

FY2002 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, we have a network of professional Extension staff located in all 10 New Hampshire counties. County staff work with local volunteers and specialists on the 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 communications technology including computer networking and interactive video. As part of the national land-grant university system, we also access the knowledge and expertise of other state land-grant universities throughout the U.S. 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 their state university and the knowledge and resources available to address needs and problems. The principle partner is the University of New Hampshire. As a state land-grant university it is charged by Congress to conduct resident instruction, research, and outreach to people beyond the classroom.

UNH Cooperative Extension employs approximately 90 Extension Educators and other program staff who plan, conduct and evaluate educational programs. Programs are conducted in two broad program areas - Youth, Families and Communities; and Natural Resources. These are supported by staff in five program groups: 4-H Youth Development; Family and Community Development; Agricultural Resources; Forestry & Wildlife; and Sea Grant, Water and Marine Resources. Each program is lead by a state Program Leader.

UNH Cooperative Extension is also committed to increasing programming for under-served and under-represented audiences. These individuals are reached through many program efforts with the majority reached through the Nutrition Connections and also 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 under-served families. Staff working in these areas are instrumental in building trust and rapport with under-represented audiences, and are key in helping Extension advisory councils understand the audience’s needs and circumstances. The needs of the under-served and under-represented groups are incorporated into the state’s plan of work and accomplishments during FY2002 are highlighted in this report.

Program accomplishments in this report respond to high priority needs in New Hampshire as identified through a comprehensive statewide needs assessment conducted in 1999. Extension advisory councils and stakeholders were systematically involved in analyzing data collected and also in the identification of highest priority needs. They are:

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

1. Land use, land & water conservation, and open space preservation.

2. Sustaining the economic value and impact of natural resources and natural resources-related industries.
3. Increasing the visibility and marketing of Extension's expertise and assistance to support natural resources and natural resources-related industries.

Family and Youth Needs

1. Strengthening families - balancing work, family and community roles; parent education/pre-parenting education; resiliency and family functioning.
2. Life skill development for youth - workforce preparation; character education; social responsibility.
3. Families need to better manage their resources - time, money, other.
4. Wellness - healthy lifestyles including nutrition, physical activity, food safety.

Broad State Needs

1. Community Involvement/Sustainability - community decision-making; educating elected officials; leadership development; community forums; balanced growth; user-friendly town government.

Based on the statewide needs assessment and final analysis and ranking by the State Extension Advisory Council, the following goals were established as the basis for the FY2000-2004 Plan of Work. These goals also provide the framework for FY2002 program accomplishments that follow.

A. Planned Programs

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

Executive Summary

- a. Agricultural marketing has been enhanced through increased direct-marketing of local products. Farm profitability has been increased by reducing inputs, using alternative systems, and enhancing management and marketing practices. Animal agriculture this year focused on reducing disease transfer through maintaining farm bio-security. Extension developed a comprehensive program to increase the adoption of management intensive grazing by the state's dairy and livestock producers. Planned outcomes include reduced soil erosion and soil compaction, more uniform and less costly manure distribution, and less soil and manure runoff in surface water. Preliminary results of joint farmer and university research on culture techniques for rainbow smelt are showing great promise for local aquaculture.
- b. There has been increased participation in local Farmers Markets in this state resulting in increased sales of locally produced commodities and promotion of local agriculture. Dairy producers successfully lowered somatic cell counts, and reported higher productivity and lower veterinarian bills resulting from improved animal production efficiency. UNH Cooperative Extension met the high demand for GIS, GPS and remote sensing training, helping municipalities and organizations address environmental issues

and concerns. This technology was used in master planning and to inventory non-point pollution sources, revised zoning regulations, educate Conservation Commissions and promote land protection. Risk management programs were conducted this year to teach methods for reducing and mitigating the adverse impact of production losses and price drops, along with farm transfers and business planning. New Hampshire farms face many risk factors including weather, unstable markets, cost of borrowing, restrictive legislation and personnel issues. Over 250 participated in education about farm pond management this year.

- c. New Hampshire farmers have access to large numbers of consumers providing substantial opportunities for direct sales of agricultural products and related services and goods. This marketing opportunity along with reducing inputs and cutting costs enable many farmers to remain in business. In addition to the financial savings, environmental impacts were reduced through improved nutrient management practices, use of Integrated Pest Management, and using cultural practices that reduce disease. In January 2000, Cooperative Extension opened the *Family, Home & Garden Education Center* with trained volunteers who staff a toll-free Info Line and responded to over 17,000 calls in FY02 from individuals seeking information about insect, disease and wildlife problems, soil testing, food safety water quality and related questions. For 30% of callers seeking chemical recommendations, either no pest control or proper use of environmentally friendly materials were recommended instead.
- d. The limited land base in NH restricts large-scale production of singular crops and diversification is promoted as a means to increase income. Alternative agriculture programs educated informed landowners about farming options and provided technical and marketing information to support new enterprises. Extension programs in agricultural production have focused on promoting use of new technologies and conducting on-farm research. Several new agricultural crops were tried experimentally this year. A major emphasis is season-extending devices. Growers report yield increases up to 50% using such practices and technologies. Some have reported a 20% reduction in labor required. The number of fish farms in the state has more than doubled in the past 4 years, with an equal number planning to start a business in the next 2-3 years. This enterprise expands farm diversity and provides new uses for unproductive land and old buildings. Extension has 600 trained Master Gardener volunteers who educate people about making environmental decisions that are economically and environmentally sound.
- e. Total Expenditures:
Funding: Federal Smith-Lever b&c - \$285,469
State Matching Funds - \$1,005,749
County Funding - \$353,124
Grant & Other External Funding - \$583,242

