



*Annual Report of
Accomplishments and Results
2004*

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A Member of the University of Maine System

**The University of Maine Cooperative Extension
Annual Report of
Accomplishments and Results
2004**

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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

Maine agriculture produces more than \$450 million in market value commodities and is responsible for \$1.2 billion in economic activity. The industry is made up of two distinct sectors: large commercial farms, and small integrated, and diverse farms. Ninety-five percent of farms in Maine are identified as “small farms” by the USDA (annual sales less than \$250,000). Small farm management is increasingly complex, with smaller profit margins and more resources necessary to inform productive decisions. Farmers face many challenges around price volatility, animal health, food safety, financial management, vanishing infrastructure, regulation, environmental concerns, and biotechnology. The University of Maine Cooperative Extension (UMaine Extension) provides research and educational information to inform Maine farmers on these and other issues, tailored to the diverse needs of both large- and small-scale agriculture. During 2004 we held more than 230 workshops and 2,000 consultations to address agricultural concerns of dairy, beef and poultry producers, greenhouse operators, veterinarians, and youth.

Dairy, Beef, and Poultry

There are more than 2,500 Maine farms that raise livestock, generating more than \$241 million in annual sales. Beef, poultry, and their products account for 52 percent of all Maine agricultural sales, with milk cows and other dairy products from cows accounting for 19 percent of sales.

While commodity milk prices have rebounded in New England from previous years, dairy farmers face other issues that challenge their profitability and survival. Dairy producers continue to experience annual losses due to mastitis and other animal diseases. This year, UMaine Extension responded to production and profitability declines that were traced to mycotoxin levels in small grain stores. We worked with effected producers to monitor mycotoxin and developed recommendations to reduce levels and stem losses. Another special programming emphasis was dedicated to issues unique to existing and transitioning organic dairy producers. Program topics included marketing organically produced dairy products, organic production techniques, and maintaining forage control. We also co-sponsor the annual Maine Dairy Seminar which brings nationally known speakers to Maine to address dairy health problems, and communicate emerging research results to producers; and partnered with the University of Maine Agricultural and Forest Experiment Station, the universities of New Hampshire, Vermont, and Connecticut, the Maine Department of Agriculture, Food and Rural Resources, and the Maine Dairy Industry Association to host the New England Dairy Seminar. Each annual conference brings together dairy experts and researchers to educate and connect with dairy producers, consultants, educators, and agribusiness representatives from the region.

Continued expansion of the organic dairy industry has led to new initiatives, including the Farmer Research Education Program (FREP), a project funded by USDA’s Sustainable Agriculture and Research Education (SARE) program. This project helps create teams of farmers, research-scientists, and Extension staff who work together to examine new production ideas through farmer-initiated projects. Farmers are involved in the whole process from

evaluating issues to implementing research trials on their farms. FREP workshop topics included forming farmer research groups, design of scientifically sound on-farm experiments and data analysis. In conjunction with the workshops, we have provided up to \$2,000 for each of 13 (FREP) groups. to buy research supplies, analyze samples, and hire additional labor. Participants have initiated on-farm projects in Maine, New Hampshire, Connecticut, Massachusetts, New York, Vermont, and Pennsylvania.

The Maine Cattle Health Assurance Program (MeCHAP) continued to grow in scope and impact during 2004 by completing core risk assessment on nearly 30 percent of Maine's dairy herds. MeCHAP is part of a 13-state alliance that offers disease prevention programs, diagnostic testing and educational programs to protect farm profits, the food supply, and public health. In 2004, a beef module was added to the MeCHAP program. MeCHAP is a cooperative project of UMaine Extension, the University of Maine Agricultural and Forest Experiment Station, the Maine Department of Agriculture, Food and Rural Resources, practicing veterinarians, and Maine livestock producers.

We experienced continued program success in the area of marketing of naturally raised Maine beef in 2004. We worked with the Maine Department of Agriculture, Food and Rural Resources, and the Wolfe's Neck Farm Foundation to help small- and medium-sized farms reach upscale markets in a cooperative manner by producing a consistent, high-quality product under a common label. Producers in northern Maine can now finish beef with low-cost local grains and by-products and cooperatively market their product with that of farmers in other regions under one high-quality product label. The partnership guides new and existing producers in defining and meeting consistency standards, and setting certification guidelines.

UMaine Extension and the Maine Beef Producers Association sponsored the annual Maine Beef Conference in 2003 (FY2004). The conference, which was attended by 83 Maine producers, focused on feeder calf value and value-added marketing of organic and non-organic cattle. Sessions addressed successful feeder calf marketing in different regions, producing calves with marketable traits using genetic information and health protocols.

Maine is experiencing increased interest in small-scale poultry production, processing, and marketing. To address this emerging trend, a team of UMaine Extension staff, Maine Alternative Poultry Association members and the Maine Organic Farmers and Gardeners Association developed and presented a workshop series to help new poultry farmers understand breed selection, production practices, and safety processing.

Crops: Potatoes, Vegetables, Fruit, IPM, Blueberry, Horticulture, Farms

The Maine potato industry is the single largest crop component of agriculture in Maine. This industry directly employs over 2,600 individuals within 500 businesses and has an economic value to Maine's economy of \$530 million. UMaine Extension has a multidisciplinary educational team composed of staff from across the state who pool their expertise to create significant and positive measurable economic, social, and environmental impacts that improve the Maine potato industry. UMaine Extension's potato crops program was honored with the 2004 Award of Excellence from the Northeast Cooperative Extension Directors, the highest award presented by Extension in the Northeast. The award recognizes Extension outreach programming

that has achieved “outstanding accomplishments, results, and impacts in addressing contemporary issues.”

An EPA Water Shed Initiative grant is helping Native American potato farmers in Maine reduce erosion potential, and soil degradation, loss of nutrients, and negative impact on adjacent watersheds through improved cover crop, mulching practices on land in potato rotation. The tribe partners with UMaine Extension and the Southern Aroostook Soil and Water Conservation District to provide research, education, and crop practice payments. In addition, equipment has been purchased for use by tribal farmers. In the first year of a three-year project, we are positively impacting over 3,000 acres, or about 30 percent of the grant’s targeted acreage. Replicated trials have been established by UMaine Extension to validate results and demonstrate techniques to others.

Maine’s vegetable growers are always looking for new markets and ways to diversify their farm enterprises. Recently adopted organic standards require organic growers to use certified organic seed, presenting existing organic growers with a new opportunity to grow and sell a new product. In 2000, an estimated 12 growers were producing commercial vegetable seed in Maine. Funded partially by a SARE grant, UMaine Extension and the University of Vermont Cooperative Extension offered a series of multi-day workshops in Maine and Vermont to help farmers develop new vegetable varieties and produce organic seed for regional seed companies. More than 400 growers have attended these workshops coming from New England, New York, Pennsylvania, North Carolina, Maryland, Virginia, and Canada. In Maine, 30 growers are now producing vegetable seed crops.

UMaine Extension is collaborating with other institutions, organizations, and agricultural producers in a variety of on-going crop research projects. Projects include using compost tea as an alternative to fungicides, investigating new nitrogen testing methodology, testing threshold-based cover cropping strategies for weed management and, defining no-till production practices.

Our Integrated Pest Management (IPM) programs support many of the vegetable and fruit growers in Maine. Potato, strawberry, apple, and sweet corn pest reports are sent out to growers throughout the season to help alert farmers when pest levels or climatic conditions might require control. The New England Vegetable and Berry Conference, co-sponsored by UMaine Extension, reached over a thousand growers with research-based information that helped them improve practices and increase profits. Field days at Highmoor Farm, Rogers Farm, and Blueberry Hill Farm bring producers to University research farms where they see a variety of IPM research projects.

Maine blueberry growers recently became eligible for assistance under the Trade Adjustment Assistance for Farmers Act, administered by USDA, as an offset for lower priced imported berry competition from Canada. Eligibility requirements included participation in educational training provided by UMaine Extension, which was aimed at improving profits. This year we provided the required training to over 100 producers.

Horticulture

The green industry continues to be the most rapidly expanding agricultural industry in Maine. This year, UMaine Extension and the Maine State Florists and Growers Association conducted the annual greenhouse growers program at the 2004 Agricultural Trades Show for 76 greenhouse growers. Topics included plant disease management, pesticide use and safety, marketing, and business management. We also highlighted integrated pest management practices for the horticulture industry, greenhouse operations, and homeowners. In addition, we supported the Ornamental Horticulture Council, formed with help from UMaine Extension, with programs on production, and business practices and marketing, such as the *Plants for ME* program which highlights native Maine plant materials as a landscaping alternative to imported species. A demonstration arboretum of native woody ornamentals was established this year adjacent to a county Extension office with the support of the industry and UMaine Extension Master Gardener program volunteers.

Farms

Growing crops on Maine farms preserves over 1.4 million acres in open space. The loss of farms that has already occurred has cost Maine a significant amount of open land; on average, 33,500 acres of farmland per year were lost to development between 1992 and 1997. The loss of small, diversified vegetable and fruit farms impacts local economies. UMaine Extension shares resources with several organizations to help preserve farmland and family farming in Maine. We worked with the Maine Farmland Trust and the Maine FarmLink program to preserve and conserve farms, and make agricultural lands available for future farmers by connecting them with farmers selling or transferring their land, farming operations. Through an application put forth by our working group, the Land for Maine's Future program recently approved \$650,000 for farmland protection through purchase of development rights in Waldo County, with an additional \$650,000 pending from the Federal Farmland Protection program. The goal of the project is to permanently protect several thousand acres through conservation easements in central Maine.

There are about 7,000 farms in Maine and half of the farms and nearly half the farmland in the state, are owned by people who are 60 years or older. In 2003 and 2004, programs were held on estate planning and farm transfer. The collaborative programs were developed and delivered by the Cooperative Extension units from the universities of Connecticut, Massachusetts, New Hampshire, Maine, and Vermont, and estate attorneys from Maine and Virginia. Ninety-one farmers from Maine attended the series.

New Farmers, New Markets

Immigrants to the United States are looking for ways to support themselves and their families. Maine has experienced in-migration in recent years, with a majority of new residents coming from Somalia in Eastern Africa, and a variety of Central and South American countries. Many are working in the agriculture industry and some are working to develop viable farm enterprises that service their own cultural communities with commodities not commonly available in Maine. UMaine Extension has been working with the New American Sustainable Agriculture Project to support aspiring farmers as they develop the necessary skills to operate viable farm businesses. We have provided comprehensive classroom and in-field training on water conservation, drip irrigation methods, and vegetable production for Somali, and Hispanic farmers. We also helped

them conduct a seven-acre demonstration trial and market garden using surplus seed and vegetable transplants from one of the UMaine Experiment Station farms. We addressed language barriers in training and regulation by producing training videos in native languages so that non-English speaking workers could get jobs and improve their skills. In 2004, 171 farmers have developed new agricultural products related to this new market and 247 existing farmers have developed new markets for their products with UMaine Extension assistance.

New cultures bring new market demands. We worked with existing livestock operations in Maine to respond to ethnically driven new markets for goat meat and other specialty products. UMaine Extension published the Maine Goat Meat Directory to help connect producers of goat meat with new markets. In addition, we continued work on a collaborative research project to increase meat sheep profits with the reintroduction of the Katahdin Hair sheep, a breed that originated in Maine during the 1950s.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 1 Total	1,840	\$187,697	\$13,742	\$187,697	\$389,135

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

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:	
	1,840	
50 percent of growers consulted with one-on-one will implement sustainable techniques based on consultation.	250	
Agricultural producers will diversify crop production (acres).	203	
Agricultural producers will participate in community management initiatives.	40	
Agricultural producers will practice resource conservation methods.	819	
Crop and livestock producers will increase integration of operations.	608	
Farmers will develop new agricultural products.	171	
Farmers will develop new markets.	247	
Farmers will implement farm management skills.	839	
Farmers will implement sustainable agricultural practices.	1,739	
General public will understand and support production agriculture.	1,180	
Greenhouse industry will organize liaison group to speak on behalf of entire industry and conduct industry-wide projects.	1	
Individuals will be trained to be more productive and knowledgeable farm employees.	165	
Maine green industry members who attend New England Greenhouse Conference will increase by 10% each conference.	0	

Potato harvester bruise levels will be reduced by 10 percent.	0
Potato harvesters will screen for bruise damage, which will result in improved harvesting operations (individual machines).	0
Producers will adopt alternative crops to reduce pesticide inputs, increase rotation length, and increase soil organic matter.	683
Producers will adopt sustainable animal husbandry practices.	309
Producers will attend an intensive potato storage, design, and management course.	0
Producers will evaluate soil health.	569
Producers will form management teams.	34
Producers will identify yield limiting factors.	170
Producers will use futures/options markets.	0
Producers will use new technologies.	1,282
Small farms will diversify.	346
Small-scale producers will make changes as a result of UMCE programs.	521
Youth will demonstrate an understanding of the basic scientific principles that affect sustainable agriculture.	213
Youth will demonstrate sustainable agricultural practices.	143

OUTPUT INDICATORS

Number of consultations.	2,569
Number of workshops/events.	253
Number of people attending the workshops/events.	12,461
Number of groups formed (ad hoc or formally organized).	92
Number of people involved in groups formed.	483
Number of volunteers trained.	4
Number of publications written.	40
Number of publications distributed.	8,061
Number of issues of newsletters written.	147
Number of people receiving newsletters within a year's time.	6,631
Number of audio visual resources developed (video, slides, displays).	39
Number of articles in news media.	64
Number of 1-hr radio programs delivered.	0
Circulation of articles in news media.	273,507

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Agricultural Profitability, Agricultural Competitiveness, and Niche Market Trade Adjustment Assistance for Farmers: The Trade Adjustment Assistance for Farmers Act was approved and funded by Congress as a result of increased import pressure facing

certain groups of U.S. farmers and fishermen. Approved growers are eligible for assistance when it is determined the national average price for a crop declined by at least 20 percent when compared to the crop's price during the five previous marketing years. The act also requires growers to participate in educational programs to evaluate and improve cropping practices, and learn ways to improve efficiency and profitability. In Maine the required programs are delivered by UMaine Extension. Through application by the Maine Wild Blueberry Commission, Maine blueberry growers were identified as eligible for assistance related to the 2002 harvest. Coordinated by the Northeast Center for Risk Management Education at the University of Delaware, regional Extension programs undertook a multi-state effort to develop programming to meet the needs of growers. UMaine Extension and Extension partners from Florida, New Mexico, and Massachusetts developed five presentations: *World Trade Situation and Outlook*, *Enterprise Budgets*, *Production Efficiencies*, *Quality Harvesting of Wild Blueberries*, and *Marketing Opportunities*. The presentations were combined with business and financial presentations developed by the University of Minnesota and presented as a Web-based course and a 120-page printed Wild Blueberry Technical Assistance Curriculum, available online at <http://www.agrisk.umn.edu/taa/Commodities/WildBlueberriesMaine/>.

Summary of Impacts: Seven UMaine Extension faculty presented the programs to 100 Maine growers, allowing them to receive nearly \$240,000 in trade adjustment assistance for losses in 2002. The financial assistance and training will give Maine wild blueberry growers the educational resources to produce future wild blueberry crops that can be competitive with Canadian wild blueberries and cultivated blueberries produced elsewhere in North America.

Scope of Impacts: Multistate Extension: DE, FL, MA, ME, MN, NM

Key Themes: Managing Change In Agriculture, Niche Market, Agricultural Profitability, and Agricultural Competitiveness

Quality Harvesting Techniques for Multi-Lingual Harvesters: Improved production practices have led to a four-fold increase in Maine's wild blueberry crop over the past 20 years, resulting in a 2003 harvest of more than 80 million pounds. The increase has necessitated the tapping of migrant labor pools during the concentrated period of harvest in late summer. Since wild blueberries are unique to northern regions, imported workers require training to harvest a high-quality berry that meets the standards of blueberry processors. Ninety-nine percent of Maine's blueberry crop is sent to processing.

Summary of Impacts: Sixty percent of Maine's blueberry harvest labor pool includes workers from south of the U.S. border. To overcome language barriers, UMaine Extension and the University of Maine produced a Spanish language version of *Quality Harvesting of Wild Blueberries*, a training video that teaches harvesters how to meet processor standards. The video made it possible for growers to meet current harvest demands, resulting in a larger harvest than in past years. The video was also digitized and used to meet grower requirements for assistance under the Trade Adjustment Assistance for Farmers act.

Scope of Impacts: State Specific

Key Themes: Organic Agriculture, Managing Change In Agriculture, Niche Market, and Agricultural Profitability

The Dairy Industry in Maine –Transition to Organic: According to the National Agriculture Statistics Service (2003), dairy is the most important agricultural product in the northeast

United States. However, the region has lost a significant number of farms over the past 10 years. Vermont and Maine, two states that account for 85 percent of the region's milk production, lost more than 800 farms during that period. Many of the remaining dairy farms are struggling financially and are exploring alternative practices and marketing strategies to improve profitability. UMaine Extension has worked directly with farmers and with the Maine Organic Farmers and Gardeners Association (MOFGA) to provide technical assistance to farmers on transitioning to organic production. Also, under the leadership of UMaine Extension, organic dairy farmers have formed a new producer organization, Maine Organic Milk Producers (MOMP), to define their issues and work with UMaine Extension to meet their research and information needs. The process helped identify an information gap relating to forage refurbishment of pastures and hayfields. This work is now being examined in on-farm trials supervised by UMaine Extension, with the goal to increase the quality or quantity of forages produced. Further, the USDA Organic Transition Program is funding a “cost of production” study done in collaboration with UMaine Extension, the UMaine Department of Resource Economics and Policy, and the University of Vermont.

Summary of Impacts: Although there is no simple solution to the challenges these farmers face, organic milk production has shown great potential in generating consistently higher revenues when compared to non-organic milk. Recently, the Maine state legislature enacted legislation to help maintain conventionally produced milk prices near their calculated cost of production (averaging \$16.50 per hundred weight of milk). Organic producers are guaranteed a contract price of nearly \$22 per hundred weight and are given several significant quality incentives that can bring their price to over \$25 per hundred weight. With transitioning and technical help from MOFGA and UMaine Extension, the number of certified organic dairy farms in Maine has risen from a few in 1995 to 65 in 2004. This number represents nearly 20 percent of the dairy farms currently producing milk in Maine and is the largest percentage of organic farms in the nation. The demand for organic dairy products continues to increase, creating more interest and additional premiums for organic farmers.

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

Key Themes: Agricultural Profitability, Adding Value to New and Old Agricultural Products, and Managing Change in Agriculture,

New Varieties for the Apple Industry; Consumer-Driven Change: Maine’s most widely grown apple variety, the McIntosh, has become unprofitable because it cannot compete with newer varieties grown in other regions. McIntosh fruit softens quickly, a trait that turns off consumers and de-values the variety. As a result of research conducted by UMaine Extension and throughout the U.S. a new variety, Honeycrisp, has been identified as having an excellent fruit quality that has high appeal to consumers. Honeycrisp is shown to be well adapted to Maine’s climate and can potentially increase profitability by \$8 per bushel at wholesale, \$18 per bushel at retail.

Summary of Impacts: UMaine Extension and the University of Vermont have held multiple grower meetings to present the attributes of this variety to over 150 regional growers, resulting in 110 acres of Honeycrisp being planted and bringing growers the potential for an annual increase in revenue of \$390,000 as the crops matures. Many growers have indicated that they will be planting additional trees of this variety in the coming years.

