

FY2006 Annual Report
University of New Hampshire Cooperative Extension
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Introduction

The University of New Hampshire Cooperative Extension provides New Hampshire residents with research-based information, enhancing their ability to make informed decisions that strengthen youth, families and communities, sustain natural resources and improve the economy. As a University outreach program, our network of professional Extension staff resides in all 10 New Hampshire counties. County staff work with local volunteers and specialists on the University of New Hampshire (UNH) campus to design and conduct educational programs that meet societal, environmental and economic needs. While many of our programs are conducted locally, we also use current communication technologies including computer networking, computer-based courseware, phone, web and interactive video conferencing to deliver programs broadly. As part of the national land-grant university system, we also access the knowledge and expertise of other state land-grant universities throughout the United States through direct relationships, web pages and most recently via eXtension. Cooperative Extension derives its name from the partnership structure that combines federal, state and county funding. This “cooperative” effort ensures all people have local access to a public university and its knowledge and resources to address needs and problems. The University of New Hampshire serves the state as the principle land-grant university charged by Congress to conduct resident instruction, research, and outreach to people beyond the formal classroom. With a total state population of 1,272,000 people, Extension reaches a quarter of these individuals through educational programs.

UNH Cooperative Extension employs approximately 80 Extension Educators and additional program staff who plan, conduct and evaluate educational programs in two broad program areas - Communities, Families and Youth and Natural Resources. These areas are supported by staff in five program groups: 4-H Youth Development, Family and Consumer Resources, Agricultural Resources, Forestry and Wildlife, and Sea Grant and Water Resources. State Program Leaders manage each program group.

UNH Cooperative Extension commits to increased programs for underserved and underrepresented audiences. These individuals participate mainly through program efforts in Nutrition Connections and the Family Lifeskills Programs, part of the state’s welfare reform effort. 4-H camping and after school programs also involve a significant number of underserved families. Staff who work in these programs build trust and rapport with under-represented audiences and help Extension advisory councils understand the audience’s needs and circumstances. Issues for the underserved and underrepresented are incorporated into New Hampshire’s plan of work and accomplishments during FY2006 are highlighted in this report.

Program accomplishments in this report respond to high priority needs in New Hampshire identified through thorough statewide needs assessment conducted in 2003. State-wide and county Extension advisory councils, along with state agency personnel, university faculty, and other key stakeholders systematically analyzed data collected and identified the highest priority needs. Ongoing review of these priorities takes place at local and state-wide advisory council meetings. Current priorities include:

Natural Resources Needs (includes land use, the environment, agriculture, forestry, wildlife, water and marine resources)

- Land use, land and water conservation and open space preservation
- Agriculture viability
- Sustaining the economic value and impact of natural resources and natural resources-related industries
- Increasing the visibility and marketing of Extension’s expertise and assistance to support natural resources and natural resources-related industries

Family and Youth Needs

- Strengthening families - balancing work, family and community roles, parent education/pre-parenting education, resiliency and family functioning
- Life skill development for youth - workforce preparation, communications, leadership, and social responsibility
- Family resource management - time, money and other resources
- Wellness - healthy lifestyles including nutrition, physical activity and food safety

Broad State Need

Community involvement and sustainability including community decision-making, educating elected officials, leadership development, community forums, balanced growth and user-friendly town government.

Based on the statewide needs assessment, analysis and ranking by the State Extension Advisory Council, the following goals served as the basis for the FY2000-2004 Plan of Work and the FY2005-2006 Plan of Work extension. These goals as well as the program logic models found at:

<http://extension.unh.edu/AboutUs/UNHCEPOW.htm> provide the framework for the following FY2006 program accomplishments. Program impacts for FY2006 resulting from these changes are noted in the executive summary for each goal.

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 - Enhance economic opportunity and quality of life for Americans

Planned Programs

Goal 1 - An Agricultural System that is Highly Competitive in the Global Economy

Executive Summary

Over 3,100 agricultural operations in New Hampshire generate nearly \$750 million in annual product value and manage approximately 445,000 acres in farm land. New Hampshire's agricultural industry is principally comprised of small family farms offering a diverse selection of crop, livestock and specialty products. These family businesses are an integral part of the local community maintaining a working landscape and providing citizens with superior products as well as connections to farming and "rural" New Hampshire.

About half the state's farmers consider farming their principal occupation. For these and many of the part-time farms, the family relies on agricultural activities to provide money for an adequate standard of living. New Hampshire's farms need to be profitable to continue to exist. While many sources of assistance are available to small businesses, the unique needs of agricultural operations require assistance from organizations and professionals familiar with those needs such as UNH Cooperative Extension.

New Hampshire's population exceeds 1,300,000. Each year UNHCE receives thousands of requests from New Hampshire citizens for education on home lawn and gardening. UNHCE developed a variety of methods to meet this need and reduce the burden on Extension Educators. Using over 500 Master Gardeners who volunteered 11,600 hours in 100 communities in 2006, UNHCE expanded its impact. This included responding to over 6,700 phone inquiries, conducting workshops in schools and communities and working on a diverse range projects that resulted in aesthetic, environmental and economic benefits for both New Hampshire citizens and volunteers.

Agricultural profitability and effectiveness, enhanced through workshops, conferences, producer visits, and volunteer programs resulted in growers and farmers improving their farm image and an increase in returns. Highlights for FY2006 include:

- 160 dairy producers have a better understanding of how to improve pregnancy rates thereby reducing extended dry periods and increasing profitability.
- 20 livestock producers learned to identify toxic weeds in their pastures and now have the ability to control them, thus improving the profitability of their business by reducing production losses due to illness or death caused by the consumption of these weeds.
- 15 beef producers gained knowledge and skills in novel ways to market their beef to local clientele and other feeders. Producing a viable, local meat supply to consumers in the region helps to increase profitability to beef producers, maintain open space and decreases reliance of food from other parts of the country.
- 60 growers attended a Community Supported Agriculture marketing workshop. As a result, 25% of participants plan on starting a CSA operation in the next couple of years, 10% will be refiguring the pricing per share and 5% expect to increase their sales from \$100 to \$5,000.
- The Agricultural Engineering project saved dairy producers over \$50,000 in construction errors this year.
- 85 NH organic producers enhanced their ability to manage production and marketing risks
- 267 NH growers better understand crop and revenue insurance options
- 96 NH agricultural professionals were informed about crop insurance and other risk management tools

- 144 New England farmers learned techniques to minimize farm business succession risks
- Active Master Gardeners worked on projects with schools, communities and prisons, conducted workshops and wrote articles, worked with the elderly, camps and with garden clubs to teach new skills that were applied for economic and aesthetic benefits. More than 7,000 citizens gained skills that improved self-esteem, enabled them to grow and preserve crops, apply pesticides responsibly and/or protect their environment.
- Veggie Volunteers (assisted by Master Gardeners) collected and distributed 14,059 pounds of produce with a value of \$20,800 for food pantries and kitchens.
- Somali Bantu, Sudanese and Meskhetian Turkish immigrants harvested 1,200 lbs of produce from their community garden, lowering grocery bills, learning how to grow local crops and forming bonds with each other and their new homeland.

Total Expenditures: \$ 3,129,939

Funding: Federal Smith-Lever b&c - \$ 320,006

State Matching Funds - \$ 1,597,379

County Funding - \$ 543,718

Grant & Other External Funding - \$ 668,836

FTEs - 26

Animal Health/Animal Production Efficiency

A. Situation - The New Hampshire livestock industry is diverse and scattered throughout the state. The state's livestock industry is important to maintaining open space and the rural setting enjoyed by its residents. The livestock industry has changed over the years and so has how it makes use of Extension. Although many of the things traditionally assumed by Extension have been taken over by agribusinesses such as: forage testing, ration balancing, production testing, etc, now more than ever, the livestock industry is looking to Extension as a source of non-biased, researched-based information to make informed decisions. They are looking for education and the practical application of current research findings on a variety of animal health and production topics including ruminant nutrition, pasture management, reproduction, and health management.

B. Program Description

Animal health and production programs held in 2006 included a variety of workshops, farm visits/tours and newsletters. Livestock nutrition and health-related topics were presented through a series of classes in pasture management, ration balancing, and feed evaluation, visits from an Extension-funded consulting agriculture engineer, a day-long class focused on beef cattle production, pasture meetings to help producers increase their ability to formulate pasture-based ruminant diets, and identify and control poisonous plants in their pastures. Dr. Jeff Stevenson, reproductive physiologist from Kansas State University presented a session for about 160 dairy producers about how to improve pregnancy rates in dairy cattle.

Further an applied research project and barn meeting was held to educate dairy producers, service technicians and electric company representatives about how photoperiod manipulation of the pineal gland of dairy cows results in increased milk production. Key elements of the program were how dairy producers could take advantage of lighting to result in an additional 5-10 pounds of milk.

C. Impact and Accomplishments

- A four-part “Balancing Grass-based Diets” mini-course improved the capacity of eight participants to evaluate and formulate pasture-based ruminant diets. Participants report the information and skills they learned have resulted in saving \$75 in ewe replacement costs, \$130 in veterinary care costs, or \$420 in feed purchases.
- As a result of farm visits made with a consulting agricultural engineer, one farm has improved barn ventilation. The improved air circulation has prevented four to five annual animal deaths from pneumonia, and it has decreased the amount of antibiotics administered to the herd, representing substantial savings.
- Eight commercial and part-time producers learned that not all feeds are created equal and how to save money by balancing rations for their stock. Their knowledge of basic ruminant nutrition increased and they acquired skills in using a Pearson Square and measuring forage quantity through the use of a pasture stick (each participant received one).
- 20 livestock producers learned to identify toxic weeds in their pastures and now have the ability to control them, thus improving the profitability of their business by reducing production losses due to illness or death caused by the consumption of these weeds.
- 15 beef producers gained knowledge and skills in novel ways to market their beef to local clientele and other feeders. Producing a viable, local meat supply to consumers in the region helps to increase profitability to beef producers, maintain open space and decreases reliance of food from other parts of the country.
- 12 northern NH producers now understand the endocrinology behind light manipulation and milk production. They learned how to determine light intensity by using a light meter to take advantage of the endocrinological effect of photoperiod manipulation on milk production. In addition to increased production and profitability, further cows subjected to photoperiod utilize feed more efficiently thereby reducing the amount of waste produced per amount of feed consumed.
- 160 dairy producers have a better understanding of how to improve pregnancy rates thereby reducing extended dry periods and increasing profitability.
- 12 poultry producers learned about disease prevention for flocks by sanitation and through the use of protective equipment.

D. Source of Funding – Smith-Level 3b&c, State matching, county funds

E. Scope of Impact - New Hampshire and New England

Agricultural Profitability

A. Situation - Agricultural producers continue to seek information and resources to help them improve the profitability of their existing businesses and farm enterprises as well as to assess the potential profitability of new enterprises. The greatest needs for educational programming are in the areas of enterprise analysis, marketing, risk management, improving farm management skills, and whole farm planning.

B. Program Description

UNH Cooperative Extension educators and specialists have addressed these needs with a variety of educational programs. These include newsletter articles, fact sheets, workshops, meetings, farm tours, and farm visits.

C. Impact and Accomplishments

- Eight whole farm plans were developed resulting in raising prices to generate an additional \$2,300 in profits on one farm, improved communication and efficiency on two other farms, a profitable sale of a third farm, and the implementation of new enterprises on another farm.
- Participants from a two-session farm management program increased their skills in enterprise analysis, pricing, cash flow budgeting, and tax planning.
- Seven participants from an electronic record keeping class installed and utilized electronic record keeping on their computers, saving them time in record keeping, and enabling them to perform enterprise analyses for their farm operations.
- Four growers changed marketing practices resulting in a \$2,000 savings.
- 60 growers attended a Community Supported Agriculture marketing workshop. As a result, 25% of participants plan on starting a CSA operation in the next couple of years, 10% will be refiguring the pricing per share and 5% expect to increase their sales from \$100 to \$5,000.
- A Risk Management meeting for forage producers enabled two farmers to mow forages in a wide swath resulting in improved labor efficiency, higher quality forage, or decrease in feed purchases.
- A dairy producer delayed cutting late planted corn as a result of a specialist consultation and increased the value of the crop by \$2,500.
- The Agricultural Engineering project saved dairy producers over \$50,000 in construction errors this year.
- Recommendations made by UNHCE dairy specialist concerning the length of cut for corn silage resulted in a farmer removing some knives on his chopper to get the correct particle size. The improved silage quality saved the farm over \$4,000 in metabolic problems in their cows.
- Partial budgeting with a dairy producer demonstrated the benefit of selling 20 extra heifers and resulted in a \$40,000 profit that went into the farmer's retirement account.
- 12 producers who attended corn pest management meetings, indicated that the programs enabled them to achieve either better weed control, more cost-effective pest management, or higher crop yields.

D. Source of Funding – Smith-Level 3b&c, State matching, County funds

E. Scope of Impact – New Hampshire and New England region

Risk Management

A. Situation - Nature, weather conditions, market changes, escalating asset values, costs of funds, legislation, legal challenges and personnel issues are among the factors which impact the viability of New Hampshire and Northeast farms. These factors pose considerable risk of economic loss and damage to the farm and family. Management tools and techniques to reduce, minimize and transfer production, marketing, financial, human resource and legal risks can stabilize farm income and improve net worth.

B. Program Description

Risk management programs center on five themes. Production risk examines the variability associated with yield or output. Marketing risk deals with price fluctuations and target market sales. Financial risk addresses securing business equity while meeting cash flow needs. Human resource risk focuses on the role of family members and employees in the firm. Legal risk considers business agreements and environmental issues.

The 2006 fiscal year program provided farmers and agricultural professionals with information and training on assessing farm risks, understanding the range of available tools to manage those risks, and developing risk management strategies. Traditional delivery methods employed included farmer workshops and seminars, training programs for agricultural professionals, release of news articles, and participation in trade shows. Web based efforts focused on upgrading and improving information pages. Target audiences for risk management education were small family farms, organic producers, corn and forage producers, and fruit growers.

In addition, New England educational efforts related to Transferring the Farm programs continued in 2006. Transferring farm ownership to succeeding generations relies on balancing high start-up costs faced by the beginning farmer while ensuring financial security for the retiring farmer. Introductory estate planning workshops were conducted at locations in four different states. Advanced workshops addressing health care, retirement planning and legal structure were held at two sites.

C. Impact and Accomplishments

- 58 NH agricultural professionals improved their understanding of agricultural-food security
- 61 NH small family farm owners learned strategies for reducing risk through diversification
- 85 NH organic producers enhanced their ability to manage production and marketing risks
- 52 NH corn and forage producers learned how to reduce crop production risks
- 53 New England fruit growers learned to better assess production and strategies for managing risk
- 267 NH growers better understand crop and revenue insurance options
- 96 NH agricultural professionals were informed about crop insurance and other risk management tools
- 144 New England farmers learned techniques to minimize farm business succession risks
- 39 New England farmers better understand retirement planning and business structure choices

D. Source of Funding – Smith-Lever 3b&c, State matching, County funds

E. Scope of Impact – New Hampshire and New England

Home Lawn and Gardening

A. Situation - New Hampshire's population is close to 1,300,000. Each year UNHCE receives thousands of requests from New Hampshire citizens for education on a wide range of topics including home gardening, wildlife, water quality, household pests, backyard livestock, food preparation and food safety, urban forestry and many others. With only 12 full-time staff to meet the demand, UNHCE has developed a variety of methods to meet this need. Each contact with the general public, homeowners, gardeners and municipalities provides the opportunity to teach people how to make changes to their surroundings that optimize the full and safe use of their properties while protecting the environment.

B. Program Description

- 79 new volunteer Master Gardeners received 60-74 hours of training.
- Over 500 active Master Gardeners contributed 11,664 hours to Cooperative Extension programs in over 100 communities.
- On the toll-free Info Line Master Gardeners responded to 6,700+ requests with research-based information

to help solve a wide array of gardening and household problems. In the counties, Extension Educators responded to another 3,000 requests.

- There were 797,518 visits to the Family, Home & Garden Education Center web page
- Master Gardener volunteers offered 13 workshops for the general public from the Family, Home and Garden Education Center. Master Gardeners and county Extension Educators delivered another 90+ workshops by request to schools, libraries, civic groups and clubs around the state. 13 spring fruit-pruning workshops were also held.
- Over 800 people received an ID or diagnosis on an insect, disease or plant sample.
- 1,260 home garden soil tests provided fertilizer recommendations for multiple crops.
- 52 "Grow It Green" spots were aired on Channel 9 (WMUR) on Saturday and Tuesday news shows, generating 300 follow-up calls. 45,000 households view these weekly.
- Garden Columns were written and distributed weekly, bi-weekly or monthly from most county Extension offices. 59% of adults read newspapers.
- 25 volunteers completed an "Accomplished Gardener" program for a nature center

C. Impact and Accomplishments

- Active Master Gardeners worked on projects with schools, communities and prisons, conducted workshops and wrote articles, worked with the elderly, camps and with garden clubs to teach new skills that were applied for economic and aesthetic benefits. More than 7,000 citizens gained skills that improved self-esteem, enabled them to grow and preserve crops, apply pesticides responsibly and/or protect their environment.
- Veggie Volunteers (assisted by Master Gardeners) collected and distributed 14,059 pounds of produce with a value of \$20,800 for food pantries and kitchens.
- Somali Bantu, Sudanese and Meskhetian Turkish immigrants harvested 1,200 lbs of produce from their community garden, lowering grocery bills, learning how to grow local crops and forming bonds with each other and their new homeland.

D. Source of Funding – Smith Lever 3b&c, State matching, County funds

E. Score of Impact – New Hampshire

Goal 2 - A safe and secure food and fiber system

Executive Summary

Foodborne illness is a great concern for public health experts and the food industry. Each year, as many as 76 million Americans experience foodborne illness, and an estimated 5,000 deaths are linked to tainted foods. Many mild cases of foodborne illness are never reported for a number of reasons. The victims pass off the symptoms as flu and don't seek medical attention, the illness is misdiagnosed as another problem with similar symptoms, the victim fails to recognize food as the source, or the physician doesn't report the illness to local health agencies. Diarrhea, nausea, abdominal pain or vomiting without fever or upper respiratory distress is

often taken to be flu, but people who experience such symptoms are highly likely to be suffering from foodborne illness.

The Safety Awareness in the Food Environment (SAFE) program provides food workers with practical information about food safety and sanitation. Forty-six (46) SAFE programs were conducted in New Hampshire reaching 1,054 food workers. As consumers increasingly rely on others to prepare food, the importance of a knowledgeable and skilled work force for all food outlets will be critical in preventing foodborne illness. The ServSafe® programs reached 285 food managers and workers with a more in-depth food safety and sanitation certification program.

- 95% of SAFE participants scored 75% or greater on the post-workshop knowledge questionnaire.
- All eight food managers in establishments sponsoring a SAFE program reported via a phone/fax survey, food safety practices changes in their employees as a result of the program.
- 82% of the ServSafe® participants passed the certification examination with a grade of 75% or higher.

As produce consumption increases, so has the number of associated foodborne illnesses. Good Agricultural Practices (GAP) are recommended food safety and sanitation practices that can help commercial and home produce growers minimize foodborne pathogen contamination.

- With funding from a USDA/CSREES grant, 14 New Hampshire fruit and vegetable producers received an in-depth, on-site GAP audit and follow up evaluation results indicated 57% of the participants made one or more farm practice change to improve food safety as a result of the audit. Examples of changes made include using more drip irrigation, providing employee education on hygiene and the use of single-use gloves by food packers.

Food insecurity occurs whenever the availability of nutritionally adequate and safe food, or the ability to acquire acceptable foods in socially acceptable ways, is limited or uncertain. Over 76,800 people in New Hampshire live below the federal poverty guidelines and most of them rely on a combination of government food assistance programs and emergency food providers to get enough to eat.

- Nutrition Connections staff worked with families to identify nutrition and food related community resources. Twenty-nine percent of participants ran out of food less often before the end of the month.

Total Expenditures: \$ 1,277,516

Funding: Federal Smith-Lever 3b&c - \$ 160,003

State Matching Funds - \$ 798,689

County Funding - \$ 271,859

Grants, Contracts, Other - \$ 46,965

FTEs - 13

Food Handling

A. Situation – Foodborne illness is a great concern for public health experts and the food industry. Each year, as many as 76 million Americans experience foodborne illness, and an estimated 5,000 deaths are linked to tainted foods. Many mild cases of foodborne illness are never reported for a number of reasons. The victims pass off the symptoms as flu and don't seek medical attention, the illness is misdiagnosed as another problem with similar symptoms, the victim fails to recognize food as the source, or the physician doesn't report the illness to local health agencies. Diarrhea, nausea, abdominal pain or vomiting without fever or upper respiratory distress is often taken to be flu, but people who experience such symptoms are highly likely to be suffering from foodborne illness.

B. Program Description

The Safety Awareness in the Food Environment (SAFE) program provides food workers with practical information about food safety and sanitation. As consumers increasingly rely on others to prepare food, the importance of a knowledgeable and skilled work force for all food outlets such as restaurants, grocery stores, schools, hospitals, and nursing homes will be critical in preventing foodborne illnesses. SAFE is a two-hour program that focuses on personal hygiene, cross contamination, and basic food handling principles. For food managers and workers desiring a more in-depth food safety and sanitation certification program, the ServSafe® program was also implemented in collaboration with the New Hampshire Lodging and Restaurant Association.