FTEs - 24

Adding Value to New and Old Agricultural Products - Mike Sciabarrasi

- A. Program Description : Proximity of New Hampshire farmers to markets and large numbers of consumers provide substantial opportunities for sales of agricultural products, related goods and services. Adding value to farm products through processing, packaging and services enables growers to improve net income. Consumers benefit in terms of higher quality products when farmers adopt marketing practices which make local farm products available.
- B. Impacts: Marketing efforts focus on helping firms increase profits through greater understanding of local markets and improved marketing strategies. Seminar series and workshops frequently emphasize direct sales of high value, locally grown products to consumers and retail outlets. Teams incorporating extension educators and researchers have conducted numerous marketing site evaluations for garden centers and farm stands. Similar teams have also assisted growers throughout the state with design and evaluation of customer surveys. Current research conducted in cooperation with the Department of Resource Economics and Development and NHAMF involves examining consumer-buying habits during the summer season. Other outcomes:
- One-hundred, ninety-two high-value, crop growers improved product marketing skills
 - Completed statewide survey assessing NH consumers' fruit and vegetable purchasing habits and patterns
 - Assisted growers with customer surveys and stand evaluations
- C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds
- D. Scope of Impact: State Specific

Agricultural Profitability - Seth Wilner

- A. Brief Description: FY 2002 was a time of fiscal hardship or economic opportunity depending on the commodity a producer/grower was involved in. Common to all growers on this economic continuum was a need and desire for education that enabled them to improve their farm management, decision-making, and production practices. Growers also requested information about new technologies and plant varieties that could increase their yield, decrease their labor and save them resources.

A variety of educational efforts were used to enhance the profitability of NH and regional producers. These efforts included written materials such as newsletter articles, web sites, and fact sheets, on-farm research experiments, workshops, in-services, farm visits, and consultations by private sector specialists who were collaborating with UNH Cooperative Extension staff. These educational efforts fell into four major categories; 1) Management and marketing, 2) Production practices, 3) Pest and disease control, and 4) New technologies. Management and marketing included financial record keeping, decision-making, enhanced marketing techniques, and building improvements and preservation that enhanced efficiency and increased production capacity. Educational outreach on

production practices included new plant/crop varieties that increased yield, resisted diseases, and/or hold greater market value. Also included under this category was pruning techniques that increased crop production or reduced time and labor, photoperiod management that enhanced livestock production, alternative bedding sources, alternative grazing methods, and nutrient management procedures. Pest and disease control education focused on identification and mitigation of insect pests, diseases, and weeds. Education regarding new technologies included new biodegradable mulches, methods to extend the growing season, sprayer nozzles that improved application efficiencies of chemicals and nutrients, equipment alterations for improved cultivation, and food supplements to increase livestock production.

B. Impacts

- No-pinch mums reduced labor by 15% while maintaining high quality.
- Seven NH greenhouses reduced property taxes by \$40,000 and increased profits by 5%.
- New seed mixes improved livestock feed resulting in higher sales.
- Photoperiod management enhanced one dairy farm's profitability by an estimated \$24,000 per year.
- Forty-five regional farms used engineering recommendations to save \$102,500. NH farms realized \$97,500 of this total savings.
- Education on alternative livestock bedding resulted in a change from sawdust to shredded newspaper, saving the farm \$1,346.
- Early identification of a fungal infestation in greenhouse tomatoes saved one farm \$1050.
- Increased awareness about barn preservation resulted in the enactment of a statewide barn preservation tax relief law.
- Farm management education resulted in a measured increase in record keeping and money management skills on the part of 26 producers.
- Two growers incorporated trickle irrigation, reducing their water use by 25%.
- Thirty-five livestock producers demonstrated a measured increase in their skills related to Management Intensive Grazing.
- Twelve vendors utilized information from a farmers' market critique to enhance their marketing skills and increase their sales.

