonki Foundation	Friends of Schoodic
Coastal Conservation Association	Georges River Shellfish Management Committee
Coastal Economic Development	Good Shepherd Food Bank
Coastal Enterprises, Inc.	Governor's Task Force on Fishing Vessel Safety
Coastal Swim Beach Committee	Great Northern Paper Company
Cobscook Bay Fishermen's Association	Great Works Watershed Coalition
Cobscook Bay Management Area Group	Gulf of Maine Aquarium
Cobscook Bay Resource Center	Gulf Of Maine Council on the Marine Environment
Communities for Children	
Community Health and Counseling	
Conservation Law Foundation	
Cove Brook Watershed Council	
Craig Brook National Fish Hatchery	
Cumberland County Commissioners	

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
Head Start
Healthy Families Maine Network
Healthy Island Project
Holt Research Forest
Island Institute
Indian Township
Island Connections
Island Homes for Students
Island Institute
Islesboro Island Trust
Kaufman Foundation
Kennebec County Commissioners
Kennebec County Extension Association
Kennebec Plaza
Knox County Children's Services
Knox County Commissioners
Knox County Extension Association
Laudholm Trust
Lincoln County Commissioners
Lincoln County Extension Association
Lobster Conservancy
Lobster Zone Management Council
MDI Tomorrow
Maine Agricultural and Forest Experiment
Station
Maine Agricultural Center
Maine Alternative Poultry Association
Maine Aquaculture Innovation Center
Maine Beef Industry Council
Maine Beef Producers Association
Maine Beef Producers Council
Maine Bureau of Mental Health
Maine Bureau of Parks and Lands
Maine Center on Aging
Maine Centers for Women, Work and
Community
Maine Children's Task Force
Maine Coalition on Aging Initiative
Maine Coastal Program
Maine Community Foundation

Maine Correctional Center
Maine Cranberry Growers Association
MDI Housing Authority
Maine Dairy and Nutrition Council
Maine Dairy Industry Association
Maine Dairy Promotion Board
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 Human Services
Maine Department of Inland Fisheries and
Wildlife
Maine Department of Labor
Maine Department of Marine Resources
Maine Department of Professional and
Financial Regulation
Maine Department of Transportation Civil
Rights Division
Maine Division of Quality Assurance and
Regulations
Maine Environmental Education
Association
Maine Fair Association
Maine Farm Bureau
Maine 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	National Home-Based and Micro-business Design Team
Maine Parent Federation	National Sea Grant Extension Growth Committee
Maine Phytoplankton Monitoring Program Advisory Board,	Natural Resources Conservation Service
Maine Public Health Association	Nature Conservancy
Maine Resource, Conservation and Development Associations	NE Farmed Fish Health Management Workshop Planning Committee
Maine Rural Partners	New American Sustainable Agriculture Project
Maine Science and Technology Foundation	New England Floriculture, Inc.
Maine Sea Urchin Zone Council and Lobster Zone Council D	New England Regional Monitoring Committee
Maine Seacoast Mission	New England Vegetable and Berry Growers Association
Maine Shore Stewards	New Moon Magazine
Maine Shore Stewards Advisory Board	NOAA Habitat Restoration
Maine Small Business Development Centers	North Atlantic Marine Alliance
Maine Soft-shell Clam Advisory Council	Northeast Aquaculture Conference and Expo Planning
Maine State Department of Inland Fisheries and Wildlife	Northeast Center for Food Entrepreneurship
Maine State Florists and Growers Association	Northeast Consortium
Maine State Housing Authority	Northeast Loggers' Association
Maine State Legislature	Northeast Regional Aquaculture Center
Maine State Planning Office	Northeast Sustainable Agriculture Research and Education
Maine State Pomological Society	Northeastern Regional Aquaculture Center's Technical Industry Advisory Council
Maine State Prison Farm	Northern Maine Development Commission
Maine State Prison	Northwest Atlantic Marine Alliance Board of Trustees
Maine Tele-Medicine Service	Notre Dame De Lourdes
Maine Urchin Harvester's Association	Ornamental Horticulture Council
Maine Vegetable & Small Fruit Growers Association	Orono Land Trust
Margaret Chase Smith Center for Public Policy	Oxford County Commissioners
Marine Conservation Center	Oxford County Extension Association
Marine Explorers Club	Partners for Ending Hunger
MDI Community Health Plan	Passamaquoddy Indian reservation
Meals for ME	Peninsula Tomorrow
Merrymeeting Bay Advisory Committee	Penobscot Bay Marine Volunteers
Microbial Source Tracking Project Advisory Committee	Penobscot Bay Network
Mount Desert Community Trust	Penobscot County Commissioners
Mount Desert Island Biological Laboratory	Penobscot County Extension Association
Mount Desert Island Sheltered Workshop	