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

Key Themes: Integrated Pest Management, and Agricultural Profitability

Sweet Corn Integrated Pest Management: Sweet corn is the most popular vegetable crop grown in Maine and comprises nearly half of land under cultivation for commercial vegetable production. Sweet corn requires high inputs of nutrients, and pesticides to produce a crop that is acceptable to the consumer. As a result, it can be a relatively low profit fresh vegetable crop that carries significant environmental impacts. UMaine Extension's Integrated Pest Management (IPM) program teaches sweet corn growers to minimize pesticide inputs while improving the effectiveness of insect management. During the 2003 growing season, monitoring sites were established at the farms of 24 volunteer sweet corn growers. With training and help from our scouting staff, the volunteers monitored insect populations and responded to specific action thresholds of insect populations, applying pesticides when necessary. Over 100 farmers received weekly updates of data from our monitoring sites and corresponding management advice on how to address the situation. Information was delivered through a newsletter, e-mail updates, and a Web page.

Summary of Impacts: Our sweet corn IPM program successfully improved the profitability of sweet corn for Maine farmers while reducing environmental risks by minimizing pesticide use. The majority of growers receiving our IPM information modified their pest management program by changing the number of sprays and altering application timing according to monitoring results. Post-season surveys indicated that 87 percent of growers felt that using IPM improved the quality of their crop. Eighteen percent significantly reduced the number of pesticide applications they made during the season. Over half of the growers said the program improved the profitability of their crop by reducing pesticide application costs and/or improving the number of marketable ears harvested. Some farmers reported that profitability increased more than 100 percent due to their participation in the IPM program. All of the farmers responding to the survey wanted to continue receiving IPM information.

Scope of Impacts: State Specific

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

Hair Sheep Research: Researchers from UMaine Extension and Bowdoin College have been collaborating since 2000 on a research project to improve the quality and health of meat sheep and reduce maintenance costs, increasing the potential for profitable herds in Maine. The focus of the project is to improve and reintroduce the Katahdin Hair sheep, a breed that originated in Maine in the 1950s. Sheep in Maine are prone to internal parasites, scrapie, and foot problems. Chronically low wool prices, predation, and the labor intensive nature of sheep farming make profits difficult to achieve.

Summary of Impacts: The researchers have developed herds with increased growth rate, and carcass size for market lambs, increased prolificacy for ewes, and a high natural resistance to internal parasites. Animals are also selectively bred to take advantage of a specific gene marker for resistance to the disease *scrapie*, a fatal, degenerative disease affecting the central nervous system of sheep and goats. Infected flocks that contain a high percentage of susceptible animals can experience significant production losses. Since the Katahdin sheep is a hair breed, there is no need to shear the sheep - they naturally shed their hair each year. No shearing removes the need to dock lambs and crotch ewes before lambing, substantially reducing labor costs. Katahdin sheep also breed beyond the traditional season, utilize grass pastures more efficiently than other breeds, and have an annual lambing percentage of nearly

200 percent. Six flocks of Katahdin sheep will be distributed during 2005 to suitable farms in the northeast, significantly increasing the potential for profitable operations.

Scope of Impacts: Integrated Research and Extension

CSREES Goal 2

A Safe and Secure Food and Fiber System

Executive Summary

The food safety program of the University of Maine Cooperative Extension strives to reduce the serious negative impact of foodborne illness in Maine and the region by promoting proper sanitation and safe food handling practices. We offer instruction and easily accessible resources through workshops, fact sheets, interactive television, newsletters, Web sites, media, and individual contacts. We provide oversight, technical assistance, and training to local health jurisdictions on retail food safety issues and participate with other state, federal, and local agencies to improve commercial food processing practices and preemptively address the threat of pathogenic outbreaks in livestock populations.

Emergency Response and Education

This year's single outbreak of Mad Cow Disease in the U.S. triggered a strong response from UMaine Extension by engaging emergency management strategies that provided livestock producers and the public timely information on the disease through newspapers, radio stations, educational programs, and a special Web site. The situation also reinforced the importance of UMaine Extension's Maine Cattle Health Assurance Program, an ongoing program that works directly with producers to identify food animal disease issues that affect public health and the safety of our food supply.

The Bangor Regional Food Safety Committee is a newly formed group with representatives from the Maine Department of Health, the Maine Department of Agriculture, Food and Rural Resources, Eastern Maine Medical Center, and UMaine Extension. We are currently developing a rapid regional response framework to use in case of a food poison outbreak. The plan will be shared throughout the state with communities and public safety agencies, and disseminated as an Extension resource.

Food Safety

Estimates indicate that \$14 billion worth of food is grown in home and community gardens in the U.S. UMaine Extension is working with other New England Extension organizations on a research project to assess produce grown in home and community gardens for the presence of microbiological contamination both before and after gardeners receive Good Agricultural Practices (GAP) education. The project, which involves UMaine Extension Master Gardeners, will define the need to integrate food safety information and apply GAP standards to home gardening programs and practices.

The Centers for Disease Control and Prevention estimate that over 75,000 foodborne illnesses occur annually in the U. S. *Cooking for a Crowd the HACCP Way* is a multi-day Extension workshop offered by UMaine Extension for volunteers who prepare meals for public events such as church suppers, service club banquets, soup kitchens, and fund raisers. Workshop participants learn Hazard Analysis and Critical Control Points (HACCP) which support safe food handling to reduce the risk of transmitting food borne illness. The training includes hands-on activities to

reinforce techniques that reduce the risk of cross-contamination. Between 3,000 and 6,000 meals are prepared and served monthly by the 45 participants in this year’s workshops.

We are also 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. This year, 150 seafood processors attended the Alliance’s three-day seafood HACCP courses.

Our food safety specialist partners with the UMaine Department of Food Science and Human Nutrition to provide a HACCP course for supermarket food managers and to others for whom the certification is required. This program provides a strong University/community connection.

UMaine Extension offered food preservation workshops statewide for people to learn the latest and safest food preservation techniques. More than 2,300 attended the workshops and learned hands-on preparation of foods by canning, drying, and freezing. More than 4,000 publications and newsletters were distributed in support of safe food preservation.

Learning about food safety can begin at an early age and provide a strong foundation for a lifetime of safe and healthy behavior. During the summer of 2004, youth camp sessions were held in four different locations in Washington County. More than 100 children attended the *Way Cool Science Camps* and each day a different group of youngsters prepared foods for lunch and snack. One day of the camp was devoted to kitchen science, and campers also learned about food safety and nutrition. On surveys collected at the conclusion of camp, 85 percent of the campers indicated that they knew the importance of safe food practices and the value of good hand washing techniques.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 2 Total	257	\$26,216	\$0.00	\$26,216	\$52,433

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

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:
Consumers will adopt Extension recommendations for canning.	1148
Consumers will adopt Extension recommendations for drying.	39
Consumers will adopt Extension recommendations for freezing.	132
Consumers will adopt proper practices in food storage (method and temperature).	207
Consumers will adopt proper practices in personal hygiene.	641
Consumers will adopt proper practices in planning for and purchasing of food.	10
Consumers will adopt proper practices in thawing frozen foods.	373

Consumers will adopt proper practices in transporting food.	54
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 chemical contamination of food by following the Salmonella Reduction program.	8
Participants will reduce the risk of microbiological contamination of food by implementing a routine testing/monitoring procedure.	38
Participants will reduce the risk of microbiological contamination of food by implementing a sanitation program.	32
Participants will reduce the risk of microbiological contamination of food by understanding the principles of HACCP.	32
Participants will reduce the risk of microbiological contamination of food by using microbiological reduction program.	6
Participants will reduce the risk of physical contamination of food by implementing a quality control program.	34
People will be making sound choices regarding food safety labels on meat and poultry.	34
People will be making sound choices regarding food selection and purchasing.	599
People will be making sound choices regarding proper food cooking, holding, and serving procedures.	574
People will be making sound choices regarding proper thawing methods.	557
Residents will adopt proper cooking times and temperatures.	184
Residents will adopt proper procedures for cleaning, and sanitizing work areas, and equipment.	90
Residents will adopt proper techniques for holding and serving of food.	89
Residents will adopt proper techniques for planning and purchasing of food.	175
Residents will adopt proper techniques for storing food (method and temperature).	218
Residents will adopt proper techniques for transporting food.	167
Residents will adopt proper thawing methods.	99
Residents will practice personal hygiene techniques related to food safety.	167

OUTPUT INDICATORS

Circulation of articles in news media.	149,000
Displays/Exhibits.	4
Families receiving lessons.	0
Frequency of workshops/events / year.	13
Number of 1-hr radio programs delivered.	0
Number of articles in news media.	19
Number of audio visual resources developed (video, slides, displays).	19

Number of consultations.	532
Number of groups formed (ad hoc or formally organized).	2
Number of issues of newsletters written.	16
Number of media outlets participating.	2
Number of people attending the workshops/events.	4,594
Number of people involved in groups formed.	32
Number of people receiving newsletters within a year's time.	14,605
Number of publications distributed.	1,608
Number of publications written.	7
Number of volunteers trained.	137
Number of workshops/events.	30
Phone inquiries.	93
Times displays seen.	7
Web pages created.	0
Web pages designed.	1

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Food Resource Management Biosecurity, Food Safety, Animal Health, Animal Production, Bioterrorism, Risk Management, and Agricultural Profitability

Healthy Livestock Equals Safer Food Supply: Healthy livestock contributes to safer and more consistent food products for consumers. UMaine Extension addresses public health concerns related to the production of meat animals through our work with the Maine Cattle Health Assurance Program (MeCHAP), a partnership between UMaine Extension, the Maine Department of Agriculture, Food and Rural Resources, practicing veterinarians, agribusiness, and Maine livestock producers. We work directly with producers to identify food animal disease issues that affect farm profitability, the safety of our food supply, and public health. We also employ an important educational component to help producers and processors understand safe practices and strategies for prevention of disease - farmers learn to conduct disease risk assessments, accurately test for diseases and develop biosecurity plans to address specific problems. UMaine Extension is currently engaged in research to determine the environmental prevalence of Salmonella on food animal farms. UMaine Extension is also collaborating with the UMaine Department of Food Science to develop environmental scanning procedures for *Listeria monocytogenes* and *E. coli*O157:H7 on dairy farms. We have conducted continuing education workshops for practicing veterinarians on *Beef Quality Assurance*, injection site lesions, vaccination programs, *Johnes Disease*, and integrated livestock management. MeCHAP is responsible for the majority of continuing education programs that address food-producing animals in Maine.

Summary of Impacts: The MeCHAP program has completed a core risk assessment of 104 dairy and beef farms, representing nearly 30 percent of all Maine dairy herds. Results have informed producers of risky situations and practices, enabling them to correct problems that could otherwise spread devastating diseases that effect both animals and people. We have subsidized the testing of 117 dairy farm bulk tanks for contagious and environmental organisms that cause mastitis, and helped producers employ corrective techniques. Working

with veterinarian, we are coordinating the testing of thousands of Maine dairy and beef cattle for John's disease, *bovine lymphosarcoma*, and contagious mastitis with the results are being used to develop, and implement management program changes, and biosecurity plans on farms statewide.

Scope of Impacts: Integrated Research and Extension

Key Themes: Emergency Response, Risk Management, Biosecurity, Food Safety, Bioterrorism, and Agricultural Profitability

Mad Cow Disease Response in Maine: In December 2003, the U.S. Department of Agriculture announced that a single positive case of Bovine Spongiform Encephalopathy (BSE), commonly known as Mad Cow Disease, was discovered in the U.S. The announcement resulted in sudden regulatory changes to the beef market that included temporary closure of export markets, changes in harvest rules, increased inspection, and an uncertain market demand. This situation led to a need for both producers and the general public to access BSE-related information and obtain credible answers to their questions. UMaine Extension responded by engaging emergency management strategies that provided livestock producers and the public access to educational materials and timely information on the unfolding situation through a special Web site, which included links to reliable sources of information. UMaine Extension also provided beef and dairy producers with management recommendations, USDA updates and customer communication suggestions. Follow-up mailings to producers contained information on new monitoring regulations, and harvest procedures, and we offered detailed educational programs for producers at the annual Maine Agricultural Trades Show. We also provided information on BSE, and clarified misinformation, for the public through regional newspapers and radio stations.

Summary of Impacts: Although the crisis abated and the disease did not spread significantly in the U.S., Extension's response helped producers to understand the situation, and implement management changes to protect them against possible infections, and meet new regulatory obligations. Information provided to the public by Extension and others helped to moderate their response as indicated by a temporary yet moderate dip in the demand for beef, accompanied by an increased demand for locally produced beef.

Scope of Impacts: State Specific

Key Themes: Food Safety, Food Handling, and Foodborne Pathogen Protection

Nutrition Education Program Emphasizes Safe Food Handling: Nationally, as well as in Maine, the incidence of food-borne illnesses still represents a tangible concern to consumers who may not be aware of safe food handling practices. A recent study from the U. S. Food and Drug Administration indicates that 62 percent of those surveyed were not aware of any risk groups for food-borne illnesses. Only four percent knew that young children are at high risk, and six percent knew that elderly were also at high risk. More importantly, 24 percent of those responding reported they don't wash their hands with soap after handling food, such as uncooked meat. UMaine Extension's Eat Well Nutrition Education Program aides provide basic nutrition education to limited-income individuals, including children, in their own homes or in group settings. Included in the nutrition curriculum is a special on food handling practices that lessen the probability of contracting food-borne illnesses. For example, when nutrition aides work with their clients, they demonstrate proper hand washing techniques, and distribute, and discuss our research-based fact sheets (*Basics for Handling Food Safely and*

Protect Yourself from Food-borne Illness). They also discuss proper thawing techniques, and the importance of refrigerating foods, especially meat and dairy products, to discourage bacterial growth, which may lead to salmonella.

Summary of Impacts: This year, 868 adults graduated from the Eat Well Nutrition Education Program. Pre- and post-program behavior checklists are administered to all adult participants to determine their success in adopting safe food practices. At graduation, 52 percent, or 399 adults, showed improvement in one or both of the food safety practices (thawing and storing foods properly) measured on the behavior checklist. As a result of the program, graduates are now taking steps to reduce the incidence of food-borne illnesses by adopting proper food handling practices when preparing foods for their families.

Scope of Impacts: State Specific

CSREES Goal 3

A Healthy, Well-Nourished Population

Executive Summary

The leading causes of death in the U.S. are associated with behaviors that can be modified. Obesity is a contributing factor to many of the chronic diseases that cause suffering, poor health, and inability to contribute to the workforce, a drain on the health care economy and shortened lives. Simple lifestyle practices to maintain good health throughout the lifespan are crucial to change the patterns of poor health and disease. Understanding and practicing the recommended nutrition guidelines for health and wellness are essential. At the University of Maine Cooperative Extension we promote changes in lifestyle habits of those with whom we work. Our history of community work and change provides a solid base and skill level for making personal and community changes. By using research-based information with a foundation of social change theory for developing and implementing programs, we can reach our goal to improve lifestyle habits and reduce the risk of chronic disease.

Improving Health

The University of Maine Cooperative Extension engages in educational programs to improve the health status of Maine citizens. Outcomes of our educational program objective that "Maine people are healthy and well nourished" include:

- 5,516 participants have knowledge, skills, and ability to be well nourished,
- 2,508 participants increased food buying skills,
- 5,029 participants increased food preparation skills,
- 4,251 participants increased their physical activity, and
- 3,080 participants engaged in community programs that enhance the health of seniors and other community members.

This year we conducted 104 workshops to improve the health and nourishment of Maine citizens. We were assisted by more than 400 newly trained volunteers who worked to further our educational intentions. Over 24,000 research-based publications, fact sheets, and newsletters were distributed relating to health improvement.

Improving Nutrition

Many Maine citizens suffer from preventable chronic diseases. Poor nutritional practices and lack of physical activity 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 overweight youth among youth has increased by 100 percent over the same time period. Overweight and obesity dramatically increase the risk factors for many chronic diseases, such as high blood pressure, and high blood cholesterol, and may result in heart disease, stroke, type 2 diabetes and osteoporosis.

Maine citizens learned how to make dietary changes to reduce their risk of chronic disease by attending UMaine Extension workshops, engaging in individual consultations, and reading publications, including newsletters, and news articles. Results included:

- 6,033 participants took steps to achieve and maintain a healthy weight,

- 9,698 participants increased their intake of fruits and vegetables,
- 6,315 participants decreased intake of saturated and total fat, and
- 6,620 participants improved nutrient and food composition to lower the risk of disease.

To improve the nutrition habits of Maine citizens, UMaine Extension conducted 196 workshops, attended by over 6,500 individuals and supported by 510 newly trained volunteers. More than 20,000 publications were employed to help participants modify their lifestyle and achieve their health and wellness goals. Many citizens beyond our workshops were reached through newsletters and the news media. Sixty-four nutrition newsletters reached more than 18,000 citizens, and 77,000 were exposed to targeted health education information through newspaper articles.

Improving Food Security

UMaine Extension is helping Maine citizens achieve food security through the ability to access nutritionally adequate and safe food. Our efforts included consultations, workshops, volunteer training, and group work, and showed the following:

- 80 participants increased their food recovery, gleaning, and donations of food to food pantries.
- 120 participants increased their food supply from gardens and home productions,
- 60 participants participated in programs organized to raise awareness about hunger and poverty at the community level.
- 72,200 pounds of food was donated to food pantries, food banks, and kitchens with a value of over \$121,300.

Improving Health and Nutrition for Low-Income Citizens

The UMaine Extension Aging Initiative is a collaborative effort with the Maine Nutrition Network and serves Maine's limited-income adults over the age of 60. The focus of our educational interventions has been to increase fruit and vegetable consumption; reduce saturated fat, salt, and sugar consumption; incorporate physical activity and healthy weight goals into daily living; and increase knowledge of healthy food, and lifestyle choices. During 2004, 15 educational programs were delivered, which reached nearly 200 limited-income seniors.

Our Eat Well Nutrition Education Program (Eat Well) includes two federally funded nutrition education programs: the Expanded Food and Nutrition Education Program (EFNEP) and the Maine Family Nutrition Program (MFNP). Approximately 40 nutrition aides deliver basic food and nutrition information to individual adults, children, senior citizens, and families in all counties in Maine.

While the goal of both programs is to provide nutrition education to limited-income citizens, EFNEP's audience includes families with young children and MFNP's audience is citizens who participate or are applying to participate in the Food Stamp Program. All participants in Eat Well receive lessons in basic human nutrition, food preparation, buying and budgeting skills, and practical meal management. Some receive this information in a home setting, which they find conducive to learning and making behavior changes. Other participants find learning in group settings more valuable.