C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds

D. Scope of Impact: Multi-State

Animal Health - Pete Erickson

- A. Program Description: Animal health is an area of continuous change and new developments in controlling and treating disease. Much of our work as of late has been in the area of controlling through prevention. Part of prevention is through implementation of on-farm biosecurity programs to reduce the spread of highly contagious diseases from farm-to-farm transfer. Implementation of weed control problems in pastures and hay fields to reduce the potential problems of toxic weeds to grazing species. Through diet correction, cows had reduced incidences of metabolic

disorders. Producers were educated about mastitis and how to reduce the incidence of that disease. A variety of educational efforts were used including the on-farm training of veterinarians and producers about biosecurity. Dr. Roger Ellis spoke at three dairy farms across New Hampshire regarding how to reduce the spread of contagious disease within and between dairy and other farms. Dr. Ellis lead the clientele on a tour of each farm, critiqued the operations and explained how to correct the potential problem. The biosecurity program was funded through a grant from the George Walker Milk Fund and with cooperation of the New Hampshire State Veterinarian.

Small producers learned how weed control can reduce the incidence of illness in their animals and improve the quality of their feed and reduce the need for purchased feed. Dairy producers were educated in the areas of reducing the incidence of metabolic disorders through diet manipulation and to reduce the incidence of mastitis through correct milking procedures

B. Impacts

Farmers (25), veterinarians (12) and milk inspectors (4) were educated about biosecurity as a means of reducing disease spreading. This will reduce veterinary bills and likely increase production. New barn designs (12) were developed to reduce the comingling of older and younger cattle. Headlocks and squeeze chutes were recommended to make it easier to do animal health checks. Bird control information was shared with producers to reduce disease spread. Surgeries and poor milk production were averted by the implementation of correct diets for pre-freshening dairy cows (3). Producers were educated in regards to control mastitis and reduce somatic cell counts below violative concentrations (5). Udder health improved. Small producers spend less money on veterinary bills and purchased feed by improving the quality of their own hay and pastures (25).

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

D. Scope of Impact: State Specific

Animal Production Efficiency - Pete Erickson

A. Program Description: Animal production efficiency can be improved through many different methods such as, correct diet balancing, photoperiod, bovine somatotropin use, intensive rotational grazing, pasture management, facility improvement, correct harvesting, young stock management and many other means. In this fiscal year the focus was on facility improvement, correct forage harvesting, and young stock management. Through on farm discussion, several dairy farms have implemented the use of 16 hour day and eight-hour night resulting in a greater milk yield. Twelve dairy farms were visited by an agriculture engineer secured through external funding. Young stock rearing techniques were described through on-farm visits and the quarterly publication "Dairy Briefs." Two presentations on silage harvesting were presented as part of the Risk

Management series. The target audience for this program was dairy producers and allied dairy industries.

B. Impacts

1. Several dairy producers have implemented the photoperiorogram and have observed a 5-10% increase in milk production (4). One producer commented on reduce electric power costs.
2. Improved barn layouts for tie-stall barns to improve labor efficiency (12).
3. Improved cow comfort and retrofitted milking parlors to improve labor efficiency (6).
4. Promoted the use of colostrometers on dairy farms for measuring colostrum quality (4).
5. Educated producers on the value of colostrum for the neonatal calf (600 Dairy Briefs Mailing list).
6. Promoted the use of free-choice water to improve rumen development (600 Dairy Briefs Mailing list).
7. Educated producers on the correct way to retrieve a forage sample (40).
8. Educated producers on the correct way to ensile corn, grasses and legumes (40).

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

D. Scope of Impact: Multi-State

Aquaculture - J-J Newman

A. Program Description: This program works with both existing and potential aquatic farmers in an effort to: 1) increase family income, 2) increase employment options for struggling commercial fishermen, 3) increase family access to fresh, high-quality fish and shellfish for the table, 4) increase farm diversity, in order to reduce risk, and 5) find new uses for unproductive land and old buildings.

Efforts to reach these goals include the following:

- Directly assisting individual farmers both in New Hampshire, and also in Maine, Vermont and Massachusetts, in consultation with local extension personnel,
- Conducting educational workshops, tours, etc., for a New England-wide audience, on a variety of aquaculture topics,
- Conducting demonstration/research projects both at university facilities and at private farms, and
- Connecting individuals, the state aquaculture association, and a local fisherman's cooperative with university researchers.

B. Impacts

- Twenty local commercial fishermen are in the process of applying for permits to start mussel farming. (integrated extension-research)

- One local farmer has started a new aquaculture business and developed the pilot for an innovative productive system that will substantially reduce effluent discharge. He has applied for funds to continue the research on a larger scale. (integrated extension-research)
- The state aquaculture association has received more than \$20,000 in grant funds in the last three years, due in part to collaborations with UNH Cooperative Extension. (state-specific)
- Preliminary results of joint farmer/university research on culture techniques for rainbow smelt are showing great promise. It appears that local production of smelt for sale as bait will be entirely feasible within the next two to three years. (multi-state; integrated extension-research)
- Approximately 40 people in New Hampshire, Rhode Island, Connecticut and Pennsylvania attended workshops on raising fish in small, indoor systems. These prospective farmers learned the basics of rearing freshwater fish, management of indoor fish culture systems, fish health, and construction of small, recirculating aquaculture systems. (multi-state)
- Approximately 250 people in New Hampshire and Vermont attended workshops on farm pond management in 2002. These people learned about pond site evaluation, regulations and procedures for pond construction, basic pond ecology, fish stocking and harvest, and control of pond algae and weeds. (multi-state)