Penobscot River and Bay Institute
Penobscot River Keepers
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
Schoolic 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 Kennebec Child Development
Corporation
State of Maine's Beaches Conference
Steering Committee
Stonington Fisheries Alliance
Sunrise County Home Care Services
Sustainable Agriculture Society
United Way of Maine
University of Maine Research Council
University of New Hampshire
USDA APHIS Veterinary Services
USDA Infectious Salmon Anemia
Standards Committee
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 Commissioners
Washington County Community College
Waterfront Management Committee
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 2000–2004 Plan of Work. In the Plan of Work the process is titled *Merit Review Process*.

Section D

Evaluation of Multistate, Multi-Institutional, Multidisciplinary and Joint Research and Extension Activities

The University of Maine Cooperative Extension (UMCE) collaborates with appropriate in- and out-of-state partners and institutions that enhance our programs and extend the effectiveness of our efforts to educate Maine citizens. We engage in research and maintain research partnerships that connect our clients with practical, usable information. Many of the programs discussed here are described in greater detail in Section A of this report, as noted by page references.

Multistate Extension

Web-Based Pasture Management Course: UMCE's livestock team has developed a Web-based training program on pasture management to help dairy producers reduce feed costs and design rotational pasturing plans for other animals. The program, also available on CD-ROM, consists of seven lessons each with an electronically submitted quiz. Individuals completing the course receive a certificate of completion. The course will be used as an in-service training resource for the Maine Natural Resources Conservation Service this year. Livestock producers from Pennsylvania, Indiana, South Dakota and Vermont have enrolled in the course.

Dairy Goat Crossbreeding Techniques: UMCE livestock specialists conducted a workshop for northern New England goat producers on the advantages of crossbreeding using artificial insemination techniques. The event took place in New Hampshire and focused on the financial benefits of crossbreeding dairy goats with a new meat goat breed to expand herds. UMCE faculty and a professional goat breeder presented the workshop to ten regional dairy and meat goat operations.

Production and Marketing of Specialty Meat: Extension staff conducted four multistate farm tours to present new ideas for the production and marketing of meat products to goat and sheep producers. The tours took place in Maine and New Hampshire. More information is available on page 8.

Library of Educational Links; Forestry and Natural Resources: UMCE has created a Web-based *Library of Educational Links* devoted to forestry, wood and wildlife topics in which users can link to hundreds of important resource and regulatory sites. During the first four months the site received over 9,000 visits from across the U.S. [<http://www.umaine.edu/umext/forestry/index.htm>].

Yankee Woodlot Forestry Camp: This year UMCE, the Maine Forest Service, and the Small Woodland Owners Association of Maine sponsored the 20th annual Yankee Woodlot Forestry Camp to teach forestry management for long-term sustainability.

Participants from eight states attended the camp. More information is available on page 36.

The Center for Parenting Education Web site: This year UMCE created the *Center for Parenting Education* Web site which provides information on child development and critical parenting practices and provides research-based learning modules on critical education processes. More information is available on page 52.

Turn Beauty Inside Out is a collaborative public awareness and community development program focusing on body image, self-esteem, media literacy and leadership development for girls and women. This year as part of our ongoing statewide gender education program, UMCE held four regional conferences in Maine and New Hampshire on the negative influence of media in the lives of girls and women. The conferences also included methods for organizing community groups around gender education issues.