Eat Well nutrition aides reported that 2,147 adults participated in our program in 2004. In addition, nearly 9,000 pre- to high-school aged youth received basic nutrition information as participants in one of the Eat Well programs. This year our program was supported by 1,033 volunteers statewide, made up of former graduates, school personnel, and staff of collaborating agencies, organizations and churches, and others who support our nutrition aides in bringing the Eat Well program to communities.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 3 Total	1,084	\$110,578	\$363,988	\$110,578	\$585,144

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

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:
	1,084
Groups will be established to conduct community programs to reduce the risk of disease.	11
Participants will decrease saturated fat and total fat intake.	6315
Participants will engage in community programs that enhance the health of seniors and other community members.	3,080
Participants will improve nutrient and food composition intake to lower the risk of disease.	6,620
Participants will increase food preparation skills.	5,029
Participants will increase food-buying skills.	2,508
Participants will increase intake of fruits and vegetables.	9,698
Participants will increase physical activity.	4,251
Participants will take steps to achieve and maintain healthy weight.	6033
Participants, at all life stages, will have knowledge, skills, and ability to be well nourished.	5,516
People will be involved in public policy issues related to food recovery.	5
People will increase their food recovery, gleaning, and donations of food to food pantries.	80
People will increase their food supply from gardens and home production.	120
People will participate in programs organized to raise awareness about hunger and poverty at the community level.	60
Pounds of food donated to food pantries, food banks, and kitchens	8,500
Super Cupboards will be organized.	0
Value of food donated to food pantries, food banks, and kitchens.	17,000

OUTPUT INDICATORS

Number of consultations/home visits.	592
Number of workshops/events.	324
Number of people attending the workshops/events.	12,547
Number of groups formed (ad hoc or formally organized).	919
Number of people involved in groups formed.	2,995
Number of volunteers trained.	1,956
Number of publications written.	79
Number of publications distributed.	34,399
Number of issues of newsletters written.	78
Number of people receiving newsletters within a year's time.	31,822
Number of audio visual resources developed (video, slides, displays).	22
Number of articles in news media.	46
Circulation of articles in news media.	176,850

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Food Security, Food Accessibility, and Food Recovery/Gleaning

Maine Volunteers Improve Food Security: UMaine Extension is committed to helping Maine citizens improve food security by improving their access to safe, healthy fruits and vegetables. For the past five years, we have been partnering with current and past participants of the Maine Master Gardener program and community volunteers to coordinate the Plant-a-Row for the Hungry program in which volunteers grow produce, organize gleaning projects, recruit home gardeners, and coordinate donations to local food pantries, soup kitchens, community meal centers, low-income agencies, individuals, senior centers, and group homes.

Summary of Impacts: People who need food are now receiving fresh and nutritious fruits, and vegetables to which they would not otherwise have access. During 2004, the Plant-a-Row for the Hungry program coordinated the donation of more than 72,200 pounds of fresh fruits and vegetables valued at more than \$121,300, making it our best year. Since 2000, we have donated just less than 300,000 pounds, valued at nearly one half million dollars.

Scope of Impacts: State Specific

Key Themes: Human Nutrition, Human Health, and Food Security

Food Resource Management is the Key to a “Healthy” Food Budget: Food is one of the largest family budget items. Grocery stores employ marketing tactics that encourage consumers to buy more than planned, and go home with unplanned purchases. Limited-income families want to know how to get more value for their food dollar, which has to compete with other fixed expenses, such as housing, home heating fuel, transportation, and healthcare. UMaine Extension’s Eat Well Program nutrition aides provide nutrition education for limited-income individuals in their own homes or in group settings, such as food pantries, community rooms in housing complexes, or senior meal sites throughout Maine. Part of the program emphasizes shopping behavior and food resource management with specific skills, such as menu planning, making shopping lists, when to shop, shopping with kids, and reading

labels for nutritional value. More than 2,100 low-income individuals were enrolled in the program this year, with 852 graduating.

Summary of Impacts: Participants were surveyed upon entry into the program and again when they completed the program. Upon entry 289 (34 percent) indicated they practiced acceptable food resource management skills consisting of a combination of utilizing meal plans, comparing prices at the supermarket, and using grocery lists. Upon completion of the program, 443 (52 percent) indicated that they now practiced food resource management skills consistently. Eighteen percent are now taking steps to improve the management of their food budget by consistently utilizing their newly acquired skills to make the most of every food dollar in their budget. Additionally, 665 (78 percent) of the 852 graduates of the program improved in at least one of the food management skills measured by the survey.

Scope of Impacts: State Specific

Key Themes: Human Nutrition, Human Health, and Senior Lifestyles

Improving Seniors' Lifestyles – Connecting Diet, Exercise, and Health: Assessments have shown that senior citizens are interested in making diet and lifestyle changes that help reduce the risk of chronic disease and influence their ability to live an active life. UMaine Extension has helped seniors in Washington County reach those goals by providing training to 65 Senior Companion Program and Extension Homemaker volunteers on the relationship between diet, exercise, and health. The volunteers are sharing their knowledge with other seniors in the region. The *Food - Mood Link* Program was developed to help participants understand the direct link between what you eat and how you feel. Participants were taught about appropriate relative levels of consumption for foods that enhance or deplete stamina and energy, such as sugar, caffeine, alcohol, water, and other foods. *Pepping Up Your Life* teaches the connection between physical activity and nutrition as part of a healthy lifestyle and helps participants develop strategies for increasing physical activity. Both Senior Companion Program and Extension Homemakers volunteers have indicated a willingness to share this information with their clients and other seniors.

Summary of Impacts: One hundred percent of the 65 *Food - Mood Link* program participants indicated that they could now identify foods that affect moods, identify foods that impact their personal life, and were now able to make better choices about their personal consumption. On a follow-up evaluation, 50 percent of respondents indicated that they had kept a food journal and could identify different foods that triggered different moods. One hundred percent indicated that they had increased consumption of water and were eating more fruits and vegetables. Participants are eating less sugar, replacing sweets with fruit and making healthier food choices for themselves and their families. All participants of the *Pepping Up Your Life* program indicated that they understood the connection between physical activity and nutrition in maintaining good health. On a follow-up evaluation, 25 percent said that they had started a walking program. One Senior Companion volunteer reported that she and her 82 year- old client had started their exercise program by walking around the client's home for three to five minutes, three times a week. After six months, the client was able to walk around the block in her neighborhood, an accomplishment that she had not been able to do for several years.

Scope of Impacts: State Specific

Key Themes: Human Nutrition, Human Health, and Food Safety

Learn & Earn Senior Nutrition: A community collaboration between UMaine Extension's Eat Well Nutrition Program and the Salvation Army has produced a nutrition education series

serving low-income seniors in the greater Portland area. The *Learn & Earn Senior Nutrition* program promotes healthy nutrition practices and helps participants gain skills and resources to meet their own food and nutrition needs. Participants attend a series of eight-week programs that include hands-on food preparation, interactive demonstrations, and group discussion on topics such as fats, cholesterol, fiber, salt, food-safety practices, economics, and more. This year, 29 seniors participated in three 8-week programs, all of which were enrolled in one or more public assistance programs.

Summary of Impacts: Participants each completed pre- and post-program assessments to determine dietary intake, food resource management, and food safety practices. Results indicated that:

- Ninety-six percent exhibited positive changes in diet in one or more of the following food groups: grains, fruits, vegetables, dairy and meat, and meat alternatives.
- Forty-six percent were consuming three or more servings of vegetables daily, representing a 25 percent improvement.
- Thirteen percent were consuming the recommended daily intake of 25 or more grams of fiber daily, representing a 13 percent improvement.
- Sixty-seven percent reduced the amount of money spent on food per capita per month from an average of \$75 to between \$100 and \$124.
- Sixty-seven percent showed improvements in two or more of the following nutrition practices: making healthy food choices, preparing foods without adding salt, or reading nutrition labels.
- Twenty-nine percent showed improvement in thawing and storing foods properly.
- Seventy-one percent showed improvements in one or more of the following food resource management practices: planning meals, comparing prices, maintaining an adequate supply, and using grocery lists to minimize impulse buying.

Upon graduation from the program, participants receive a certificate of completion and continue to receive nutrition education through the *Nutrition Notions* newsletter, produced by our Eat Well Nutrition Education Program.

Scope of Impacts: State Specific

CSREES Goal 4

Greater Harmony Between Agriculture and the Environment

Executive Summary

Horticulture

The University of Maine Cooperative Extension's home horticulture program helps Maine citizens adopt practical, sustainable, research-based horticultural practices to improve their home gardening success. In 2004, more than 5,300 people significantly improved gardening skills because of UMaine Extension programs. Much success was accomplished through the Master Gardener Program, which trained more than 250 new master gardeners statewide. These gardeners in-turn offered their expertise and leadership through volunteer community improvement projects. During 2004, current and past Master Gardeners led 255 educational and community projects, involving nearly 8,000 community members. Forty-two graduates started horticulture-based businesses in Maine. One ambitious effort included writing and producing a 32-episode gardening show, which was presented on local access television. Our program also supports the Plant-a-Row for the Hungry program, a volunteer effort that, in 2004, led to collection of more than 72,200 pounds of fresh fruits and vegetables valued at more than \$121,300. The food was donated to organizations that serve the needy.

UMaine Extension staff and volunteers also delivered horticulture education in public schools and to under-served audiences, such as physically disabled gardeners, low-income groups, and prison inmates. Volunteers in one county developed the Kids Can Grow 4-H Youth Gardening Program, a comprehensive gardening and nutrition program for children to learn how to grow nutritious vegetables, herbs and flowers in their own gardens. Approximately 50 percent of Kids Can Grow participants live in low-income families. Surveys conducted after this year's program indicated that of the 30 participants, 100 percent grew fresh vegetables and herbs for their families for the first time, and 70 percent of parents indicated improved self-esteem in their children.

In Southern Maine, 20 people from five counties attended a nine-session Ecological Landscaping course to learn about the value of using native plants in the landscape. The course taught general ecology, planting and landscaping skills, and gardening practices that impact the bio-diversity of the area.

This year, UMaine Extension partnered with the UMaine Department of Plant, Soil and Environmental Sciences to create the Eastern Maine Native Plant Arboretum. The arboretum will be used as an outdoor laboratory for the study of native tree and shrub species best suited for regional landscapes. Master Gardener volunteers participated by gathering data on plant phenology (the relationship between a periodic biological phenomenon, such as flowering, and climatic conditions), plant growth, pests, and wildlife. The public participates in self-guided tours using fact sheets that explain each species in the arboretum. Research results will be compiled and used by the commercial horticulture industry and the general public.

UMaine Extension developed a new program this year to address the special needs of greenhouse and nursery operators for the safe handling and application of pesticides. Program partners included the Maine Board of Pesticides Control and the Maine Ornamental Horticulture Council.

The program helps operators and their employees obtain state certification for handling and applying controlled pesticides. Forty-six people attended the program this year, and 44 passed the state exam.

Water Quality

In 2004, our water quality programs focused on non-point source pollution issues in specific watersheds, the capacity of watershed coalitions, partnerships with municipal officials, and development of new educational program areas.

Our Watershed Stewards Program trains Maine residents to identify water pollution sources and initiate mitigations. In exchange for the training, graduates volunteer at least 20 hours of service in their watershed. This year, we continued our work with established watershed stewards groups, initiated new projects, and developed a new methodology for installing buffers and monitoring for invasive species. We also facilitated buffering projects on properties where landowners were physically unable to do the work by providing student work crews. Watershed Steward volunteers at 11 different sites on three lakes, transformed more than 3,000 square feet of waterfront to environmentally sustainable buffers. The work of the Watershed Stewards Program is done in partnership with the Maine Department of Environmental Protection.

In 2000, the Maine State Legislature responded to concerns voiced by various environmental organizations and the Maine Department of Environmental Protection (DEP) by passing emergency temporary legislation making the intentional transport of any aquatic plant illegal and imposing a fine on those who do so. The law also mandated that the DEP undertake public education efforts, conduct research on control methods, and institute control measures if they became necessary. In 2001, the Legislature passed a permanent invasive aquatic plant law which included the need for surveys on Maine lakes to determine existing invasive plant inventories and the level of each lake's vulnerability. Working in partnership with the Hancock County Soil and Water Conservation District and local lake associations, we conducted a study to determine the level of harmful species in lakes throughout Hancock County watersheds. With training provided by UMaine Extension, the Maine Center for Invasive Aquatic Plants, and the Hancock County Soil and Water Conservation District, more than 55 volunteers surveyed more than 90 lakes, and found no evidence of infestation. This effort was the first in the state, and will serve as a model to monitor all 5,300 Maine lakes.

Marine Extension Team

The Marine Extension Team is an alliance between UMaine Extension and Maine Sea Grant that includes 10 shared staff members who are involved in projects relating to fisheries, resource management, aquaculture, coastal monitoring, eco-tourism, coastal access, and habitat restoration. The Marine Extension Team administers the Maine Shore Stewards Program, which helps local coastal environmental groups monitor 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. Because disease-causing organisms in sewage-contaminated waters can cause a wide range of diseases, such as gastroenteritis, dysentery, hepatitis, and respiratory illness, beach water pollution is a threat to public health. We collaborate with state and federal agencies, municipalities, and citizens in 18 towns representing 37 beaches to safeguard public health through monitoring. UMaine Extension has contributed

technical training and community development expertise to engage towns and state parks in this voluntary program. We have also worked with volunteers, scientists, educators, and state agency personnel to provide quality data to coastal communities to identify non-point source contaminants impacting surface water resources and shellfisheries.

The availability of industrial waterfront facilities and access for the fisheries and aquaculture industries in Maine is approaching a critically low point due to rapidly rising real estate values in coastal communities. As recreational and residential needs increase, industrial access to the water is diminishing, and these important industries are being squeezed out. Our Marine Extension Team is a partner in the Working Waterfront Coalition, whose goal is to prevent loss of waterfront infrastructure. The coalition is a unique collaboration of diverse groups, including state agencies, coastal municipalities, and community economic development non-profits. UMaine Extension and Maine Sea Grant are helping to reduce conflicts within the group and promote educational outreach programs to help communities preserve industrial waterfront facilities and access. The Team, in partnership with Maine Sea Grant and other organizations, produced a brochure “Moosabec: The Downeast Fishing Community of Beals and Jonesport” which describes the unique characteristics of this coastal community and provides visitors and potential future residents with information about what it is like to live in a working waterfront community. The brochure has been well received, and other regions of the state are interested in creating a similar product for their communities.

The Marine Extension Team has been asked by the Maine Aquaculture Association to facilitate the development of a Cobscook Bay Management Plan for Finfish Aquaculture, incorporating best management practices designed to minimize risks to fish health and the environment. Recommended processes will include separation by age, fallowing of farm sites, and biosecurity/disinfection strategies. Staff members are developing the plan with the help of participating salmon farmers. The Maine Department of Marine Resources, USDA, and other resource agencies will review the final plan for eventual incorporation into formal regulatory policy.

Household Hazardous Waste Collection

Citizens of Hancock County recognize the importance of safe disposal of hazardous wastes for a healthy environment and community. UMaine Extension and the Hancock County Planning Commission sponsored a household hazardous waste collection event that collected hazardous materials from more than 160 households. Extension’s role was to publicize the effort and increase public awareness and participation. The following hazardous materials were collected and properly disposed of: eight cubic yards of oil-based paint, resins, and adhesives; 275 gallons of pesticides and fertilizers; 825 gallons of cleaning agents; 55 gallons of acid; 5 gallons of oxidizers; 5 gallons of liquid mercury; and 5 gallons of unused pharmaceuticals.

Youth Environmental Education

Today’s youth will be tomorrow’s stewards of our land and water resources and yet little time during the school year is devoted to helping students understand and appreciate necessary sustainable living practices. Elementary school teachers often lack the resources and knowledge to help their students meet the Maine Learning Results standards relating to science, marine science, ecology, and natural resources. In addition, many teachers are not comfortable teaching

outdoors. As a consequence, education in today's schools is squeezed indoors. During 2004, UMaine Extension offered a variety of proven strategies to train Maine youth about natural resources, including school-based studies, residential and day camps, festivals, fairs, and field trips. More than 12,000 youth and 278 adult volunteers were trained through these programs. Many of these programs were offered in collaboration and/or partnership with schools, state agencies, and non-profit organizations.

Tanglewood 4-H Camp and Learning Center conducted summer camps, school programs, and teacher workshops with more than 4,400 youth and adults. Ninety percent of participants were from Maine; the balance came from 22 other states and countries. A total of 667 youth participated in Tanglewood summer residential camp. Summer campers reported gaining knowledge and skills in ecology, biodiversity, outdoor living, leadership, citizenship, healthy lifestyles, sustainable living, and organic gardening. They also reported significant attitude and behavior changes, including the adoption of healthy eating and exercise habits, more self confidence in composting and recycling activities, more time hiking and playing outdoors, improved relationships with others, and more awareness of and respectful for the environment. Several summer camp foci are offered each week. The garden focus is highlighted as part of this year's report. Tanglewood's organic garden program enables young people to learn about growing their own food and making healthy food choices as part of their summer camp experience. Maine youth do not always understand the connection between their food and its production. The garden is organized, planted, maintained, and harvested by a corps of Master Gardener volunteers and campers. This past summer, 60 campers engaged in the garden focus and in-turn taught others how food choices relate to the larger concept of leading more sustainable lives. Through mealtime presentations, these 60 campers shared their knowledge with approximately 600 young people.

Earth Connections School Programs at Tanglewood helped Maine's K-12 public school teachers address the need to align their classroom curriculum to state and federal standards. Nineteen hundred students from 22 schools participated in outdoor immersion programs focusing on concepts relating to forest, river, and seashore ecosystems. All programs are aligned with the State of Maine Learning Results. Working in cooperative group settings, students develop life skills, a sense of community and an awareness of their connection to the natural world. A variety of hands-on, minds-on teaching techniques are used to address the needs of diverse learning styles. All students are challenged through open-ended inquiry and critical-thinking situations. In addition, the experiential methodology strengthens problem-solving skills and often effectively reaches those students who have not been successful in a traditional classroom atmosphere. The educational opportunities offered are often impossible to offer in a classroom setting. A fourth grade teacher put it simply, "There is no way we could reproduce this experience in a classroom." Programs were funded through partnerships with schools, parents, individual donors and the foundation funding.

The non-profit Tanglewood 4-H Camp and Learning Center raised \$185,573 in financial aid, and other program support to make summer camp and school programs affordable and accessible. An additional \$842,940 was raised in support of a capital fund drive to acquire the Blueberry Cove Camp in Tenants Harbor, Maine. Blueberry Cove is envisioned to become a sustainable living education center with a focus on marine studies.

The Silver Wake science curriculum project enhances the learning experience of middle school students through several programs including an intensive teacher institute, two-day workshops, field trips and ongoing in-classroom support by UMaine Extension staff and volunteers. The program is a partnership of UMaine Extension, Maine Sea Grant, and the UMaine Department of Marine Sciences. In 2004, it served 1,036 students, and trained 390 teachers and volunteers. Follow-up surveys and interviews conducted by the University of Maine Center for Research and Evaluation documented that students were more engaged in science when studying components of this program, better problem solvers, and more aware of environmental issues.

York County Extension, in cooperation with the Kennebunkport Conservation Land Trust, and Tanglewood 4-H Camp, conducted low-impact island camping programs that provided training to 110 youth ages 9-17. The programs focused on teaching sustainable natural resource stewardship practices, environmental education, and leadership. Parents of campers reported positive changes in behavior and attitudes in their children, including: social and cultural changes (making new friends, building trust in relationships, valuing diversity, understanding culture); changes in their inner selves (sense of peace, self awareness, sense of joy and beauty and wonder in the world); and changes in their attitudes about the ecosystem (discovering sense of place, nature study, curious about the environment, curious about nature).

Farm Safety

Our farm safety program includes hands-on tractor safety training for youth, publications and fact sheets, training programs for farm and greenhouse pesticide applicators, safety training for working with large animals, on-farm environmental scanning, and biosecurity training for small farmers and veterinarians. These activities help make the agricultural environment safer for the people of Maine. This year, we worked in cooperation with the Maine Board of Pesticides Control to develop Worker Protection Standards train-the-trainer program for pesticide handlers in the potato production and processing industry. The program teaches safe pesticide handling practices and how to develop a decontamination kit. Ten presenters were trained in 2004 who, in turn, trained over 300 pesticide handlers, all of whom received certification for completing the training. Annual inspections by the U.S. Environmental Protection Agency resulted in no fine-bearing citations at production and processing operations where fines as high as \$150,000 have been levied in the past. Safe practices have helped the industry attract workers, and relief from fines have increased the overall profitability of the potato industry in Maine. Tractor safety training programs resulted in youth from largely rural areas being qualified to work on local farms.