C. Impact and Accomplishments

Forty-six (46) SAFE programs were conducted reaching 1054 food workers. Post-workshop knowledge questionnaires were completed by 874 (83%) of the workshop participants. For those food workers who completed the questionnaire, 830 (95%) scored 75% or greater. Participants' responses to knowledge and food safety practice questions are highlighted below.

- 98% of participants correctly identified recommended hand washing procedures.
- 96% correctly identified the food temperature danger zone
- 77% correctly identified the maximum amount of time food can be in the temperature danger zone
- 94% correctly identified how to prevent cross contamination
- 80% correctly identified when food contact surfaces should be cleaned and sanitized

Eight (8) follow-up phone or fax surveys of food managers in food service establishments sponsoring SAFE programs were completed. One hundred percent (100%) of food managers reported an increased awareness of key principles covered in the SAFE program as well as described observed changes in food handling practices, such as: food workers washing hands more frequently and thoroughly while singing the Happy Birthday song; wearing single-use gloves more often and changing them more frequently; workers cleaning and sanitizing food preparation areas more thoroughly; and workers being more attentive to cooking temperatures.

To provide baseline data on food practices, 391 SAFE participants indicated how often they implement currently recommended food safety and sanitation practices immediately prior to their participation in a SAFE program. Listed below are the two lowest and two highest scoring practices implemented 75% or more of the time as reported by participants:

- 82% check cooking and holding temperatures with a calibrated thermometer
- 84% wash hands before and after handling each different food
- 97% use recommended hand washing technique
- 97% wash hands after touching hair, nose, or using the rest rooms.

ServSafe® programs reached 285 food managers and workers. 234 participants passed the examination with a grade of 75% or greater yielding a pass rate of 82%.

D. Source of Funding – Smith-Lever 3b&c, State matching, County funds

E. Scope of Impact: New Hampshire

Food Safety

A. Situation - As produce consumption has increased, so has the number of associated foodborne illnesses. The New England region is characterized by small agribusinesses with a diversity of crop varieties, most of which are marketed locally.

B. Program Description

Good Agricultural Practices (GAP) are recommended food safety and sanitation practices that, when implemented, can help produce growers and home gardeners minimize foodborne pathogen contamination. The New England Extension Food Safety Consortium received two USDA/CSREES grants (RI lead state); the first was to develop and test three educational approaches to enhance the voluntary adoption of GAP recommendations by commercial produce growers (10/00 – 9/04) and the second was to adopt GAP guidelines to food production by home gardeners (9/03-9/07).

C. Impact and Accomplishments

The GAP program for commercial growers yielded these results:

- 14 New Hampshire fruit and vegetable producers received an in-depth, on-site GAP audit conducted by teams of UNH Cooperative Extension Family and Consumer Resources and Agricultural Resources Educators. Follow-up evaluation questionnaire results indicate that 57% of the participants made a change in one or more farm practice as a result of the GAP audit. Specific changes included: using more drip irrigation, provide employee education on hygiene, have packers wear single-use gloves, and clean equipment better and more often.
- Approximately 270 fruit and vegetable growers increased their awareness of food safety and sanitation at selected steps throughout their production, harvesting, and sale of product while attending GAP presentations.

The GAP program for home gardeners extends the above referenced results to a new audience:

- A survey to assess food safety knowledge and attitudes was mailed to 3000 random households of home gardeners in five New England states. Survey questions focused on food safety topics for all aspects of gardening and post-harvest handling.
- 762 respondents answered 56 knowledge questions. These questions were assessed using five gardening timeline categories (e.g. soil preparation, planting) and four content categories (e.g. sanitation, water quality).
- Mean percent correct ranged from .60 - .71 for timeline and .59 - .74 for content areas. Using 80% as a “passing level,” only 23 of 56 (41%) items met the standard.
- Low scoring topics included the use of fresh manure / compost, safety of organically grown produce, cleaning produce, water safety, and home canning.
- To probe low scoring content areas, 94 structured interviews were conducted by trained master gardeners with home gardeners (19 interviews conducted in NH).
- Data analysis was conducted by project directors from each of the five New England states. Knowledge and skill areas explored in greater depth during the interview included: organic food production, composting, water sources and back-flow protection, food safety and sanitation practices in handling freshly harvested produce and food preservation practices. Results indicate that home gardeners

consistently define the term “organically grown” as using no chemicals, pesticides, insecticides, or synthetic fertilizers. Further, a majority of the respondents indicated that organic fruits and vegetables were safer. Many home gardeners thought chemicals and pesticides were a greater contamination hazard than bacteria.

- Based on the results of the mail survey and in-depth interviews, a train-the-trainer education program on food safety practices targeting Master Gardeners was developed by the project directors. Implementation of the program is currently underway. Once trained, the Master Gardeners will disseminate the information using a variety of educational methods (displays, workshops, personal contact).

D. Source of Funding – Smith-Lever 3b&c, State Matching, County, Grant funds

E. Scope of Impact - Multi-State (NH, ME, VT, CT, RI)

Food Security

A. Situation - Over 76,800 New Hampshire people lived below the federal poverty guidelines. Most of these people rely on a combination of government food assistance programs and emergency food providers to get enough to eat. The New Hampshire Food bank will have distributed about four million pounds of food to its member agencies. Increasingly, food banks, soup kitchens and food pantries are called upon to meet needs of participants with fewer resources.

B. Program Description

Along with our Food Security Coordinator, the UNH Cooperative Extension Nutrition Connections staff conducted nutrition interventions to benefit low-income food insecure families throughout the state.

C. Impact and Accomplishments

The Food Security Coordinator represents Nutrition Connections on the steering committee of a new university based center New Hampshire Center for a Food Secure Future – to address food security in New Hampshire and the region. The Food Security Coordinator is an active member of the steering and strategic planning committees. This key role in the development of the center assures that food insecurity of low income populations is represented.

Nutrition Connections staff work with families in a series of lessons to teach food and nutrition and to identify nutrition and food related community resources. As a result of programming and pre/post and survey data, 29 % of participants less often ran out of food before the end of the month. “I went shopping this month and I saved over \$30 and still have food.” “I now take the time to use coupons and compare the cost per unit label which has saved me between \$5 and \$10 dollars a week.” “I have been saving \$10 a week in groceries.”

Despite serving over 340 agencies and programs across the state, there are many areas with high levels of need. Even in areas where agencies do provide assistance, clients may not always have access to food because many agencies are only open certain hours or days per week. The NH Food Bank initiated a mobile food pantry that takes food to outlying communities – targeting those with high poverty rates and low numbers of emergency

food sites. Food Stamp and Nutrition Connections brochures and materials are then provided to insert in the boxes that are distributed to the families. Very limited income participants have better access to food.

UNH CE is committed to informing the public about hunger in the state. A local fisherman responded to us willing to give a donation of shrimp. He states: "I was searching on the web for any food pantries or soup kitchens in New Hampshire that could use donations and I came across this site. (UNH Cooperative Extension web site)I was shocked to read that there are so many people living in our great state that are going hungry."

The NH Food Bank picked up about 800 lbs. of shrimp and dropped off most of it to local pantries and kitchens.

D. Source of Funding – Smith-Lever 3b,c&d, State Matching, County, Grant funds

E. Scope of impact: New Hampshire

Goal 3 - A healthy, well-nourished population

Executive Summary

The health of many New Hampshire citizens continues to be affected by preventable deaths, disease, disability and disparities in health status. Many of these causes of death are potentially preventable through nutrition and exercise. Dietary factors and physical inactivity are associated with leading causes of death in the United States. Like everywhere else in the United States, rates of obesity in New Hampshire are rising.

UNH Cooperative Extension is committed to look at ways to optimize health by reducing risk factors through education to improve physical exercise, nutrition, and lifestyle choices. Nutrition and health programming in New Hampshire is implemented by the Nutrition Connections Program, Family Lifeskills Programs, Family and Consumer Resource and 4-H Youth Development staff. Activities target physical activity, nutrition, community involvement and obesity awareness and prevention. Specifically, Nutrition Connections staff provide educational interventions based on the Dietary Guidelines and MyPyramid based on the needs of individuals and groups, stressing practical application of the information.

- Of the 734 adults completing a series of lessons, 37% increased the time they devote to physical activity on a daily basis
- In one county, several 4-H groups took up the challenge to exercise more and 23 youth logged over 3 million steps (1,507 miles), prompting many families to purchase pedometers.
- Of 1,199 families participating in nutrition education series (882 graduates) 88% did a better job of eating the recommended servings from the food pyramid
 - 79% of graduates showed improvement in one or more nutrition practices by planning meals, making healthy food choices, preparing foods without adding salt, reading nutrition labels or having their children eat breakfast
 - 71% of graduates showed improvement in one or more food resource practices by planning meals, comparing prices, not running out of food or using a grocery list. For the limited resource audience, saving money at the grocery store enables them to extend their purchasing power.
- 4,080 youth participated in a series of nutrition interventions.
 - 76% now eat a variety of foods

- 74% increased their knowledge of human nutrition
- 86% increased their ability to select low cost, nutrition foods and;
- 88% improved practices in food preparation and safety.

Total Expenditures: \$ 2,514,764

Funding: Federal Smith-Lever 3b&c funds - \$ 295,391

Federal Smith-Lever 3d - \$ 242,407

State matching funds - \$ 1,474,504

County funding - \$ 501,893

Grants, Contracts, Other - \$ 569

FTEs - 24

Human Health

A. Situation - The health of many New Hampshire citizens continues to be affected by preventable deaths, disease, disability and disparities in health status. Many of these causes of death are potentially preventable through nutrition and exercise. Given rising rates of obesity, UNHCE is committed to look at ways to optimize health by reducing risk factors through education to improve physical exercise and lifestyle choices. Individual, group and community coalitions are all ways to get important messages and education out to the public.

B. Program Description

The nutrition and health programming in New Hampshire is implemented by the Nutrition Connections Program, Family Lifeskills Programs, Family and Consumer Resource and 4-H Youth Development staff. Activities target physical activity, nutrition, community involvement and obesity awareness and prevention.

C. Impact and Accomplishments

Nutrition Connections staff include physical activity education in programming with limited income adults. Programming is evaluated with a pre/post survey. Of the 734 adults completing a series of lessons, 37% increased the time they devote to physical activity on a daily basis. “Harry began to walk more and was able to lose 14 pounds in 6 weeks.” One staff member conducts strength training with seniors with the goal of increasing stamina, flexibility and strength. Staff comments include: “One woman is able to drive her car again. She had a problem flexing her foot and the program helped her develop the strength and flexibility in her ankle to feel confident to drive again.” “Two women lost inches and both reported their clothes are looser now. One dropped a dress size.” All participants reported an increase in strength that was noticeable in performing activities of daily living. In one county several local 4H groups took on the challenge to exercise more. 15 youth from 3 groups participated and logged over 892,000 steps (89 miles). The next year, 23 youth from 2 groups participated by walking over 3 million steps total. (1,507 miles) As a result of this activity, youth volunteers shared that many families had gone out and purchased pedometers.

The Family Lifeskills staff and many participants walk daily for the three weeks the classes meet and some continue this on their own afterwards. 31% improved their physical activity with all making a positive change in some way. Participant comments: “I exercise with my children more often that I used to. We do more walking and swimming.” “I joined a gym and go daily, my son goes too and he loves playing with the other kids.”

Instructor comment: “You have been positive about our daily walks and have been walking at home, which is great.”

Given the increase in obesity rates, UNH Cooperative Extension has taken the lead to involve many agencies and organizations in a statewide initiative called “Lighten Up New Hampshire.” This initiative is designed to assist health care professionals by providing a variety of resources on physical activity, nutrition and healthy lifestyles in a web based format. Professionals and consumers will be able to access the information. Funding was awarded to develop the web based resource and convene interested agencies and organizations.

D. Source of Funding – Smith-Lever 3b,c,&d, State Matching, County, Grant funds

E. Scope of impact: New Hampshire

Human Nutrition

A. Situation - Dietary factors and physical inactivity are associated with leading causes of death in the United States. Four categories of factors seem to influence food consumption: consumer’s income; food prices and costs of other products and services; knowledge of health and nutrition; and consumer’s tastes and preferences. The development, maintenance and change of eating patterns are determined not only by individual factors, but also by many social, cultural and environmental influences.

B. Program Description

Nutrition education through the Nutrition Connections Program is based on the Dietary Guidelines and MyPyramid. Educational interventions are planned based on the needs of individuals and groups. Practical application of information is stressed.

C. Impact and Accomplishments

Families complete pre/post surveys and food recalls as part of programming. 1,199 families participated in nutrition education lessons, with 882 graduating from a series. 88 % graduated with a positive change in any food group, meaning they did a better job of eating the recommended servings from MyPyramid. 79 % of graduates showed improvement in one or more nutrition practices by planning meals, making healthy food choices, preparing foods without adding salt, reading nutrition labels or having their children eat breakfast. Families learned to improve their nutrition practices through hands-on interactive lessons designed to have them practice what they have learned. Behavior changes reported by participants:

- “I have prepared a snack cabinet and one in the refrigerator of healthy items.”
- “I shared the food pyramid with my children. I am buying more fruits and vegetables and less junk food. My daughter has lost 5 lbs. I taught her how to eat healthy.”
- “I now look at all labels. A lot of products that I regularly feed my son have high amounts of sodium. I discontinued using them.”
- “I have started eating more fruits and vegetables. I changed to whole wheat bread and I now make sure I eat a healthy breakfast every morning.”
- “The children enjoy the fresh fruits so much more.”
- Observations by staff include: “Sue lost about 45 pounds over a period of 4 months and Kaylee has lost about 10 pounds. They felt empowered to make changes despite not having very much money.” (Family only receiving Food Stamps)

Seventy-one percent of graduates showed improvement in one or more food resource practices by planning meals, comparing prices, not running out of food or using a grocery lists. For the limited resource audience, saving money at the grocery store enables them to extend their purchasing power. Observed by staff:

- “She is now more careful with her spending and from reading food labels has left some items at the store that she used to buy regularly.”
- “Last week I noticed a week’s menu planned including recipes from the book including “planned overs.”
- “She said she has saved \$25 on one trip she made to the grocery store because she used the store flyer and did not give in to impulse buying.”

From participants:

- “I’ve started planning meals out for the whole week.”
- “I went shopping this month and I saved over \$30 and still have food.”
- “I also made a shopping list and stuck to it for the first time.”
- “I now take the time to use coupons and compare the cost per unit label which has saved me between \$5 and \$10 dollars a week.”
- “I didn’t realize homemade food was cheaper than prepared food.”

In addition, 4,080 youth participated in a series of nutrition interventions with results: 76% eat a variety of foods; 74% increased their knowledge of the essentials of human nutrition; 86% increased their ability to select low cost nutritious foods; and 88% improved practices in food preparation and safety. Youth are reached through classes at school; in after-school programs; and at community agencies. This year Nutrition Connections asked teachers for additional feedback after nutrition programming ended. Comments include: “Today for the first time, everyone had a healthy snack!” “I find the students using the information when deciding if their snacks/lunches are healthy or non healthy.” “More students eat breakfast.” “Children are bringing in more healthy foods for snack time. They are also telling their parents about the nutrition classes and what they are learning.” “They are very interested in what the school lunch is.” “I have seen some students reading nutrition labels comparing different types of milk at lunch.” “Approximately 50% of the children started drinking 1% and skim milk instead of chocolate, strawberry and whole milk.” Comments directly from youth: “I never would have tried this if I hadn’t made it.” “This tastes better than it looks.” “I didn’t think I’d like this stuff, but it’s pretty good, can I take some home for my mom to try.”

UNH Cooperative Extension is committed to work with the limited resource audience, particularly the food stamp program recipients. With the Food Stamp Program Manager, \$744,255 grant dollars were awarded to New Hampshire this year to work with this specific audience.

Nutrition Connections had a total of 350 volunteers who assisted with nutrition programming which accounted for 1.3 FTE at a value of \$26,000.

D. Source of Funding – Smith-Lever 3b,c,&d, State Matching, County, Grant funds

E. Scope of impact – New Hampshire

Goal 4 - Greater harmony between agriculture and the environment

Executive Summary

The natural environment and the state's natural resources are highly valued by New Hampshire residents. Protecting and preserving the environment are among Extension's highest priorities. This includes the preservation of land and open space, and minimizing the impact of chemicals, erosion and pollution. Programs also focus on land and forest management and stewardship to help maintain the environment and quality of life for all residents.

UNH Cooperative Extension motivates landowners to actively manage their land for long-term stewardship of natural resources. Programs in forestry and wildlife, agriculture and water resources bring a comprehensive approach to solving problems and protecting resources through an extensive network of partners within the natural resources and agricultural communities.

Extension's accomplishments for this goal are reflected in agricultural waste management, nutrient management, forest resource management, Integrated Pest Management, land use education, water quality and wildlife management. Extension is well-known in New Hampshire for expertise and educational programs in these areas. One major role for Extension includes educating citizens to make informed natural resources decisions by providing technical assistance, promoting forest and land stewardship and increasing knowledge and skills in natural resources protection and management. The Community Conservation Assistance Program helps communities and conservation commissions with land and water conservation planning projects. In the past five years, New Hampshire communities approved \$125 million for land conservation measures. This year, 39 towns and conservation groups involving 1,836 participants received help from Extension in developing natural resource inventories, conservation plans, and land acquisition.

Cooperative Extension's Forestry & Wildlife program focuses on sustaining forests that support the state's \$2 billion forest industry. Highlights this year include:

- Extension provided on-site forest management assistance to 1,244 landowners influencing management decisions on over 146,200 acres of land
- UNH Cooperative Extension co-coordinated with NH Fish and Game a three-year effort to develop a comprehensive Wildlife Action Plan. As a result of this effort, the citizens of NH are poised to implement one of the top 12 ranked Wildlife Actions Plans in the country.
- Through the NH Coverts Program, UNH Cooperative Extension coordinates 258 natural resources volunteers who own or manage over 95,000 acres of wildlife habitat. As a result of this program, we ensure that wildlife are managed appropriately, and volunteers have contributed to a major \$120-million land conservation thrust in recent years

Several efforts focused specifically on agricultural producers:

- As a result of the Integrated Pest Management (IPM) program 68% of the state's apple growers reporting a change in the way they managed flyspeck and sooty blotch in 2006, resulting in at least a \$210,000 state-wide savings in spray costs (when compared to pre-IPM method spray use). As a result of Extension's sweet corn IPM program and monitoring reports, growers reported a total state-wide savings (in reduced spray and cull losses) of \$99,478.
- The nutrient management program continues to collaborate with Agricultural Research Service researchers and staff involved with the National Phosphorous Research Project (NPRP).

- Through the New Hampshire Agricultural Engineering Project a consultant worked with seven farms to design manure storage facilities to improve run off situations, better use manure for crop production, and explore the possibility of a methane generation system, resulting in less contamination to adjacent water bodies, reduction in odors, and improved soil quality where manure was applied appropriately.

In response to 2005 unprecedented Eastern Equine Encephalitis cases in NH, Extension collaborated with public health officials, and veterinarians to provide educational information to local citizens, and municipalities. This timely and research-based information allowed voters in southern NH towns to make informed decisions about mosquito control and take appropriate action on their own properties to reduce the threat of EEE through source reduction, biological controls, and the use of repellants.

New Hampshire currently leads all New England states in the rate of new development and redevelopment. The long-term consequences of the resulting pressure and demands on the state's precious water resources remain unknown. Of particular concern is increasing non-point source pollutant loading due to watershed development and land use activities. Local citizens, lake/watershed associations and local decision-makers need additional information for intelligent management of land and water resources.

Limited financial resources don't allow for adequate monitoring of these waters by state or federal agencies, and the increased development and recreational use require a more accurate assessment of the water quality of our estuaries, lakes, ponds, rivers and streams. Highlights from this year's water quality work include:

- Development and use of community-based environmental assessment tools and expanded use of GIS led to improved decision-making capability at the local level to protect water resources throughout New England
- Rural communities reduced water quality risks from onsite wastewater disposal via the development, demonstration and dissemination of research-based, comprehensive, cost-effective approaches.
- Volunteer monitoring programs worked with local, state, and federal agencies to provide monitoring data in support of local protection efforts, watershed assessment reports, and the state water resources impairment list.

Four agricultural resources positions, two forestry and wildlife positions and one water resources position were vacated because of staff retirements and budget reductions in this goal area in FY2004. This downsizing as well as leaving positions open awaiting employee hire, reduced the impacts reported in this goal area.

Total Expenditures: \$ 5,101,701

Funding: Federal Smith-Lever 3b&c - \$ 246,159
 Federal Smith-Lever 3d - \$ 125,188
 State matching funds - \$ 1,228,753
 County funding - \$ 418,244
 Grants, Contracts, Other - \$ 3,083,357

FTEs – 20

Agricultural Waste and Nutrient Management

A. Situation - Nutrient management issues extend across all commodities from dairy and livestock to field corn, cut flowers, greenhouse and field grown vegetables. Since the situations vary by commodity, the

approaches employed to address a specific concern will vary. Dairy, livestock and vegetable enterprises are faced with the challenge of managing large amounts of manures and composts, while greenhouse tomato and bedding plant growers have need for calibrating and understanding nutrient injection equipment for proper fertilizer applications.

Many New Hampshire livestock and dairy enterprises are near urban areas; concern about properly storing manure to avoid environmental, odor and water quality problems drives the manure management program in the state. Manure storage also allows for improved timing of land application to maximize the utilization of nutrients for crops.

B. Program Description

The complexity of this issue and the current situation in NH require an effort in both research (on-farm, lab and greenhouse, and collaborations with others, etc.) and education (farm visits; small workshops). A team approach is used, usually consisting of the local Extension Educator, State Specialists, hired agricultural engineering consultant (paid for through a local grant) and area NRCS technicians.