Food Processes and Product Reviews: During 2003 we performed one hundred thirty-five food process and product reviews for individuals in Maine and New Hampshire who are involved in home-based food processing. We supported the development of new processed food products through educational programs, product and process analysis, technical support and the hiring of an additional food science specialist to conduct research and educational programs in new product development and processing.

Key Health Issues for Salmon Aquaculturists: UMCE, in collaboration with Maine Sea Grant, the Maine Aquaculture Innovation Center, the Maine Aquaculture Association and local industry leaders sponsored the 11th annual *New England Farmed Fish Health Management Workshop* to address key issues in salmon farming. Experts were invited from Norway, Scotland, Canada and the U.S. to speak on topics including the control of infectious salmon anemia and the health-related effects of marking salmon.

Multistate Extension and Multi-Institutional Extension

Integrated Pest Management in Schools: UMCE, in cooperation with the Maine Department of Agriculture, Food and Rural Resources, implemented the Maine School Integrated Pest Management program to educate public school staff about the hazards of pesticide exposure. The program introduced IPM as a comprehensive approach to preventing pests from reaching unacceptable levels in schools using low-risk control strategies. With the start of the current school year, every school administrative district in Maine is required by law to have a written IPM policy and an IPM coordinator to oversee pesticide use. Educational materials for the program were written with input from the University of Vermont and the University of New Hampshire, and developed by UMCE for use in all three states. Train-the-trainer workshops were held in Maine, New Hampshire and Vermont.

New England Greenhouse Conference: UMCE worked with floriculture industry trade associations from the six New England states to present the New England Greenhouse Conference. The conference was attended by 2,000 growers and industry representatives and included a trade show as well as workshops on crop selection and production, marketing, business management and pesticide management. The conference included speakers from the Universities of Connecticut, Georgia, Massachusetts, Minnesota,

Maine, New Hampshire, and Vermont; North Carolina State University, Clemson University, Cornell University and Pennsylvania State University.

Farmer-Led Research: UMCE and the University of New Hampshire were recently awarded a Northeast Sustainable Agriculture Research and Education professional development grant to provide training to farmers on research methods and techniques. The project will be directed towards Extension educators and other agricultural professionals working directly with farmers in Maine, New Hampshire and neighboring states. Workshops have been held in both states that addressed research issues important to farmers, including how farmers can translate production and conservation problems into researchable questions, how to design experiments that are scientifically sound yet manageable, and how to analyze on-farm experimental data.

Greenhouse IPM: In 2003, IPM educators from the Universities of Maine, New Hampshire and Vermont planned and conducted greenhouse IPM workshops in each state. The workshops provided hands-on training to participants in pH management, on-site disease testing, pest and disease management for herbs, scouting techniques and abiotic problems. The program was based on a survey of grower needs conducted in the previous year.

Fisheries Education Series: To inform the fishing industry and coastal communities about issues relating to marine mammal protection, fisheries management, pollution abatement and habitat protection, UMCE and Maine Sea Grant offered workshops on by-catch reduction in the groundfish fishery, the use of marine protected areas in fishery management and an introduction to rights-based fisheries management. These three workshops were part of a northeast regional fisheries enhancement project involving Sea Grant programs from Connecticut, Maine, New Hampshire and Rhode Island.

Joint Research and Extension

Knotless Trawl-net Evaluation: UMCE and Maine Sea Grant have collaborated on a project to evaluate the selective properties of knotless mesh used in the codend of a trawl-net, as compared to a codend made of standard knotted twine. The research is being conducted with local fishermen and results show that the new net design helps to reduce by-catch, minimizes mesh size expansion, and improves energy efficiency by minimizing drag.

Apple Variety Research: UMCE and Maine Agricultural and Forest Experiment Station researchers are working to provide economically viable alternatives to traditional soft apple varieties, which are losing market share to varieties with better storage characteristics. The work is being done at Highmoor Farm, a jointly operated research facility.