Forestry

The Small Woodland Owners Association of Maine and UMaine Extension sponsored the Yankee Woodlot Forestry Camp, designed to teach landowners, loggers and land managers about forest ecology and the techniques of managing woodlands for improved wildlife habitat, recreation, forest products, biodiversity, aesthetics, and long-term sustainability. Through first-hand experiences in a demonstration forest, participants develop a woodland plan that incorporates their goals and the ecological conditions of the forest. This year, a special scholarship was offered by the Maine Forest Service's *Women in the Woods Program*, which enabled 11 female woodlot owners to participate. More than 320 people have graduated from the

Yankee Woodlot Forestry program and now manage in excess of 60,000 acres of forestland in New England.

UMaine Extension conducted 168 consultations on forest management in 2004 and provided 20 workshops to nearly 400 landowners and stewards. We helped 130 individuals develop goals and objectives for their forest; 80 developed forest management plans affecting over 3,000 acres. One-hundred-thirty-six natural resource professionals received continuing education instruction in courses delivered by Extension staff and collaborators, qualifying 56 individuals for six-month Apprentice Wood Scaler Licenses.

Our Agroforestry team partnered with nine national, state, local, and private organizations to convene the Northeast Forestry and Agroforestry Conference. Over 120 people attended the 20 classes and workshops offered at the event.

UMaine Extension continues to provide information to Maine maple syrup producers. This past year saw the introduction of a syrup grading school that is intended to bring product consistency to the marketplace. The program will expand beyond the borders of Maine in the coming year.

This year, we partnered with the UMaine Department of Forest Management to help 15 undergraduate students meet their degree requirements by completing portable sawmill operation course work. Two in-depth articles on sawmill operation and maintenance were published in a multi-national periodical with a circulation of more than 120,000.

The *Library of Educational Links* [<http://www.umaine.edu/umext/forestry/>] Web site was created this year to serve as a portal to forestry, wood and wildlife resources. The site received over 17,000 visits in its first year.

Integrated Pest Management (IPM)

Maine is the lead state in New England for the Northeast Pest Management Center. The Center provides a virtual resource over the Web, with listings of the best pest management resources from each state. The Web site is a portal to information that is intended to minimize pest damage and pesticide risk in the six-state area. The site is located at <http://pronewengland.org> .

During 2004, UMaine Extension offered many types of pesticide educational programs to address Maine's agriculture and natural resource issues, including applied research trials, grower meetings, hotlines, newsletters, ecology camps, school trips, and environmental monitoring efforts. UMaine Extension worked with more than 2,000 agricultural producers who used IPM practices to improve production for apples, potatoes, sweet corn, blueberries, strawberries, cranberries, and greenhouse crops. More than 50 were new users of IPM. We helped more than 10,000 Maine citizens make informed decisions regarding pesticide application in homes, farms, businesses, and schools. More than 3,700 were homeowners who received information relating to pest control in their home gardens and yards. UMaine Extension's pest management Web site logged more than 500,000 visits this year, where visitors can access research-based information to help them to minimize pesticide use while limiting damage from harmful pests. The Web site is located at <http://www.umext.maine.edu/topics/pest.htm>.

Our potato IPM program operated 125 field-monitoring sites in 2004, which were used to survey potato pest populations and identify thresholds for implementing disease mitigation strategies. We also employed 26 summer program aides, who produced 1,250 individual field-scouting reports for growers. Growers used the information to develop successful plans for pesticide applications, which reduced the number of typical calendar-driven applications.

European corn borer and cutworms are becoming major pest problems for Maine potato growers due to a recent and dramatic increase in their population and range. With the help of our IPM field staff, growers avoided crop losses through an increased insect trapping effort. Research efforts are ongoing concerning cutworms not only in potatoes, but also in rotational crops for potatoes.

The 2004 growing season in Maine was ideal for the occurrence of potato late blight. Our forecasting program recommended protective sprays beginning earlier than normal and lasting for most of the growing season. The recommendations provided vital information for growers and potentially saved millions of dollars in crop losses. Our field staff discovered late blight on 11 farms prior to the growers knowing about it, allowing them to take actions, which prevented costly losses. Field scouting and monitoring also identified an extremely low aphid population, which resulted in the elimination of two aphicide applications for growers. The elimination of applications resulted in industry-wide savings in Maine of approximately \$2 million dollars and an estimated 19,500 gallons of insecticide.

In 2003, UMaine Extension developed the *Maine Potato Pest Management Guide* as an online resource. It provides potato growers with accurate, up-to-date information on pest control methods. 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. During 2004, the site, located at <http://www.maineopotatopestguide.com/>, had more than 71,000 visits.

Thanks to advances in IPM provided by researchers at UMaine and an effective educational outreach program by UMaine Extension, Maine's blueberry growers are better able to minimize pesticide and herbicide use. Since the introduction of IPM 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 annual yield from 20 million pounds in 1983 to a 70 million pound yearly average over the past five years.

Our Apple IPM program provides training, monitoring, and twice-daily online pest forecasts to help growers keep up with current pest threats and management options. Over 160 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 27 orchards for on-site pest updates. Over 90 percent of growers surveyed in 2004 reported that the program helped

them reduce crop damage. They attributed \$65 worth of pesticide saving per acre, per year to the program, representing an estimated savings of \$200,000 statewide.

Public demand is high for sweet corn, making it the most popular vegetable crop grown in Maine. It typically requires high inputs of pesticides to produce a marketable crop, and this reduces profit margins and increases environmental risk. This year, we worked with 24 volunteer corn farmers to minimize insecticide use through weekly monitoring. Post-season surveys indicated that 87 percent of the growers improved their crop quality and almost 20 percent significantly reduced their insecticide applications. More than half of the farmers found that the program improved profitability, some by more than 100 percent.

IPM techniques were demonstrated to strawberry growers through training sessions, field days, and at the Maine Vegetable & Small Fruit Growers Annual Meeting and the New England Vegetable and Berry Conference in 2004. We worked with 12 volunteer farms to monitor for problems on a weekly basis during the pre-bloom through harvest period. Management recommendations were provided in three ways: suggested to the volunteers based on established action thresholds, offered to more than 90 other strawberry growers in Maine through a weekly newsletter, and posted on our Web page at: <http://pmo.umext.maine.edu/strwbery/strwbery.htm>. Due to the late emergence of some major pests, including strawberry bud weevil and tarnished plant bug, our efforts resulted in significantly reduced pesticide applications on most farms, improved profitability, and a high quality crop.

This year, we partnered with Extension programs from Vermont and New Hampshire to conduct three hands-on IPM workshops for over 120 greenhouse growers, addressing issues such as insect and disease identification, insect biology, and damage symptoms – subjects identified as important in a recent industry survey. As part of a multi-year pilot program, we assisted a select group of seven small-, medium-, and large-scale poinsettia growers to more effectively identify and manage pests and diseases in their greenhouse crop. In one small operation we detected the disease Botrytis on stems and foliage early in the cropping cycle. By removing the infested plants and preventing the disease from spreading, the grower avoided a projected loss of approximately \$12,700, a significant savings for a small operation.

We are using a community-based approach to help homeowners reduce Japanese beetle populations on a neighborhood-wide basis. Normally, we recommend against Japanese beetle traps for a variety of reasons. However, we closely monitored traps in selected neighborhoods as a way of comparing beetle numbers from year to year. Results of this project are still being evaluated. While checking the traps weekly, we also interact with the homeowners on other pest management issues, such as the euonymus caterpillar, viburnum leaf beetle, lily leaf beetle, slugs, bald-faced hornets, and others. The project generated a television news report that was seen statewide, creating considerable homeowner interest in biological and alternative control of the Japanese beetle. Nearly 300 people requested additional information as a result.

Our Insect and Plant Disease Diagnostic Laboratory is the main diagnostic facility of its type in Maine. The lab responds to the needs of commercial growers and citizens in a timely manner so they can make informed decisions about crop management as the issues arise. This year, our lab partnered with the Maine Department of Agriculture, Food and Rural Resources, and USDA-

Animal and Plant Health Inspection Service - Plant Protection and Quarantine to conduct a survey of Maine nurseries for the pathogen that causes sudden oak death. Nearly 800 plants were sampled from 20 nurseries and processed through the diagnostic lab. Results showed no presence of the pathogen, giving Maine nurseries a higher degree of confidence in the health of their products. Regulatory agencies that were involved in the project were the able to certify Maine nursery plant stock for export.

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 do; when they are exposed to pesticide residues, they potentially receive larger doses. The Maine Department of Agriculture, Food and Rural Resources, in cooperation with UMaine Extension, implemented the Maine School IPM program with a grant provided by EPA. The program educates school staff about the hazards of pesticide exposure. It introduces IPM as a comprehensive approach to preventing pests from reaching unacceptable levels, and advocates low-risk control and strategies when necessary. Our program continues to assist schools as they make the transition from conventional pest control to IPM, helping to make schools safer for children.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 4 Total	6,184	\$630,824	\$176,732	\$630,824	\$1,438,380

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

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:
Acres affected as a result of implementing Nutrient Management Practices	92,000
Acres will be covered in watershed management initiatives.	391,352
Agricultural producers will implement Integrated Pest Management programs in Maine.	3,102
Agricultural producers will reduce herbicide use with increased use of cultivation, cultural management, band spraying, or lower-rate products.	1,797
Agricultural producers will start composting.	8
Community groups will be involved in watershed management initiatives.	41
Crop producers will identify yield-limiting factors and increase long-term productivity.	3,509
Educational and community projects will be developed and/or run by Master Gardeners.	255
Farmers and homeowners within source water protection areas will assess and take action to prevent water contamination.	25

Horticultural therapy programs will be started.	2
Households will start composting.	64
Maine Citizens will access up-to-date information on the Pest Management Office website and UMCE web page.	141,854
Maine citizens will be involved in leadership training to protect natural resources.	81
Maine citizens will complete lake watershed surveys.	25
Maine citizens will conduct coastal watershed surveys.	19
Maine Citizens will form weekend watershed conservation teams to take action to correct easily correctable problems with the assistance of UMCE staff.	14
Maine citizens will have increased awareness of the threats to drinking water.	739
Maine citizens will have increased awareness of threats to marine habitats.	2,577
Maine citizens will monitor phytoplankton for an early warning system for toxins affecting public health.	0
Maine citizens will protect wildlife habitat in suburban and rural settings.	96
Maine citizens will take action to protect Maine's natural resources, by becoming inland and coastal watershed stewards.	274
Maine citizens will take action to protect shellfish resources.	108
Maine citizens will use appropriate home horticulture practices to protect water resources.	323
Maine coastal groups will learn capacity building techniques to protect marine resources.	7
Maine residents will protect wetland and riparian habitats.	57
Management plans will be written as a result of UMCE efforts.	13
Master Composter projects will be created.	0
Master Composters will be trained.	0
Master Gardener Volunteers will be trained in composting education.	62
Master gardeners will further their education through college classes or Technical Programs.	64
Master Gardeners will start a horticulture-based business.	42
Municipalities will start composting.	4
Number of acres affected as a result of Coverts Project Cooperator outreach projects.	0
Number of acres of forest included in forest management plans.	3,080
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 alternative income opportunities adopted.	21
Number of BMP's adopted and the number of acres affected.	21
Number of communities starting a public policy process involving wetlands, timber harvest, endangered species, and other resource issues.	0
Number of contact hours of continuing education instruction delivered by Extension staff or in collaboration with partners.	926
Number of environmentally appropriate forest management practices adopted and the number of acres affected.	21
Number of environmentally appropriate forest management practices adopted and the number of acres affected.	2,080
Number of environmentally appropriate practices adopted as a result of Coverts Project Cooperator outreach projects.	0
Number of erosion control measures adopted and acres affected.	2
Number of firms implementing changes in management as a result of developing strategic goals and objectives.	0
Number of firms implementing strategies or practices to increase product value or dollars earned.	6
Number of firms incorporating strategic planning, record keeping, and predictive models in their management practices.	2
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.	1,902
Number of individuals and groups who develop goals and objectives for their forest.	130
Number of individuals or groups who develop a forest management plan.	80
Number of individuals who implement their forest management plan.	59
Number of loggers adopting safety practices.	0
Number of loggers attending safety workshops.	0
Number of Maine citizens making an informed decision regarding a pesticide application.	4,695
Number of Maine citizens who address a pest management issue after consultation or diagnosis by Pest Management Office staff.	5,347
Number of Maine citizens who become certified pesticide applicators.	336
Number of Maine producers implementing pesticide best management practices to protect the environment.	1,584
Number of manufacturers who can describe the relationship of production, economic and environmental variables in making management decisions.	71
Number of manufactures adopting safety practices.	11
Number of Master Gardeners who are able to successfully identify beneficial and pest organisms, and utilize appropriate management techniques.	642

Number of municipalities who develop and implement components of comprehensive urban forest management plans.	0
Number of natural resource professionals who obtain their apprentice wood scaling license as a result of attending Extension programs.	56
Number of natural resource professionals, educators, and service providers attending continuing education instruction delivered by Extension staff or in collaboration with partners.	56
Number of natural resource professionals, educators, and service providers incorporating new knowledge and adopting new practices in their work.	136
Number of new or expanded market opportunities for forest products.	0
Number of participants completing the Covert Projects training.	0
Number of participants who consider alternative income opportunities for their land.	49
Number of producers changing pesticide application techniques and attitudes using PAT practices.	1,854
Number of producers using Integrated Pest Management practices in apples, potato, sweet corn, and greenhouses, cranberries.	2,187
Number of safety practices adopted.	0
Number of urban forest resource management plans developed and implemented.	0
Number of volunteer hours given by Coverts Project 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
People will adopt ecologically sound landscape practices that enhance wildlife habitat.	252
People will donate vegetables to food pantries.	274
People will expand their garden space.	1,102
People will gather and organize information.	1,196
People will graduate from UMCE Compost School.	58
People will make informed decisions demonstrating environmental stewardship, and sustainable marine resource practices.	909
People will participate in Master Composter projects.	0
People will participate in Master Gardener educational events, and community projects.	7,997
People will recognize significant improvement in gardening skills through participation in public garden programs.	5,303
People will report reduced pesticide use.	598
People will start a garden.	257
People will take steps to achieve personal, and community goals.	719

People will use adaptive gardening techniques.	170
Potato and blueberry producers will understand and use thresholds for pest treatment.	2,979
Poultry and aquaculture producers will adopt Integrated Pest Management practices.	7,225
Pounds of produce will be donated to food pantries.	66,601
Private compost facilities will be established.	2
Private composters will attend programs.	200
Producers will adopt testing strategies as a part of management practices and use results in their management process.	1,641
Producers will change pesticide application techniques and attitudes using Pesticide Applicator Training practices.	756
Producers will implement pesticide and nutrient Best Management Practices to protect surface water and groundwater systems.	2,243
Producers will maintain pesticide certification by attending pesticide recertification programs.	2,050
Producers will reduce negative impacts of livestock on streams.	8
Producers will use strategic planning, record keeping, and prediction models in their management practices.	1,485
Residents will attend home composting programs.	225
Responses will be made to public requests.	4,512
Soil tests will be interpreted.	471
Soil tests will be submitted.	1,110
Specimens will be collected.	924
The USDA receives accurate information on pesticide use in Maine. Information gathered through a PIAP survey of the agricultural community. Number of surveys conducted.	1
Total dollar value from value-added strategies to local communities.	0
Total dollars saved or earned as a result of implementing management changes learned through Extension programs to enhance economic viability.	0
Value (in dollars) of food will be donated to food pantries.	95,693
Volunteer hours will be given by Master Composters for community projects.	75
Volunteer hours will be given by Master Gardeners to provide horticulture information to the public and develop community horticulture projects.	16,998
Youth will demonstrate a knowledge of the laws of ecology and/or an understanding of their connections with the Earth.	8,643
Youth will demonstrate environmental stewardship and/or sustainable natural resource practices.	2,089

OUTPUT INDICATORS

Circulation of articles in news media.	3,061,339
Number of articles in news media.	271
Number of audio-visual resources developed (video, slides, displays).	148
Number of consultations.	44,989
Number of groups formed (ad hoc or formally organized).	117
Number of horticultural therapy adaptive gardening workshops/consultations.	38
Number of issues of newsletters written.	2,109
Number of Master Gardener volunteers successfully completing training.	253
Number of people attending the workshops/events.	37,886
Number of people involved in groups formed (above).	3,396
Number of people reached through Farmers Markets.	1,000
Number of people receiving newsletters within a year's time.	43,301
Number of publications distributed.	253,543
Number of publications written.	177
Number of radio program listeners.	9,500
Number of radio programs produced.	3
Number of television segments produced.	22
Number of volunteers trained.	2,538
Number of workshops/events.	825

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Agricultural Profitability and Agricultural Financial Management

Mid-Maine Greenhouse Growers' Association: The Evolution of a Growers' Group: The Mid-Maine Greenhouse Growers Association (MMGGA) started in 1986 with the help of UMaine Extension. MMGGA currently represents between 80 and 90 growers from northern and eastern Maine, and most of them are spring bedding plant producers who operate on a seasonal basis. When the group formed, UMaine Extension helped develop a constitution and by-laws, provided organizational and networking support, as well as technical assistance, and gave grant writing help. Since the late 1980s, the group has met monthly to address business and educational topics common to the operation of a greenhouse business in Maine. As demand increased for business, marketing, and technology-related information, Extension offered multi-day workshops for growers to improve their operations. This year, we participated in annual vegetative and seed trials to benefit the group.

Summary of Impacts: In its first year, MMGGA members began working cooperatively to purchase bulk materials, immediately reducing their costs by 22 percent. Since then, growers have consistently averaged a 20 percent discount due to the power of bulk purchasing on average annual purchases of over \$400,000. This amounts to over \$80,000 per year, and more than \$1 million over the life of the association. Other savings have resulted from cooperative advertising projects and shared capitol purchases. Additional advantages have been realized

because industry representatives can contact 30 to 50 growers at one time during business meetings. In 2000, MMGGA was asked to be a member of the Ornamental Horticulture Council of Maine, an umbrella group for all green industry organizations in Maine that addresses policy issues on a regional basis. While the group is self-sufficient and thriving, UMaine Extension continues to support this group with research-based information as needs arise.

Scope of Impacts: State Specific

Key Themes: Agricultural Waste Management and Water Quality

Protecting Groundwater from Nitrate Pollution: Recent regulatory focus has expanded from controlling point-source pollution to identifying and controlling non-point source pollution. For the past 20 years, Maine livestock farms, while decreasing in number, have been increasing in size, thereby creating higher concentrations of manure and making them identifiable producers of non-source point pollution. Under the umbrella of the state conservation districts, a group of producers, UMaine Extension staff, Maine Department of Agriculture, Food and Rural Resources staff and federal environmental regulators worked to identify issues and possible solutions. The group concluded with a recommendation for developing legislation; An Act Regarding Nutrient Management passed the Maine legislature in 1998 with support from the agricultural community and commodity organizations across the state and with support from the Maine Department of Environmental Protection. The law addresses issues such as winter storage of manure, and the creation of Comprehensive Nutrient Management Plans (CNMP) for most livestock producers in the state. State regulation now requires Maine producers to develop and implement CNMPs that demonstrate how they will control manure on their farms to prevent groundwater nitrate contamination. In 1999, the Maine Department of Agriculture, Food and Rural Resources contracted with UMaine Extension to develop a training and certification program to meet the needs of the legislation. We developed competency requirements for certified planners and created training materials for farmers, planners, and state agency staff. We also developed software that has been widely used across the state to help livestock producers write their own nutrient management plans, and track their efforts. Educational programs were delivered to farmers, Natural Resources Conservation Service staff, certified crop advisors, and state regulators. Over \$5 million was made available for Maine farmers through legislative appropriation and state bonds for the construction of manure facilities.