The continuation of a collaborative relationship with AES researchers and staff has expanded research to identify soil test factor most closely related to offsite Phosphorous movement in NH soils. The attempt to address the risk of nitrate leaching to groundwater includes the use of Pre-Sidedress Nitrate Test (PSNT) and a nutrient credit system. New nitrogen management tools (chlorophyll meters, corn stalk nitrate test) are also being evaluated to determine their appropriateness in replacing the PSNT and a workshop was held to help farmers understand the value of nitrogen management and how to use and interpret the stalk nitrate test on their farms.

The UNHCE Soil Testing Program (SAIS) is being completely revised and updated and continues to provide analysis of samples in order to implement nutrient management decisions that balance production and environmental aspects of cropping systems – specific to NH soils. An ongoing effort will be necessary to continue to develop research-based information to support this program.

Many of our farm systems in NH for manure/nutrient management are cost-shared with the Environmental Quality Incentive Program (EQIP) or with small grants from the NH Department of Agriculture, Markets & Food. Systems are designed to be environmentally sound, easy to operate, labor saving and cost effective. In addition, individual Educators conduct educational workshops, work with NRCS and other agency staff to write/review nutrient management plans, and work individually with producers to address nutrient management issues.

C. Impact and Accomplishments

Nutrient Management:

- Over 2,500 soil test results and recommendations were given to farmers, landowners and residents to help them better manage nutrients on their properties.
- New growers, and owners of small horse and livestock operations increase their knowledge and understanding of nutrient management through educational workshops.
- Improved fertilizer practices, plant quality and reduced costs were reported by 24 growers (6 greenhouse tomato and 18 bedding plants) as a result of nutrient monitoring techniques.

- Installation of drip irrigation systems by 6 vegetable and small fruit growers resulted in a reduced risk of nitrate leaching;

Manure storage and handling systems were improved on several farms:

- Assistance to two dairy producers resulted in improved designs and systems for short-term manure storage and handling parlor waste, preventing parlor waste from flowing into nearby brooks and improved manure run-off situations at the farms.
- A dairy producer received advice on a system that improved leachate handling from a bunker silo, reducing contamination to a nearby stream.
- Worked with two dairy producers and one large poultry producer to help them explore the possibilities of installing a methane generation system. This will reduce odors and provide a good quality manure product for land application.
- Technical advice and equipment was provided to three farms on the location and establishment of on-farm composting process of manure, improving manure handling situations and increasing the use of compost on their farms and as a for-sale product.

D. Source of Funding – Smith-Lever 3b&c, State Matching, County, Grant funds

E. Scope of Impact – New Hampshire -- The NH P Index criteria may be applicable to farms on the Vermont side of the Connecticut River.

Forest Resource Management

A. Situation - Forest landowners hold the key to protecting New Hampshire's environment. 70% of New Hampshire, or 3.2 million acres, is privately owned. The average size woodlot is just under than 40 acres and it is these family forests that help define our state.

B. Program Description

UNH Cooperative Extension's Forestry and Wildlife Program provides technical assistance and education to landowners, natural resource professionals, volunteers and others encouraging them to adopt sustainable forest management practices to improve the health and productivity of New Hampshire's forests.

Extension visited 1,244 landowners influencing management on over 146,200 acres. We offered 370 natural resource related workshops– the equivalent of one program every day of the year- reaching nearly 10,000 attendees. Seventy one new volunteers received forest stewardship and wildlife habitat education. We now have a cadre of volunteers numbering 561 (275 Coverts Cooperators and 286 Community Tree Stewards).

C. Impact and Accomplishments

As a result of our woodlot visits and workshops, landowners are making more informed decisions about their forest management.

We refer landowners to licensed private foresters to follow-through with management. In 2006, comprehensive forest stewardship plans were written by these foresters on 22,652 acres representing approximately \$222,000 of direct economic activity. This is just one aspect of the economic activity generated by these referrals.

Comprehensive planning is a critical step in sustainable forest management. We participated in a national study which found that landowners with plans were more active in the care and management of their forestlands. 80% implemented at least one practice and nearly 70% expended an average of \$1,800-\$3,600 to implement improvement practices. They also continued to expand their knowledge by subscribing to resource publications and contacting natural resources specialists.

Since the New Hampshire Forest Stewardship Program began in 1990, plans have been developed covering over 996,900 acres, or roughly 31% of the privately owned forestland. Better informed natural resource management is occurring on these lands as a result.

Our natural resource volunteers are making a difference. In the past six years, cities and towns appropriated over \$130 million dollars for land conservation, underscoring the value that people place on the natural landscape. Communities with active Coverts Cooperators or Community Tree Stewards volunteers are 3.5 more likely to have passed conservation funding measures as towns without these active volunteers.

D. Source of Funding – Smith-Lever 3b,c,&d, State Matching, RREA, County, Grant funds

E. Scope of Impact – New Hampshire

Integrated Pest Management Program

A. Situation - New Hampshire farmers, orchardists and greenhouse operators face serious challenges with pests, causing yield and/or quality loss. Growers commonly over-rely on pesticides, risking toxicity problems, pest resistance, contamination of water and the environment, injury to non-target organisms, and high costs. Failing to respond effectively risks crop losses, lower yields, loss of markets and other problems. Growers must balance their goals of maximum yields and quality of crop, while responding to increased consumer demands for decreased pesticide use.

B. Program Description

New Hampshire's Integrated Pest Management (IPM) program teaches growers how to **manage** pest problems, while minimizing costs and risk of injury, using a three-prong approach; 1) **monitoring** pests and conditions, 2) **preventing** conditions that favor pest problems and 3) applying **controls** (not just chemicals) when necessary. This year in addition to apple and greenhouse efforts, we worked with sweet corn growers as well. Activities included 1) weekly fruit pest update (automated telephone), 2) newsletters disseminated by mail and electronically via the web, 3) weekly sweet corn advisories on website, 4) dozens of publications and handouts, 5) a New England-wide website providing pest management resources (PRONewEngland.org), 6) 35 grower meetings and workshops, with another dozen focused on backyard and home application of IPM. In addition, many county staff recorded weekly growing degree day data, which is posted on the website, to help predict pest events and crop development. In response to record high flyspeck incidence on apples (late season hurricanes in 2005), flyspeck management was heavily emphasized in our educational efforts.

C. Impact and Accomplishments

Apples: As a result of Extension’s educational efforts, 68% of apple growers reported they changed the way they manage flyspeck and sooty blotch in 2006. Despite favorable weather for flyspeck, the incidence of flyspeck plummeted to 0.32% this year (was 8.5% in 2005). Many growers increased fungicide use this year, but they still saved over \$100 per acre on spraying, compared to pre-IPM methods. Statewide apple acreage was 2,100 in 2006, for a statewide spray savings of at least \$210,000.

Sweet Corn: Corn earworm and Fall armyworm are unpredictable sweet corn pests in NH and there was an unusually high peak in earworm numbers in fall 2005, but monitoring reports indicated populations fell to low to moderate (along with European corn borer) in 2006. In the early part of the season, participating growers (350 acres sweet corn) said they saved two applications of insecticide ($\$18/a \times 350ac = \$6,300$). By passing timely information to other growers (60 ac) they saved 1 spray per acre ($\$828$). Later in the season pest levels were higher, and our work reduced culling losses (throwing out caterpillar-infested ears). For direct participants, we reduced culling by 50 dozen ears/acre on 350 acres. With the average sweet corn price of $\$4.82/dzn$, this amounted to $\$84,350$ savings. Impacts were more modest for farms not on the program ($\$8,000$ reduction in culling). Total sweet corn savings (spray and cull reductions) reported statewide were $\$99,478$.

Field Corn and Forage Crops: In 2006 southwestern NH corn and forage crop producers who participated in such activities as the annual corn & forage meeting or spring crop meeting were surveyed asking them to report the impact of Extension IPM programs. Ninety one percent of respondents indicated farm visits, educational programs, and UNHCE publications increased their understanding of how to manage pests in corn and forage crops. A similar percentage said they diversified their pest management activities to include such practices as crop rotation, use of mowing to control weeds, or rotating herbicides. Eighty two percent said that these changes provided more effective pest management, more cost effective control, reduced pesticide use, or higher crop yields. Other benefits reported included “getting weaned off Roundup” and relying less on genetically modified corn.

D. Source of Funding – Smith-Lever 3b,c,&d, State Matching, County funds

E. Scope of Impact: New Hampshire

Easter Equine Encephalitis

A. Situation - In 2005, NH had the highest number of (human) Eastern Equine Encephalitis cases in the nation. The disease is often fatal. In response, this year Extension reached thousands of NH residents and decision-makers with written information, displays, lectures, and media coverage of mosquito management and EEE.

Number of Eastern Equine Encephalitis

Cases in New Hampshire

<u>Year</u>	<u>Human</u>	<u>Equine</u>	<u>Other mammals</u>
2005	7	9	5
2006	0	1	0

B. Program Description

The unprecedented 2005 EEE peak created a need for education among local decision-makers and residents, especially in southeastern NH. Extension produced and disseminated information that included preventative methods, source reduction, monitoring, biological controls, repellants and chemicals. A 13-page EEE paper was mailed to town offices in five southern counties (74 towns). The web-based version of the paper was visited 3,600 times over the 8 week town meeting period, and 10 week peak EEE season. Abbreviated versions were visited more than 1,600 times. The information was used in town meetings in at least 12 communities, as voters considered mosquito control articles on town warrants. Thousands of people saw the EEE displays at five NH county fairs. The radio and television coverage also reached thousands.

In 2006, there were no human EEE cases and a 93% drop in the number of mammal (non-human) EEE cases, even though the number of positive birds and mosquito pools was up from 2005.

C. Impact and Accomplishments

Because of our educational efforts, NH people improved their understanding of mosquito management, and neighbors of farms were less worried that agriculture was contributing to the problem. (This had been an irrational concern in 2005.)

Public health officials assert that each human case of EEE costs society \$1 million. Our educational efforts in concert with efforts by NH public health and veterinary officials (including monitoring, controls) affected the significant drop in cases.

D. Source of Funding – Smith-Lever 3b&c, State Matching, County funds

E. Scope of Impact: New Hampshire

Community Conservation Assistance Program (Land Use)

A. Situation - Rapid land use changes are causing environmental, economic and social impacts. Rural and pristine waters and habitats are at risk and urban water quality remains in need of improvement and/or protection. Community and conservation leaders are mainly volunteers without extensive backgrounds in natural resources and other disciplines related to land use and water quality issues. Tools are available for conserving natural resources and managing growth but many community and conservation leaders have limited understanding of them. Groups and individuals need long-term, sustained assistance as well as timely access to information and other resources for better natural resources stewardship. There is currently broad public support for land and water conservation. Commercial audiences are faced with increasing environmental, regulatory and economic pressures that strain the ability to maintain open space and the general public does not fully understand the consequences of land and water protection and development impacts.

B. Program Description

Community Conservation Assistance Programs (CCAP) assists New Hampshire communities and conservation groups with land and water conservation planning projects, such as natural resources inventories, conservation planning, land protection, public outreach, and building public support. The objective is to provide community

decision makers with guidance and appropriate education and training to help them move forward with their land and water conservation goals.

During the reporting period, Extension staff working with CCAP assisted 36 towns and 3 conservation groups with natural resources inventories, wetland evaluation, water resources protection, conservation planning and land protection, and participated in 10 regional meetings. Direct assistance to communities, workshops and courses involved total participation of 1,836 participants. 257 participants attended the **5th Annual Saving Special Places Conference**, receiving education on a variety of land conservation and stewardship issues. This event is co-sponsored by UNHCE and the Center for Land Conservation Assistance.

One hundred-twenty participants attended seven workshops offered through CCAP's **Summer Land Conservation Workshop Series** (Wildlife Habitats, Inventorying Species & Natural Communities, Aquatic Ecology, Landscape History, Navigating and Mapping, Forest Ecology, Wetland Ecology & Evaluation).

C. Impact and Accomplishments

Education and training provided by CCAP programming has increased communities' abilities to be pro-active about land conservation. Program highlights include the following:

- Three communities are now working towards comprehensive natural resource and land conservation strategies as a result of the *Dealing with Growth* presentation and extended follow-up assistance (multiple meetings) by the Natural Resources Outreach Coalition (NROC), which CCAP staff coordinates and is part of. Community projects initiated with NROC assistance include: surface water quality monitoring, starting Land Conservation Groups, drafting zoning revisions, community outreach & education to build support for land conservation, developing a Water Resources chapter of the master plan, and conducting Master Plan surveys.
- 49 UNH students assisted 13 towns with natural resources inventories, wildlife habitat studies, wetland evaluation, town forest management plans, land conservation, bridge & culvert assessment and trail design through the UNH Senior Projects course, providing the students with valuable hands-on experience while providing communities with the support they needed.
- Two municipal groups received assistance and acted to engage the public in the revision of a municipal master plan and planning and development of infrastructures that are conducive to non-motorized transportation, respectively.

D. Source of Funding – Smith-Lever 3b&c, State Matching, County funds

E. Scope of Impact: New Hampshire

Water Quality

A. Situation - Water is essential for life and its protection is critical. US EPA considers polluted runoff the primary source of water pollution in the nation. Storm water runoff carries pollutants from our homes, neighborhoods, roads, farms, and logging areas into local water bodies. This pollution is difficult to regulate because it does not come from a single, identifiable source. The control of non-point source pollution depends on education and behavior changes that put water quality protection at the forefront of home, farm, workplace, community and municipal practices.

B. Program Description

The Water Resources programs of the University of New Hampshire Cooperative Extension work at the grass roots level with the backing of science-based information to gradually change practices that affect water quality. The content of these programs often includes information about how natural marine and aquatic systems work, the effect of contaminants in those systems, the connection between land use and water quality, and strategies for minimizing contaminant input. Several programs focus on educating **lay water quality monitors** on taking samples and measuring various water quality parameters. Others focus on working with watershed groups and the primary land use boards within communities on long term projects for implementing natural resources protection. Programs are delivered through a variety of methods including trainings, presentations, facilitated sessions, technical assistance, regular meetings, on-water site visits, and various print and electronic media. Typical audiences of our programs include youth, volunteer water quality monitors, community leaders, watershed association members, agency staff, agricultural land managers and interested citizens. Each of the results listed below contributes to the scientific knowledge base on the State's water resources and/or the education and empowerment of its citizens to reduce pollution and protect natural resources through better planning, policies and practices.

C. Impact and Accomplishments

Lay water quality monitoring:

- Increased knowledge of at least 12 water quality monitors (20 indirectly) in freshwater quality concepts and monitoring procedures.
- Increased knowledge of at least 22 new volunteers in estuarine water quality concepts and monitoring procedures, 7 new monitors in phytoplankton monitoring procedures, and 3 volunteers in fecal coli form bacteria laboratory processing.
- Increased knowledge of at least 7 volunteers for stream water collection techniques.
- 68 monitors (including seven new ones) passed QAQC testing this year for saltwater monitoring. Three coastal monitors gained skills in laboratory procedures for processing water for fecal coli form bacteria. Seven gained skills in phytoplankton sampling and identification.
- Improved skills of volunteers in identifying phytoplankton based on use of newly developed identification sheets. Monitors in Maine and Massachusetts are now using it as their primary field identification reference. (multi-state)
- Adoption of NH monitoring program's approach and methods by other states and countries. (National and International)
- Increase in potential funding for Green Mountain Conservation Group of the Ossipee Watershed who applied for a grant to conduct groundwater modeling/monitoring and education.
- Ability to document extent of harmful algal blooms through use of volunteer-collected data. Data are being used by state/fed agencies and institutions.
- Increased capacity for NH Department of Environmental Services (NH DES) and others to confirm the arrival of Red Tide conditions in NH waters. Phytoplankton monitors successfully identified the beginnings of the 2006 red tide event in NH by documenting presence of toxic Alexandrium cells at a sampling site in May.
- Volunteer collected data being included in NHEP/NH DES 305B report to Congress.
- Additional state and federal funding for volunteer monitoring programs to assist with local habitat restoration and baseline data collection.

- Additional state and federal funds being directed to community-based work as a result of WQ data collected.
- Savings to communities and lake associations in discounted water analysis and field sampling costs = over \$16,900.
- Savings to NH municipalities in laboratory analysis \$5,500 (provided free) and sampling support \$1,050.
- Donation of over 3,975 hours of volunteer time Great Bay Coast Watch (GBCW) valued at \$18.04 = \$71,709
- Donation of over 4,917 hours of volunteer time Lakes Lay Monitoring Program (LLMP) valued at \$18.04 vol rate/hr = \$88,703.

Work with watershed groups and communities

- Increased knowledge of local watershed stakeholders for five lake watersheds who learned about current status of lake and watershed resources and agreed to present inventory and management plans to a wider group within their communities.
- Increased knowledge of over 880 municipal, state, regional, federal and international agency staff, tribal representatives, scientists, academics, consultants, students, non-governmental and citizen stakeholders, and citizen volunteer monitors attending the National Water Quality Monitoring Council Conference about the status of water quality monitoring. (national and international)
- Increased knowledge of about 55 coastal community members on specific growth rates in town, potential impacts of growth on natural resources including water, and tools for reducing impacts of growth on natural resources.
- Increased knowledge of about 20 members of coastal communities on sources of water pollution, impacts of contaminants, and possible strategies for preventing or reducing impacts of water pollutants.
- Increased willingness to adopt water quality friendly landscaping practices; 37 homeowners pledged to commit to improve their landscaping; Ten homeowners agreed to allow tours of their property to show improvements (e.g. erosion control, buffer and rain garden plantings, and infiltration trenches) that had been made.
- Increase in ability of Youth Conservation Corps (YCC) staff who attended “Following the Flow” and other trainings to assess potential sources of water pollution and install various water quality BMPs.
- Increase in funds through a NH DES Watershed Assistance grant for a project on Newfound Lake to implement measures to better protect water quality. Project includes representatives from UNH CE, Plymouth State University, Newfound Lake Region Association, NH Fish and Game, Lakes Region Planning Commission, Jeffrey Taylor and Associates, local towns, etc.
- Greater capacity of at least 6 community groups including conservation commissions, planning board members, local elected officials, open space committees, community leaders, watershed association members, and others to conduct natural resource inventories, develop conservation plans, develop watershed plans, conduct community outreach campaigns and carry out related natural resource protection projects.
- Increased funds for the Action (ME) Wakefield (NH) Watershed Alliance (AWWA) and their YCC through \$60K in grants. Groups received early assistance from UNH CE in project conception and design. In 2006, the AWWA and YCC generated over \$37K in local funding and in-kind match.
- Town of Strafford voters passed a new, more protective wetlands ordinance as well as other natural resource protection measures in April '06.
- Town of Wakefield added rural zone district, prime soils overlay, and open space conservation development article.

- Completion of 10 projects and 37 technical assistance designs on lakes in Wakefield NH by the AWWA and YCC. Projects included installation of erosion controls, buffers and rain gardens, and infiltration trenches aimed at reducing sediment and phosphorus loading.
- Potential increases in property values (and tax revenues) around lakes because of improved water quality associated with water quality assessments and education on preventing degradation.
- An estimated reduction of almost 16 tons of sediment and over 14 pounds of phosphorus loading each year due to AWWA and YCC projects assisted by Extension.

Students and teachers

- Increased knowledge of science educators from Massachusetts' Hands On Boat-Based Environmental Studies (HOBBS) and the Provincetown Center for Coastal Studies in phytoplankton monitoring techniques. (multi-state)
- Increased knowledge of students and teachers participating in HOBBS programs about phytoplankton.
- Improved skill of high school and community college students in field identification of specimens through use of phytoplankton identification key developed by GBCW. (multi-state)
- Increased skill of about 180 6th grade students who learned to use field microscopes and the GBCW phytoplankton key to identify cells observed in their samples.
- Increased skill of undergraduate business students who participated in service learning with GBCW.

D. Source of Funding – Smith-Lever 3b&c, State Matching, County, Grant funds

E. Scope of Impact: New Hampshire & New England-wide

Wildlife Management

A. Situation - New Hampshire is the fastest growing state in the northeastern United States. The additional population growth and associated development and transportation infrastructure places increased pressures on the landscape, causing fragmentation of wildlife habitat and the loss of 15,000 acres of habitat each year. Enhancing critical habitats for wildlife and ensuring the long-term protection of those lands for wildlife will ensure that wildlife continue to exist and people continue to enjoy our natural resources.

New Hampshire communities passed more than \$135 million in funds for land conservation in the past five years. Working with communities on land management and conservation projects is a key goal for UNH Cooperative Extension to achieve success.

B. Program Description

The UNH Cooperative Extension Wildlife Specialist served as co-coordinator of the state's Wildlife Action Plan. This plan was a 3-year effort undertaken by every state in the United States, with an aim at providing for the long-term conservation of our wildlife legacy. The wildlife specialist and colleagues made 25 presentations to towns and conservation groups, reaching 370 individuals of this target audience. Education was focused on key wildlife and critical habitats. Topics ranged from more general Wildlife Action Plan overviews to familiarize audiences with the plan and how they could help implement it; to more specific topics such as recognizing the prime wetlands in a community.

C. Impact and Accomplishments

As a result of this effort, the citizens of New Hampshire are poised to implement one of the top 12 ranked Wildlife Action Plans in the country. Communities are actively protecting lands through acquisitions and conservation easements with a focus on those areas most critical to wildlife species of conservation concern. We have raised the level of awareness on this topic of planning for a wildlife future to the point where it will continue to play a major role in decision-making at the town-level, regional planning level, and statewide level. Decision-makers now have the information they need to make good choices, and UNH Cooperative Extension is helping them make those informed decisions.