Evaluation of Native Ornamental Plants: UMCE and UMaine Plant, Soil and Environmental Sciences department researchers are evaluating native ornamental plants as landscaping alternatives to opportunistic invasive species, which destroy diversified habitats used by native plants and animals. Trials are being conducted at multiple locations in Maine, including Acadia National Park.

The Value of Food Processing Waste: UMCE and UMaine Plant, Soil and Environmental Sciences department researchers are evaluating the value of food

processing waste on cover crop growth in vegetable farming. This work will help eliminate material from the waste stream, use previously wasted nutrients, and economically benefit small farmers. More information is available on page 9.

Soil Amino Nitrogen Test: A team of UMCE scientists is working with the UMaine Department of Plant, Soils and Environmental Sciences to research the use of a new soil test to test the potential for corn to respond to supplemental nitrogen. The Soil Amino Nitrogen Test may be able to replace the more expensive presidedress soil nitrate test, which many Maine growers continue to use. Work is planned to develop a preplant soil nitrate test and determine a rainfall and temperature decision tree matrix to help growers know when to apply additional nitrogen.

Intervention to Improve Nutrition: UMCE is collaborating with UMaine Department of Food Science and Human Nutrition researchers and 13 state partners to identify the eating habits of limited-income young adults and apply the stages-of-change model as an intervention strategy to improve nutrition practices. Over 200 young adults were recruited to participate in our research efforts.

Cultural and Heritage Tourism Development: UMCE and the UMaine Department of Resource Economics are working to integrate elements of successful rural entrepreneurship research into cultural and heritage tourism development models. Successful implementation of these models will provide an economic stimulus for the Highlands region of Maine as well as an example for other regions. More information is available on page 54.

Multi-Institutional Extension and Joint Research and Extension

Genetically Resistant Goats: UMCE and Bowdoin College are conducting research on the production of Katahdin hair sheep as an economically and environmentally viable enterprise. This work will have significant biomedical impact though its success in identifying and breeding animals that are genetically resistant to internal parasite infections. Katahdin sheep also minimize animal maintenance costs for producers, since they do not need shearing.

Multistate Extension, Multi-Institutional and Joint Research and Extension

National Plant Disease Diagnostic Network: UMCE's Pest Management program has partnered with 11 other northeastern universities to form the Northeast Plant Diagnostic Network, which has linked with the four other regional networks to form the National Plant Disease Diagnostic Network. The national network will define a distribution system to detect and identify pests and pathogens that have been deliberately introduced into agricultural and natural ecosystems, and create links to appropriate responders and emergency managers.

Food Handling for Produce Farms: UMCE is part of a six-state consortium of institutions that is helping bring good agricultural practices (GAP) and skills to popular "pick your own" produce farms in New England, in order to reduce the risk of contamination by detrimental microorganisms. Beyond education and GAP certification for growers, the program contains a research component that will analyze samples for microbiological contamination in a pre- and post-GAP study of practices and results. More information is available on page 15.

Nonpoint Source Pollution Research: UMCE, Maine Sea Grant and the University of New Hampshire are engaged in coastal water quality research that the Maine Department of Marine Resources and community officials use to identify and address dangerous nonpoint sources of pollution on coastal swim beaches.

Good Agricultural Practices for Home Gardeners: UMCE is working with Extension programs from six New England institutions in a research project that will define the need to integrate food safety information and apply good agricultural practices (GAP) to home gardening activities. The project will use Master Gardener volunteers to sample produce grown in home and community gardens and assess it for microbiological contamination before and after GAP implementation. In the United States, it is estimated that \$14 billion worth of food is grown in home and community gardens each year.

European Corn Borer has become a major pest problem for Maine potato growers as its population and range have dramatically increased. Through an increased trapping effort, growers were able to avoid the crop losses that could have resulted from these population increases. In a joint project with the University of Maine Agricultural and Forest Experiment Station and Cornell University, UMCE has begun to explore biocontrol methods to manage European corn borer populations in potatoes, which would reduce the damage without the use of chemicals.