Summary of Impacts: Since the enforcement of CNMP regulations in 2000, 411 certified nutrient management plans have been prepared, which control the waste of more than 61,000 animals. Over 92,000 acres of cropland are now managed using nutrient plans developed under Maine guidelines. Fifty-nine of Maine's dairy farmers have written and certified their own plans with the help of our software and passed competency exams. This project won the Northeast Extension Directors Award of Excellence in 2003.

Scope of Impacts: State Specific

Key Themes: Agricultural Crops and Agricultural Production Efficiency

Regional Training for Agricultural Service Providers: Agricultural service providers provide information and guidance to farmers on fertilizer and pesticide application, crop selection, rotation, and harvest decisions. Today, virtually all agricultural service providers are certified through the American Society of Agronomy's Certified Crop Advisors (CCA)

program, a voluntary program that offers training, sets certification levels, and provides testing. UMaine Extension participates with other New England-based Extension water quality programs to deliver the CCA trainings, providing an opportunity for crop service providers to remain current in the latest regional soil and crop management research, be updated on changes within the U.S. Natural Resource Conservation Service programs, and address crop management business, and ethics issues. Annual 2-day training programs cover nutrient management, soil quality, water quality, crop management, and pest management, and include a field training component.

Summary of Impacts: More than 100 crop advisors have been certified as a result of training programs since 2000. Our certified crop advisor program graduates have influenced manure application practices on at least 60,000 acres of New England farmland and soil fertility management 55,000 acres. They have worked with more than 650 producers to soil improve fertility and 375 producers to address pest management issues. Program participants indicated that they had saved individual growers between \$12,500 and \$500,000 in production costs.

Scope of Impacts: Multi-State Extension: ME, NH, VT, MA, NY, CT, RI

Key Themes: Water Quality and Science Education

Silver Wake; A Science Curriculum for Middle Schools: Various reports and consultations with statewide educators point to a middle school curriculum that does not meet the needs of students in learning science. UMaine Extension, Maine Sea Grant, and the UMaine School of Marine Sciences co-developed and implemented the Silver Wake Program, a full-year curriculum focused on local environmental and water quality concerns. Teachers are using Silver Wake to teach biology, ecology, and stewardship in coastal watersheds. The program includes multi-day intensive workshops, field trips, a summer institute for teachers, ongoing in-classroom support by UMaine Extension and University staff, and help from volunteers who are part of community coastal phytoplankton monitoring teams. In its first year, the Silver Wake Program reached over 500 middle school students in Maine. The program has built and continues to promote an innovative partnership among UMaine researchers and educators, community phytoplankton monitoring volunteers, and public school teachers.

Summary of Impacts: Teachers and volunteers became familiar with analysis using microscopy methods, particularly as they pertains to harmful phytoplankton, human impact, and aquaculture-related projects. Teachers became knowledgeable about photosynthesis, marine food chains, bioluminescence, and the ecology of phytoplankton. Teachers incorporated new skills and knowledge into individual, integrative curriculum plans that are flexible to accommodate change, capitalize upon local strengths, and move beyond traditional disciplinary boundaries. Surveys and interviews conducted by the UMaine Center for Research and Evaluation documented that students are more engaged in science when participating in this program, have improved problem solving skills, and are more aware of environmental issues. Evaluators expressed their belief that that the Silver Wake Program is contributing to the development of a higher level of student thinking. Teachers shared the curriculum with others in their educational districts and will continue to utilize the curriculum and resources with future classes.

Scope of Impacts: State Specific

Key Themes: Environmental Education and Leadership Training and Development

Indirect Impacts of the Master Gardener Program: UMaine Extension's Master Gardener Program was instituted in response to a critical need for research-based horticultural information for the home gardener and to Maine's emerging green industry. Now celebrating its 20th year, the program has improved the horticultural practices of citizens and contributed to positive community development throughout Maine. Participants agree to volunteer 40 hours to develop community projects, and deliver educational programs in exchange for the learning that they receive. Many continue to volunteer in subsequent years.

Summary of Impacts: An evaluation was sent to 69 Master Gardeners from Oxford County who took the course between 1995 and 2003 to determine long-range outcomes. Of the 42 responses, 90 percent experienced at least one of the following:

- Greater awareness of how gardening techniques affect the local ecology.
- Greater awareness of how lifestyle choices affect the environment.
- Greater awareness of how volunteering can impact the community.

One survey participant stated that the program inspired her to lead a significant project in a local watershed, which had positive environmental impacts.

Scope of Impacts: State Specific

Key Themes: Precision Agriculture, Integrated Pest Management, Pesticide Application and Agricultural Profitability

Support for the Potato Industry in Maine: UMaine Extension is an important link to current research and educational programs for the potato industry in Maine. During the winter months, we engage in programs that give growers and technical field staff the latest integrated techniques to improve crop yield and storage viability, and help them address major problems such as potato late blight. Our programs include the Maine Potato Pest Management Conference, and the Maine Potato Conference, which deliver training and information to technical field staff and growers preparing for the upcoming season. Growers are also supported by regional meetings (that assist in preparing for the threat of late blight) and by newsletters, fact sheets, and newspaper articles. A major component of our support for potato growers is the Potato Late Blight Forecasting Program, which helps growers schedule fungicide treatments based on scouting reports and the collection of condition-specific data from monitoring stations throughout the growing region. This year, our programs reached 375 of Maine's 400 commercial potato growers.

Summary of Impacts: During 2004, we employed and trained 26 seasonal employees to survey potato crops for weeds, insects and diseases, with an emphasis on potato late blight. Our scouts surveyed 125 strategically located potato fields on a weekly basis throughout critical points in the growing season and were able to detect ideal conditions for the occurrence of potato late blight. Eleven occurrences were identified on farms prior to the grower knowing that late blight was present. Our scientists provided vital information and recommendations for protective sprays that potentially saved millions of dollars in crop losses. In some cases, our scouting reports allowed growers to harvest store their crop early, which may not have been the case if late blight had not been detected or had been detected later in the growing season. Also during 2004, our scouts identified extremely low aphid populations. As a result, many growers were able to eliminate scheduled aphicide applications, saving the industry approximately \$2 million, and keeping an estimated 19,500 gallons of insecticide from being released in the environment.

Scope of Impacts: State Specific

CSREES Goal 5

Enhanced Economic Opportunity and Quality of Life for All Americans

Executive Summary

Parenting and Family Education

Parent educator training is designed to enhance the skills of educators who are working in a variety of childhood and education settings. UMaine Extension's parent educator trainings give participants a comprehensive set of skills applicable in their programs. The training also helps educators recognize the benefits of teaching parents how to parent well, and learn how life span development affects families. During 2004, more than 1,500 parent educators adopted new skills to use when working with parents or groups, and 44 childcare providers adopted new practices that enhanced their ability to care for children and/or work with parents. Over 10,000 people received our parenting publications, and many more were reached through more than 50 articles in the news media.

The ways UMaine Extension interacts with parents and child-care providers are changing. While we continue to present workshops that support healthy child development and positive parenting skills (over 150 workshops offered), citizens are also using us as consultants (more than 2,300 contacts), receiving child development information by mail (nearly 30,000), and are accessing our Center for Parenting Education Web site. The Web site is designed for parents, for people who care for or work with children, and for parenting educators. It is located at <http://www.umext.maine.edu/parentcenter/intro.htm>.

UMaine Extension is a key collaborator in the statewide parenting education home visitation delivery system through major programs, such as *Parents are Teachers Too* in Waldo County, and Knox County's *Teen Parent Program*, *Parent Education and Family Services Project*. Both Knox and Oxford Counties in Maine have incorporated parenting education in their highly successful school-age child-care programs.

UMaine Extension's *Turn Beauty Inside Out Program* is a collaborative, public awareness community development program focusing on body image, self-esteem, media literacy, and leadership development for girls and women. The goal is to challenge the media messages that tell girls they must be thinner, prettier, or sexier to be OK, and to create a new cultural definition of beauty: "true beauty is good hearts, great works, and activism." May, 2004 was proclaimed *Turn Beauty Inside Out* month in Maine by Governor John Baldacci. Newspapers statewide featured articles on the project, and included information on how community groups are celebrating a new definition of beauty. This year, we distributed 178 community awareness kits as a resource for teachers, group leaders, and volunteers to adapt and use in their communities. More than 25 workshops were conducted and a conference was presented attended by more than 900 people. Most of the workshops were train-the-trainer sessions where participants planned to bring information and activities back to their groups. A highlight was the "Turning Media Inside Out" weekend workshop for girls and women that focused on media literacy, leadership development, and creating new media. With funds from the Pine Tree State 4-H Foundation, video equipment was purchased so girls could create their own new media images.

Over the past 10 years, more than 4,000 individuals from all 50 states have participated the Tanglewood 4-H Camp Elderhostel program. They have experienced extraordinary learning adventures in natural history, environmental education, sailing, forestry management, fishing and lobstering, local history, sustainable practices, and Maine products. Participants enroll in week-long sessions; 12 different sessions are offered each season. Tanglewood 4-H Camp's mission is to teach Maine youth and adults to be effective and caring citizens of the Earth through affordable environmental education and nature-based experiences. We encourage reflection and respect, while inspiring change within our communities and ourselves. This year, more than 300 people from 41 states participated in the Elderhostel program.

Elder Caregiving

Almost one in four households in the U.S. is involved in caregiving for a person aged 50 or older. Twenty-five percent of all workers provide elder care for someone 65 or older. Two-thirds of these workers have to rearrange their work schedules, decrease their working hours, or take unpaid leaves to meet their caregiving responsibilities. The costs are high. In 1997, the value of informal caregiving, if it had to be replaced with paid services, would have cost an estimated \$196 billion. During the same time period, U.S. businesses estimated lost productivity related to informal caregiving to exceed \$11 billion annually.

Many seniors, elder caregivers, and their families are unfamiliar with how to help older adults in crisis access needed medical care, personal care, and support services. UMaine Extension is helping to reduce this unfamiliarity through educational programs and access to relevant information. This year, we developed a fact sheet to help people understand and manage an elder caregiving crisis. *Managing Your Caregiving Needs: Avoiding a Caregiving Crisis* was distributed to 650 sites including health clinics, hospitals, municipal offices, libraries, senior centers, and churches; and to over 2,000 elder caregivers, seniors, and families in mid-coast and central Maine. Our four-part *Elder Caregiving Series* was delivered in six locations in Somerset and Kennebec counties. Elder caregiving resource kits, including the *Elder Caregiving Series* curriculum, reference books, and video tapes, were distributed through participating public libraries, and UMaine Extension offices throughout the state. We also partnered with several organizations to design and run the statewide *Supporting Family Caregivers* conference, bringing together 106 elder service providers, behavioral service providers, and caregivers to share information. The conference was partially funded by the U.S. Department of Health & Human Services Administration on Aging. Post evaluations showed that knowledge was increased related to aging, and developmental/intellectual disabilities. Participants left able to take on critical roles in the development of needed new services and support for elders.

To improve the quality of life for older Maine citizens, we developed the *Garden Angels* Program in Cumberland County. The program connects able-bodied gardeners with aging or physically disabled citizens to collaborate on a home gardening project. The "Garden Angels" make weekly visits to help plan, plant, weed, water, or harvest vegetables, and flowers from the recipient's garden. The real work is the cultivating of kindness and friendships. People who receive this free assistance can count on a friend for social interaction, fresh vegetables for an improved diet, physical activity, and mental stimulation. Gardening can be therapeutic. A physical therapist in Freeport said that he saw a world of positive difference in one of his patients after she became a recipient in program; she started feeling better both physically and

emotionally. This year, 45 individuals received special attention from 40 *Garden Angel* volunteers.

Business Education

Small businesses are the backbone of Maine's business economy. Successful start-up and expansion of small businesses play a very important role in Maine's employment growth and economic vitality. UMaine Extension's small and home-based business education programs helped thousands of potential and existing Maine entrepreneurs access research-based information and improve their knowledge, skills, and business management practices, increasing their chances of success. Our educational efforts helped Maine people to secure and sustain a livable income, and improve their quality of life.

During the past year, we helped more than 4,500 people through small business clinics, workshops, conferences, resource fairs, Web sites, individual consultations, and publications. We taught Maine people how to plan, start, evaluate, and grow their own small and home-based businesses. We partnered with other business-assist organizations in a wide range of activities that focused on increasing the visibility and accessibility of educational resources available to those considering starting or growing a small and home-based business in Maine.

UMaine Extension helped hundreds of small business owners acquire new knowledge and skills to improve their business management practices, and decision-making capabilities. More than 1,000 Maine people attended 94 small and home-based business education workshops on topics such as pricing products and services, balancing business and family, customer service, starting a horticulture business, recordkeeping, and business planning. Our small business clinic program, conducted through county Extension offices, helped 188 people access reliable information and answer questions about starting and growing their business. We helped child-care providers learn how to start and maintain effective financial records, small farmers evaluate alternative enterprises, and specialty food processors price their products profitably. Seventy-six people who attended our programs wrote business plans, 89 wrote marketing plans, and 82 developed a sound record keeping system. About 900 people reported adopting one or more business management practices as a result of attending small and home-based business educational programs. We also provided leadership in planning and organizing the second annual Washington County Business Conference and Marketplace, which was attended by more than 400 people.

UMaine Extension participated as a member of a planning team that organized a two-day business skills conference in Texas for outreach professionals across the country who work with entrepreneurs. Supported by a \$25,000 USDA grant and logistical assistance from the Southern Rural Development Center, members of the National Home-Based and Micro Business Design Team organized this train-the-trainer conference to help expand the technical skills, and enhance the educational programming for outreach professionals. Over 70 participants from 28 states participated in this conference and had the opportunity to sharpen their technical skills in areas such as e-commerce, marketing, financial planning, business planning, business operations, and customer service. Participants came from a variety of organizations including Extension, local and state government, and tribal and other colleges. The proceedings are available at <http://srdc.msstate.edu/bst/proceedings.htm>.

We have strengthened existing linkages and developed new partnerships with small and home-based business owners and other business-assist organizations in Maine during the past year by initiating or participating in 35 collaborative and/or cooperative efforts that resulted in more than 50 educational activities being conducted across the state. These activities include:

- Katahdin Entrepreneurship Education Project
- Washington County Business Conference and Marketplace
- Downeast Microenterprise Network
- Mount Desert Island Tomorrow Project
- UMaine Business Innovation Center Project
- Maine Entrepreneurship Working Group
- Business Outreach on Community Radio
- Mid-Maine Child-Care Resource Development Project
- National Home-Based and Micro Business Design Team
- Tourism Economic Development Project
- Farms for the Future Program
- Blueberry Trade Adjustment Assistance Program
- Women's Agricultural Network Program

We also cooperated with researchers at the University of Maine in a variety of important economic development applied research projects. Our staff has worked with researchers from UMaine's Margaret Chase Smith Center and the Department of Resource Economics and Policy on a project to define tourism attitudes in rural Piscataquis County to inform emerging regional economic development efforts. We have also collaborated with the Resource Economics and Policy to evaluate the economic importance and impact of microbusinesses to the New England economy, and the economic importance of cruise ships to the Maine economy. We are continuing to collaborate on a multi-year Fund for Rural America project focusing on strengthening small grocery store retailing in rural communities.

4-H Youth Development

Research validates and reinforces the significant impact that adults have in the positive development of youth. Maine 4-H youth development programs provide a nurturing and supportive environment for young people to learn and develop. Whether it is a UMaine Extension Master Gardener who is mentoring in the *Kids Can Grow* gardening program, or service-learning supported activities in after-school programs, the sustained involvement of caring adults with youth is a prescription for long-term success. A recent study of Maine 4-H alumni bears this out. Of 41 respondents, all noted their self-esteem had been enhanced by their involvement in 4-H programs. All indicated that 4-H had taught them the importance of community service and that they had acquired life skills. Maine's 4-H program, which ranges from traditional 4-H club programs to innovative in-school and after-school programs, rests firmly on the relationships between youth and adult volunteers and educators. Adult and older teen volunteers teach, demonstrate and model subject matter and life skills. Successful examples of individual and program-wide success include:

- Ninety-five percent of graduating seniors in an Oxford Hills youth/adult partnership effort said that being part of a service-learning project raised their self-esteem, gave them direction and purpose, and helped them set goals for higher education.

- Rural youth in Washington County demonstrated skills they had learned in a 4-H Super Sitter child-care course, and then applied them in real-life babysitting experiences. Over 75 percent reported they had acquired decision-making and problem-solving skills.
- In Knox County, a school-age childcare and school enrichment program improved school attendance; 90 percent of students attended more days of school than in the previous year.
- Parents report that 4-H does make a difference. One parent noted that a year after joining 4-H, their child had developed new, healthier friendships, improved academically, and had stopped behavior that merited school detention.
- In Houlton, 30 students revitalized the high school civil rights team by creating school-wide education events. Team members noted that they had become more aware of issues of prejudice and bias, and learned positive ways to intervene. Nearly twice as many students have signed up for next year's team.
- Tanglewood 4-H Camp trained 60 teen campers as part of the outdoor leadership development program. Twelve of these become volunteer counselors at the camp this year, teaching activities, resolving conflicts, serving as role models for younger campers, and working as part of a team to improve the camp.
- During the past three years, UMaine Extension has offered staff training and implementation of Mini-Society, a student entrepreneurial education program, to an elementary school on the Passamaquoddy Indian Reservation at Pleasant Point, Maine. The program has now been incorporated into their formal five-year teaching plan for the entire school.
- Hancock County 4-Hers learned the value of compiling financial records in their projects. One parent noted that her child improved her understanding of what it costs to own a horse, and developed financial skills that she will use throughout her life.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 5 Total	10,032	\$1,023,303	0	\$1,023,303	\$2,046,607

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

	Total Days:
Adults will adopt a least one new growth-enhancing skill.	2,197
Adults will adopt at least one new parenting skill.	2,316
Adults will develop strategies to strengthen family and other important relationships.	2,141
Adults will incorporate new information that enhances a child's development.	2,255
Adults will participate in community-based efforts to reduce violence.	689
Adults/older youth will demonstrate acceptance of differences.	1,202

Adults/older youth will demonstrate essential communications skills.	1,648
Adults/older youth will demonstrate fairness and equity.	889
Adults/older youth will demonstrate peaceful conflict resolution skills.	810
Adults/older youth will demonstrate that they are responsible, contributing members of their community.	1,688
Adults/older youth will teach acceptance of differences.	1,181
Adults/older youth will teach essential communication skills.	932
Adults/older youth will teach peaceful conflict resolution skills.	643
Adults/older youth will use developmentally appropriate hands-on, experiential educational methods.	1,705
Child care providers will adopt at least one new parenting skill.	176
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.	44
Child care providers will incorporate new information that enhances a child's development.	175
Collaborative groups will be formed.	16
Cooperative groups will be formed.	20
Educational activities resulting from cooperative/collaborative efforts	53
Enterprises will be retained/expanded.	269
Enterprises will report increased revenues and/or decreased costs.	39
Enterprises will transition to closure.	7
Jobs will be created.	75
New enterprises will be created.	147
Non-viable businesses will not be started.	40
Number of adults/older youth who demonstrate leadership	1,644
Number of adults/older youth who teach fairness and equity.	923
Number of adults/older youth who teach leadership.	1,208
Parent educators will adopt at least one new practice or skill in leading parenting classes or groups.	713
Parent educators will adopt at least one new practice or skill in working with parents.	813
Participants and volunteers will be involved in public policy issues affecting families, organizations, and communities in Maine.	429
Participants and volunteers will increase their confidence and participation in resolving family, organizational, or community issues.	3,038
Participants and volunteers will increase their educational and leadership skills.	1,893
Participants and volunteers will use their educational and leadership skills to bring about change in their family, organization, or community.	2,665
Participants will attain a driver's license, business license or other bridge to employment opportunities.	22