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

D. Scope of Impact: Multi-State

Bioterrorism/Biosecurity - Pete Erickson

A. Program Description: Animal health is an area of continuous change and new developments in controlling and treating disease. Much of our work as of late has been in the area of controlling through prevention. Part of prevention is through implementation of on-farm bio-security programs to reduce the spread of highly contagious diseases from farm-to-farm transfer. Implementation of weed control problems in pastures and hay fields to reduce the potential problems of toxic weeds to grazing species. Through diet correction, cows had reduced incidences of metabolic disorders. Producers were educated about mastitis and how to reduce the incidence of that disease. A variety of educational efforts were used including the on-farm training of veterinarians and producers about bio-security. Dr. Roger Ellis spoke at three dairy farms across New Hampshire regarding how to reduce the spread of contagious disease within and between dairy and other farms. Dr. Ellis lead the clientele on a tour of each farm, critiqued the operations and explained how to correct the potential problem. The bio-security program was funded through a grant from the George Walker Milk Fund and with cooperation of the New Hampshire State Veterinarian.

Small producers learned how weed control can reduce the incidence of illness in their animals and improve the quality of their feed and reduce the need for purchased feed.

Dairy producers were educated in the areas of reducing the incidence of metabolic disorders through diet manipulation and to reduce the incidence of mastitis through correct milking procedures

B. Impacts

Farmers (25), veterinarians (12) and milk inspectors (4) were educated about bio-security as a means of reducing disease spreading. This will reduce veterinary bills and likely increase production. New barn designs (12) were developed to reduce the comingling of older and younger cattle. Headlocks and squeeze chutes were recommended to make it easier to do animal health checks. Bird control information was shared with producers to reduce disease spread. Surgeries and poor milk production were averted by the implementation of correct diets for pre-freshening dairy cows (3). Producers were educated in regards to control mastitis and reduce somatic cell counts below violative concentrations (5). Udder health improved. Small producers spend less money on veterinary bills and purchased feed by improving the quality of their own hay and pastures (25).

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

D. Scope of Impact: State Specific

Diversified/Alternative Agriculture - John Porter

A. Program Description: The limited land base in the State restricts large-scale production of singular crops and diversification is a way to increase income. The objectives of the Diversified/Alternative Agriculture Program were to increase the awareness of alternative farming options and provide both technical and marketing information to assist producers with new enterprises.

B. Impacts: The program included a “Listening to Farmers” conference supported by a SARE grant. The purpose of this was to educate USDA agency staff and Cooperative Extension about the needs of the small farmer. Farmers were used as the instructors and they shared their challenges and successes as small farmers. Over 75 people attended the conference, and as a result, agency people now have an increased sensitivity to the education needs of small farmers.

In addition, several new agricultural crops were tried experimentally within the state:

- Forage soybeans were grown as an alternative feed for livestock.
- Several plantings of wood-grown shiitake and oyster mushrooms were grown to as an alternative ag-forestry crop.
- Lathco flat peas and Deertongue grass were grown for erosion control
- Buffer strip on river banks were planted with income producing shrubs that have the potential of \$5,000 per acre of income.

Work was also done with value-added products as a way to increase farm income. Three dairy producers were interested in looking at the option of bottling and selling their own milk. One farm has started installing the equipment. Two new goat dairies became certified and are marketing goat cheese directly to the tourist trade through farmers markets. A SARE grant was obtained to develop a template for calculating the economic feasibility of farm processing of dairy products.

A guideline was produced to assist farmstead cheese making and the safe production of cheese. Currently an on-farm survey is being conducted to document cheese making procedures so these techniques can be published as standard operating procedures.

- C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds
- D. Scope of Impact: Multi-State

GIS/GPS - Nancy Lambert

- A. Program Description: NH organizations, communities and citizens need access to geospatial technologies (GIS, GPS and remote sensing) in order to expand their capacity to address issues and concerns facing the state. UNHCE currently offers both introductory workshops and extensive courses which emphasize the use of GIS/GPS for natural resources applications. Additionally, we offer GPS workshops and a GPS loan program that provides mapping quality GPS units for community and school projects. In an effort to expand educational opportunities for geospatial technologies, we also are collaborating in an effort to develop a geospatial technology training and resources center.
- B. Impacts: Our programs have impacted a diverse clientele including state and municipal employees and volunteers, educators, natural resources professionals, and university students. Below is a sampling of impacts that program participants reported were a result of their participation in our GIS programs:
 - Two participants reported that they decided to study GIS in graduate school as a result of this course.
 - Approximately 125 students at the McKelvie School in Bedford used GIS to look at natural resources and hazards and volcano and earthquake patterns.
 - A GLOBE Research Associate is assisting in writing a tutorial on using ArcView with GLOBE data. (GLOBE is an international environmental education program.)
 - A teacher in the Concord School District introduced GIS to six 6th graders as part of an after-school program.
 - The coordinator of Manchester's Urban Pond Restoration Program creates maps to evaluate environmental conditions of Manchester's urban ponds.
 - A USDA Forest Service employee uses GPS and GIS for small community mapping projects including mapping urban woodlots in Boston.