D. Source of Funding – Smith Lever 3b&c, State Matching, County funds

E. Scope of Impact: New Hampshire

Goal 5 - Enhance economic opportunity and quality of life for Americans

Executive Summary

Creating supportive environments for Americans is increasingly complex. Each year, New Hampshire loses 13,000 acres of open space and farmland due to development. The resulting growth brings excess traffic, overcrowded schools, neighborhoods of strangers, community battles over growth, and an influx of immigrants. Changing demographics and character of the state require adapting programs to meet the needs of youth, families, communities and businesses. Significant changes in New Hampshire include:

- More people, new cultures: New Hampshire population increased 6% from 2005 to 2000 – the fastest growth rate in New England. Several pockets of refugee immigrant populations (Samli Bantu, Sudanese and Meskhetian Turkish) have changed the faces of communities in New Hampshire as well. Assimilation of the new with the old requires cooperation, acceptance and change.
- Overcrowded schools – From 1990 to 2000, the K-12 public school enrollment increased 25%. Students can become disengaged from learning when there are too few textbooks, or classes are crowded into libraries, cafeterias, stages and portable units.
- Drop-out rate – In the first four years of the 21st Century, over 10,600 New Hampshire teens left school only partially prepared for adulthood based on the cumulative dropout rate. They enter an adult world without the experience and preparation to succeed in the workforce.
- Poverty – Lack of resources affects a family's capacity to participate in work and community life. At minimum wage (\$5.15), a New Hampshire worker must work 122 hours/week to afford a two-bedroom unit at fair market rent. The state's housing wage (able to pay rent on the wages for 40 hours/week) is \$15.77. Homelessness, transience and living with relatives in crowded conditions can diminish a child's capacity.
- Language barriers: An increasing number of New Hampshire public school students have limited English proficiency which creates a greater need for cultural understanding and bilingual resources.

Information gleaned from program gap analysis assessments held in all 10 New Hampshire counties, as well as needs identified as a result of 45 Community Profiles conducted in New Hampshire towns over the past five years, indicate communities find it difficult to engage diverse citizens in community activities and decision-making processes. A lack of volunteerism and deficiencies in leadership exacerbate this decline in so-called

social capital noted by scholar, Robert Putnam in his book entitled *Bowling Alone: The Collapse and Revival of America Community*. The following trends outline the situation facing New Hampshire communities:

- A decreasing diversity of individuals participating in decision-making and community activities at the local level
- A lack of support for activities that encourage diverse participation in local decision-making processes
- A declining percentage of individuals who vote (particularly young adults)
- Weakening social networks between community citizens, organizations, and associations.
- Declining volunteerism around community activities due to increasing life-demands on individuals and families
- Existing leaders lack the skills to engage and/or mobilize diverse participation in community activities and decision-making processes.

UNH Cooperative Extension conducts a wide array of programs to enhance economic opportunities and quality of life for New Hampshire residents and the largest number of our staff contribute programming effort toward this goal. Programs include:

- Education for child care providers
- 4-H Afterschool programs conducted with PlusTime New Hampshire for statewide work and through Children, Youth and Families at Risk (CYFAR) work in two regions of the state
- Community Profiles Action Planning initiated in a number of communities and other community development work
- Family financial management programs for individuals on public assistance or on probation, teachers, adults, youth, Earned Income Tax Credit recipients and Medicare beneficiaries
- Leadership development to build leadership capacity through facilitation training and other educational efforts
- Parenting programs through various deliveries including a newsletter series, fact sheets, a web site, media, and workshops.
- Workforce preparation for youth through UNHCE 4-H Camps programs and adults through the Family Lifeskills program
- Lifeskill development in youth through classic 4-H clubs, 4-H camping, school enrichment programs, and special interest groups
- Marine science education through the UNH Marine Docents and other educational efforts with teachers and citizens

Another key aspect of this goal includes the extensive use of trained volunteers for implementing UNH Cooperative Extension's programs. Volunteer Coverts Cooperators, Master Gardeners, Community Tree Stewards, UNH Marine Docents, Great Bay Coast Watchers, Lakes Lay Monitors, 4-H Leaders and 4-H community service volunteers in the last year contributed approximately 75,355 hours of time saving tax payers \$1,359,404 (\$18.04 per hour – Independent Sector rate for volunteer time) that they would have paid for volunteer-related educational services.

Select notable impacts include:

- Four towns that completed a Community Profile have formed an action plan, leading to the formation of 17 local action committees addressing their respective community issues.

- As a result of the trainings and strategic planning assistance two regional economic development organizations developed strategic action plans for achieving desired objectives. One organization has already provided over \$3 million in loans this year to help small local business to expand and create 30 new jobs in the region.
- As a result of Extension's assistance to three watershed associations, Board members from each respective organization gained new knowledge about what others are doing to address land use and water quality. One association created a partnership with another organization to pursue conservation of habitat, another sponsored a series of newspaper articles to educate the public about the issues facing the watershed and one organization engaged over a dozen residents to participate in an educational 'river trip' to build awareness of the importance of the watershed.
- As a result of financial literacy education, participants completed or plan to: set up a system for storing financial records (96%), reviewed their insurance coverage (78%), calculated a net worth statement (84%), follow a spending plan (96%), have an emergency fund (97%), obtained a credit report (97%), reduced their money leaks (98%) and 85% reported they felt more confident making money decisions.
- Evaluation results on participants in the High School Financial Planning Program include: 47% knew more about credit costs, 37% improved skills for tracking spending, 45% started saving or began saving more and 38% felt more confident about managing their money.
- More than 90% of Family Lifeskills Program participants report that they feel more prepared for the job market, 58% reporting that they feel "much more" prepared; 94% reported having gained knowledge about available services and 90% felt better able to handle problems. Follow-up information on 174 participants found as of March 31, 2005 that 50% of the random sample was employed. Within two years, about 56-60% are working and 60-70% of cases have closed.
- 4-H Youth Development programs continue to build self-confidence, knowledge and skills in youth from a variety of backgrounds:
 - 75% of 4-H youth (n=1,349) showed increased knowledge and understanding related to specific project work.
 - 77% of 4-H youth (n = 1,393) learned and practiced a new skill through their 4-H group experience.
 - 75% of 4-H youth (n = 1,355) made gains and/or advanced in competency and skills in their 4-H projects.
 - 62% of 4-H youth (n= 1,122) presented examples of their 4-H work to the public.
 - 28% of 4-H youth (n = 496) prepared a resume or kept records to document their 4-H work. One former member reported he "used his resume to get a job."
 - 30% of 4-H youth (n = 540) made an oral presentation in public related to something they had learned or worked on through 4-H.
 - 60% of 4-H youth (n = 1,087) participated in at least one county event, gaining experience meeting youth from other communities, learning how to be part of an organized activity, and sharing knowledge and skills with others.
 - 39% of 4-H youth (n = 706) used or applied leadership skills learned through 4-H.
 - 24% of 4-H youth (n = 424) served on a committee during the past year as part of their 4-H experience.
 - 27% of 4-H youth (n = 482) served as an officer in a 4-H group at the local, county, and/or state level.
 - 59% of the reporting 4-H groups (n = 150) indicated the group members had planned and completed one or more community service projects during the past year. These projects included: community beautification, helping the environment, peer-to-peer teaching, pet training and

therapy, building a new facility or playground, therapeutic riding, cleaning and maintaining community property, providing games and recreation for children, and raising funds or collecting food for a charitable cause.

- 4-H Camp not only provides a positive camp experience for youth, but also gives young adults valuable work experience:
 - Two-thirds of staff had not worked at NH 4-H Camps previously (48%, n = 27) or had only one summer's previous experience (18%, n = 10). At the end of staff training less than one-third of staff (30%, n=17) felt confident enough to strongly agree that "staff training prepared me for my role at camp", while about half (57%, n=32) strongly agreed "I know what is expected of me in my position." With experience, mentoring, and booster training throughout the summer, staff perceptions changed slightly. On the posttest, almost three-fourths of staff (70%, n = 39) strongly agreed they "know what is expected of me in my position", while only one-third (34%, n=19) strongly agreed "staff training prepared for my role at camp".
 - By the end of the season, almost half of staff (45%, n=24) strongly agreed "I know how to use 4-H teaching methods to reinforce learning", compared with only 27% (n=15) at the start of the camp season. Most staff strongly agreed on the posttest "it is important to help campers experience a sense of belonging" (89%, n=50), "independence" (79%, n=44), "generosity" (91%, n=49), and "mastery" (91%, n=49). About one-third of staff (38%, n=21) strongly agreed on the pretest "I know how to encourage campers to appreciate the natural environment", and almost two-thirds (61%, n=34) strongly agreed on the posttest.
 - An important life skill is learning to care for oneself while meeting the challenges of personal and work situations. Staff improved in their self-assessment of "I take care of myself each day," with 38% (n=21) strongly agreeing on the pretest and 46% (n=26) strongly agreeing on the posttest.
 - Teamwork is considered a critical skill for today's workforce. About half of staff strongly agreed on the pretest (48%, n=27), increasing to 61% (n=34) on the posttest, with the statement "I contribute to making the staff a strong team." Similar responses were made on the statement "I contribute to positive staff morale." No change between pretest and posttest was found in response to the statement "I am treated with respect by other staff members." Half the staff (52%, n=29) strongly agreed on both pre- and post-test.
- 20 farms were trained on ways to prevent disease outbreaks (specifically Avian Influenza) in their poultry operations. Attendees were also provided with some basic protective equipment (respirators and nitrile gloves) and instructed in their correct use.
- County Agricultural and Forestry Educators along with specialists routinely meet with land owners on their farms and woodlots. Safety messages involving tool/equipment usage, protective equipment, pesticides and animal handling are ongoing. Some examples include:
 - discussions about proper ventilation - air quality safety when working around manure pumps and man-holes.
 - installation of proper protection around manure reception ports with alley scrapers to avoid accidents with people and cattle.
 - working with Agri-Ability programs to provide disabled farmers with assistance, equipment modifications.
 - identification of potentially toxic plants (to livestock and people) as part of individual or group pasture-walks.
- Parenting education workshops yielded the following participant results:

- 80% increased use of positive discipline strategies after completing program
- 80% increased their knowledge of child development (reasonable expectations of children)
- 92% establish clear limits and rules most of the time or almost always
- 92% understand what to expect of children at different ages most of the time or always
- 100% feel confident in their parenting most of the time or always
- 91% Use natural and logical consequences most of the time or always
- Marine Science education program participants reported increased knowledge and understanding of the marine environment, and specifically the Gulf of Maine
- 450 middle and high school students participating in the boat-based Great Bay Living Lab program and the Floating Lab program gained skills in:
 - water chemistry data collection
 - plankton collection
 - benthic community sampling
 - navigation
 - weather and current measurement
 - identification of common intertidal organisms
- Trained twenty-one new marine science docents in the New Hampshire coastal region capable of delivering pre-K- adult education programs and supporting other informal and formal marine science education facilities and programs

Total Expenditures: \$ 6,036,432

Funding: Federal Smith-Lever 3b&c - \$ 578,473

State matching funds - \$ 2,887,569

County appropriations - \$ 982,874

Grants, Contracts, Other - \$ 1,587,516

FTEs - 47

Community Development

A. Situation - New Hampshire communities face many challenges, including changing demographics, shifting economic structures, emerging societal crises, unprecedented growth in some regions, and decline in others. At the same time, volunteerism has declined, population pressure is causing economic and societal stresses, certain parts of the state are losing jobs, and family and community crises are on the rise.

B. Program Description

The goal of UNH Cooperative Extension's community development programming is to help communities achieve long-term well-being by building human, environmental, economic, and social capacity by providing a variety of educational services to community residents, organizations, and local governments.

Community Profiles, a community action planning/visioning program facilitated by UNH Cooperative Extension in coordination with community leaders reached over 400 residents in 4 New Hampshire towns last year. The Community Youth Mapping project (CYM) is a program aimed at getting NH youth to identify

resources and assets in their communities. This past year, 12 youth were trained in Strafford County and 30 were trained for the Concord, Stratham and Manchester sites.

Extension worked with business/economic development organizations in New Hampshire's North Country to facilitate strategic planning sessions, as well as provide Board training in meeting management, conflict resolution, and economic analysis. Extension helped the city of Nashua Livable Walkable Communities Initiative to engage the public in planning and developing infrastructures conducive to urban beautification.

Cooperative Extension staff also worked with three watershed associations around the state to identify key issues facing their watersheds, key opportunities to address these issues, and develop action plans to address the issues. The Natural Resources Outreach Coalition (NROC) provided conservation planning assistance and technical assistance to four New Hampshire communities last year.

C. Impact and Accomplishments

Societal Impacts:

- Four towns that completed a Community Profile have formed an action plan, leading to the formation of 17 local action committees addressing their respective community issues. Accomplishments by action committees over the past year include:
 - Creation of a hazardous mitigation plan for Cold River and Bowers Brook watersheds, both of which were seriously impacted by major floods in 2005.
 - In one town, land was secured for a CSA (a community supported agricultural operation).
 - A town website was created to strengthen communication among local residents.
 - A non-profit was created to begin a community newsletter named Greenland Grapevine.
 - One town engaged over 20% of population at the Community Profile event – the public input from the event is being utilized in the revision of the town's Master Plan.
 - Cleaning up of a youth soccer field.
 - Sponsorship of Tai Chi lessons and dances to increase social activities in one town.
- Each of the towns/counties that participated in Community Youth Mapping collected and posted information about local assets on a website accessible to the public. An evaluation is being conducted by a graduate student to determine the changes in knowledge, skills, and behaviors of the youth participating in the project.
- Extension's Community Development Program hired two interns last year. One student helped evaluate impacts of Extension programs, implement Community Profiles, and conduct applied research on the impact that civic networks have on coastal communities. The other student – a graduate assistant – provided technical assistance to two towns working on Master Plans.

Economic Impacts

As a result of the trainings and strategic planning assistance two regional economic development organizations developed strategic action plans for achieving desired objectives. One organization has already provided over \$3 million in loans this year to help small local business to expand and create 30 new jobs in the region. This quote is from a resident subsequent to a Community Profile "The Landaff Community Profile was a catalyst for getting the citizens of Landaff to come together and make good things happen in their community. Many community residents were skeptical of the Community Profile process before the forum, but most left the forum as believers in what a community can accomplish by working together."

As a result of a Community Profile, Nashua city officials and Ledge Street neighborhood residents helped to clean up a rail-trail corridor, beautify vacant buildings, implement a youth mural project, and obtain resources from the city to obtain resources to implement a community garden in a Hispanic Neighborhood starting next Spring.

Environmental Impacts:

As a result of Extension's assistance to three watershed associations, Board members from each respective organization gained new knowledge about what others are doing to address land use and water quality. One association created a partnership with another organization to pursue conservation of habitat, another sponsored a series of newspaper articles to educate the public about the issues facing the watershed and one organization engaged over a dozen residents to participate in an educational 'river trip' to build awareness of the importance of the watershed.

Impacts from the NROC program include completion of natural resource inventories, development of a conservation chapter for Master Plans, securing of funds to preserve tracts of land, and creation of associations to address natural resource issues. A report entitled "Setting Goals, Redefining Boundaries" outlines impacts the program has had. The report can be found at:

<http://extension.unh.edu/CommDev/NROC/docs/NROCbKHR.pdf>

D. Source of Funding – Smith-Lever 3b&c, State Matching, County, Grant funding

E. Scope of Impacts – New Hampshire, UNHCE is also collaborating with Maine, Massachusetts and Vermont Extension services on projects related to community entrepreneurship, land use decision-making, etc.

Leadership Training and Development

A. Situation - New Hampshire communities face many social, physical, economic, and environmental challenges. While some communities have proactively responded to current and future issues, others lack the leadership structure and capabilities to address issues in an organized and effective fashion.

B. Program Description

Cooperative Extension's Strengthening New Hampshire Communities Program (SNHC) offers a variety of training programs aimed at building leadership capacity – facilitation training workshops, community development academy, and other curricula. Last year, organizational assistance and facilitation training was provided to over 35 community volunteers from four towns that implemented Community Profiles (Community Profiles is a community action planning program facilitated by UNHCE). These volunteers helped to facilitate breakout groups at their respective community forums. Extension staff conducted leadership development workshops for several statewide community organizations. As an example, Extension provided training to the *Farmington Preservation Guild* to help them to engage new community members in the organization's civic and preservation-related activities. UNHCE's COVERTS program (conservation outreach and training program) trained dozens of community volunteers to provide leadership on community-based conservation efforts, namely wildlife habitat preservation activities. Youth Development Educators around the state have developed a series of innovative programs that engage youth to serve as leaders in their communities. Such efforts include the *Community Youth Mapping Project* (CYM), creation of Community Prevention Coalitions

(e.g. Rockingham County Youth Coalition), and Youth as Partners initiatives that help to engage youth and their parents in decision-making processes.

C. Impact and Accomplishments

- Four Community Profile volunteer facilitators went on to chair community action committees that were created as a result of the forum. Other direct impacts that Community Profiles had in 4 New Hampshire towns as a result of engaging of new citizen leaders include:
 - A town website was created in one town to strengthen communication among local residents.
 - A non-profit was created to begin a community newsletter named the 'Greenland Grapevine'.
 - One town engaged over 20% of its population at the Community Profile event – the public input from the event is currently being utilized to revise the town's Master Plan and zoning/regulations.
 - Sponsorship of Tai Chi lessons and dances to increase social activities in one town.
- Leadership development workshop participants learned basic skills for conducting effective meetings, building effective organizational structures, and implementing projects. Two participants have since taken on new leadership roles as a result of the training.
- Last year, UNHCE's Community Development Program provided community development training to a graduate assistant and an undergraduate student intern. These students provided direct assistance and educational programming to four New Hampshire towns in Rockingham and Strafford Counties.

D. Source of Funding – Smith-Lever 3b&c, State Matching, County funds

E. Scope of Impacts: New Hampshire. UNHCE is also collaborating with Maine, Massachusetts and Vermont Extension services to develop and implement a community assessment and evaluation tool (Community Capacity Index).

Family Resource Management

A. Situation: Personal savings as a percentage of disposable personal income declined from 1.8% in 2004 to -.4% in 2005. There were 6,058 bankruptcy filings in NH in 2005 which was a 32% increase from 2004. Households are saving less and spending more putting their financial security at risk. Spending habits start early. Comparing 2005 to 2004, teens overall spending level declined 6% but nearly half believe they'll spend more in 2006 than they did in 2005. The Jump\$tart Coalition for Personal Financial Literacy 2004 survey found 12th graders' personal finance knowledge level to be 52.3% which is a failing grade based upon the typical grade scale. Many young people could establish bad financial management habits, and stumble through their lives learning by trial and error.

B. Program Description

UNH Cooperative Extension increased the financial literacy by providing education for participants to establish financial goals, reorganize their spending to start or increase saving, decrease their debt load, and follow a spending plan that will lead toward achieving financial security now and in later life. Family resource management education is taught in every New Hampshire county through face-to-face education, learn-at-home publications and the media. The audiences include those on public assistance, on probation, Individual

Development Account participants, teachers, adults, youth, Earned Income Tax Credit recipients, and Medicare beneficiaries.

During this reporting period, 556,633 people were reached with family resource management education (2,133 adults and 4,000 youth through face-to-face education and 550,500 through print and non-print media). Workshops (38) were conducted within the Financial Security in Later Life national initiative by attending either “Making Money Work For You”, Credit Check-Up, Don’t Get Crushed by Debt and Legally Secure Your Financial Future.

Education was also provided through the Linking Workers with the Earned Income Tax Credit project. For Tax Year 2004, 61,815 low income NH workers gained \$95,432,362 by receiving the Earned Income Tax Credit (EITC) which was primarily used to pay bills. To increase the awareness of EITC there was radio and TV coverage resulting in 1,688,780 (duplicated count) viewers/listeners and 58,875 EITC publications were distributed. To increase the number of students gaining from the High School Financial Planning Program (HSFPP), UNH Cooperative Extension teamed with NH Jump\$tart Coalition. In Spring 2006, at the annual NH Jump\$tart “Money Smarts” Conference for Teachers, 2 workshops focused on the HSFPP. As a result 4,000 students were reached.

C. Impact and Accomplishments

As a result of this education the participants have completed or planning to: set up a system for storing financial records (96%), reviewed their insurance coverage (78%), calculated a net worth statement (84%), follow a spending plan (96%), have an emergency fund (97%), obtained a credit report (97%), reduced their money leaks (98%) and 85% reported they felt more confident making money decisions.

The evaluation results of the High School Financial Planning Program were: 47% of participants knew more about credit costs, 37% improved skills for tracking spending, 45% started saving or began saving more and 38% felt more confident about managing their money.

D. Source of funding – TANF and state funds

E. Scope of Impact - New Hampshire and New England

Workforce Preparation/Adults

A. Situation- Federal law requires most recipients of TANF public assistance to prepare for and find paid employment. Many TANF recipients find they need help mastering basic lifeskills to make a successful transition to paid work. Some people have difficulty managing time, conflict, anger and stress. They may fear change or rejection. Some need help building support networks for themselves. Many people do not have successful role models for balancing paid work and family life. Some have family difficulties that undermine their ability to seek and find a job. Many need help with parenting skills and understanding the developmental needs of children. Often, parents worry about finding childcare or interacting with childcare providers. In addition, they need help developing a spending plan or preparing nutritious meals within their budget and time constraints.