Participants will cease/decrease in unhealthy or anti-social behavior, addiction or lifestyle pattern, including necessary or desirable weight reduction or weight gain.	134
Participants will demonstrate increasing order, organization or cleanliness in the home environment.	115
Participants will demonstrate positive reading habits by contacting an agency to access literacy assistance for self.	7
Participants will demonstrate positive reading habits by describing increasing reading activities (reading, finger rhymes, talking about books, etc.) with child/children.	37
Participants will demonstrate positive reading habits by describing increasing reading for self.	45
Participants will demonstrate positive reading habits by describing/demonstrating increased positive family relationships through reading, and reading related activities.	27
Participants will demonstrate positive reading habits by expressing increased enthusiasm for reading, and ideas found in books.	36
Participants will demonstrate positive reading habits by increasingly having books visible in the home.	48
Participants will demonstrate positive reading habits by increasingly having general reading materials (newspapers, magazines, etc.) in the home.	53
Participants will demonstrate positive reading habits by reporting increasing visits to a local library.	24
Participants will express positive goals (aspirations) for the future.	200
Participants will increase in contacts to community, social, or educational agencies to access needed resources or skills	148
Participants will increase network of support persons/resources.	218
Participants will increase participation in school, church or community programs, events and opportunities, including volunteer efforts.	182
Participants will increase responding to a need with action toward solving/addressing it through use of community resources.	162
Participants will initiate job training/job seeking/literacy skills.	42
Participants will reduce debt or saving money.	145
Participants will report or demonstrate increased positive communication in the home.	138
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, etc.).	73
People gathering/organizing personal, financial information.	442
People making informed decisions.	686
People taking steps to achieve personal and goals.	976

People will adopt one or more business management practices (e.g. developing a pricing strategy, etc.).	905
People will be involved in public policy issues affecting small or home-based businesses in Maine.	0
People will contact business-assist organizations.	384
People will develop record keeping systems.	82
People will increased their confidence and participate in organizational or community affairs related to small business.	38
People will present/facilitate educational activities at conferences, etc.	0
People will report ease in understanding and accessing small business educational resources.	110
People will report increased understanding of others' leadership skills.	0
People will report increased understanding of personal leadership skills.	60
People will report mentoring other business owners.	0
People will take part in networking opportunities.	2,468
People will use leadership skills to bring about change in their business and those with whom they interact.	6
People will use leadership skills to enhance small or home-based businesses in Maine.	6
People will write business plans.	76
People will write marketing plans.	89
People will writing customer service plans.	62
The number of adults enhancing their knowledge and/or skills to provide necessary care for aging family members.	452
The number of coalitions with UMCE involvement that support healthy child development, and position parenting skills.	262
The number of UMCE parent educators incorporating nutrition education materials into their programs.	16
UMCE nutrition aides and educators will incorporate parent education materials into their programs.	38
With UMCE involvement coalitions that facilitate building systems needed for adults will engage in positive, growth-enhancing behaviors.	87
Youth will demonstrate and document the ability to work in diverse settings.	288
Youth will demonstrate and document workplace skills, and competencies.	562
Youth will demonstrate character development (self-discipline, managing feelings, self-responsibility, self esteem, integrity, honesty, reliability, loyalty).	2,757
Youth will demonstrate empathy, and concern for others (nurturing relationships, sharing, charity).	1,983
Youth will demonstrate responsible citizenship (self-motivation, teamwork, contributions to group effort, community service/volunteering, and accountability).	2,652

Youth will demonstrate the qualities necessary to run a successful business.	322
Youth will demonstrate the skills necessary to run a successful business.	272
Youth will demonstrate their ability to lead others.	1,742
Youth will demonstrate their ability to resolve conflict through peaceful means.	1,352
Youth will demonstrate tolerance and acceptance of differences (peaceful conflict resolution, social skills, cooperation, courtesy, communication, respect, fairness, and justice).	2,314
Youth will develop and use safe and peaceful means to resolve disputes in their communities (town, neighborhood, and school).	1,112
Youth will develop mutually caring relationships with peers.	1,705
Youth will engage in activities related to their short-and long- term goals.	2,627
Youth will engage others in being supportive in their communities.	1,397
Youth will help their communities embrace diversity.	1,119
Youth will identify personal goals, values, and aspirations.	2,062
Youth will make appropriate decisions and resolve problems effectively in their daily lives.	3,089
Youth will make healthy lifestyle choices.	1,969
Youth will make informed financial decisions.	442
Youth will organize and maintain appropriate personal financial information.	423
Youth will practice appropriate safety procedures in home, work, or recreational activities.	1,415
Youth will serve effectively on teams with peers and adults.	1,987
Youth will set appropriate and reasonable goals for themselves and others.	2,763
Youth will take steps to achieve personal financial goals.	421
Youth will use peaceful means to resolve disputes with others.	1,208
Youth will value differences in their peers.	1,555
Youth will volunteer in their communities.	3,135

OUTPUT INDICATORS

Circulation of articles in news media.	2,980,129
Estimated audience involved in broadcast.	131,000
Number of articles in news media.	565
Number of audio visual resources developed (video, slides, displays).	64
Number of consultations.	5,640
Number of cooperative efforts initiated.	25
Number of economic reports disseminated.	24
Number of educational radio, TV and internet programs given.	17

Number of educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	81
Number of educational workshops, seminars, or conferences conducted by UMCE staff.	187
Number of enterprises assisted.	662
Number of existing small business owners participating in UMCE educational programs.	737
Number of groups formed (ad hoc or formally organized).	209
Number of home budget plans written.	0
Number of home visits.	10,744
Number of home visits by parent educators.	1,133
Number of individual consultations held.	382
Number of individuals participating in collaborative efforts.	724
Number of individuals participating in cooperative efforts.	102
Number of issues of newsletters/calendars written.	393
Number of issues of newsletters distributed.	8,056
Number of one-on-one consultations or trainings conducted by Extension program participants and volunteers.	83
Number of one-on-one consultations or trainings conducted by UMCE staff.	580
Number of organizations involved in collaborative efforts.	141
Number of organizations involved in cooperative efforts.	49
Number of participants in educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	597
Number of participants in educational workshops, seminars, or conferences conducted by UMCE staff.	3,102
Number of people attending small business clinics.	188
Number of people attending the workshops/events.	25,474
Number of people attending the workshops/events (for the aides).	0
Number of people attending UMCE educational workshops.	1,049
Number of people attending UMCE-sponsored networking programs.	700
Number of people cooperatively and collaboratively planning educational events.	0
Number of people involved in groups formed.	2,745
Number of people receiving newsletters/calendars within a year's time.	38,011
Number of people requesting business-related information.	518
Number of people requesting home budgeting information.	92
Number of potential small business owners participating in UMCE educational programs.	321
Number of promotional/informational articles distributed.	798,528
Number of promotional/informational articles written.	53

Number of publications distributed.	43,665
Number of publications written.	1,257
Number of resources loaned.	157
Number of small and home-based business owners participating in collaborative efforts.	299
Number of small and home-based business owners participating in cooperative efforts.	35
Number of small business clinics held.	68
Number of Trade Area Analyses conducted.	11
Number of UMCE educational workshops held.	94
Number of UMCE-sponsored networking programs held.	13
Number of volunteers trained.	3,108
Number of workshops/events.	1,139

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Youth Development/4-H, Home Lawn and Gardening, Leadership Development and Human Nutrition

4-H Gardening and Nutrition: York County, Maine has become more urbanized and less agricultural over the past 40 years. Consequently, many children are generations removed from the farm, food production, and the opportunity to establish a relationship with the Earth. In 1999, UMaine Extension and Master Gardener volunteers in York County developed the *Kids Can Grow 4-H Youth Gardening and Nutrition Program*, for children ages 7 to 14. Young people learn how to grow vegetables, herbs, and flowers for their families in their own 3 x 5 foot raised bed gardens using intensive square foot gardening techniques. They also receive lessons in the value of vegetables as an important part of a nutritious diet. Each child has a Master Gardener volunteer as a mentor to assist, inspire, and help them overcome obstacles in their gardening experiences. Approximately 50 percent of *Kids Can Grow* participants live in low-income families.

Summary of Impacts: Since 1999, 125 York County youth have completed the *Kids Can Grow 4-H Youth Gardening and Nutrition Program*, giving them a positive introduction to a potentially life-long healthy hobby of gardening. Surveys conducted after the program indicated all participants grew and consumed fresh vegetables and herbs for their families for the first time. Seventy percent of parents indicated a rise in the children’s self-esteem, and 80 percent of participants indicated an interest in continuing to garden in future years. Twenty-two youth exhibited leadership by returning as program helpers. The program has been replicated in two other Maine counties, and in New York, Oregon, and South Carolina through Master Gardener and 4-H programs.

Scope of Impacts: Multistate Extension: ME, NY, OR, SC

Key Themes: Youth Development/4-H, Service Learning, Lifeskills, and Workforce Development – Youth

4-H Youth Development Service Learning Projects: Each year, Maine youth serve their communities in meaningful ways through 4-H sponsored community service projects. Service

learning is a form of experiential learning in which youth apply the subject matter they are learning, along with critical thinking skills, to address genuine community needs. Competitive funding from the Pine Tree State 4-H Foundation and the Mudge Foundation provided youth with up to \$200 to support their individual projects. Forty-eight three-year project grants were funded between 2001 and 2003 for 539 youth from all 16 counties in Maine. The youth were supported by an estimated 100 trained adult volunteers.

Summary of Impacts: Recent research shows that youth who are involved in service learning projects are more likely to do well in school, graduate, vote, and are 50 percent less likely to abuse alcohol, cigarettes, or engage in other destructive activities, or become teenage parents. Over the last three years:

- 65 youth landscaped community parks, planted trees, and cared for public gardens and public trails,
- 56 youth planted and harvested community vegetable gardens for disadvantaged families,
- 79 youth taught educational programs and conducted presentations demonstrating life skills,
- 38 read to young children involved in community literacy and reading programs,
- 33 raised money for a variety of local services and programs,
- 37 participated in animal care and rescue,
- 66 collected food for food kitchens, and
- 72 provided clothing to families, including sewing kimonos for mammography patients at a women's health center.

Scope of Impacts: State Specific

Key Themes: Youth Development/4-H, Service Learning, Lifeskills, and Workforce Development – Youth

Long-term Impact of 4-H Programs in Franklin County: 4-H educational goals include helping young people and adult volunteers acquire skills and knowledge in specific subject matter areas, develop positive self-images, develop leadership skills, fulfill leadership roles, explore and evaluate career and job opportunities, and participate in community affairs. UMaine Extension's Franklin County office recently conducted an evaluation among 4-H graduates from the last seven to eight years. Most of the participants had been involved in the 4-H program during their teen years.

Summary of Impacts: Of the 41 respondents, 100 percent felt that their 4-H participation had improved their self-esteem; 73 percent had learned to exercise leadership, and 78 percent had become more responsible. Fifty-three percent of the respondents reported that 4-H had influenced their career direction, and all indicated that 4-H had taught them the importance of community service. One said, "Helping with the Special Olympics through my 4-H club showed me how rewarding and satisfying community service can be for everyone involved." In a separate statewide survey of 60 4-H graduates, respondents reported that the life skills they had acquired through 4-H included leadership, communication, learning, responsibility, planning, goal-setting, teamwork, community service, and self-esteem.

Scope of Impacts: State Specific

Key Themes: Small and Home-Based Business Education, Promoting Business Programs, and Economic Development

Washington County Business Conference and Marketplace: Maine's economy is profoundly influenced by the successful start-up and expansion of small businesses. In Washington County, nearly 30 percent of the workforce is employed by businesses with less than four employees, making the local economy highly dependent upon micro-businesses, and providing a viable mechanism for improving the economy by enhancing small business success. In 2003, UMaine Extension initiated the Washington County Business Conference and Marketplace. The collaborative effort involved more than 40 organizations, agencies, municipalities, and businesses. The conference theme was *Building the Entrepreneurial Spirit of Washington County* and its goals included highlighting contributions made by small businesses to the county economy, building and improving the business management skills of entrepreneurs, providing networking opportunities and business assistance, and helping businesses to attract new customers. More than 400 people participated in the event as workshop participants, presenters or exhibitors.

Summary of Impacts: Approximately 230 workshop participants reported improved business management skills in one or more areas considered crucial for business success. Eighty people attended two special, day-long pre-conference workshops presented by a national authority on trade show design and innovative selling and marketing strategies. As a result of their attendance, participants expected to increase their annual sales by a total of approximately \$166,600, or nearly \$2,100 each. In addition to generating sales, marketplace participants reported hundreds of contacts with potential customers, businesses, and business assist agencies. One sponsor, who provides financing to businesses summed up his view of the conference by saying, "I wish all of my customers could be exposed to this learning experience that fosters innovation and success!"

Scope of Impacts: State Specific

Key Themes: Aging, and Seniors

Senior Companion Program: There is a need to provide opportunities for elders who are no longer employed to maintain a high level of social integration. Volunteer programs are one way to encourage productive social involvement, however, the rate of volunteering is lower among low-income elders than among their more affluent counterparts. UMaine Extension responds to this need by providing volunteer opportunities for low-income individuals at least 60 years of age. The *Senior Companion Program* (SCP) is an initiative of the Corporation for National and Community Service and the federal domestic volunteer service agency, and sponsored in Maine by UMaine Extension. Senior Companions serve one-on-one with the elderly and other homebound persons who have difficulty completing everyday tasks. They assist with daily tasks, teach skills for everyday living, and alert doctors and family members to potential problems. To offset the cost of volunteering, Senior Companions receive a stipend of \$2.65 per hour and reimbursement of transportation expenses.

Summary of Impacts: A 1998 MacArthur Study found that close relationships with others and involvement in meaningful and purposeful activities are important to one's well being throughout life. Evidence suggests that social integration can positively affect health and that people who maintain extensive social contacts, engage in physical activities, and pursue emotionally and intellectually stimulating activities will age more successfully than those who

do not. In 2004, 110 Senior Companions volunteered a minimum of 15 hours per week, providing support and companionship to over 500 homebound elders. In 2002, a study of SCP financed by the John A. Hartford Foundation Geriatric Social Work Faculty Scholars Program found that Senior Companions showed relatively low rates of depression, loneliness, social isolation, anger, and confusion. Many spoke of the meaning the program brought to their lives. One Senior Companion stated, "It is more interesting, because you have something to do", and "so I think it is wonderful. I would encourage anyone to be a Senior Companion." Another stated, "Oh, there's a reason to get up mornings. I feel more like getting up. There is something to do." In addition to providing direct service opportunities, the *Senior Companion Program* also enhances participants' quality of life by providing monthly trainings on a variety of topics of importance to elders. Senior Companions are encouraged to be life-long learners, and to share information with their elderly clients as well. In 2004, 89 percent of Senior Companions attended monthly trainings. Evaluations show that the percent of Senior Companions increasing their knowledge of the monthly training topics ranged from 77 percent to 100 percent.

Scope of Impacts: State Specific

Key Themes: Community Development

Effective Community Group Leadership: Community members express frustration and discouragement about participating in groups that are ineffective. As more work is done in a variety of team settings, the cost of ineffective group work soars. Community members need to know how to work in groups and how to conduct effective meetings to achieve results that better serve the community. Since 2001, the Waldo County office of UMaine Extension has trained 60 community leaders to more effectively design and manage group processes and consequently minimize common working problems. The training helps citizens develop leadership skills that they take back to towns where they work or reside. These new skills directly benefit community agencies, organizations, and civic groups. The endeavor is supported by a grant from the Maine Community Foundation with the additional goal of building a lending library of facilitation toolkits, and theory and technique books for use as a resource to participants and communities. Thirteen of the original participants have also completed a 24-hour advanced facilitation training during 2004.

Summary of Impacts: The methods and techniques learned have been used by participants in their own community groups. Participants reported that practice during training increased their confidence as group leaders and that the training increased the intermediate and long-term outcomes that were achieved in their meetings. Meeting efficiency and effectiveness increased as needs, learning styles, and partnerships were acknowledged and included in the meeting process. Meetings were more focused, stayed on track, and had better communication resulting in improved teamwork. All trainees also felt they were better group members as well as leaders. The trainees also say they want to be of greater service to their communities. Both the beginner and advanced facilitators are leading agency, governmental, and community meetings in a seven county area on a regular basis. A working group of the advanced trainers was formed to help decision- and policy-makers and other stakeholders understand the social and economic link between training skilled community leaders and the strengthened capacity of communities to effectively identify and address citizens' needs. A presentation at a national Extension conference determined there was a need for a local, focused, affordable, train-the-trainer model. The multi-part program is being developed for national release in early 2006.

Scope of Impacts: State Specific

Key Themes: Child Care, Children, Youth, and Families at Risk, Parenting, and School Enrichment

School-Aged Child Care and Enrichment: Research shows that for every dollar spent on after-school programming, taxpayers can expect to save three dollars in the future related to welfare, incarceration, and rehabilitation. There is a need across Maine for quality school-age child care and quality enrichment programming in safe environments to enhance the academic school day for children. Since 1991, UMaine Extension has partnered with local school systems, parent/teacher associations, and the local communities to assess community needs and initiate effective after-school care and enrichments programs. Assessment is conducted through a community development process and, if the need exists, we help facilitate the creation of a local non-profit entity to meet the demand. Typical grants supporting many of the sites include start-up funds for three to five years, with decreasing support thereafter. Programs eventually become self-supporting. While most programs begin with grant funding, some groups began without grant funds as a true grassroots community project. Many of the programs have expanded to include summer, kindergarten, and vacation/holiday programs.

Summary of Impacts: In Oxford County, seven programs serving between 35 to 190 families each are evaluated annually by participants, parents, staff, and board members using the Wellesley College Assessing School-age Childcare Quality assessment tool and the University of Maine Parent Perception of Student Performance Tool. Evaluations have shown that over 90 percent of parents find the programs to be of great value to them and their children, and report that the program has had a positive impact on their ability to make a living and maintain a job. The majority of parents report that the program has positively impacted their child's academic growth. In our Knox-Lincoln County program, 45 percent of 35 enrolled students are behaviorally and or academically challenged. Classroom teachers were surveyed and reported that since participation in the program, 39 percent of these students made positive behavioral changes, 46 percent made substantial academic improvements, and 39 percent improved by completing their homework and turning it in on time. Quotes from parents include "Best program I have ever had my kids involved with," and "My daughter loves the program and is learning in a fun hands-on safe environment."

Scope of Impacts: State Specific

Key Theme: Parenting

Parenting Education - How to Deal with Anger: Each year in Maine, abuse tragically ends the lives of at least three children. According to state statistics, 3,746 children were officially documented to be the victims of abuse or neglect in Maine in 2002. Since many cases of abuse and neglect are not reported, officials estimate that more than 10,000 children are abused or neglected each year. According to a study by the RAND Corporation, every \$1 invested in parent coaching programs saves taxpayers \$4. Maine now spends \$5 million annually on child-abuse prevention. UMaine Extension's Washington County office presented a four-part positive parenting skills program to five Head Starts programs during monthly parenting meetings. Topics include communication, setting limits, nutrition for the young child, and anger management. Sixty-two parents attended the class session titled *How to Deal with Anger*, which taught the four step method to anger management: 1 - stop and pause a moment to cool off, 2 - read the situation quickly, and try to determine what is really happening, 3 - form a plan, and 4 - act.