Following is a sampling of projects that were supported with UNHCE's GPS education and loan program:

- GPS receivers were used for the following projects (by people who attended training workshops this year or in previous years and by UNH Senior Projects students):
- Natural resources inventories: Shaker Village, New Boston, Barrington
- Education-related projects: New England College, McKelvie Middle School, Colby-Sawyer College, UNH
- Trail mapping: Raymond, Farmington, Amherst, NH Audubon Sanctuaries, Moose Mountains Regional Greenways, Lebanon
- Town infrastructure mapping: Plaistow, Conway, Somersworth, Belmont
- Milfoil mapping for Northwood Lake Association and Lake Wentworth Association
- Infrastructure mapping: NH Army National Guard, UNH Facilities
- Cheshire County Farm boundary maps for conservation easement proposal

C. Source of Funding: Smith-Lever 3b&c, State matching funds, grant funds

D. Scope of Impact: State specific

Home Lawn and Gardening - Margaret Hagen

A. Program Description: Each year Cooperative Extension receives thousands of requests from New Hampshire citizens for education on a wide range of topics including home gardening, wildlife, water quality, household insects, backyard livestock, food preparation and safety, and many others. The Home Lawn and gardening programs provide citizens with the education necessary to make positive changes that optimize the safe use of their properties while protecting the environment. The target audience is the general public, homeowners, gardeners and municipalities. The delivery method varies greatly across the state, but generally rely heavily on one-to-one tailored responses to clientele phone questions. UNHCE has a toll-free information phone (staffed by trained volunteers) specifically designed to meet this need. Alternative programming methods designed to reach large numbers of people include: weekly to monthly garden columns, county newsletters, classes, twilight meetings and field trips, radio and TV, community gardens and the extensive use of Extension fact sheets. In addition, New Hampshire has 600 trained Master Gardeners who help expand the impact of this program through volunteerism. The fact that the demands made on this program increase slightly each year indicate that Extension is educating citizens to make economically and ecologically sound decisions that are positively changing their home environment.

B. Impact: Seventeen thousand (17,000) New Hampshire residents benefited from the home, lawn and gardening program this year. Residents gained new knowledge or skills they applied for economic or aesthetic benefits. Approximately 30% learned how to choose and /or use a pesticide appropriately. And participants in community gardens (often partnered with Nutrition Connections programs) applied a variety of newly learned skills: landscaping, gardening, nutrition, food safety, teamwork, reliability and how to develop community.

This program provides the following economic benefits:

- In two out of five clientele contacts, a product is recommended that can be purchased from a local business or company.
- 15 businesses reported that mass media efforts promoting products and/or locally grown commodities brought them new customers
- Businesses are provided with a source of referral and education for their customers (happy customers are repeat customers).
- Individuals gain the dollar value of the food crops produced, of self-reliant landscape care, of reduced fertilizer and pesticide use, and of health benefits related to the above.
- 69 communities save money by utilizing Extension staff and volunteers as consultants on town landscapes, parks and athletic fields. Often a volunteer can be paired with a town to help it achieve its goals. This kind of cooperation can result in a savings of thousands of dollars.
- Environmental research shows homeowners misapply pesticides more often than farmers. In 30% of our interactions with clientele, we recommend either no pest control or proper use of environmentally friendly materials. In addition, we teach IPM practices to thousands of New Hampshire residents through classes, fact sheets, one to one contacts and mass media.
- Volunteers expand UNHCE's staff impact by 10 or more times. This year they contributed 12, 062 hours to individuals and communities as a source of research-based knowledge and practices. This is equivalent to \$150,775 staff dollars.

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

D. Scope of Impact: State Specific

Niche Market - David Seavey

- A. Program Description: Family owned garden centers, roadside stands and farmer's markets cannot compete with the superior buying and promotional power of mass merchandisers. Local retailers must seek new or alternative markets to increase sales. They develop niche markets by providing a new product, a special service, superior quality, or a unique ambience. They often begin with customer surveys that provide pertinent information on local customer needs and wants and changes in buying trends.
- B. Impacts: After constructing a model washing station, a petting farm (with an adjacent snack stand) increased the number of school farm tours, increased the visibility of the farm stand and improved its food safety image. After touring the model site, six farmstand operators have made plans to construct washing stations. Extension introduced a new pot-in-pot system to nurseries and garden centers. Five operations totaling 12 acres adopted this practice, which reduces production time by 25 percent, improves plant quality, offers ease of handling, extends harvest period and cuts winter protection expenses. UNHCE presented dwarf grass information to an audience of 150 at the NE Vegetable/Berry Conference and to an additional 10 growers via phone requests, resulting in dwarf grass seedlings on 16 acres of berry farms in Massachusetts and New

Hampshire. Growers noted that the attractive floor improved customers' pick-your-own experience, so the customers picked more berries. The eight farmers collectively saved 64 hours in mowing time, giving them more time to serve customers. Evaluations of the Sanbornton and Newport farmer's markets resulted in helping vendors offer safer, higher quality products and expand sales to WIC customers. A large trial of no-pinch mums at UNH and six smaller grower trials showed that excellent quality can be maintained while saving 2-3 cents per pot in labor costs. The grower cooperators reported that they will alter their practices next year by reducing the number of pinches or dedicating a portion of their crop to a no-pinch system.