B. Program Description

UNH Cooperative Extension has been contracted by the NH Department of Health and Human Services, Division of Family Assistance to provide the Family Lifeskills Program. Within this Program there is the Lifeskills for Employment, Achievement and Purpose curriculum (LEAP – 90 hours). The goal of the Family Lifeskills Program is to provide TANF recipients with enhanced competencies that can bring them into the job market. These competencies fall into two basic categories: knowledge-based skills communicated through planned curriculum and personal/interpersonal skills that are enhanced through the actual group process that takes place during the sessions. The knowledge-based skill areas are divided into four sections: food and nutrition; money management; parenting skills; and personal skills facilitating balancing work and family. The personal skills gained through the group process include enhanced self-esteem and healthy social support networks.

C. Impact and Accomplishments

During this reporting time period 679 TANF recipients attended the Family Lifeskills Program. The Family Lifeskills Program uses pre, post, and follow-up assessment tools. More than 90% of LEAP participants report that they feel more prepared for the job market, 58% reporting that they feel “much more” prepared; 94% reported having gained knowledge about available services and 90% felt better able to handle problems. Of particular note was the way in which adherence to workplace standards, such as punctuality and attendance, gave people incentive to complete the program. It was noted that the proper balance between promoting group bonding and responsibility to the group by showing up, being punctual, and dressing appropriately, seemed to facilitate self-esteem as well as a sense of responsibility necessary in securing and maintaining employment. Follow-up information on 174 participants found as of March 31, 2005 that 50% of the random sample was employed. Within two years, about 56-60% are working and 60-70% of cases have closed

D. Source of Funding: TANF and State funds

E. Scope of Impact: New Hampshire

4-H Youth Development Through Life Skills

A. Situation - Positive youth development is the conceptual foundation of the 4-H program. The development of critical life skills is universally recognized as a primary task of childhood and adolescence. Young adults have a difficult time acquiring and retaining employment, living on their own, and starting a family without the basic skills of effective communication, goal setting, decision making, problem solving, and conflict resolution.

B. Program Description:

Through 4-H, youth acquire and practice critical life skills including goal setting, decision-making, communication, interpersonal relations/making friends, accepting differences, and conflict resolution. Critical program components used in the NH 4-H Youth Development program to achieve this goal include trained and supported 4-H volunteers, 4-H CCS curriculum, educational events and activities, and a variety of delivery methods including 4-H clubs, afterschool programs, and camps.

Demographics:

UNHCE staff provides ongoing orientation, training and curriculum resources for 4-H volunteers on core life skills selected for emphasis and evaluation during the current Plan of Work. Annual 4-H Group Activity Reports were completed by 158 out of 433 existing 4-H clubs/groups (36%) in all ten New Hampshire counties. These groups reported holding an average of 15 meetings per group (n = 2,310 total meetings) during the 2006 program year, with an average meeting length of 1.9 hours. Of the groups reporting, a total of 4,427 hours of meeting time was provided for youth. During the past year, 4,009 youth enrolled in 4-H in these counties, and 1,803 were represented by group reports (45%). Of the youth represented in group reports, 1,523 (84%) completed the year as 4-H members, and 280 (16%) dropped out at some time during the year.

4-H group leaders reported a contribution of 48,047 volunteer hours, including 37,549 hours contributed by screened volunteers and 10,498 other volunteers. At \$18.04 / hour, this represents a contribution of \$866,768 of in-kind services to the UNHCE 4-H Youth Development program.

C. Impact and Accomplishments

Youth are developing important life skills through a variety of 4-H programs and activities. Through the Annual 4-H Group Activity Report, 4-H volunteers were asked for to assess how 4-H has influenced the development of knowledge and skills among the youth in their groups. Volunteers from 252 4-H groups provided their perceptions of how well 1,803 4-H members are practicing basic life skills emphasized through the 4-H experience.

Providing opportunities for youth to gain knowledge, learn and practice a new skill, and improve on something they do well is an essential element of a quality youth development program, and leads to increased feelings of competence and self-confidence.

- 75% of 4-H youth (n=1,349) *showed increased knowledge and understanding* related to specific project work.
- 77% of 4-H youth (n = 1,393) *learned and practiced a new skill* through their 4-H group experience.
- 75% of 4-H youth (n = 1,355) *made gains and/or advanced in competency and skills* in their 4-H projects.
- Learning and practicing new skills is often a journey in 4-H, according to one 4-H volunteer. “A horse member leased an easy horse that was not kept at home. She often received blue in classes and often did not show up to do the expected chores. She acted as if she had the answer to everything. When the family purchased a horse, she found out daily care was a lot more involved and that the horse needed a lot of exercise and practice, which she chose not to do... She was not going to participate in the county show but the leader convinced her. She ended up scratching two classes and only received whites in the other two. She was very quiet and spent a lot of time to herself over the weekend but did stick it out. A week later the leader sat down with her to discuss it. The member had come to realize that she still had a lot to learn, that practice serves a purpose, and often placing is a direct reflection of work rendered. She said she realized she couldn't always win but that it made more sense to set a goal to work toward rather than focusing on the ribbon. As the leader said, ‘I have never been more proud of one of my 4-Hers!’ This is the best part of being a 4-H leader, seeing your children and families learn and grow and take the leap to become more involved because they have become more confident and comfortable from your teachings...My members are well on their way to becoming responsible adults and great leaders, and they are learning those skills through 4-H and at home in their barn.”

Learning to communicate in a variety of ways is an essential skill that is highly valued in the workforce, and critically important to social development and interpersonal relationships. 4-H provides opportunities for youth to reflect on their experiences, demonstrate something they have learned, and document their accomplishments.

- 62% of 4-H youth (n= 1,122) *presented examples of their 4-H work to the public.*
- 28% of 4-H youth (n = 496) *prepared a resume or kept records* to document their 4-H work. A former member reported he *“used his resume to get a job.”*
- 30% of 4-H youth (n = 540) *made an oral presentation in public* related to something they had learned or worked on through 4-H.
- A 4-H volunteer reports one youth *“has learned to not talk as much and interrupt,”* and another reports, *“his listening and sharing have really improved.”*

Learning how to be part of a group, plan and carry out group activities, and following through on commitments to a group are important life skills that carry over into family, school, community and future employment. 4-H provides many opportunities, from a very young age through adolescence, for youth to learn and practice a variety of leadership skills.

- 60% of 4-H youth (n = 1,087) *participated in at least one county event*, gaining experience meeting youth from other communities, learning how to be part of an organized activity, and sharing knowledge and skills with others.
- 39% of 4-H youth (n = 706) *used or applied leadership skills* learned through 4-H.
- 24% of 4-H youth (n = 424) *served on a committee* during the past year as part of their 4-H experience.
- 27% of 4-H youth (n = 482) *served as an officer* in a 4-H group at the local, county, and/or state level.
- A 4-H volunteer reports one youth *“is learning to take more responsibility for her own results, and not expecting others to do things for her. She is more motivated to achieve goals.”*
- A member reports, *“it helped me in my school work and to get along with other kids. I follow rules to get what you want done. I learned that ribbons and coming in first isn’t important, learning something new and having fun is.”*

One 4-H volunteer reports two teens *“have taken over the leadership of the Cloverbud group and have done a great job planning projects and running meetings. One of their moms is always there to back them up, the teens are running the show.”*

Contributing to one's community through community service learning provides many important lessons, including identifying a problem or need, making a plan, organizing and gathering supplies and/or needed information, making and keeping a schedule, communicating and working together, reflecting on the process and the outcome, and evaluating the finished project.

- 59% of the reporting 4-H groups (n = 150) indicated the group members had planned and completed one or more *community service projects* during the past year. These projects included: community beautification, helping the environment, peer-to-peer teaching, pet training and therapy, building a new facility or playground, therapeutic riding, cleaning and maintaining community property, providing games and recreation for children, and raising funds or collecting food for a charitable cause. One leader reports a boy *“has shown growth in responsibility, empathy, compassion, and caring for, not only his family, but for people who live within the community as well.”*
- 2,361 youth and 1,108 adults were reported as participating in these community service projects. They contributed an estimated 7,655 hours to the projects, averaging 51 hours per group. At \$18.04 per hour, this contribution is valued at \$10,102 in in-kind support to the community.
- An important outcome of community service is learning to appreciate what we have. One 4-H volunteer describes new insights shared by 4-H youth: *“gratefulness that they are ‘abled’...show continued*

interest and help with the therapeutic riding program...the joy of sharing their love and knowledge of horses with those less abled.”

- In one county, youth undertook roadside cleanup. They were surprised at how many people still litter, and can't understand why so many [fast food] customers litter. They now understand the laws of no littering. In discussing the changes, they now look at a roadside and actually see it, but felt truthfully they didn't make any change. *“In a couple of days it will look just like we hadn't touched it.”*
- Youth in one club *“discussed ...why they need or should donate money to different organizations...They are surprised that things take so much time to complete. They are giving when it comes to money, but are taken back when it comes to time. They now realize there are children less fortunate than themselves.”*
- A leader reports, *“children are caring about things other than themselves. They are more open to notice problems in the area and want to help more.”*
- A county reports, *“An awesome group of 4-Hers led their class in organizing a sale to benefit Alstead Flood Victims. The EXTRAVAGANZA was incredible and earned over \$4,000 to donate! Teacher/parent reports confirmed that 4-Hers led the way!”*

4-H teens learn and develop leadership skills by: 1) participating in the Mentoring and/or Leader-in-Training programs at 4-H Camps, 2) serving on the Teen Council to plan and implement an annual 3-day 4-H Teen Conference on the University of New Hampshire campus, and 3) participating in specially funded Rural Youth Development (RYD) programs. The Engaging Youth, Serving Community, Youth Leadership Survey, a pre- and post- self-assessment survey designed for the RYD project, was used with 47 teens who participated in one of these three opportunities during the past year. Post-test results show:

- Almost all participants (96%, n = 45) reported excellent or good ability on the posttest in their skills to *work as a team member, share new ideas with others, and meet others*; and 94% (n = 44) reported similarly in their skills to *teach others*. One-third of the participants (n = 15) had improved in these areas from some or good ability to excellent ability.
- A majority of participants (89%, n = 42) reported excellent or good ability on the posttest in their skills to *organize information, follow a process to make a decision, lead group discussions, speak before a group, and plan programs*. One-quarter of participants (n=11, 23%) reported they had improved in skills to organize information. Between six and nine youth (13% to 19%) reported they had improved in the other skills mentioned.
- Three-quarters or more of the participants reported excellent or good ability on the posttest in their skills to *organize a group activity* (88%, n = 41), *keep written records* (87%, n = 41), *identify resources* (85%, n = 40), *establish time use priorities* (83%, n = 39), *see things objectively* (78%, n = 37), and *evaluate programs* (70%, n = 33). One-quarter of participants (26%, n = 15) reported they had improved in the first of these skills, organizing group activities; and 21% (n = 10) had improved in keeping written records, and evaluating programs.

Volunteer leaders report 4-H attracts many youth with special needs.

- One teen decided to seek a career in Special Education as a result of working as a 4-H camp counselor.
- 4-H Camp also helped two young boys with learning disabilities meet new friends, and learn new skills in archery and swimming.
- Another leader reports, *“three of my current members have autism spectrum disorder. Another has multiple learning disabilities. 4-H remains the only organization that these kids feel they really belong. One has become more assertive and confident. Even though she is the youngest, she will try to answer*

questions and participate in the work activities we do. Teens are taking an active leadership role to help these younger members”

- A former 4-H member and 4-H camp staff member decided to major in pediatric occupational therapy, specializing in children with autism spectrum disorder, and is now a practicing certified therapist. *“My first assignment in my new job was to assist with running a summer camp for 250 children with autism. I drew heavily on my 4-H Camp experience to get me through the challenge. My supervisor complimented my work, but I know that the camp experience and training was a large part of it.”*

D. Source of Funding – Smith-Lever 3b&c, including CYFAR, leveraged with State Matching, County funds and participant fees.

E. Scope of Impact: New Hampshire

Project and Life Skill Development through 4-H Animal Science Projects

A. Situation - 4-H animal science programs provide a unique opportunity for youth to be involved with a project on a year-round basis and combine learning about a topic of great interest to them with the opportunity to practice important life skills. Although New Hampshire is largely a rural state, there are few opportunities (less than five high school vocational agriculture programs with an emphasis on animal production in the state) for youth to learn about animal agriculture and 4-H youth development provides this education for more than 3,000 youth enrolled in 4-H animal science projects.

B. Program Description

NH 4-H Youth Development has community clubs, local and state-wide competitive events, and more than a dozen opportunities for youth to travel outside the state to exhibit or participate in events with other 4-H animal science members. Animal science projects are well supported through community volunteers and the 4-H Foundation of New Hampshire. Animal shows, public speaking and judging contests, skill-a-thons and industry supported events such as national dairy conference are all important components of the 4-H animal science program in New Hampshire

C. Impacts and Accomplishments

One-hundred forty-four youth who have participated in 4-H animal science programs responded to a retrospective survey on their knowledge and skills about their animals, as well as their everyday living skills. Everyday living skills included goal setting, responsibility, decision making and leadership. All youth who responded to the survey were over 12 years of age, with an average grade level of respondents being 9.4. On average the respondents had been 4-H members for 5 years and were asked to rate their skills and knowledge currently, and then try to remember their level three years prior. Every item under the animal care and knowledge section showed a greater percentage of youth with higher levels currently then they had three years ago. Highlights of animal skills and knowledge and skill changes are as follows:

- 94% indicated they currently make decision(s) based on what is best for their animal usually (17%) or almost always (77%), but three years ago only 70% indicated they usually (19%) or almost always (51%) do this.

- 90% said they knew how to recognize symptoms of illness in their animals, when only 53% said they did three years prior.
- 68% indicated they knew the dollar value of their animals, when only 39% indicated they had three years ago.
- 89% realized the work and cost involved in having an animal currently, up from 49% three years ago.
- Twice the number of youth (88%) indicated they now had enough information to purchase and evaluate (judge) animals against the ideal animal, when only 44% indicated the same three years prior.

These data suggest that *4-H animal science youth are learning a great deal about what is involved in taking care of animals, and not just in daily care, but also important animal industry skills like disease recognition, animal selection, and economic skills like understanding the actual cost and value of animal production.*

Impressive, but slightly less dramatic increases were reported for the frequency of life skills practiced as well. While maturity is likely an important factor in the increased percentage of youth reporting they usually or almost always practice a specific life skill, particularly great increases were reported for skills the NH 4-H program has provided special emphasize for over the past several years: goal setting, communication, and leadership (particularly youth and adult partnerships).

- 80% of the youth currently reported setting goals on a regular basis and 76% said they usually or almost always achieve their goals. Three years prior, only 55% reported regularly setting goals and 56% said they usually or almost always achieve their goals.
- 65% reported currently serving in a leadership role and only 44% reported the same three years ago. Additionally, 64% said they almost always were able to connect well with adults, but only 44% had reported this three years ago.
- 86% of the youth indicated they knew what was necessary to prepare or a public presentation when only 50% had three years prior. 91% indicated they were confident in answering questions about their animals and 65% had indicated the same three years ago.
- 85% were usually or almost always able to get along with people who have different interests/opinions, but only 72% had three years ago. 75% said they almost always felt comfortable interacting with people of different ages, but only 46% had three years prior.

Regardless of whether the youth in the 4-H animal science program take up a career in animal agriculture, the skills they have learned and practiced will be of use to them in any endeavor. *New Hampshire 4-H animal science youth know how to set and achieve their goals, are actively serving in leadership roles and are confident in their interactions with adults as well as younger youth. They know how to get along with others and have increased their communications and presentation skills through the animal science-related activities.*

D. Source of Funding: Smith-Lever 3b&c, State Matching, County funds, participant fees and 4-H Foundation donations

E. Scope of Impact: New Hampshire

4-H Camps: Life Skills & Workforce Preparation

A. Situation- America needs a well-prepared work force with citizens and community leaders who have connections, and positive relationships (Belonging); demonstrate empathy and concern for others (Generosity); acquire the knowledge, skills, confidence, and motivation to solve problems and set and achieve goals (Mastery); and accept meaningful roles, and responsibilities (Independence). The role of preparing youth to be productive adults extends beyond the family and schools, to include out-of-school time activities. Young adults often don't have real work experience until their college or post-college years and learning basic life and work skills is important.

B. Program Description

UNH 4-H Camps provide youth with a unique sense of place, bringing young people together with young adult staff members in a structured, remote location. The camp program incorporates the essential elements of a positive youth development program, including caring adults, a safe inclusive environment, opportunities to engage in learning and practice service to others, opportunities for self-determination, and positive interactions with peers. Both campers and staff learn and practice important life skills as they work together to build a sense of community within their cabins, units, and camp programs, and across the camp as a whole. These include communication, problem solving, self-management, and conflict resolution.

During 2006, fifty-six (56) young adult staff members participated in a week-long staff training that incorporated the essential elements of quality programs and positive youth development, as well as knowledge and skills to provide appropriate support and guidance for the diverse camper population. Through training and the summer experience, these staff developed their own important work skills. This is an often overlooked outcome of youth camps.

C. Impact and Accomplishments

UNH 4-H Camps staff (n = 56) completed a pre-test in June following a week of staff training, and a post-test during the final camp week in August. The survey asked staff to assess their own knowledge and skills related to their roles and responsibilities as a staff member. There were more female staff members (57%, n = 32) than males (41%, n = 23), reflecting the enrollment of campers, with girl campers outnumbering the boys.

The staff came with a range of knowledge and experience. Almost two-thirds of the staff (61%, n = 34) had some post-secondary training, including three with graduate degrees. Twenty percent (20%, n = 11) were high school graduates or held a GED, and ten were still in high school (18%, n = 10). Some staff came with specialized training related to the programs they would be supporting or leading. One third (32%, n = 18) began the summer with health / safety training and certification. By the end of the summer, forty-three percent of staff (43%, n = 24) had been certified. Eight staff (14%) had waterfront /lifeguard training and certification, and seven staff (13%) had outdoor education / leadership training. Staff assignments included 35 counselors (63%), 11 program staff (20%), seven administrators (12%), and three who indicated other positions or did not reply (5%).

Two-thirds of staff had not worked at NH 4-H Camps previously (48%, n = 27) or had only one summer's previous experience (18%, n = 10). At the end of staff training less than one-third of staff (30%, n=17) felt confident enough to strongly agree that "*staff training prepared me for my role at camp*", while about half (57%, n=32) strongly agreed "*I know what is expected of me in my position.*" With experience, mentoring, and

booster training throughout the summer, staff perceptions changed slightly. On the posttest, almost three-fourths of staff (70%, n = 39) strongly agreed they “*know what is expected of me in my position*”, while only one-third (34%, n=19) strongly agreed “*staff training prepared for my role at camp*”.

Familiarity with staff policies and schedules enhances staff performance and ensures camp becomes a place of connectedness for campers. At the start of the summer, two-thirds of staff (66%, n=37) strongly agreed “*I am familiar with the camp schedule*”, while fewer (18%, n=10) strongly agreed “*I have read and understand the staff policy manual*”. By the end of the season almost all staff (93%, n=52) strongly agreed they were “*familiar with the camp schedule*”, and those who strongly agreed they had “*read and understand the staff policy manual*” increased to 30% (n=17). Staff confidence in responding to emergencies also improved. Three-fourths of staff (77%, n=43) reported at the end of the season they strongly agreed “*I know my role if there is a waterfront emergency or drill*”, an increase from 45% (n=25) at the start of the season.

Maintaining traditions and supporting camp philosophy are critical aspects of establishing a meaningful sense of place that campers remember long after the summer has ended. Almost all staff (91%, n=49) ended the season strongly agreeing they “*understand the importance of traditional ceremonies at camp*”, compared with 59% (n=33) who strongly agreed at the start of the summer. Similarly, 93% (n=52) of staff strongly agreed at the end of the camp season they “*know what the ‘H’s’ in 4-H stand for and can incorporate them*”, compared with 57% (n=32) at the start of camp.

4-H uses experiential teaching methods, and strives to create programs that address the basic needs of youth. By the end of the season, almost half of staff (45%, n=24) strongly agreed “*I know how to use 4-H teaching methods to reinforce learning*”, compared with only 27% (n=15) at the start of the camp season. Most staff strongly agreed on the posttest “*it is important to help campers experience a sense of belonging*” (89%, n=50), “*independence*” (79%, n=44), “*generosity*” (91%, n=49), and “*mastery*” (91%, n=49). About one-third of staff (38%, n=21) strongly agreed on the pretest “*I know how to encourage campers to appreciate the natural environment*”, and almost two-thirds (61%, n=34) strongly agreed on the posttest.

An important life skill is learning to care for oneself while meeting the challenges of personal and work situations. Staff improved in their self-assessment of “*I take care of myself each day*,” with 38% (n=21) strongly agreeing on the pretest and 46% (n=26) strongly agreeing on the posttest.

Teamwork is considered a critical skill for today’s workforce. About half of staff strongly agreed on the pretest (48%, n=27), increasing to 61% (n=34) on the posttest, with the statement “*I contribute to making the staff a strong team.*” Similar responses were made on the statement “*I contribute to positive staff morale.*” No change between pretest and posttest was found in response to the statement “*I am treated with respect by other staff members.*” Half the staff (52%, n=29) strongly agreed on both pre- and post-test.