Summary of Impacts: All of the participants indicated that they understood strategies to deal with anger. On a follow-up evaluation sent to the participants two months after the program, 12 parents reported that they had used this strategy to help them deal with their anger. One parent indicated that she had always reacted very quickly when she was angry with her children and now she counts to 10 before saying or doing anything. She said this helps her get a new perspective on her child's misbehavior and that she is a better parent as a result of the programs.

Scope of Impacts: State Specific

Key Themes: Homemakers, Community Development, and Volunteerism

Maine Extension Homemaker: Extension Homemaker groups in Maine have supported educational activities in Maine communities for more than 50 years. The groups were created as volunteer service organizations through UMaine Extension with membership open to anyone. Today, group members meet in informal settings where they can learn about topics of interest, develop leadership skills, promote Extension educational programs to community and family, volunteer in their communities, and create positive relationships with others. Extension Homemakers exhibit a strong commitment to lifelong learning. According to the latest Extension Homemaker annual report there are more than 1,000 Extension Homemakers in 11 Maine counties.

Summary of Impacts: Extension Homemaker groups across Maine volunteered more than 10,000 hours this year to offer educational programs for more than 4,000 Maine citizens. The educational programs focused on cultural and creative arts, safe food handling, health and disease prevention, leadership, managing natural resources for sustainability and profitability, nutrition, parent and family relationships, community service, and volunteerism. In the past year, Extension Homemakers have also dedicated their time and efforts to improving the communities where they live by addressing critical community needs in the follow ways:

- Made specialty items to donate to various community service agencies in Maine, such as hospitals, court systems, nursing homes, animal shelters, senior housing, and shelters. The value of these items was over \$9,600.
- Volunteered their time to work in local community agencies, such as schools, housing shelters, food pantries, nursing homes, community organizations, local fire departments, and animal shelters, contributing 14,000 volunteer hours for an estimated value of over \$140,000 (at \$10 per hour).
- Raised over \$14,900 to support local and state community agencies, and provide scholarship and summer camper scholarships to Maine youth.
- Worked 6,116 hours to support the Maine Extension Homemaker Council, and County Extension groups, and contributed \$2,611 towards county program support.

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 implementation, with stakeholders serving as partners and key members of focus groups, county boards, and advisory groups. These selected examples illustrate our public input process.

- Each of Maine's county offices has a County Executive Committee made up of county citizens to provide advice and direction on priority programs. County educators meet with their County Executive Committee at least six times a year to evaluate and review programs and discuss current and future public issues, needs, and programming. This year, County Executive Committees participated in a statewide program needs assessment by hosting public discussions within their county that helped suggest and prioritize issues.
- The University of Maine Board of Agriculture continues to provide counsel and advice to UMaine Extension on our agricultural priorities. The board represents commodity groups, organizations, state government, and related industries. During 2004, the board met twice and provided specific recommendations to the University regarding the use and upgrading of Experiment Station farms, state bond funding for capitol projects at the farms, staffing, research initiatives, and managing program priorities during challenging financial times. The Board's updated long-range plan for the Maine Agricultural Center (MAC) was presented to the Maine State Legislature's Joint Standing Committee on Agriculture Conservation and Forestry. MAC is a joint venture of UMaine Extension and the Maine Agricultural and Forest Experiment Station dedicated to integrating outreach education and applied research in support of Maine agriculture.
- 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 nearly \$1.6 million for 2004. 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 a CSREES research grant of \$218,000 and recommends funding based on priority needs of the wild blueberry industry. UMaine Extension's blueberry specialist meets with the Wild Blueberry Commission throughout the year and includes commission updates in the Wild Blueberry Newsletter.
- UMaine Extension 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 195 individuals completed PAT training and more than 1,536 individual pesticide recertification credits were given to farmers attending UMaine Extension pesticide education programs in 2004.
- The Maine Board of Pesticides Control, a group of seven individuals appointed by the governor, provides guidance for and input into UMaine Extension's Pesticide Applicator Training program as well as our efforts in school and homeowner Integrated Pest Management (IPM) programs. The board is made up of representatives from the forestry

- and medical industries, a commercial pesticide applicator, a private applicator (farmer/grower), a UMaine faculty member with knowledge of IPM, and two citizens with environmental expertise.
- UMaine Extension staff regularly meet with the Maine Potato Board, composed principally of potato farmers, to discuss priority issues and needs for Maine's potato growers. The Board's education and research committee often supports UMaine Extension 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 UMaine Extension. As a result, the board provided funding for a UMaine Extension-produced growers' newsletter, as well as control measures for emerging pest issues such as white mold and aphids. UMaine Extension was also very active in a Potato Summit held by the Maine Potato Board in the summer of 2004 to identify future directions for the industry. An outcome of the summit was an affirmation of the continuing work of UMaine Extension and the University's Experiment Station in support of this commodity sector.
 - The Forest Resources Advisory Committee (FRAC) includes representatives of natural resource agencies, university faculty, organizations, and businesses. The Committee advises the forestry and wildlife departments of the UMaine College of Natural Sciences, Forestry and Agriculture, with an emphasis on research and outreach. UMaine Extension faculty are actively pursuing opportunities to enhance programming and grant funding through collaboration with FRAC partners.
 - The 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 an ongoing multiple needs assessment process, that includes county Executive Committee advisory boards, current and past Master Gardener program participants, surveys from the general public and discussions among UMaine Extension home horticulture staff. Our Master Gardener/Home Horticulture team meets quarterly to review and refine the Maine Master Gardener course and educational needs. The 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 completed a fund-raising campaign to purchase the Blueberry Cove Camp in Tenants Harbor, Maine. Through this educational partnership, UMaine Extension will greatly expand its educational programs for youth and adults with an emphasis on marine-based environmental education programs. More information about 4-H can be found on page 27 and on page 42.
 - The Pine Tree State 4-H Foundation works in partnership with UMaine Extension to enrich youth experiences through the Maine 4-H Youth Development program and shares input received from funding recipients, stakeholders and supporters with UMaine Extension staff. Foundation priorities are set by a board of trustees consisting of community and business leaders, 4-H volunteers and youth, all of whom have a strong commitment to youth development and the success of 4-H. The staff and trustees of the 4-H Foundation

are actively engaged in joint work with UMaine Extension through planning committees and task forces. More information about 4-H can be found beginning on page 51.

- The UMaine Extension Senior Companion Program (SCP) Statewide Advisory Council gives advice and assistance to UMaine Extension staff with the goal of moving SCP toward continued growth. The Council consists of 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 Council advises the project director on statewide policy, operational procedures, and practices consistent with program policies. Additionally, the council seeks input to share with SCP from local advisory committees and SCP representatives. More information about SCP is on page 22.
- UMaine Extension and Maine Sea Grant work together in a unique partnership to deliver educational programs and conduct applied research projects in coastal Maine relating to coastal communities, aquaculture, fisheries, and ecosystem health. Marine Extension Team (MET) members have access to local advice on programming via 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. These committees are also being engaged in the development of the next Maine Sea Grant Strategic and Implementation Plans. Since the members of these committees have a strong understanding of UMaine Extension and Sea Grant, they can provide particularly valuable insights into the most pressing, high-impact programming for consideration by the programs in developing their strategic directions. In addition to the individual advisory committees mentioned above, the Sea Grant program also has a Policy Advisory Committee made up of members from partner organizations across the state with a mix of state and federal agencies, industry, academic institutions, and non-governmental organizations. This group meets at least three times annually to provide input to program managers and they have an important role in developing the strategic and implementation plans.

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

- 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 Integrated Pest Management (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 UMaine Extension, 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, UMaine Extension and

Maine Sea Grant, in partnership with the Maine Department of Marine Resources, have worked with the Zone D Lobster Management Council.

- 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.
- UMaine Extension 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.
- The Trade Adjustment Assistance for Farmers Act was passed by Congress as a result of increased import pressure facing U.S. farmers and fishermen. We are working with wild blueberry growers to complete educational programs that are required to be eligible for assistance. See *Trade Adjustment Assistance for Farmers* on page 7.
- We collaborate with UMaine academic departments to help natural resource professionals qualify for Apprentice Wood Scaler Licenses through continuing education instruction required by the Maine Department of Agriculture, Food and Rural Resources.
- We work with livestock producers and dairy farmers to create Comprehensive Nutrient Management Plans that address manure storage issues. The plans are required by state legislation. See *Protecting Groundwater from Nitrate Pollution* on page 38.
- In 2001, the Maine State Legislature passed an invasive aquatic plant law to protect the state's fresh water lakes. The law also mandated that the Maine Department of Environmental Protection survey Maine lakes to determine the level of infestation. UMaine Extension participate in a project that surveyed more than 90 lakes in Hancock County. The effort was the first in the state, and will serve as a model to monitor all 5,300 Maine lakes. More information can be found on on page 25.

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

- We partner with the universities of New Hampshire, Vermont, and Connecticut, the Maine Department of Agriculture, Food and Rural Resources, the Maine Dairy Industry Association, and UMaine academic units, to hold the New England Dairy Seminar. Each annual conference brings together dairy experts and researchers to educate and connect with dairy producers, consultants, educators and agribusiness representatives from the region. More information on the New England Dairy Seminar can be found on page 2.
- The Maine Cattle Health Assurance Program is part of a 13-state alliance that offers disease prevention programs, diagnostic testing, and educational programs that help protect farm profits, the food supply, and public health. In Maine, the program is a cooperative project among UMaine Extension, the Maine Department of Agriculture, Food and Rural Resources, practicing veterinarians, and Maine livestock producers. See *Healthy Livestock Equals Safer Food Supply* on page 15.

- UMaine Extension works with livestock producers in Maine to meet organic certification standards and to cooperatively market their organic product along with farmers in other parts of the region under the Wolfe's Neck Farm label. We have partnered with the Maine Department of Agriculture, Food and Rural Resources and the Wolfe's Neck Farm Foundation to set standards and help small- and medium-sized farms reach upscale markets by producing a consistent, high-quality product under this common label. More information on Wolfe's Neck Farm can be found on page 3.
- UMaine Extension and the Maine Beef Producers Association sponsored the annual Maine Beef Conference in late 2003. This year, the conference focused on feeder calf value and value-added marketing of organic and non-organic cattle.
- A team of Extension staff, Maine Alternative Poultry Association members and the Maine Organic Farmers and Gardeners Association developed and presented a workshop series to help new poultry farmers understand breed selection, production practices, and safety processing.
- UMaine Extension and the University of Vermont Extension offered a series of multi-day workshops in Maine and Vermont to help farmers develop new vegetable varieties and produce organic seed for regional seed companies. More than 400 growers have attended these workshops. More information is available on page 4.
- We annually collaborate with Extension programs from the universities of Connecticut, Massachusetts, New Hampshire, Rhode Island, and Vermont, Cornell University, the New England Vegetable and Berry Growers Association, and the Massachusetts Fruit Grower's Association to hold the New England Vegetable and Berry Conference. This year, the conference reached more than a thousand growers with research-based information that helps them improve practices and increase profits.
- UMaine Extension and the Southern Aroostook Soil and Water Conservation District are partnering with the Houlton Band of Maliseet Indians in a three-year project to provide research and education to reduce the negative impact on adjacent watersheds through improved cover crop and mulching practices. In its first year, the project impacted over 3,000 acres.
- This year, UMaine Extension and the Maine State Florists and Growers Association conducted the annual greenhouse growers program at the 2004 Agricultural Trades Show for 76 greenhouse growers, with sessions on plant disease management, pesticide use, and safety, marketing, and business management.
- We worked with the Maine Farmland Trust and the FarmLink program to deliver statewide workshops that help citizens preserve and conserve farms by making agricultural lands available for future farmers through sale or transfer. We also worked with the Land for Maine's Future program in central Maine for farmland protection through purchase of development rights and creation of conservation easements. More information is available on page 5.
- In 2003 and 2004, we partnered with Extension programs from the universities of Connecticut, Massachusetts, New Hampshire, and Vermont, and estate attorneys from Maine and Virginia to address citizen needs for estate planning to transfer farms and farmland to their heirs. More information is available on page 5.
- UMaine Extension has been working with the New American Sustainable Agriculture Project to support recent international immigrants who are aspiring farmers as they

develop the necessary skills to operate viable farm businesses in their new home. More information is available on page 5.

- We partnered with the Northeast Center for Risk Management Education at the University of Delaware, and other universities, to help specific agricultural producers become eligible for federal assistance through the Trade Adjustment Assistance for Farmers Act. See *Trade Adjustment Assistance for Farmers* on page 7.
- 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. UMaine Extension partners with MOFGA in many ways. An example is a project that provides technical assistance to dairy farmers on transitioning to organic production, which led to the formation of new producer organization, the Maine Organic Milk Producers. See *The Dairy Industry in Maine –Transition to Organic* on page 8.
- UMaine Extension and Bowdoin College have been working on a collaborative research project focused on improving the quality and health of the Katahdin sheep. See *Hair Sheep Research* on page 10.
- We are a partner in the newly formed Bangor Regional Food Safety Committee. The committee is working on developing a rapid regional response to a food poison outbreak. Other partners include the Maine Department of Health, the Maine Department of Agriculture, Food and Rural Resources, and Eastern Maine Medical Center. More information is available on page 12.
- UMaine Extension is part of the Northern New England Seafood Alliance, which offers classroom and online seafood HACCP (Hazard Analysis and Critical Control Point) courses to seafood processors. Maine partners include the Maine Department of Agriculture, Food and Rural Resources, the Maine Department of Marine Resources, UMaine, and representatives from the Maine seafood industry.
- The University of Maine Cooperative Extension Aging Initiative is a collaboration with the Maine Nutrition Network that reaches Maine’s limited income seniors to improve their nutrition and increase levels of physical activity. More information is available on page 19.
- The Maine Nutrition Network is a collaboration of public and private partners with primary funding from the USDA Food Stamp Program and the Maine Department of Human Services Bureau of Health.
- This year, we partnered with the Maine Board of Pesticides Control and the Maine Ornamental Horticulture Council to develop a new program that addresses the needs of greenhouse and nursery operators to understand and become certified for safe handling and application of pesticides.
- Our *Watershed Stewards* Program trains groups of Maine residents to identify water pollution sources in their local watersheds and initiate mitigations. The program is a partnership between UMaine Extension and the Maine Department of Environmental Protection. More information is available on page 25.
- We worked in partnership with the Hancock County Soil and Water Conservation District, local lake associations, and the Maine Center for Invasive Aquatic Plants to conduct a study to determine the level of harmful invasive aquatic species in lakes throughout Hancock County watersheds.

- UMaine Extension and Maine Sea Grant are addressing coastal access issues through the Working Waterfront 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 25.
- The Marine Extension Team has been asked by the Maine Aquaculture Association to facilitate the development of a Cobscook Bay Management Plan for Finfish Aquaculture. The Maine Department of Marine Resources, USDA, and other resource agencies will review the final plan for eventual incorporation into formal regulatory policy.
- The Small Woodland Owners Association of Maine and UMaine Extension sponsored the Yankee Woodlot Forestry Camp, in response to landowner needs to increase their understanding of forest ecology and woodlot management. This year, the program included a special scholarship by the Maine Forest Service Women in the Woods Program, which enabled 11 additional female woodlot owners to participate. More information is available on page 28.
- Our Agroforestry team partnered with national, state, local, and private organizations to convene the Northeast Forestry and Agroforestry Conference. Over 120 people attended the 20 classes and workshops offered at the event. Conference partners were the USDA National Agroforestry Center, Small Woodlot Owners Association of Maine, USDA-NRCS, U.S. Forest Service, Maine Forest Service, Somerset and Kennebec County Soil, and Water Conservation District, Maine Farm Service Agency, National Resource Conservations Service, Messalonskee High School, and private foresters.
- We support the greenhouse industry in Maine through the Mid-Maine Greenhouse Growers Association started in 1986 with the help of UMaine Extension. See Mid-Maine Greenhouse Growers' Association - The Evolution of a Growers Group on page 37.
- Our small and home-based business education program has strengthened existing linkages and developed new partnerships with small and home-based business owners and other business-assist organizations in Maine during the past year. Some of these include:
 - Blueberry Trade Adjustment Assistance Program
 - Business Outreach on Community Radio (WERU)
 - Downeast Microenterprise Network
 - Katahdin Entrepreneurship Education Project
 - Land for Maine's Future Program
 - Mount Desert Island Tomorrow Project
 - Maine Entrepreneurship Working Group
 - Mid-Maine Child Care Resource Development Project
 - National Home-Based and Micro Business Design Team
 - Tourism Economic Development Project
 - UMaine Business Innovation Center Project
 - Washington County Business Conference and Marketplace
 - Women's Agricultural Network Program
- The Maine Agricultural Center (MAC) is a partnership between UMaine Extension 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 \$180,000 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.

- A partnership of UMaine Extension 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.
- UMaine Extension'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, YMCAs, YWCAs, Boys and Girls Clubs, Boy and Girl Scouts, Future Farmers of America, 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. Note: stakeholders that are involved in substantial partnerships to offer programs or services with UMaine Extension agree to do so within our non-discrimination policy.