- C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds
- D. Scope of Impact: Multi-State

Risk Management - Mike Sciabarrasi

- A. Program Description: Nature, weather conditions, market changes, cost of funds, legislation, legal challenges and personnel issues are among the factors which impact the viability of New Hampshire farms. These factors pose considerable risks of economic loss and damage to the farm and family. Adverse impacts can be reduced and minimized through understanding and using risk management tools and techniques. 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 people in the firm. Legal risk considers business agreements and environmental issues.

The risk management program has incorporated New England wide conferences, research on the viability of revenue products, and intensive in state industry and producer training. The New England conferences have served as professional training for agricultural industry leaders with participation from university and agency personnel. Research related to the Adjusted Gross Revenue program enabled establishment of a pilot program in New England and other areas of the US to help maintain farm viability in years with significant shortfall in receipts. In addition to university researchers, the New England Vegetable and Berry Growers Association and insurance and banking industry representatives participated in research activities. From the fall of 2001 through the spring of 2002, fourteen seminars and workshops focusing on one or more of the five themes were presented across the state targeting growers as well as agricultural professionals. Seven of the workshops were intensive daylong programs featuring university research personnel and industry representatives. In addition, program fact sheets were mailed statewide and information booths were manned at industry shows.

- B. Impacts:
 - Evaluation and expansion of the Adjusted Gross Revenue program through USDA RMA

- Improved understanding of risk management principles and applications of risk management strategies by 60 agricultural industry professionals and leaders
 - Forty-four farmers applied improved forage production risk management strategies to farm operations
 - One-hundred, fifty-seven fruit and vegetable growers increased their risk management planning skills
 - Thirty-eight apple growers reviewed market and production alternatives to increase economic viability
 - Thirty-five dairy producers better understand milk pricing and options
 - Thirty-six farmers improved employee management skills
 - Three-thousand, three-hundred farmers were informed about general risk management planning and crop insurance options
 - Four-thousand, seven-hundred NH citizens became aware of farm risk management efforts
- C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grants
- D. Scope of Impact: Multi-State

Goal 2 - A safe and secure food and fiber system

Executive Summary

- a. The Safety Awareness in the Food Environment (SAFE) program provided 544 food workers in restaurants, schools, hospitals and nursing homes with education about practices to prevent foodborne illnesses. This 2-hour program includes personal hygiene, cross contamination, and basic food handling principles. A contracted Food Security Coordinator was engaged to work with nutrition staff on food security issues. Results included securing a grant for *Plant an Extra Row* which encourages individuals to plant an extra row of fruit and/or vegetables to donate to a local agency providing produce to food stamp recipients, with 61,000 pounds donated to food pantries and soup kitchens. In addition, a series of Global Positioning System (GPS) maps were developed to illustrate the poverty levels in the state's municipalities.
- b. Nine (9) ServSafe programs were conducted with 153 food managers and workers taking the national certification resulting in 93.5% earning certification. Food Safety specialists in the six New England states continued implementation of a 3-year grant to integrate research initiatives with innovative educational approaches to increase adoption of Good Agricultural Practices (GAP) for food safety and sanitation. This year GAP was expanded through intensive on-farm food safety audits. Other results include 74 food pantry volunteers who participated in 2-hour food safety trainings to reduce foodborne illness for the most vulnerable populations.

- c. Follow-up SAFE program evaluations revealed food service managers observed increased hand washing among food workers and increased care in cleaning and sanitizing surfaces between raw and cooked food use. Extension's Nutrition Connections Food & Nutrition Program conducted client food accessibility and affordability education with 71% of 493 graduates improving one or more food resource practices
- d. Food safety programs that reduce foodborne illness in New Hampshire are vital for protecting its \$8.6 million tourism industry, of which a significant portion is spent on food.
- e. Total Expenditures:
 Source of Funding - Smith-Lever 3b&c - \$133,218
 Smith-Lever 3d - \$25,000
 State Matching Funds - \$469,349
 County Funding - \$164,791
 Grants - \$272,179

 FTEs - 11

Food Accessibility and Affordability - Val Long

A. Brief description of program

Teaching clients, especially those with limited resources, how to maximize their food dollar is essential for nutritional health. Two programs within UNH Cooperative Extension focus on food accessibility and affordability; the Nutrition Connections Program (Expanded Food and Nutrition Education Program and Food Stamp Nutrition Education Program) and the Family Lifeskills Program). In addition to conducting nutrition interventions with adults, we also design innovative interventions for both youth and adults. An example of this is the *Plant An Extra Row* program, conducted again this year.