Being conscious of one’s own behavior in the work environment is difficult in a residential camp environment, with campers and co-workers present 24 hours a day. A high number of staff strongly agreed, “*I can monitor my own behavior to ensure I am a positive role model*” on the pretest (55%, n=31), increasing to 73 % (n=41) on the posttest. Similar numbers of staff strongly agreed “*I can use humor within appropriate boundaries*” and “*campers can trust me and look to me as a role model.*”

Camp staff need strong communication skills to work effectively with campers, their parents, and co-workers. A majority of staff strongly agreed on the pretest (61%, n=34) and posttest (79%, n=44) that “*I am confident*

meeting and greeting parents at the start of camp.” Slightly fewer staff strongly agreed on the pretest (57%, n=32) and posttest (70%, n=39) that *“I can easily talk with parents about their child’s positive experience”*. Communicating with campers about the schedule and changes in activities is also important. Over one-third of staff (43%, n=24) strongly agreed on the pretest, *“I am prepared to help campers with important transitions.”* On the posttest, 79% (n=44) strongly agreed with this statement, indicating most staff experienced success in this area.

Making appropriate decisions under pressure is a valuable life skill, and many staff showed improvement during the summer. Staff who strongly agreed they *“know how to diffuse tension in a challenging situation”* increased from 25% (n=14) on the pretest to 48% (n=27) on the posttest. Staff who strongly agreed they *“can maintain a clear head, act quickly and calmly in emergencies”* increased from 43% (n=24) to 63% (n=35). Similar improvement was found in staff who strongly agreed they *“know how to get help dealing with a difficult camper situation”*, increasing from 43% (n=24) to 80% (45). Also, staff strongly agreed they *“know how to recognize and respond to bullying”*, increasing from 32% (n=18) to 61% (34).

An important skill for anyone working with youth is adapting to the unique needs of each child. Staff developed this skill during the summer. While only 27% (n=15) strongly agreed on the pretest that *“I am familiar with the behavioral characteristics of various age groups”*, over half (52%, n=29) strongly agreed on the posttest. About half of staff strongly agreed *“I know how to adapt an activity to be sure all children in my group are included”* on the pretest (45%, n=25), increasing to 63% (n=35) on the posttest. Similarly, 46% of staff (n=26) strongly agreed on the pretest *“I know how to work with all campers, regardless of ability or disability”*, increasing to 70% (n=39) on the posttest. One area where staff are less confident is in being prepared with techniques and activities to use *“when campers become bored, homesick, restless, or frustrated.”* Only 20% (n=11) strongly agreed on the pretest, and 36% (n=20) on the posttest.

Helping campers learn and practice life skills is an important role of all camp staff that requires ongoing training and coaching. One-third of staff (32%, n=18) strongly agreed on the pretest *“I know how to help campers learn and practice basic social and life skills.”* Over half of staff (54%, n=30) strongly agreed on the posttest. Since many of UNH 4-H Camps staff is foreign, helping other staff and campers understand other cultures is a logical expectation. Half of staff (54%, n=30) strongly agreed on the pretest *“I can help campers respect and value differences and similarities different cultures”*, and 77% (n=43) strongly agreed on the posttest.

D. Source of Federal Funds – State funds and participant fees

E. Scope of Impact: New Hampshire

Farm Safety

A. Situation – Agriculture and forestry-related work continues to be a dangerous occupation and there are many reported (and even more non-reported) injuries every year. There are over 3,000 individual operations that qualify as commercial farms in New Hampshire, and they employ family members and others. New Hampshire's forest industries represent \$1.7 billion and employ over 16,000 people, thus a major emphasis in NH's Farm Safety Program is on the timber industry.

A growing number of people are undertaking farming and forestry related activities on a part-time basis. New Hampshire's forestland is owned by approximately 83,700 individuals. Approximately 1,600 of these owners actively manage their land through the NH Tree Farm Program. Many of these individuals have had limited exposure to farm and forest related equipment and activities prior to becoming active on their own land. In addition, many forest related operations are conducted only periodically, increasing the likelihood that participants will be less familiar with equipment and techniques than people who conduct these activities more frequently.

B. Program Description

NH's Rural Safety Program encompasses safety activities within a variety of program areas. Target audiences for farm safety programming include: loggers and forest products related industries, the farming community, the growing number of landowners engaging in part-time/hobby farming and forestry activities, and rural youth and families.

Extension Educators and Specialists incorporate safety messages throughout their programming and publications. Safety topics related to farming include equipment safety; and the safe use, containment, and disposal of pesticides and other farm related chemicals. The goals of this program are to help people identify and minimize work site hazards and to adopt practices that will reduce injuries and illnesses for people engaged in farm and forest related occupations and activities.

UNH Cooperative Extension co-sponsors the NH Professional Loggers Program which provides training programs for loggers which help them improve their efficiency, safety and environmental awareness.

Through the 4-H program, Extension works with youth audiences. Many 4-H activities involve the grooming and showing of livestock animals and safety around animals and on the farm as well as safety at agricultural fairs and programs is emphasized.

C. Impact and Accomplishments

- Chainsaw and other woodlot equipment safety workshops which provided information on maintenance, safe use of and protective equipment. Approximately 95 attended these training sessions. Besides their importance in everyday usage, the training's application to emergency response operations was noted.
- Twenty farms were trained on ways to prevent disease outbreaks (specifically Avian Influenza) in their poultry operations. Attendees were also provided with some basic protective equipment (respirators and nitrile gloves) and instructed in their correct use.

County Agricultural and Forestry Educators along with specialists routinely meet with land owners on their farms and woodlots. Safety messages involving tool/equipment usage, protective equipment, pesticides and animal handling are ongoing. Some examples include:

- discussions about proper ventilation - air quality safety when working around manure pumps and man-holes.
- installation of proper protection around manure reception ports with alley scrapers to avoid accidents with people and cattle.
- working with Agri-Ability programs to provide disabled farmers with assistance, equipment modifications.

- identification of potentially toxic plants (to livestock and people) as part of individual or group pasture-walks.

D. Source of funding: Smith-Lever 3b&c, State Matching, County funds

E. Scope of Impact: New Hampshire

Parenting Education

A. Situation - Strong families raise children to become responsible, productive and caring adults. Parents, from diverse backgrounds and with diverse strengths and weaknesses, are in need of education to help them understand how to more effectively parent their children. Characteristics about children's families can also place them at-risk for future problems. In 2001 28% of families were headed by a single parent and 16% of children lived in poverty, while 7% lived in extreme poverty. When these types of risk factors are combined with a lack of knowledge, children can suffer. There is vast evidence to indicate that education and prevention campaigns over the past three decades have helped to reduce the adversity in children's lives, such as lower rates of maltreatment and crime and higher rates of high school completion. The goal of parenting education programming is for families to be strong and to demonstrate healthy interpersonal relationships and for parents to provide appropriate nurturance and guidance to their children.

B. Program Description

During the 2006 program year, education was delivered through classes, workshop series, age-paced newsletters, fact sheets, UNH Cooperative Extension's web site, and the media. Nine hundred sixty-one (961) parents were reached through Extension's face-to-face parenting programs including seminars/one time workshops and workshop series. 6,362 families with infants from birth to 12 months of age received the age-paced newsletter, Cradle Crier, and 6,158 families with toddlers from 13 to 24 months of age received the age-paced newsletter, Toddler Tales. Over five thousand (5,084) additional publications were distributed on issues ranging from bullying to the impact of divorce on children. Approximately 250,000 people were reached per episode through 18 episodes of "Positive Parenting" - a 3 minute program aired biweekly on WMUR, a statewide New Hampshire television station. In addition a monthly column is created on hot topics in parenting for Parenting NH, a monthly newspaper with statewide circulation of 27,000.

C. Impact and Accomplishments

A variety of audiences are reached through parenting education programs. A majority are female. Target populations include incarcerated, refugees, those at risk for substance abuse, and those at risk for abuse and neglect. Educators in 8 of 10 NH counties work with incarcerated parents or parents in alternative sentencing programs. Participants in prison classes frequently requested extra copies of handouts so they can send them home to the child's caregiver. An incarcerated mom reported "There are ways to work with your teen and not fight like my mom and I always did." Participants in prison classes report that they were benefiting from the class but it was hard to come to class because talking about their children was hard to do while they were behind bars.

The following results were elicited from one sample workshop series for parents of school age children and are indicative of knowledge/skills gained and intent to change behavior.

Participants who completed the evaluation survey reported:

- 80% increased use of positive discipline strategies after completing program
- 80% increased their knowledge of child development (reasonable expectations of children)
- 92% establish clear limits and rule most of the time or almost always

Participants who completed the evaluation reported:

- 92% understand what to expect of children at different ages most of the time or always
- 100% feel confident in their parenting most of the time or always
- 78% reported that the program help reduce stress in their family
- 91% Use natural and logical consequences most of the time or always

Parenting education is often implemented through the work of community coalitions. UNHCE co-sponsored a series to create a bully free community. Educators met with peer educators and community partners to plan activities re: bullying for National Youth Violence Prevention Week. Results from the nearly 1,300 returned surveys indicated that more than 80% of the students who answered felt that this list of behaviors are part of bullying or harassment: hurtful comments about a person's appearance, culture, religion or race, unwanted physical contact, comments on a person's sex life or sexuality, and demands for money, possessions or unreasonable favors. The survey also asked how often a student had been bullied or harassed during this school year. The good news is that 41% of the students said "never", and 43% said "once or twice." 9% reported being bullied or harassed three to five times this year, and 7% said that they had been bullied or harassed six or more times. While these last two percentages seem fairly low, if they hold true for the whole school (which is likely given the large size of the sample) this means that around 150 students are reporting that they are being harassed or bullied 3 to 5 times this year, plus 120 students 6 or more times. That represents a great deal of misery and distraction from classes and other positive goals, and a great deal of time spent on the issues.

D. Source of funding – Smith-Lever 3b&c, State Matching, County funds

E. Scope of Impact – New Hampshire

Marine Science Education

A. Situation - Citizens of New Hampshire, with its small coastline, appear largely unaware of the value of the coastal/marine environment. State educational standards focus on core science content which only indirectly includes the study of the marine environment. State higher education institutions do not usually include study of the ocean topics in their preparation of teachers. UNH is well known for its prowess in marine and coastal research, yet most of this research seemingly goes unnoticed by the public and anecdotal evidence indicates it isn't made use of by teachers as they try to address the science standards upon which their students are assessed. Informal and formal educators need more professional development and instructional resources if they are to improve student performance in science. The public needs opportunities to learn about and appreciate marine research that affects their decision-making and quality of life.

B. Program Description

The marine science extension specialist provided training to volunteer members of the UNH Marine Docent program who, in turn, provided 94 hands-on and/or field-based educational programs to approximately 6,500 children and adults in marine science. Specifically the programs encompassed:

- In-school, activity-based SeaTrek programs for pre-K – 12 audiences
- Boat-based field programs for middle school, high school, and adult audiences
- Informational presentations to adult groups on such topics as climate change and salt marsh restoration
- Exposure to UNH marine faculty and programs for northern New England high school students through participation in the annual NOSB Nor'Easter Bowl.

Approximately 80 UNH Marine Docents also supported other formal and informal marine education efforts as volunteers at the Seacoast Science Center, Sandy Point Discovery Center, and the Gundalow Program.

Efforts were also made to improve the functioning and impact of the region's affiliate of the National Marine Educators Association (NMEA), the Gulf of Maine Marine Education Association (GOMMEA) by active membership in the board of directors and support of association activities.

C. Impact and Accomplishments

Through all programs all participants gained an increased knowledge and understanding of the marine environment, and specifically the Gulf of Maine, in the following topics:

- Aquaculture
- Boat Building
- Marine Careers
- Lobsters
- Plate Tectonics
- Rocky Shore
- Salt Marsh
- Sandy Beach
- Seaweeds
- Sea Chanteys
- Watersheds
- Whales/Marine Mammals

Four hundred and fifty middle and high school students participating in the boat-based Great Bay Living Lab program and the Floating Lab program gained skills in:

- water chemistry data collection
- plankton collection
- benthic community sampling
- navigation
- weather and current measurement
- identification of common intertidal organisms

Twenty-one new marine science docents were trained in the New Hampshire coastal region capable of delivering pre-K- adult education programs and supporting other informal and formal marine science education facilities and programs

D. Source of funding – Sea Grant, miscellaneous grants

E. Scope of Impact – New Hampshire and Coastal New England

Leadership Training and Development/ Volunteers

A. Situation- Volunteers are a key element in delivering UNH Cooperative Extension education and youth development programs. The effective recruitment, training, and placement of volunteers enables increased program delivery to NH citizens. Specifically recruited, well-screened and trained volunteers complement and multiply staff efforts to provide NH citizens with research-based education and information. Volunteers are a vital link between extension educators and the many NH citizens with whom they are unable to have regular direct contact.

B. Program Description

Each year extension volunteers assist UNHCE staff in the development and delivery of programs that educate citizens in the stewardship of our states; forests, wildlife, agriculture, marine and fresh water resources as well as positive youth development. Currently seven volunteer programs are administered by Cooperative Extension staff they are as follows: **4-H youth development, NH Coverts Project, Marine Docents, Community Tree Stewards, Master Gardeners, NH Lakes Lay Monitoring Program, and the Great Bay Coastal Watch.** Each volunteer program has specific goals and objectives that were derived from state wide needs assessment data collected over the past several years.

C. Impact and Accomplishments

4-H Youth Development Program orients and educates volunteers in the principals of positive youth development, risk management, and techniques to use with youth that foster critical life skill development.

- 158 4-H groups held an average of 15 youth meetings per year. Approximately 1.9 hours of volunteer contact time with youth was provided at each meeting. 526 screened volunteers contributed a total of 37,549 hours of volunteer time. At a value of \$18.04 per hour this represents \$677,384 of in-kind services to the UNHCE 4-H Youth Development program.
- New Hampshire 4-H group leaders submitting a total of 158 year end group activity summaries representing 1,803 youth they worked with over the past year, with the following results:
 - 39% of the youth used or applied leadership skills, 24% served on a committee and 27% served as an officer
 - 75% of the youth showed increased knowledge and understanding
 - 77% of the youth learned and practiced a new skill
 - 75% of the youth made gains/advances in competency and skills
 - 62% of the youth presented examples of their work to the public through exhibits or displays
 - 30% of the youth did an oral presentation in public
 - 28% of the youth kept records or prepared a resume

- 150 4-H groups completed a total of 479 community service projects. 2,361 youth and 1,108 adults contributed a total of 7,655 hours to community service. At a value of \$18.04/hour, this represents a contribution worth \$138,096 to NH communities made by 4-H members and adult volunteers.

The NH Coverts Project annually provides 70 hrs of comprehensive natural resource stewardship education to 25 new Covert Cooperator volunteers and an additional 25 hrs of continuing education opportunities for alumni volunteers.

- 25 new Coverts Cooperators attended and completed the 12th annual Coverts Training Workshop. There are now 275 Coverts Cooperators working in 128 different communities throughout New Hampshire.
- 140 Coverts Cooperators reported contributing a grand total of 12,376 hours of volunteer time for FY 06. At \$18.04 per hour this represents a contribution of \$223,263 of in-kind services to the people of New Hampshire.

Land Stewardship: the total land owned or managed by all Coverts Cooperators has reached over 95,000 acres.

Community Conservation: Many Coverts Cooperators serve as local decision-makers and help initiate or implement conservation actions in their communities.

- 140 Covert Cooperators submitted a year end report and among those volunteers 57 serve on conservation commissions.
- 49 Serve on town planning/zoning boards, as selectman, on watershed commissions or open space boards.
- 38 helped complete a natural resource inventory or habitat inventory.
- 55 helped manage town or conservation land.

The UNH Marine Docent program provides extensive education to individual volunteers dedicated to the preservation and wise use of New Hampshire's marine resources. Marine Docents present slide shows or lectures and lead field trips and tours that will result in increased public awareness of the marine environment.

- 21 new UNH Marine Docents completed education in basic marine science, and formal and informal education practices. They will join the existing 80 active Marine Docents in providing programming to schools or volunteering at other informal marine education venues including the Seacoast Science Center, The Great Bay Discovery Center, the Great Bay Coast Watch and the Gundalow company.
- 94 SeaTrek marine education programs were conducted by volunteers for approximately 6,480 students in 27 NH schools.
- 200 students from 8 schools were trained in boat-based marine science activities through the docent-led Floating Lab program.
- Increased the knowledge and awareness of 550 adults and children about the Gulf of Maine, the Isles of Shoals, and the Shoals Marine Laboratory through eighteen volunteer led one-day Shoals Discovery Cruises.
- 250 middle school students and 15 teachers were educated about the Great Bay estuarine environment by volunteer led programs of the Great Bay Living Lab.

The NH Community Tree Steward Program provides orientation, instruction, support and continuing education for Tree Steward volunteers in subject related to community and urban forestry.

- 4-H Community Tree Stewards volunteered an average of 69.6 hours in approximately 75 New

Hampshire cities and towns. Many communities had several Tree Stewards who worked together on multiple projects totaling 4,874 hours. This is the greatest number of hours recorded in one year since the program's beginning, and is equivalent to 609 eight-hour days or 2.3 additional full time employees in urban and community forestry.

- Tree Steward volunteers contributed 1,250 hours toward land conservation efforts. A total of 648 hours of volunteer time was invested in Adult Education activities and 601 volunteer hours were invested in Landscape projects.
- A range of 100 to 300 hours of volunteer time were dedicated toward the following areas:
 - Water Quality
 - Natural Resource Committee Work
 - Youth Education
 - Earth Team Volunteering
 - Tree Committee Work
 - NH Big Tree Program
 - Watershed improvement
 - Fundraising
 - Forest & Land Management
- 100 Community Tree Stewards serve in leadership roles in their communities on Conservation Commissions, Watershed Associations, Tree Boards, etc.
- 24 three-hour continuing education programs were held. For the first time the Tree Steward and Master Gardener programs combined their continuing education offerings.

The **UNHCE Master Gardener Program** annually educates new volunteers and provides continuing education opportunities to active NH Master Gardeners. These volunteers help UNH Cooperative Extension respond to the thousands of requests for information received throughout the year.

- 79 new volunteer Master Gardeners received 60-74 hours of training.
- Over 500 active Master Gardeners contributed 11,664 hours to Cooperative Extension Programs in over 100 communities.
- On the toll-free Info Line Master Gardeners responded to 6,700 + requests with scientifically based information to help solve a wide array of gardening and household problems.
- 14 Master Gardeners offered a total of 21 workshops to the general public from the Family, Home and Garden Center. Master Gardeners and county Extension Educators delivered another 90+ workshops by request to schools, libraries, civic groups and clubs around the state.

The **NH Lakes Lay Monitoring Program** annually trains volunteer lake monitors in water quality data collection methods and engage them in the collection of valuable data on NH lakes.

- 78 Volunteer monitors were trained or retrained in proper water quality sample collection techniques.
- NH Lakes Lay monitors invested 4,917 hours of volunteer time. At \$18.04 per hour this represents \$88,703 of in-kind services in the collection of water quality data.

D. Source of Federal Funds - Smith-Lever, leveraged with state and county funds

E. Scope of Impact – New Hampshire

Management Goals

Multicultural and Diversity Issues

A. Situation - New Hampshire population increased 6% from 2005 to 2000 – the fastest growth rate in New England. While (and perhaps because) the ethnic diversity in New Hampshire still doesn't reflect the rest of the country, it is important for UNH Cooperative Extension to reach out to diverse audiences, insure our programs are accessible to all and model acceptance of differences to all of the various audiences we work with. Several pockets of refugee immigrant populations (Samli Bantu, Sudanese and Meskhetian Turkish) have changed the faces of communities in New Hampshire as well. Assimilation of the new with the old requires cooperation, acceptance and change.

Through programming and operations UNH Cooperative Extension must:

Reach out to people who would otherwise not participate in Extension programs, ensure staff and volunteers adhere to the law and the spirit of the law when developing and implementing educational programs, and serve as an example to other organizations and individuals regarding diversity principles

B. Program Description

Staff and volunteer Extension County Advisory Council members are being trained regarding civil rights principles, practices and issues. Training includes the following:

- Each January, as part of civil rights month, the Extension Dean and Director reaffirms in writing to all staff a strong commitment to diversity and ensures that everyone knows expectations of every individual to this effort.
- Every new Extension staff person receives civil rights guidance from their Program Leader. New employees are receive the *Civil Rights Guide for UNH CE Staff*
- Every staff person received training and each staff person received a civil rights manual written specifically by and for Extension. Every person has his/her individual civil rights responsibilities spelled out in the manual. The manual is also available on the UNH Cooperative Extension web site for easy access to all employees.
- Each Extension program person is required to keep an individual record of civil rights activities and impacts.
- Each County Advisory Council receives training regarding civil rights principles, practices, and issues

Recognition of outstanding diversity efforts by staff: *Diversity and Pluralism Award* was initiated in 2006

This award recognizes the outstanding efforts and accomplishments of staff to achieve and sustain diversity and pluralism within our organization, and/or programs that address the needs and concerns of underrepresented audiences.

Among those receiving this award were **Suzann Knight** and **Debbie Luppold** for their work in the LEAP program.

The focus of LEAP has been helping people make a successful transition from welfare to work. Woven into the 90-hour curriculum was a teaching model that focused on workplace expectations of attendance and punctuality and a continual reinforcement of the participant's ability to be successful. The curriculum also was conducted in Spanish. The program has educated over 2,500 individuals.