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

Acadia National Park	Catholic Charities of Maine
Agricultural Council of Maine (AGCOM)	Center for Marine Conservation
Androscoggin County Commissioners	Central Maine Sheep Breeders Association
Androscoggin County Extension Association	Chewonki Foundation
Androscoggin Healthy Families	Coastal Conservation Association
Androscoggin Home Care and Hospice	Coastal Economic Development
Aroostook County Action Program	Coastal Enterprises, Inc.
Aroostook Agency on Aging	Coastal Swim Beach Committee
Aroostook County Commissioners	Cobscook Bay Fishermen's Association
Aroostook County Community Action Program	Cobscook Bay Management Area Group
Aroostook County Extension Association	Cobscook Bay Resource Center
Bangor Area Visiting Nurses	Communities for Children
Bangor Regional Food Safety Committee	Community Health and Counseling
Bangor State Fair Administration and Board	Conservation Law Foundation
Bigelow Laboratory for Ocean Sciences	Corporation for National and Community Service
Blue Hill Heritage Trust	Cove Brook Watershed Council
Blue Hill Peninsula Chamber of Commerce	Craig Brook National Fish Hatchery
Bowdoin College	Cumberland County Commissioners
Bucksport Community Concerns	Cumberland County Extension Association
Bureau of Elderly and Adult Services	Darling Marine Center
Casco Bay Estuary Program	Downeast Community Hospital
	Downeast Institute for Applied Marine Research and Education

Downeast Lobsterman's Association
Eastern Area Agency on Aging
Eastern Association of Veterinarians in
Aquaculture
Eastern Maine Development Corporation
Eastern Maine Medical Center
Eastport Health Care Center
Education Advisory Committee of the
Wells National Estuarine Research
Reserve
Eleanor Widener Dixon Memorial Clinic
Farm Fresh Connection
FarmLink
Federal Farmland Protection Program
Finance Authority of Maine
First Congregational Church of Calais
First Congregational Church of North
Anson
Forest Resources Advisory Committee
Four Directions Development Corporation
Franklin County Commissioners
Franklin County Extension Association
Friends of Acadia
Friends of Casco Bay
Friends of Medomak Watershed
Friends of Schoodic
Georges River Shellfish Management
Committee
Good Shepherd Food Bank
Governor's Task Force on Fishing Vessel
Safety
Great Northern Paper Company
Great Works Watershed Coalition
Gulf of Maine Aquarium
Gulf of Maine Council on the Marine
Environment
Gulf of Maine Expedition Board
Gulf of Maine Foundation
Gulf of Maine Ocean Observing System
Gulf of Maine Research Collaborative
Hancock County Commissioners
Hancock County Extension Association
Hancock County Planning Commission
Hancock County Soil and Water
Conservation District
Head Start

Healthy Families Maine Network
Healthy Island Project
Holt Research Forest
Indian Township
Island Connections
Island Homes for Students
Island Institute
Isleboro Island Trust
Kaufman Foundation
Kennebec County Commissioners
Kennebec County Extension Association
Kennebec Plaza
Kennebunkport Conservation Land Trust
Knox County Children's Services
Knox County Commissioners
Knox County Extension Association
Laudholm Trust
Lincoln County Commissioners
Lincoln County Extension Association
Lobster Conservancy
Lobster Zone Management Council
Maine Agricultural and Forest Experiment
Station
Maine Agricultural Center
Maine Alternative Poultry Association
Maine Aquaculture Association
Maine Aquaculture Innovation Center
Maine Beef Industry Council
Maine Beef Producers Association
Maine Beef Producers Council
Maine Board of Pesticides Control
Maine Bureau of Mental Health
Maine Bureau of Parks and Lands
Maine Center on Aging
Maine Center for Invasive Aquatic Plants
Maine Centers for Women, Work and
Community
Maine Children's Task Force
Maine Coalition on Aging Initiative
Maine Coastal Program
Maine Commission for Community
Service
Maine Community Foundation
Maine Correctional Center
Maine Cranberry Growers Association
Maine Dairy and Nutrition Council

Maine Dairy Industry Association
Maine Dairy Promotion Board
Maine Emergency Management Agency
Maine Deer and Elk Producers
Association
Maine Department of Agriculture, Food
and Rural Resources
Maine Department of Conservation
Maine Department of Conservation's
Bureau of Parks and Lands
Maine Department of Economic and
Community Development
Maine Department of Education
Maine Department of Environmental
Protection
Maine Department of Health and Human
Services
Maine Department of Inland Fisheries and
Wildlife
Maine Department of Labor
Maine Department of Marine Resources
Lobster Zone Management
Maine Department of Professional and
Financial Regulation
Maine Department of Transportation, Civil
Rights Division
Maine Division of Quality Assurance and
Regulations
Maine Environmental Education
Association
Maine Fair Association
Maine Farm Bureau
Maine Farmland Trust
Maine Fish Health Technical Committee
Maine Fishermen's Forum Board
Maine Forest Service
Maine Geological Survey
Maine Gourmet and Specialty Food
Producers Association
Maine Greenhouse Industry Growers
Maine Humanities Council
Maine Island Trail Association
Maine Landscape and Nursery Association
Maine Lobsterman's Association
Maine Maple Producers Association
Maine Marine Trades Association

Maine Math and Science Alliance
Maine Nutrition Network
Maine Organic Farmers and Gardeners
Association
Maine Organic Milk Producers
Maine Parent Federation
Maine Phytoplankton Monitoring Program
Advisory Board
Maine Public Health Association
Maine Resource, Conservation and
Development Associations
Maine Rural Partners
Maine Science and Technology
Foundation
Maine Sea Grant
Maine Sea Urchin Zone Council and
Lobster Zone Council D
Maine Seacoast Mission
Maine Shore Stewards
Maine Shore Stewards Advisory Board
Maine Small Business Development
Centers
Maine Soft-shell Clam Advisory Council
Maine State Florists and Growers
Association
Maine State Housing Authority
Maine State Legislature
Maine State Planning Office
Maine State Pomological Society
Maine State Prison
Maine State Prison Farm
Maine Tele-Medicine Service
Maine Urchin Harvester's Association
Maine Vegetable and Small Fruit Growers
Association
Maine Wild Blueberry Commission
Margaret Chase Smith Center for Public
Policy
Marine Conservation Center
Marine Explorers Club
Meals for ME
Merrymeeting Bay Advisory Committee
Microbial Source Tracking Project
Advisory Committee
Mount Desert Island Community Health
Plan

Mount Desert Community Trust
Mount Desert Island Housing Authority
Mount Desert Island Biological
Laboratory
Mount Desert Island Sheltered Workshop
Mudge Foundation
National Home-Based and Micro-business
Design Team
National Sea Grant Extension Growth
Committee
Natural Resources Conservation Service
Nature Conservancy
New American Sustainable Agriculture
Project
New England Farmed Fish Health
Management Workshop Planning
Committee
New England Floriculture, Inc.
New England Regional Monitoring
Committee
New England Vegetable and Berry
Growers Association
New Moon Magazine
NOAA Habitat Restoration
North Atlantic Marine Alliance
Northeast Aquaculture Conference and
Expo Planning
Northeast Center for Food
Entrepreneurship
Northeast Center for Risk Management
Education (University of Delaware)
Northeast Consortium
Northeast Loggers' Association
Northeast Regional Aquaculture Center
Northeast Sustainable Agriculture
Research and Education
Northeastern Regional Aquaculture
Center's Technical Industry Advisory
Council
Northern Maine Development
Commission
Northwest Atlantic Marine Alliance Board
of Trustees
Notre Dame De Lourdes
Ornamental Horticulture Council
Orono Land Trust

Oxford County Commissioners
Oxford County Extension Association
Partners for Ending Hunger
Passamaquoddy Indian Reservation
Peninsula Tomorrow
Pennsylvania State University
Penobscot Bay Marine Volunteers
Penobscot Bay Network
Penobscot County Commissioners
Penobscot County Extension Association
Penobscot River and Bay Institute
Penobscot River Keepers
Pine Tree State 4-H Foundation
Piscataquis County Commissioners
Piscataquis County Economic
Development Council
Piscataquis County Extension Association
Project KEEP (Katahdin Entrepreneurship
Education Program)
Plants for ME
Pleasant Point Preservation Committee
Professional Employees Advisory Council
Project Learning Tree
Regional Dairy Quality Management
Alliance
Sagadahoc County Commissioners
Sagadahoc County Extension Association
Salvation Army
Schoodic Futures
Sea Urchin Zone Council
Sebasticook Valley Hospital
Senior Spectrum
Service Corps of Retired Executives
Shore Stewards Collaborative
Small Woodland Owners Association of
Maine
Somerset County Commissioners
Somerset County Extension Association
Southern Aroostook Soil and Water
Conservation District
Southern Kennebec Child Development
Corporation
Southern Maine Community College
Southern Rural Development Center
State of Maine's Beaches Conference
Steering Committee

Stonington Fisheries Alliance
Sunrise County Home Care Services
Sustainable Agriculture Society
Tanglewood 4-H Camp and Learning
Center Board of Directors
United Way of Maine
University of Connecticut
University of Delaware
University of Florida
University of Massachusetts
University of Minnesota
University of New Mexico
University of New Hampshire
University of Southern Maine Muskie
School of Public Service
University of Vermont
USDA APHIS Veterinary Services
USDA APHIS Plant Protection and
Quarantine
USDA Infectious Salmon Anemia
Standards Committee
USDA Organic Transition Program
USDA Sustainable Agriculture and
Research Education

U.S. Department of Agriculture
U.S. Small Business Administration
Waldo County Commissioners
Waldo County Extension Association
Waldo County Triad
Walker Trust Foundation
Washington County Commissioners
Washington County Community College
Washington County Extension Association
Washington-Hancock Community Agency
Wells National Estuarine Research
Reserve
Wells National Estuarine Research
Reserve, Education Advisory
Committee
Western Maine Community Action
Western Mountains Alliance
Wild Blueberry Growers Association
Wolfe's Neck Farm Foundation
Women's Agricultural Network
Working Waterfront Access Coalition

Section C

Program Review Process

There have been no changes to the Program Review Process for the 2000–2004 Plan of Work. In the Plan of Work the process is titled *Merit Review Process*.

Section D

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

The University of Maine Cooperative Extension 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.

Joint Research and Extension

Cover Crop and Mulching Practices on Tribal Land: UMaine Extension is partnering with Native American potato farmers and the Southern Aroostook Soil and Water Conservation District to provide research, education and crop practice payments to reduce erosion potential, soil degradation, and loss of nutrients through improved cover crop, and mulching practices on land in potato rotation. Replicated trials have been established by Extension to validate and demonstrate the techniques to tribal farmers and others. In the first year, the project, funded by a three-year EPA Watershed Initiative Grant, has impacted more than 3,000 acres.

Healthy Livestock Equals Safer Food Supply: UMaine Extension is engaged in research to determine the environmental prevalence of Salmonella on food animal farms. We are also working with the UMaine Department of Food Science to develop procedures for the environmental scanning of *Listeria monocytogenes* and *E. coli*O157:H7 on dairy farms. The research results are delivered directly to livestock producers through the Maine Cattle Health Assurance Program, a collaborative effort of UMaine Extension, the Maine Department of Agriculture, Food and Rural Resources, practicing veterinarians, agribusiness, and Maine livestock producers. More information is available on page 15.

Monitoring Environmental Conditions for Potato Disease: During the 2004 growing season, our pest management scientists continually evaluated data from 125 field monitoring sites in potato growing regions of Maine. The data was compared to models that predict economically damaging potato disease levels. At appropriate levels, growers were notified to implement disease mitigation strategies. The program helped growers to apply costly treatments only when necessary and avoid the more traditional calendar-based applications when they were not necessary. For more information, see *Support for the Potato Industry in Maine* on page 40.

Eastern Maine Native Plant Arboretum: This year, we partnered with the UMaine Department of Plant, Soil and Environmental Sciences to create the Eastern Maine Native Plant Arboretum. The arboretum will be used as an outdoor laboratory for the study of native tree and shrub species best suited for regional landscapes. Research results will be compiled and used by the commercial horticulture industry and the general public. Free public access is available, which includes a self-guided tour using fact sheets that explain each species in the arboretum.

Small Business and Rural Economics: We are working on multiple projects to help understand the impact and potential of small business in Maine and New England. Our staff has worked with UMaine's Margaret Chase Smith Center to define tourism attitudes in rural Piscataquis County to inform emerging regional economic development efforts. We have also collaborated with the UMaine Department of Resource Economics and Policy to evaluate the economic importance and impact of microbusinesses to the New England economy, and the economic importance of cruise ships to the Maine economy. We are continuing to collaborate on a multi-year Fund for Rural America project focusing on strengthening small grocery store retailing in rural communities.

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

The Dairy Industry in Maine –Transition to Organic: UMaine Extension provided technical assistance to dairy farmers on transitioning to organic production and helped them to form a new producer organization, Maine Organic Milk Producers. The process has driven a study identifying information gaps, which have initiated on-farm trials and a cost of production study conducted by UMaine Extension, the UMaine Department of Resource Economics, and Policy, and the University of Vermont. More information is available on page 8.

New Varieties for the Apple Industry: UMaine Extension and the University of Vermont Extension have conducted trials and held grower meetings to present the attributes of the Honeycrisp apple variety to more than 150 regional growers. More information is available on page 9.

Cover Cropping Strategies for Weed Management: We have partnered with the UMaine Department of Plant, Soil and Environmental Sciences, and Pennsylvania State University in a project to integrate tillage systems and cover cropping practices to lower the density of weed seed on vegetable farms. The project is evaluating the impact of increasing cover cropping system intensity on weed seed bank dynamics, and assembling innovative cover cropping systems concepts into case studies. Trials and on-farm research is being conducted that identifies key pest and soil management benefits.

Compost Tea as an Alternative to Fungicides: Based on simultaneous requests from farmers in Maine and New Hampshire, UMaine Extension and the University of New Hampshire Cooperative Extension initiated a joint study of the effectiveness of compost tea as a alternative to fungicides. The study is being conducted in controlled situations, and by farmers on hoop house, and field grown tomatoes. In this ongoing project, other crops will be also be tested, including apples, and strawberries.

Multistate Extension

Northeast Forestry/Agroforestry Conference: UMaine Extension's Agroforestry Team partnered with nine national, state, local, and private organizations to convene the second Northeast Forestry/Agroforestry Conference. Conference activities helped Maine's small and private non-industrial woodlot owners make informed decisions about the management of their properties. Over 120 people attended the 20 classes offered. Participants completing the post-conference questionnaire indicated that 61 percent learned new information that they

would use to make management changes for their woodlands. One attendee wrote that he/she would, “seriously investigate options for a number of small business value-added activities in my own woodlot as well as use ideas to help grow my local woodland owners association.”

Trade Adjustment Assistance for Farmers: UMaine Extension partnered with the universities of Delaware, Minnesota, Florida, New Mexico, and Massachusetts to develop educational programs that would help farmers meet eligibility requirements for relief funds offered by Congress as a result of increased import pressure. For more information, see *Trade Adjustment Assistance for Farmers* on page 7.

The New American Sustainable Agriculture Project was developed by Coastal Enterprise, Inc. to support aspiring farmers as they gather the skills and resources necessary to develop viable farm businesses. Many new farmers in Maine and New England are recent immigrants from Somalia, Mexico, Central, or South America. UMaine Extension participates by delivering skills-based courses to help new American farmers succeed in a climate and environment that may be unfamiliar to them. This year, we offered training in water conservation and drip irrigation methods for market gardens to new farmers from Maine, Massachusetts, and New York. The workshop was also a train-the-trainer session for two participants who will now provide workshops and seminars in New York City.

High Profile Websites: We have logged many thousands of visits this year to UMaine Extension Web sites where visitors from all 50 states and beyond have accessed research-based information that helped them to improve their lives. A sampling of our most popular websites are:

Pest Management Web Site: This site offers information to help agricultural enterprises, schools, and homeowners minimize pesticide use while limiting damage from harmful pests. Users can access educational resources, pest reports, and link to other important pest management sites. The site is located at <http://www.umext.maine.edu/topics/pest.htm>

The Small and Home-Based Business Virtual Resource Library: This site includes links to a library of information about small business management, lending agencies, trade associations, and much more. It is located at <http://www.umext.maine.edu/hbbsite/html/index.html>

Center for Parenting Education Web Site: This site is designed for parents, adults who care for or work with children, and for parenting educators. It gives information about how to understand, guide, nurture, motivate, and educate children from the perspective of parents or professionals. The site is located at <http://www.umext.maine.edu/parentcenter/Default.htm>

Nature, Heritage, Community Web Site: This site includes information about community-based and tourism-based economic development. Users can access a community tourism planning model, and gain understanding for the development of cultural and forest heritage assets, as well as agritourism, ecotourism, and adventure-tourism assets. The site is located at <http://www.umext.maine.edu/nhc-tourism/Default.htm>

Multi Institutional Research

Hair Sheep Research: Researchers from UMaine Extension and Bowdoin College have been working since 2000 on a collaborative research project designed to increase the quality and health of meat sheep and reduce maintenance costs, increasing the potential for profitable herds in Maine. For more information, see *Hair Sheep Research* on page on page 10.

Multistate Extension and Multi Institutional Extension

Diversifying Crops – Producing Organic Seed: Recently adopted organic standards require organic growers to use certified seed to produce their crops. Working with the University of Vermont in a project funded by CSREES/SARE, we have offered a series of multi-day workshops in Maine and Vermont to help farmers diversify their enterprises with new vegetable varieties, and produce organic seed for regional seed companies. More than 400 growers have attended these workshops from all the New England states, New York, Pennsylvania, North Carolina, Maryland, Virginia, and Canada. As a result, the number of commercial seed growers in Maine has more than doubled in the past three years. More information is available on page 4.

New England Dairy Seminar: The New England Dairy Seminar series brings nationally known speakers to address dairy health problems and deliver cutting edge research information to producers. Held in various locations throughout New England, the program is a cooperative effort of UMaine Extension and the universities of New Hampshire, Vermont, and Connecticut. In Maine, it is a cooperative endeavor with the Maine Dairy Industry Association, and the Maine Department of Agriculture, Food and Rural Resources. More information on the New England Dairy Seminar can be found on page 2.

Integrated Pest Management for Greenhouse Growers: This year, we partnered with Extension programs from Vermont and New Hampshire to conduct multiple pest management workshops for greenhouse growers. For more information see *Integrated Pest Management* on page 29.

Multidisciplinary Extension

Gardening and Nutrition Education: Our Maine Master Gardener Program teamed with our statewide *Eat Well Nutrition Education Program* to create Farmers Market Education programs, providing gardening and nutrition information to more than 2,700 citizens. They also created a cable television gardening and nutrition show that produced 35 on-half hour segments for at least 7,000 cable subscribers. The program series received the Thomas Atwell Award from the Garden Club Federation of Maine. Also Master Gardener volunteers in York County have developed the *Kids Can Grow 4-H Youth Gardening and Nutrition Program*, for children ages 7 to 14. Young people learn how to grow vegetables, herbs, and flowers and receive lessons in the value of vegetables as an important part of a nutritious diet. For more information, see *4-H Youth Gardening and Nutrition* on page 51.

Watershed Monitoring and Community Capacity Building: UMaine Extension worked with the town of Milbridge to create and fund a citizen water monitoring and education group as

part of the statewide Maine Shore Stewards program. Their focus is to identify bacterial contamination in the Narraguas watershed, a state-listed priority watershed for pollution. The Narraguas watershed is an important natural and economic resource to the people who live in the region, which supports 3,621 harvestable acres to shellfish diggers and provides habitat to the federally listed endangered Atlantic Salmon. With support and technical training provided by the UMaine Extension, this citizen group is also providing support to teachers who integrate watershed education into their curricula, educating students and local citizens about water quality issues.

Healthy Coastal Beaches: UMaine Extension, in collaboration with state and federal agencies, municipalities, and citizens, has recruited 18 towns representing 37 public swim beaches into the Healthy Coastal Beaches program. The program monitors coastal swim beach water quality and identifies pathogens (disease-causing organisms) in sewage-contaminated waters that can cause a wide range of diseases, including gastroenteritis, dysentery, hepatitis, and respiratory illness. Local capacity has been built to include technical science skills, group process, and community development. As a result of working closely with the towns, the program now covers 85 percent of the high use beaches in southern Maine.

Research and Extension Create a Science Curriculum for Middle Schools: UMaine Cooperative Extension, Maine Sea Grant and the UMaine School of Marine Sciences have co-developed and implemented the Silver Wake Program, a full-year curriculum that is focused on local environmental and water quality concerns as a vehicle for teaching science to middle school students. For more information, see *Silver Wake - A Science Curriculum for Middle Schools* on page 39.

Section E

Integrated Research and Extension Activities: Multi-state
U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
 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
New England Consortium Activities					
-Faculty/Staff Time on New England Activities	\$40,383	\$60,381	\$76,911	\$82,772	\$86,680
-Additional Staff Time on New England Activities	\$20,825				
-Additional Staff Time on Multi-State Activities	\$93,178	\$136,936	\$72,692	\$72,090	\$77,350
Total Multi-State Activity Expense	\$154,386	\$197,317	\$149,603	\$154,862	\$164,030

Lavon L Bartel
 Dean and Director

March 30, 2005
 Date

Section F

Integrated Research and Extension Activities: Integrated
U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
 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>\$25,000</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>\$325,893</u>
<u>Faculty Engaged in Integrated Activities</u>			<u>\$109,289</u>	<u>\$121,996</u>	<u>\$130,595</u>
<u>Administrative Support</u>			<u>\$42,391</u>	<u>\$49,192</u>	<u>\$49,838</u>
<u>Total Integrated Activity Expense</u>	<u>\$149,718</u>	<u>\$204,596</u>	<u>\$458,722</u>	<u>\$489,613</u>	<u>\$531,326</u>

Lavon L Bartel
 Dean and Director

March 30, 2005
 Date