B. Short impact/accomplishment summary

Client education in the Nutrition Connections Program in the area of food accessibility and affordability revealed that of the 493 program graduates, 71% of graduates showed improvement in one or more food resource practices (plan meals, compares prices, does not run out of food or uses grocery lists). 43% of graduates showed improvement in two or more food resource practices. 20% of graduates showed improvement in three or more food resource practices. And, 6% of graduates showed improvement in all four food resource practices.

Another program, *Plant An Extra Row*, was expanded statewide to encourage local citizens to plant an extra row of fruits and/or vegetables to donate to a local agency providing food to food stamp participants. A total of 61,000 pounds were donated to food pantries and soup kitchens throughout the state. The Nutrition Connections staff from the county Cooperative Extension offices surveyed the food pantries in their counties in order to update the lists of food pantries and soup kitchens that accept donations from gardeners and farmers. Once the lists were confirmed, the food security coordinator developed a tool to track the garden donations. A letter requesting participation in the

project included receipts for volunteers to use when accepting donations and instructions on how to estimate the weight of various fruits and vegetables that were donated. A survey was distributed to food pantries and soup kitchens throughout the state. Twenty food pantries/food pantry-soup kitchen combinations returned the survey. Compilation of the survey revealed that 48,000 pounds of fresh produce was donated this past summer. Although, not all of the donated produce can be attributed to this project, it appears that this project did contribute to the fresh produce which then became available to clients of the food pantries. The survey also revealed that food pantries and soup kitchens need food safety information and nutrition education for their clients.

Another project which was targeted to food accessibility for the homeless involved the development of a brochure titled: *Shopping Hints for the Homeless, You Can Still Eat Well*. This brochure was developed by the NH Food Stamp Program and UNH Cooperative Extension to inform homeless populations throughout the state of food stamp program benefits. There were 13,000 copies of *Shopping Hints for the Homeless, You Can Still Eat Well* printed and distributed to agencies and organizations throughout the state that provide services to homeless populations throughout the state.

- C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, grant funds
- D. **Scope of Impact** – State specific

Food Handling - Catherine Violette

A. Brief Description of Program

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 sponsored by the National Restaurant Association Educational Foundation was also implemented.

B. Impact and Accomplishment Summary

Thirty-one (31) SAFE programs were conducted reaching 544 food workers. Post workshop questionnaires were completed by 422 (78%) of the workshop participants. Participants' responses to knowledge and food safety practice questions are highlighted below.

- 95% of participants correctly identified recommended hand washing procedures.
- 96% of respondents correctly identified the recommended cold storage temperatures for perishable foods.
- 97% identified the time – temperature danger zone as 41 to 140 degrees F.
- 76% indicated that food should not remain in the danger zone for more than four hours.

SAFE participants were asked to indicate how often they implement currently recommended food safety and sanitation practices. Participants indicating they do the following practices 75% or more of the time include:

- 92% wash hands before and after working with food.
- 86% wash hands after touching hair, nose, or using the restrooms.
- 87% report using separate equipment and utensils for meats and vegetables/fruits.
- 84% report using gloves, tongs, or tissues to serve ready-to-eat foods.

Sixteen (16) follow-up phone surveys of food managers in food service establishments sponsoring SAFE programs were conducted. Food managers reported increased hand washing among food workers and proper disposable glove use. In addition, managers reported that employees were more careful to clean and sanitize surfaces between raw and cooked food uses. One food manager recommended that food safety training be mandatory for all employees because customers trust that restaurants handle and prepare food safely.

Nine (9) ServSafe™ programs were implemented with 153 food managers and workers taking the national certification examination. One hundred and forty-three participants (93.5%) passed the examination with a grade of 75% or greater.

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

D. Scope of Impact: State Specific

Food Safety - Catherine Violette

A. Brief Description of Program

As produce consumption has increased, so has the number of associated foodborne illnesses. The New England region is characterized by small agri-businesses with a diversity of crop varieties, most of which are marketed locally. Good Agricultural Practices (GAP) are recommended food safety and sanitation practices that, when implemented, can help produce growers minimize foodborne pathogen contamination.

Recognizing the regional similarity of produce production and marketing, Food Safety Specialists from the six New England states developed and submitted a grant application to develop and test innovative educational approaches to enhance the voluntary adoption of GAP recommendations by local growers. The three-year grant was funded by USDA/CSREES and initiated in October of 2000.

B. Impact and Accomplishment Summary

During the first year of the funding period, the following was accomplished:

- 296 fruit and vegetable producers (47% response rate) completed a survey to assess their awareness of GAP recommendations and current food safety practices.