Multidisciplinary Extension

Nutrition and Gardening for Micmac Tribal Youth and Elders: UMCE worked with tribal youth and elders in a project that helped teach nutrition and gardening while improving cultural connections between the two generations. More information is available on page 20.

Master Gardeners and Watershed Stewards: In the spring of 2003, volunteers from our Master Gardener program partnered with a regional watershed stewards group to design and create a shorefront buffer for water quality protection that is both beautiful and functional. The Pushaw Lake Watershed Survey conducted by the stewards revealed that many shorefront properties lack buffer areas sufficient to filter contaminants from storm water runoff. Working in partnership with a local landowner, the groups designed and installed a pilot buffer that contained a combination of tree canopy, shrubs, groundcover, and duff layers to absorb and filter runoff while preventing further erosion of the soil. The site has already generated interest in more plantings on Pushaw Lake for next season—a trend that may help stabilize the water quality of this valuable resource.

Maine Herb Growers Short Course: UMCE created a thirteen-week course on growing and processing herbs, developing a business plan and marketing herbal products. The course was designed for those wishing to start a new business or expand an existing one. More information is available on page 53.

Small-Scale Greenhouse Business School: UMCE offered a small-scale greenhouse business school for people considering starting a greenhouse business as well as those who were already in a horticulture-based business but looking to add a greenhouse operation. Fifteen people took the 10-session course. The course addressed operational strategies, greenhouse structure, plant management, marketing and business management.

Section E
Integrated Research and Extension Activities: Multi-state
U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Multi-State Extension Activities and Integrated Activities
 (See Summary of Multi-State Activities in Section D)

Institution: University of Maine Cooperative Extension
State: Maine

Check one:

- Multi-State Extension Activities**
 Integrated Activities (Hatch Funds)
 Integrated Activities (Smith-Lever Act Funds)

Actual Expenditures

Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>New England Consortium Activities</u>					
<u>-Faculty/Staff Time on New England Activities</u>	<u>\$40,383</u>	<u>\$60,381</u>	<u>\$76,911</u>	<u>\$82,772</u>	
<u>-Additional Staff Time on New England Activities</u>	<u>\$20,825</u>				
<u>-Additional Staff Time on Multi-State Activities</u>	<u>\$93,178</u>	<u>\$136,936</u>	<u>\$72,692</u>	<u>\$72,090</u>	
<u>Total Multi-State Activity Expense</u>	<u>\$154,386</u>	<u>\$197,317</u>	<u>\$149,603</u>	<u>\$154,862</u>	

Lavon L. Bartel March 29, 2004
 Director Date

Section F
Integrated Research and Extension Activities: Integrated
U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Multi-State Extension Activities and Integrated Activities
 (See Summary of Integrated Activities in Section D)

Institution: University of Maine Cooperative Extension
State: Maine

Check one:

- Multi-State Extension Activities**
 Integrated Activities (Hatch Funds)
 Integrated Activities (Smith-Lever Act Funds)

Actual Expenditures

Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>Contribution to Maine Agricultural Center</u>	<u>\$20,000</u>	<u>\$25,000</u>	<u>\$25,000</u>	<u>\$25,000</u>	<u> </u>
<u>Faculty with Joint Extension/Research Appointments</u>	<u>\$129,718</u>	<u>\$179,596</u>	<u>\$282,042</u>	<u>\$293,425</u>	<u> </u>
<u>Faculty Engaged in Integrated Activities</u>	<u> </u>	<u> </u>	<u>\$109,289</u>	<u>\$121,996</u>	<u> </u>
<u>Administrative Support</u>	<u> </u>	<u> </u>	<u>\$42,391</u>	<u>\$49,192.62</u>	<u> </u>
<u>Total Integrated Activity Expense</u>	<u>\$149,718</u>	<u>\$204,596</u>	<u>\$458,722</u>	<u>\$490,113</u>	<u> </u>

Lavon L. Bartel March 29, 2004
 Director Date