The Recognition Committee recognized **Julia Steed Mawson** for her work as a Hillsborough County 4-H Youth Development Educator, working with a very diverse population of youth each week in summer and after-school programs, in city neighborhoods, through a youth development and gardening project called the 4-H Green Thumb Team, now in its eighth year. The selection committee felt that Julia believes and lives the highest ideals of respecting and understanding different cultures in all she does.

The Recognition Committee recognized **Margaret Hagen**, Extension Educator, Agricultural Resources, for her efforts in developing a community gardening program for newly arrived Somalian refugees. They felt establishing a community vegetable garden would not only provide fresh produce and help lower the cost of weekly grocery bills, but that working on their own plot of land would help the new arrivals connect with each other and their new homeland.

Working with the International Institute of New Hampshire, a local resettlement agency, and Brookside Congregational Church, which provided garden space, and using an anonymous cash grant from another master gardener, the 2,400 square foot Brookside International Community Garden welcomed 12 refugee families from Somalia and the Sudan last summer. As Margaret noted, "This is a wonderful learning experience for everyone involved."

The Recognition Committee also recognized **Val Long**, currently FSNEP Nutrition Coordinator. Val's programming efforts in diversity and pluralism began long before it was considered important by many other Extension Educators. A big focus of Val's efforts has been on social marketing to provide nutrition information to all food stamp participants in New Hampshire, thus providing the ability to reach more audiences. As well, social marketing focuses on behavior change. Changing a participant's eating behavior often comes from effective nutrition education. Social marketing incorporates programs aimed at changing the behaviors of a well-understood target audience that may include those tools. Unlike other forms of intervention, social marketing allows Nutrition Connections to provide important information to a larger number of clients than ever before.

Reaching out to underserved audiences

Sharon Cowen is working with refugee families in Manchester in cooperation with the local school district to develop a parenting education program.

Sharon Cowen is on a committee at West High School in Manchester - the Multicultural Competency Committee to educate and sensitize faculty, staff and students to the needs of a diverse student body. She is also on a committee in Manchester to explore and help to resolve the relatively high drop out rate in Manchester schools, which is even higher for kids of color, particularly Latino kids. The group is planning a "summit" in January to bring together members of the community, parents, students, and businesses to learn about the problem and discuss ways to address it.

With the increased number of immigrant labor milking cows, Extension Dairy Specialist, John Porter and others have supplied farmers with information about how to communicate in Spanish, including Spanish

milking procedures posters and other materials. Information has also been given to farmers to help immigrants socialize and meet their personal and family needs.

Shane Bradt will be taking the leadership role of translating outreach efforts into Spanish as a part of the content creation for the National Geospatial Technology Extension Network (NGTEN) in order to reach a broader audience across the country. NGTEN was awarded an eXtension grant to develop a Community of Practice centered on geospatial technologies.

Helen Costello is a part time food security consultant for the UNHCE Nutrition Connections Program and has done several things to enhance Extension's efforts relating to diversity. In 2004, Helen was awarded a SARE grant to trial a project that allows food stamp participants to use their food stamp electronic benefit cards at three farmers markets in NH. One of the project markets was in Nashua in a primarily Latino neighborhood. Spanish and Portuguese are the primary languages spoken. Each of the two years the program ran at that market, native speakers were hired who could translate when necessary. The customers at the market clearly felt more comfortable approaching people they could easily talk to. The people hired knew many of the people from the neighborhood. The program targeted the Somalian refugee population because they used food stamps. Extension engaged a community leader who is Somalian and voluntarily works with the city to help integrate the refugees into the community. He brought a group of refugees to the Extension booth and translated while Extension staff explained how to use the system. At all three test markets, there was signage in Spanish and most Extension materials were translated into Spanish. Helen's daughter, who was in high school at the time and taking advanced Spanish, did the translations for Helen as a volunteer project for school and then the native speaking staff reviewed it for accuracy. In addition to being native speakers, Helen's staff in Manchester and Nashua were all women. In Manchester, Helen sought the assistance of the Families in Transition group, which serves women and young families as a way to complete the staffing for Manchester. In Nashua, Helen placed flyers in the Latino neighborhood. All of her staff over the two years in those two cities had used or were using food stamps themselves.

Mary Tebo was instrumental in the development of the Valley Street Cemetery tree identification brochure that is in English and Spanish.

A proactive initiative to ensure that underserved audiences are not missed in a USDA Forest Service financial assistance program was led by Extension Specialist, Karen Bennett. For the Forestland Enhancement Program (FLEP), an outreach letter to was sent to non-traditional organizations using information relating to these groups provided by the USDA Farm Service Agency.

Kathleen Jablonski is working with Littleton's Model Communities Project to increase access to youth to recreational activities and is working with Model Communities to do a community sidewalk review for Littleton on accessibility for folks with limited mobility.

David Foote, through the University of New Hampshire Institute on Disability, using the Granite State Distance Learning Network, worked with Therese Willkomm, Assistant Professor to coordinate and facilitate workshops on "Assistive Technologies" for therapists, educators and managers who work with people with disabilities.

David Foote worked with Phil Girard, Project Director, Crotched Mountain Foundation for the to download and broadcast a series of satellite programs to Granite State Distance Learning Network sites containing

information and content on a wide range of issues including: “*English Language Development and Deafness*”, and “*Autism - Working with the Autistic Child*.”

David Foote worked with Mollie White, Project Director, for the Parent Information Center to coordinate and facilitate a twelve-week series of workshops for parents and volunteers titled “*Volunteer Advocates For Special Education*,” a nationally recognized program that provides specialized training for volunteers to assist parents in obtaining appropriate special educational services for their handicapped children, using the Granite State Distance Learning Network.

Community and Economic Development Specialist, Charlie French, gave a presentation in Spanish to a group of visiting Hondurans last year about the role of Cooperative Extension in bridging the University's knowledge and applied research-based outreach to the public. A Honduran non-profit wants to partner with the national university to create an Extension-like system and is interested in learning how we operate as a state and national system.

Charlie French conducted applied research on Boston's urban community gardens to determine how demographic change results in neighborhood change and therefore can impact the participation of minorities in community gardening (including several youth community gardens). Although Charlie will not publish the research findings until next year, he is currently working with the *Livable Walkable Communities Initiative* in Nashua, NH to plan a community garden in an Hispanic part of town, in coordination with the city.

The 4-H after school program in NH's biggest city, Manchester, works with youth representing 20 different cultures (including languages, ethnic origins). This is one of the centers for immigrants to the US. 4-H programs work to welcome and integrate these diverse youth into the community. The goals have been to develop a sense of belonging and accepting others.

4-H Youth Development programs strive to reach youth with age and developmentally appropriate educational programs. Many youth who participate in local, state and regional events have documented learning disabilities. 4-H staff and volunteers make every effort to be sure they have a very positive experience. Staff learned to modify written, oral and physical tests for youth individually based on their needs. Some youth, are provided with a reader or a scribe, but other youth require a modified test or the allowance for physical help in the show ring or at the quiz bowl table.

With a history of 20 percent of the youth attending UNH 4-H Camps having a diagnosis of a physical, emotional, or behavioral disability as well as social, emotional and economic challenges, UNH Cooperative Extension provided intensive staff training, and reviewed the 2004 and 2005 camp seasons to address future disability needs at the camps.

UNH Cooperative Extension has collaborated with Northeast Passage, the organization which provides active outdoor experiences for persons with disabilities. They provide equipment, staff and expertise and 4-H provides targeted individuals who will benefit from challenging outdoor activities. 4-H partners with the UNH Institute on Disabilities, providing expertise to include in training 4-H staff.

Bilingual training programs are offered in the Professional Loggers Training Program by the UNH Cooperative Extension Forestry and Wildlife Program and its partners. So far, bilingual training has been presented in northern New Hampshire, using people from the community to provide translation in French.

The availability of the bilingual opportunity is made known in advance and at the workshops, a person makes the offer for translation assistance in French to the audience at the beginning of each workshop.

C. Impact and Accomplishments:

As a result of pro-active Extension diversity programs and practices, Extension has set the standard for how work is accomplished within many partner organizations in the state. UNH Cooperative Extension successfully leads by example, as shown by partner organizations who use Extension's formal civil rights statement on co-sponsored programs. The New Hampshire Tree Farm Program officially adopted UNH Cooperative Extension's ADA accommodation statement and civil rights statement as a part of its program notification. Extension made the commitment to handle accommodation issues on the Tree Farm Program's behalf. The Granite State Woodland Institute has adopted civil rights and ADA accommodation wording in their offerings as a direct result of Extension's work. Bilingual workshops continue to be offered through the Timber Harvesting Council as a result of Extension's assistance. As a result of Extension's close partnership with NH Division of Forests and Lands, Extension sits at the table during USDA Forest Service civil rights reviews and offers compliance information and practices to our partners. At the USDA Forest Service Review of the New Hampshire Forest Stewardship Program, UNH Cooperative Extension was cited as having the most complete Civil Rights documentation of all the states reviewed in the Northeast Area. The external review committee was impressed, not only with the documentation, but the breadth and depth of the accomplishments in the area of diversity and civil rights. This is now the standard and example that other states will be following in their USDA Forest Service Forest Stewardship Programs.

UNH 4-H Camps have trained and experienced personnel on staff to provide behavioral supports to accommodate camper needs. Previous years provided positive results to support the value of intensive training, with no campers sent home due to unmanageable behaviors. One-on-one aides were hired to accommodate individual problems arising from being positive and proactive regarding diversity.

UNH Cooperative Extension has made investments of resources for 4-H Camps to provide substantial programming to autistic children and their parents beyond a one-time event. UNH Cooperative Extension has seen an increase in requests for experience where children with autism are able to explore new opportunities through future development with parents of autistic children. Through continued inclusion in an integrated program, these children are able to share experiences. Multiple year experience encourages confidence on the part of the children and parents in a residential camp experience. Long term confidence building is experienced by parents as well as their kids.

As a result of the *Women and the Woods* project, 20 women learned the basics of forest stewardship, working with professionals, tree identification, woods safety including navigating through the woods with map and compass, in a series held in Norwich VT. *Women and the Woods* is a program developed by our Extension Professor and Specialist, Forest Resources, and a woman from the Maine Forest Service. It was designed to target women forestland owners. Traditionally, the male head of the household deals with the business related to woodlands. Women now own woods in their own name, share in the business decisions in a family wood lot, or are the principle manager in a privately held woodlot. This program targets a previously underserved female audience and welcomes women into an educational program about the business management aspect of woodland ownership. People from the target audience were engaged in the development of this program, as were Extension colleagues from other disciplines within UNH Cooperative Extension.

UNH Cooperative Extension, working with partners, secured a \$100,000 grant to construct a trail and tree house for the disabled on the Strafford County Farm. Work on this is in progress, while other Extension inspired trails for the disabled are now in use on the Cheshire County Farm and elsewhere in New Hampshire. Extension staff has helped municipalities and others with plans and funding needs to construct educational and nature trails on community forests.

As a result of Cooperative Extension the University of New Hampshire woodland trails adjacent to the UNH campus have been upgraded to accommodate persons with disabilities. Extension Specialists worked with the USDA Forest Service to secure funding for this purpose.

As a result of highly successful UNH Cooperative Extension sponsored Universal Access Trails Workshop in Coos County, 61 participants learned how to design, build and maintain recreational trails that increase access to the natural environment for all people. One woman from the US Forest Service co-sponsor came from Washington DC in a wheel chair. This program was conducted with the help of USDA Forest Service, UNH Northeast Passage, the Governor's Commission on Disability, NH Trails Bureau, and Appalachian Mountain Club.

As a result of multi-cultural work by Land and Water Conservation Educator, Phil Auger, UNH Cooperative Extension has completed its second externally funded international exchange program with natural resources professionals from Costa Rica. This year, a group from Costa Rica came to the United States to learn about how we deal with natural resource issues. The group included two women and four men with occupations including forestry, ecotourism, youth education and research. Educational interactions with people in the US included their attending a community meeting in a New England town, gathering citizen input on environmental issues. It included on-site informational exchanges with natural resource professionals in public agencies, such as the USDA Forest Service, and private conservation organizations such as the Nature Conservancy. Being an exchange, UNH Cooperative Extension has taken natural resource professionals in Extension, state and private organizations to Costa Rica to compare differences and similarities in ways that each culture deals with natural resource and community-related issues. The Costa Rica participants from the first exchange impacted an area in their home country about three quarters the size of the state of New Hampshire.

UNH Cooperative Extension provided assistance to a farmer who had "farmer's lung" and had to carry oxygen while running his farm. John Porter brought in an agricultural engineer to help design some safe attachments on the equipment for the oxygen canister and contracted with people from the Vermont Agri-Ability project to offer assistance in providing creative technology adaptations to help make his daily routine easier.

This year in our Kids Can Grow Master Gardener youth gardening program Geoffrey Njue had 9 kids from Dover housing authority participate and complete the program. 44% of the kids were non white, about 10% African American and 34% Asian. The evaluation showed that the kids enjoyed the program and want to continue to garden. The program also had positive impact on the community as shown by the parents' interest in the program.

As a result of Alice Mullen's work with youth from Manchester on safe food handling, young people from a diverse set of ethnic backgrounds, including Iraq, Sudan, Asian, African American, and Latino, started a food canteen at the youth center to sell food at the basketball games. This was through Julia Mawson's 4-H program for youth entrepreneurship. The kids did their own menu planning, food shopping and food

preparation. Alice covered personal hygiene, preventing cross contamination and keeping foods at the proper temperatures.

As a result of John Porter's , "Ag-Biz" course to teach Quicken and Quickbooks Several women became more proficient in business management in agricultural operations, an area traditionally dominated by males. He held the course in the middle of the day in an effort to include women in agricultural decision making. Many were farm wives who got additional training on how to keep records and analyze the farm business to measure profitability and be valuable partners in the business.

D. Source of Funding: Smith-Lever 3b&c, State Matching, County, Grant funds

E. Scope of Impact: State specific

B. Stakeholder Input Process

UNH Cooperative Extension actively involves stakeholders in Plan of Work development, monitoring, implementation and evaluation. County and State Cooperative Extension Advisory Councils, County Commissioners, state legislators, university administration and faculty, program committees, commodity committees, state agencies and organizations, volunteers, and clientele provide input which shapes development, implementation, and evaluation of the Plan of Work.

County Advisory Councils, designated by state statute, play a key role in development of the Plan of Work and in monitoring its implementation and outcomes. Each council includes 12 citizen volunteers, including one or two youth, plus a County Commissioner and one local member of the state legislature. The State Advisory Council provides oversight for the statewide Extension program. The Council's 26 seats include two from each of the state's 10 advisory councils, the state Council for Agricultural Research, Extension and Teaching (CARET) representative and five members at large. Monitoring program outcomes and impacts is an appropriate role since council members represent the state's population, including under-served and under-represented audiences. Advisory Councils helped determine program implementation changes due to downsizing of staff. Council members also assist with the program development process. In 2003, over 300 council members and other citizens identified local issues, Extension's role in addressing these issues and ways to deliver educational programs through listening sessions held in each county by the Associate Director of Extension, on line surveys, and a statewide face-to-face caucus. Listening session and caucus participants received a final report on issues to be addressed by the Plan of Work. Staff developed logic models for programs based on stakeholder feedback (see: <http://extension.unh.edu/AboutUs/UNHCEPOW.htm>). A draft 2007 to 2011 Plan of Work was vetted with county advisory councils and staff through feedback sessions in each county. This process also provided an opportunity to gain feedback on accomplishments in the current plan of work.

Program outcomes and accomplishments are shared with advisory council members through program presentations, reports and discussions during council meetings. Annual accomplishment reports, impact statements and success stories are widely distributed to advisory council members, elected officials, and other stakeholders. The UNH Cooperative Extension web page increasingly informs stakeholders and advisory council members of program development, implementation, and the value and relevancy of efforts and

outcomes (see <http://extension.unh.edu/AboutUs.htm>). In addition, Extension works closely with many partners and other stakeholders. These include state and federal agencies, public and private organizations, foundations, university faculty, town government and non-profit agencies. Key individuals representing these partners and stakeholders routinely participate in Extension program planning, implementation, evaluation and reporting.

C. Program Review Process

The University of New Hampshire Cooperative Extension has entered into a formal agreement with Extension in Maine, Vermont, and Massachusetts to develop and implement a four-state planning and reporting system. Working in collaboration with three other states in developing our system has also resulted in discussions around state and regional programs, opportunities for multistate work, sharing staff resources and a much better understanding of how each of our unique programs are similar and different than others in New England.

As a result, the four states have agreed to provide merit review for each state as part of our formal partnership. The new system provides access to each state plan of work for all four states, allowing for easy sharing of ideas and opportunities for further collaboration. Further, we've agreed to set up a rotating system of more comprehensive merit review by selecting a different state plan each year for in-depth review by Extension staff from the other three states. With this system, we will be sharing plans with one another continuously, and every four years every state's plan will go through a more rigorous review process by the other three states.

In addition, county and state advisory committees will be asked annually to review updates to county and state plans as part of their role in the process.

D. Evaluation of Success of Multi and Joint Activities

Multi-state Extension activities include a wide range of long-term partnership and collaborative efforts. Many activities reported are joint efforts with CSREES, Northeast and New England regions. Emphasis is placed on joint activities with New England states due to common regional issues, program scale, close proximity to Extension staff in neighboring states and budget reductions. Many programs listed in Sections E and F are described in greater detail in Section A of this report as noted by page references.

Planned multi-state programs include targeting underserved and underrepresented audiences. The regional EFNEP and FSNE collaborations target this audience. Success is due to competent, experienced staff and supportive local advisory councils and decision-makers. 4-H Afterschool youth development programs and UNH 4-H Camps also target and involve underserved and low-income youth, including youth with disabilities from several states. Several agricultural and forestry programs regionally target women as an audience. These programs include financial management components important to producers whose income is limited by their business management skills.

All planned multi-state and integrated Extension and Research projects start with clear goals, objectives and expected outcomes. Staff focus on program evaluation as a planned part of all programming, with intended outcomes and impacts determined prior to program implementation. In 2001, UNH Cooperative Extension formally adopted the logic model for improved program development, implementation, evaluation, and reporting. Extensive staff training conducted from 2002 to 2005 positioned the logic model as the basis for program planning, including development of the 2007-2011 Plan of Work. In 2004, interdisciplinary program and issue teams created logic models for programming and these teams are still active. The plans were updated in 2005 were the foundation for development of a draft Plan of Work for 2007-2011 and the 2012 POW update.

Staff create and update individual program logic models on an annual basis as part of their planning, reporting and performance management processes.

Multi-state programs and integrated Research and Extension programs improve organizational effectiveness and efficiency. Through UNH Cooperative Extension's active partnership with CSREES, staff access and use resources and expertise from the total Cooperative Extension System. For example, educational resources from a number of Extension systems were disseminated this year on dealing with floods in south New Hampshire after severe Spring flooding.

Joint planning strengthens the entire program development and evaluation system through agreement on common initiatives, goals, and procedures. Four New England states have developed a joint online planning and reporting system through the New England Planning and Reporting Consortium. This collaborative effort encourages and supports joint programming due to similar structures and operations easily connecting each partner.

E. Multi-State Extension Activities

FY2006 Multi-State Programming	\$ 203,554
FY2006 12.5% Target	\$ 200,004

Brief Report of Progress in Planned Multi-State Programs:

The University of New Hampshire Cooperative Extension collaborates with a vast array of local, multi-state, regional and national partners. Each partnership helps extend Land-Grant based research to address critical and emerging issues impacting the people of New Hampshire. Efficiencies are realized through pooled human and fiscal capital with other Extension systems.

American Distance Education Consortium (ADEC) provides educational resources through distance education to member Extension systems. The UNHCE Director of Information Technology and Distance Education serves in leadership roles with the Consortium. New Hampshire actively participates in the American Distance Education Consortium and accesses numerous satellite training and educational opportunities through the consortium

Certified Crop Advisor Training involves several Northeast Extension systems that train beginning and advanced advisors. In the past year, 22 new advisors were trained and continuing education units were provided for 75 advanced participants.

Children, Youth and Families At-Risk National Initiative includes grant projects at two New Hampshire locations and supports youth involved with the military through the Operation Military Kids Project. New Hampshire staff work with staff in other states to share program successes, ideas and resources.

Eastern States Exposition provides an opportunity for New Hampshire youth to participate in a multi-state learning experience in Springfield, MA. Over 200 New Hampshire 4-H youth join 4-H members from all over New England to meet, make friends, showcase skills and compete in a variety of animal shows, communication events and a fashion review. Because New Hampshire and most other New

England states doesn't hold a state fair, the Exposition recognizes youth for their achievements at a large, regional event attended by hundreds of thousands of people. Youth and adults gain valuable planning, communication and organizational skills by working with youth and volunteers from other states throughout the year to plan the successful Exposition events. The Exposition also exposes attendees to the breadth and scope of the 4-H Youth Development Program. Other regional 4-H programs include coordinated communication efforts of the Northeast 4-H Youth Development program leaders. The program leaders meet every other month to discuss regional issues.

eXtension works towards developing a National Extension System online resource to expand use of Extension resources. New Hampshire actively participates in the eXtension initiative with three staff serving on national committees, three staff serving on Communities of Practice. We've developed a UNHCE eXtension institutional team, chaired by David Foote.

Extension Disaster Education Network (EDEN) provides educational resources for disruptive events. This year UNHCE drew heavily from EDEN materials from several Extension systems for an effective response to severe spring flooding in southern New Hampshire. An emergency protocol for programming is also being developed by staff and led by one of UNHCE's national EDEN contacts.

Financial Security in Later Life National Initiative - Thirty-eight Financial Security in Later Life workshops were taught by UNHCE staff. UNHCE staff are also involved in the Financial Security in Later Life eXtension Community of Practice.

Health Rocks National Initiative provides training to youth and teams in decision making and youth and adult partnerships. Fifteen states participated in Health Rocks training this year reaching 10,000 youth. Twenty states participated in Life Rocks training that reached 5,000 youth this year. The New Hampshire 4-H Youth Development Program Leader serves as a Health Rocks trainer.

Multi-state Fairs and Expositions are conducted with Maine and Vermont to provide educational experiences and showcase accomplishments of 4-H youth at the Fryeburg and Lancaster fairs.

Multi-state Soil Testing Program includes Penn State and UNHCE staff. The collaboration formed due to closure of UNH's soil lab. The new partnership with Penn State allows UNHCE to continue updating soil recommendations tailored to local conditions on more than 2,000 fields and gardens. Staff identified risk levels for phosphorus and adjusted recommendations accordingly.

National 4-H Afterschool work enhances the network to develop best practices for 4-H afterschool programs. New Hampshire staff participate in monthly national 4-H afterschool meetings.

National Family and Consumer Science Plan of Work Impacts Project works towards standardizing family and consumer science programs and related outcomes and impact indicators through national committee work. The UNHCE Family and Consumer Resources Program Leader chairs the subcommittee on parenting education. The impacts project document is being used by several Northeast Extension systems to guide development of the 2007-2011 plan of work and the 2012 plan of work update.

National Phosphorous Project is a collaborative effort with a number of Extension systems and the main contact housed with the USDA ARS Pasture Systems and Watershed Management Research Unit. Since 2002,

16 lysimeters were collected in New Hampshire to contribute to phosphorous research. The results were used to develop the New Hampshire Phosphorus Site Index used to develop nutrient management plans across New Hampshire.

National, Regional and New England Forestry Initiatives involving UNHCE forestry and wildlife staff included:

- A lumber grading course for Vermont and New Hampshire in cooperation with the forest utilization and marketing specialist in Vermont
- The 20 state USDA Forest Service Northeast Area Forest Utilization and Marketing Council
- The 20 state Urban and Community Forestry Council
- The 20 state Northeast Forest Resources Program Leaders including participation from state forestry agencies, USDA Forest Service and Cooperative Extension from the Northeast. This group sponsors a spatial analysis project relating to Forest Stewardship Plans in the multi state region
- Principle author and leader for the multi state *Women in the Woods* program focusing on business management education for female business owners.
- Contributions to the National Web Center for Private Forests and Range Lands, a CSREES multi state project
- Providing GPS training across New England plus sharing the curriculum with the University of Maryland Cooperative Extension
- Chairing the NRAES Board of Directors
- Reviewing publications, including a manual for private, non-industrial forest owners, a publication regarding insects and diseases of woody plants and a backyard woodland management for NRAES
- Working with maple syrup producers from across the Northeast maple producing region and Canada to ensure health and safety standards for maple syrup production
- Worked with the New Hampshire/Vermont Maple Producers Association and states across the Northeast on Christmas tree production
- Vice Chair of the New England Christmas Tree
- Member of the National Christmas Tree Association editorial review board

Natural Resources Agriculture and Engineering Service (NRAES) provides technical publication and educational support for Northeast states that provides critical coverage for technical expertise lacking in specialist staffing. These services are especially critical with recent staff downsizing. The NRAES membership assessment is paid through state funds and UNHCE staff serve in leadership roles on the NRAES board.

New England Green Pastures is an organization started in 1948 seen as a leader of change in the dairy industry in the Northeast. The group started out seeking to improve pastures in the region and has since promoted a regional Extension Consortium supported by the Northeast Dairy Compact to conduct regional inservice training. UNHCE specialists carry out the Green Pastures program in New Hampshire and take leadership for regional efforts.

New England Maple Grading School: In 2004, the first New England Maple Grading School was developed and conducted by the Vermont Department of Agriculture, Food and Markets, the University of Maine Extension, and UNH Cooperative Extension. It is for maple producers, bulk syrup buyers, state inspectors and others needing to accurately grade maple syrup or judge maple product entries at fairs and contests. Now called the International Maple Grading School, it has been very well received by the maple industry with 75 participants representing all of the maple producing states and provinces, as International Maple Syrup Institute

became the official sponsor providing both financial and its political support. Ohio State University has offered to host the International Maple Grading School in 2007.

The New England Planning and Reporting Consortium (NEPRC) is a four-state effort to create an online planning and reporting system. The group meets by phone conference and periodic face-to-face meetings. Impacts this year include completed planning and reporting modules currently in use by all four states. The group also presented a follow-up seminar (also presented in 2005) at the American Evaluation Association conference on their joint work and impacts.

New England Water Quality Initiative improves water quality management through Extension and applied research programs within the region that complements partner's efforts. State of the art approaches are tailored locally for unique attributes of watersheds and the concerns of communities and producers. The New England Program originated from the strengths and partnerships of the individual New England Land Grant University Water Quality Programs and evolved in response to coordinated planning and shared resources. The initiative documented 28 measurable impacts this year ranging from generating and disseminating research to improving local decision making on water quality.

New Hampshire/Maine Extension Homemakers educational programming includes a variety of topics presented by Extension staff from both states for the Fryeburg and Conway Extension Homemakers groups. These staff also present other family and consumer resource programs to clients in Maine and New Hampshire as appropriate.

New Hampshire/Vermont Family Literacy Training workshops include staff and participants from both states. In the last year 30 participants and eight agencies participated in this program. In addition, the Vermont Center for the Book received program kits to lend to families to help them become better readers and learners. The workshop resulted from UNHCE staff involvement with the Monadnock Partners for Family Literacy Coalition.

Northeast Forest Resources Extension Council (NEFREC) of Extension forestry professionals collaborate on programs, publications, conferences, new technology and other natural resource outreach. This group contributes to the ECOP Forestry Task Force, Farm Bill feedback and other regional efforts. Three UNHCE staff are active participants in this 13-state Council. This year, the USDA Forest Service provided instruction to the Council on a newly developed forest management decision making computer model. Council members from across the Northeast will share the model with natural resource professionals in their state.

Northeastern Integrated Pest Management (IPM) projects included 1) Tri-state greenhouse IPM workshops held jointly by Vermont, New Hampshire and Maine, 2) New England-wide publications, 3) NY, New England, Canadian Fruit Pest Management Workshop, 4) New England Vegetable and Fruit meetings (Manchester NH), 5) two joint MA/NH fruit twilight meetings, 6) a NH/VT vegetable growers meeting, and IPM workers collaborating on crop profiles, crop surveys and pest management strategic plans. In the last year 110 growers attended the tri-state greenhouse workshops, and 1,250 growers attended the Manchester vegetable and fruit meetings. Also, a pest management strategic plan was completed on highbush blueberry, and a survey of school IPM in New England was completed. Joint publications produced included the New England Apple Pest Management Guide (update only in FY'05), the New England Vegetable Management Guide, the New England Small Fruit Management Guide and the New England Greenhouse Floriculture Guide. Additional IPM surveys, profiles and strategic plans can be found at the project web site: <http://ProNewEngland.org>.

Northeast Plant Diagnostic Network provides funding for training for pathogen and insect identification and management. Target audiences include Extension staff, growers, crop consultants and land care professionals. UNHCE staff contributions to the network this year included:

- Disease and insect update for forest trees and woody ornamentals training conducted for 25 agriculture and forestry resources specialists and educators on identification and regulation of pathogen and insect pests of trees and shrubs including Sudden Oak Death, Hemlock Woolly Adelgid, Emerald Ash Borer and Butternut Canker. All participants reported an increase in their knowledge base from this training
- Diagnosing plant health problems training included 17 university staff from UNH and URI who learned to recognize and diagnose biotic and abiotic causes of plant health problems. All of the participants reported and increase in their diagnostic skills from the training
- The New England Greenhouse Conference is a collaborative effort by grower associations and Cooperative Extension throughout New England. UNHCE Extension staff chaired the educational program committee that organized 65 speakers. 88% of the conference attendees rated the education sessions as helpful.
- UNHCE staff also contributed to the New England Small Fruit Pest Management Guide, the New England Vegetable Management Guide and worked with the Massachusetts Christmas Tree Association to provide training on the identification and management of common Christmas Tree diseases

Northeast Regional Center for Rural Development conducts research and programming on rural issues. New Hampshire entrepreneurs and Extension staff were supported in their rural development work through the Center's programs and publications. UNHCE staff served on the Center's Board of Directors and work groups.

Northeast Soil Testing Group (NEC1007) meets annually to discuss soil testing issues that affect the Northeast. Extension representatives from Maine, New Hampshire, Vermont, New York, Pennsylvania, New Jersey, Maryland, Delaware and Virginia work to address soil testing issues and procedures that affect multiples states in the region.

New England Nursery Association is an umbrella organization for state nursery associations in New England. The group sponsors New England Grows, an annual 3-day conference and trade show attended by some 15,000 people from varied horticultural businesses. Extension staffed a central pavilion on the trade show floor to answer horticultural questions. Educational grants from conference proceeds were awarded to each state Extension system. In New Hampshire, funds supported applied research on production and market evaluation of cut flowers and innovative container production systems for nursery stock, delivery of educational information through a quarterly newsletter for the horticultural industry, and statewide meetings and workshops for garden center and landscape companies. As a result of these efforts, 75% of participants in the New Hampshire Garden Seminar program improved marketing and merchandising skills increasing sales by 5-10% at each business. 90% of landscaper program participants improved business by offering or improving organic and sustainable alternatives for lawn and land care. At least 20 firms are growing new or improved varieties of cut flowers based on Extension information

Regional Agricultural Engineering combines the skills of Extension staff and an agricultural engineering consultant with the philanthropy of a dairy farmer to run this program in New Hampshire and Vermont. Extension staff expand their capacity by working with the consultant. Over four years, this program included 200 farm visits that saved producers over \$250,000 by preventing construction errors and labor savings. The Ag-Biz farm management programs are multi-state efforts that teach farmers business and financial management skills. These programs are conducted jointly by Cooperative Extension staff in New Hampshire

and Vermont. Four, five-hour sessions are conducted. Participants learned about financial record keeping, record keeping software, financial statements and budgeting.

Regional Dairy Management and Marketing includes Extension dairy specialists from five New England states meeting on a regular basis. This results in sharing of fact sheets, educational programs, joint programming efforts and the use of expertise across state lines. In addition to a regional in service program held each year, there is an active regional listserv and a New England animal science web site developed to share educational programs with colleagues – www.umaine.edu/animalsci/. A new New England Dairy Farms Cooperative was established to bring identity to locally produced milk. Extension staff are also writing a benchmark report on the New Hampshire dairy industry to provide data to support the Cooperative. This effort could return several cents per hundred weight to dairy farmers' milk checks in the region.

Regional Diversified and Alternative Agriculture Initiative is based on the proximity of New England farmers to markets and large numbers of consumers that provides substantial opportunities for sales of agricultural products, related goods and services. Adding value to farm products through processing, packaging and services enabled growers to improve net income. Diversified and alternative agricultural practices created new markets for farmers and established product identity in the market place.

Marketing efforts focused on helping firms increase profits through greater understanding of local markets and improved marketing strategies. Diversified and alternative agricultural practices were promoted to farmers growing products for the first time or expanding existing markets. Programs addressed selling products through direct markets such as farmers' markets, farm stands and pick-you-own sales. Creative product alternatives were introduced by featuring farms that grow these products at twilight meetings and in newsletters. New concepts were also included in regularly scheduled commodity meetings. Presentations and seminars were conducted at county programs, state meetings and expositions, and at multi-state venues such as New England producer conferences.

Regional Food Safety programs include UNHCE's participation in the Good Agricultural Practices for Homeowner's grant. Funded by USDA/CSREES with the University of Rhode Island Cooperative Extension as the lead state, this research and Extension project involves five of the six New England states. Research components of the grant have been completed, including a mail survey and in-depth structured interviews with home gardeners to assess food safety knowledge and practices.

Regional Sustainable Agricultural Research and Extension Program (SARE) is a USDA competitive grants program with regional programs and leadership. Grants support professional development for Extension staff, other professionals and farmer educators on sustainable agriculture. Also our SARE representative is working regionally with farmers to do Whole Farm Planning and enterprise analysis.

Outcomes for the past year include:

- 25 Whole Farm Plans
- Trained 77 farmers and educators in whole farm planning (Farmers, NRCS, and Extension)
- 20 farmer-driven projects were conducted in Maine, New Hampshire, Vermont and New York, increasing participant's knowledge of sustainable agricultural practices

Two State Nutrient Management Collaboration includes joint work with Extension staff in Vermont and New Hampshire. The group conducts joint nutrient management programs in both states.

F. Integrated Research and Extension Activities

Integrated Extension and Research improves Extension's program effectiveness in New Hampshire. Due to Extension's responsibility to extend the university's knowledge and research for application throughout the state, joint work facilitates this process. As Extension Educators, Extension Faculty and research faculty work closely together, all entities benefit. Extension staff are more involved in research planning and implementation, informed of findings and better equipped to convey research results to those who need it. Researchers, through their close relationship with Extension, better understand research needs in the state and witness the practical application of their research results. For example, several Integrated Extension and Research projects focus on profitability and sustainability. Because of our short growing season, lack of fertile soils and limited open space, many agricultural producers have marginal profits and benefit from research addressing these factors.

The Agricultural Experiment Station at the University of New Hampshire functions under the Dean of the College of Life Sciences and Agriculture, while Extension remains a separate entity functioning under its own dean. Current joint activities demonstrate collaboration and partnerships between research and Extension. For example, Extension staff serve on the Agricultural Experiment Station Advisory Board, the Cooperative Extension Agricultural Resources Program Leader meets with the College of Life Sciences and Agriculture (COLSA) Executive Committee and joint teaching/research/extension appointments are held between COLSA and Cooperative Extension. In the past few years, the number of Ag Experiment Station/Extension sponsored graduate students increased and the Station is awarding multi investigator proposals for Hatch funding with increased research/Extension integration. The goal is 50-75% integration of the Station's portfolio with Extension.

Title of Planned Program	Actual FY2006 Expenditures
1. Dr. Peter Erickson	\$ 18,582
2. Dr. Catherine Neal	\$ 48,364
3. Dr. Paul Fisher	\$ 28,043
4. Cheryl Smith	\$ 2,682
5. Alan Eaton	\$ 0
6. Dr. Charles Schwab	\$ 1,030
7. Dr. J. Brent Loy	\$ 1,304
8. Tom Buob	\$ 0
9. Suzann Knight	\$ 0
10. Dr. Catherine Violette	\$ 55,908
11. Jeff Schloss	\$ 0
12. Dr. Stacia Sower	\$ 8,786
	=====
FY2006 Integrated Research Expenditures	\$ 164,429
FY2006 7.5% Integrate Research Target	\$120,002

Brief Report of Progress:

The University of New Hampshire Cooperative Extension engages in research and builds research partnerships that bring customers practical, useful information based on expressed client needs.

1. Salary support provided for Dr. Peter Erickson, Extension Dairy Specialist, to conduct a research project: *Management Systems to Improve the Economic and Environmental Sustainability of Dairy Enterprises*. Research has been conducted in the area of lactoferrin supplementation to dairy calves fed a colostrums replacer. Results are being analyzed, shared with producers through the specialist's joint appointment with Extension.
2. Salary support provided for Dr. Catherine Neal, Extension Landscape/Nursery Specialist, to conduct a research project: *Cultural Factors Influencing Production and Landscape Establishment of Trees and Shrubs*. This project is working towards lowering production costs of woody nursery stock through use of modified container systems such as pot-in-pot and fabric containers. Improvements in plant growth and winter survival in these systems, along with the development of a novel insulating pot cover for winter protection, has the potential for drastically changing the ways northeastern nurseries produce and over-winter nursery crops. These results are shared with producers through on-site visits, communication through Extension educators and statewide meetings and workshops.
3. Salary support for Dr. Paul Fisher, Extension Ornamental Specialist, to conduct a research project: *Developing and Integrating Components for Commercial Greenhouse Production System*. Research topics included surveying physical and chemical qualities of commercial propagation media, quantifying lime reactivity and residual lime in container media, micronutrient levels in fertilizer and contaminant sources, quantifying tissue and media nutrient levels from the stock plant stage through to propagation for vegetatively-propagated cuttings and a new nutrition training website (FloraSoil) and quantifying leaching of nutrients during propagation. Presentations were made at a number of professional meetings and workshops were held with producers.
4. Salary support for Cheryl Smith and Alan Eaton, Extension Specialists, to conduct a research project: *Young Plant Center*. This was the first large Hatch grant for integrated research between COLSA research faculty and Extension faculty. Multiple experiments were run at UNH and at commercial greenhouse sites in NH, NH, CO, and MI. A protocol was developed to measure leaching, and leaching and fertilizer use were subsequently measured during commercial propagation. The Ornamental Breeding Program at UNH released five new cultivars in 2006: Nolana Loma Blanca, and the Borwallia Endless series, with cultivars Illumination, Celebration, and Flirtation. Trials compared fungicide efficacy for control of Botrytis during shipping determined Decree and Spectro to be most effective. A "new" parasite associated with fungus gnats was discovered in two of the seven insecticide trial sites (CO and NJ). Work is underway to determine the species and start a colony at UNH.
5. Salary support for Dr. Charles Schwab, Professor of Animal & Nutritional Science, to conduct research projects: (1) *Metabolic Relationships in Supply of Nutrients in Lactating Cows*; and (2) *Management of Systems to Improve the Economic and Environmental Sustainability of Dairy Enterprises*. This work has included the establishment of an organic dairy operation at one of the university farms. Extension staff worked with the PI as well as research and Extension faculty in Maine to establish the first university-run organic dairy operation in the country.

6. Salary support for Dr. Brent Loy, Professor of Plant Biology and Genetics, to conduct research projects: (1) *Conservation and Utilization of Plant Genetic Resources*, and (2) *Genetics, Breeding, and Physiology in Cucurbits*. This research is being shared with Extension staff and clientele through staff in-services, department open houses, Extension workshops and newsletters, and twilight meetings at the university research farms. At all these venues, staff and clientele interact with the researcher on the results and future research.

7. Salary support for Tom Buob, Extension Agricultural Resources Educator, to conduct a research project: *Development and Implementation of Nutrient Management Practices*. Field studies were conducted to evaluate nutrient credit contributions from sod, corn silage, winter squash and ornamentals. Sixteen lysimeters were collected and data is being analyzed from the follow-up study for incorporation into new soil testing software. Of special interest is the nitrogen and phosphorous (P) management guidelines. The updated information will include nutrient credits from the various sources and phosphorus management suggestions/recommendations based on the %P saturation levels from the soil test. The %P saturation levels have been determined to be a better way to look at soil test P (STP) across many soil types rather than just soil test levels.

8. Salary support for Suzann Knight, Extension Family Resource Management Specialist, to conduct a research project: *Rural Low-Income Families: Tracking Their Well-Being and Function in an Era of Welfare Reform*. The Rural Families Speak web site has been created to allow researchers from participating states to share the latest findings and link to other studies and work that complements the understanding of rural families in the context of changing welfare policies. Fact sheets using NH data have been produced. A public website for NH is under construction. Worked with project team members on publications and presentation especially those related to EITC. An Earned Income Tax Credit program has begun and a NH EITC Statewide Alliance has been formed to share best practices, research and media.

9. Salary support for Dr. Catherine Violette, Extension Professor and Extension Food and Nutrition Specialist, to participate in a Hatch-grant funded research project entitled: *Improving Plant Food Availability and Intake in Older Adults*. Under objective 2, experiment 2, research and Extension faculty will conduct cognitive interviews with older adults to identify how they select whole grain foods and what factors and barriers impact their purchase of whole grain foods. Four research stations (NH, MA, MD, MN, UDC) are participating. The research team has developed, pre-tested and revised the research protocol. Over 90 interviews with older adults have been completed to date. Data analysis is currently underway.

10. Salary support for Jeff Schloss, Extension Water Resources Specialist, -- *Sources of Microcystins and Food Web Pathways in NH Lakes*. This project continues in its efforts and now includes small water supply managers (municipal) as a new stakeholder group. We also field tested a new technique on a regional scale (with the cooperation of EPA New England and all of the New England state water quality agencies) to assess MCs from dried filter samples primarily used to assess Chlorophyll a (lake productivity) and will expand these assessments focusing statewide this summer to volunteer collected samples through the NH LLMP. Focus of spring/summer 2007 and future student directed research will be to investigate spacial distributions of MCs due to wind effects and target species movement/migrations. We will also expand our outreach and tech transfer products for our widening range of stakeholder groups.

11. Salary support for Dr. Stacia Sower, Director, New Hampshire Agricultural Experiment Station, for joint administration of Integrated Research and Extension Activities.

U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities
 (Attach Brief Summaries)
Fiscal Year: 2006

Select One: Interim Final

Institution: Cooperative Extension

State: New Hampshire

	Integrated Activities (Hatch)	%	Multistate Extension Activities (Smith- Lever)	%	Integrated Activities (Smith- Lever)	%
<i>Established Target %</i>		%	12.5	%	7.5	%
<i>This FY Allocation (from 1088)</i>			\$1,600,032		\$1,600,032	
<i>This FY Target Amount</i>			\$200,004		\$120,002	
Title of Planned Program Activity						
<i>(see attached brief summaries)</i>			203,554		164,429	
Total			\$203,554		\$164,429	
Carryover			\$3,550		\$44,427	

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

Dr. John Pike
Director

3/28/07
Date