- A mail survey to evaluate consumer food safety concerns and fruit and vegetable purchasing profiles was developed and distributed to 3000 randomly selected households in New England. 742 surveys (24% response rate) were returned. Selected findings follow:
 - 85% of consumers shop for fresh fruits and vegetables 1-2 times per week.
 - Respondents indicated a strong preference for locally grown produce.
 - 64% felt that domestic produce was safer than imported.
 - 84% indicated they were willing to pay more for produce from a GAP certified farm.
 - Standard New England GAP guidelines/recommendations were developed as the basis for the educational programs.
 - Produce samples from all New England states were collected and analyzed for pathogen contamination to establish baseline levels prior to implementation of the educational intervention.

During the second year of the project, the following was accomplished:

- Educational materials (fact sheets and slide presentations) were developed collaboratively by the states. UNH Cooperative Extension chose to implement the GAP program through intensive on-farm audits. Agricultural Resources and Family Development Educators in county offices conducted audits as a team.
- NH's internal and external advisory committees continued to meet. Twenty (20) specialists and educators attended a one-day GAP inservice program.
- Six in-depth, on-farm audits were conducted by county Educator teams.
- Produce samples from three farms were collected after the intervention.

C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds

D. Scope of Impact: State specific

Food Security - Val Long

A. Brief description of program

Along with our Food Security Coordinator, the UNH Cooperative Extension Nutrition Connections staff worked on a variety of food security issues this past program year. GIS mapping was completed for poverty in the state, a grant to Kraft foods submitted and awarded, *Plant an Extra Row* project continuing, and nutrition interventions conducted for low-income families throughout the state.

B. Short impact/accomplishment summary

A series of GPS maps were developed to illustrate the poverty levels of New Hampshire municipalities. A database was created using 2000 US Census data and comparative GIS maps of the state highlighting municipalities with the percentage of people who live 100%, 125%, and 185% below the official federal poverty guideline. In addition, the Food Security Coordinator has developed a summary of food security status among the low income population in New Hampshire. The report included summary statistics regarding poverty and hunger; trends with government food and nutrition assistance

programs; community food assistance programs and recommendations and effective models for improving food insecurity.

A grant was written by the Food Security Coordinator for the New Hampshire Food Bank for upgrading the food bank building to accept additional fresh produce and other cold storage foods. In addition, a fax machine was requested so that the food bank could receive timely faxes from Second Harvest about the availability of fresh fruits and vegetables. The grant, in the amount of \$11,000, was awarded to the New Hampshire Food Bank. Part of the grant project involves a strong collaborative effort between UNH Cooperative Extension Nutrition Connections Program and the New Hampshire Food Bank.

Another program, *Plant An Extra Row*, was expanded statewide to encourage local citizens to plant an extra row of fruits and/or vegetables to donate to a local agency providing food to food stamp participants. A total of 61,000 pounds were donated to food pantries and soup kitchens throughout the state. A news article was written which appeared in many county newsletters as well as on the UNH Cooperative Extension web page. The UNH Cooperative Extension Family, Home and Garden Center received articles and fact sheets, of participating soup kitchens and food pantries, to distribute.

And finally, results of the work of Nutrition Connections staff documented in the ERS (EFNEP Reporting System) reveal that 46% more often planned meals in advance to save time and money; 31% more often compared prices when shopping; 32% less often ran out of food before the end of the month; 36% more often used a list for grocery shopping to save money and time. An additional program which comes under the umbrella of food security is our food safety work with food pantries. This year, 74 food pantry volunteers were reached with 2 hours of food safety education in the prevention of foodborne illness for the most vulnerable populations.

C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds

D. Scope of impact: State specific

Goal 3 - A healthy, well-nourished population

Executive Summary.

- a. The goal this year was to optimize health by reducing risk factors through education to improve physical exercise and lifestyle choices. Activities targeted physical activity, osteoporosis prevention and strength training. Statewide, 1,349 low-income youth and 267 low-income adults participated in a series of programs including fitness activities. Most incorporated walking into the program with some providing pedometers and logbooks. The Nutrition Connections program is a major initiative in New Hampshire targeted to limited income families. It includes the Expanded Food and Nutrition Education Program and the Food Stamp Education Program. It's based on the revised

Dietary Guidelines 2000 and the Food Guide Pyramid. This year 493 families graduated from the Nutrition Connections program with 87% making a positive change at the end of the program.

- b. Tufts University's *Strong Living Program*, a research-based strength training program for older adults and the developmentally disabled, was introduced this year to help these individuals live more healthy, independent lives. Sixty-nine (69) seniors and 25 developmentally disabled individuals were involved with most increasing their physical activity.
- c. A successful statewide social marketing campaign targeting food stamp recipients was conducted this year. It included a mailing of three newsletters to 19,000 households. In addition, three, 30-second TV commercials were created to reinforce healthy eating education. In addition, the *Family Lifeskills Program* for individuals making the transition from welfare to work graduated 324 this year. 85% reported positive resulting from the food & nutrition component of the program.
- d. The Nutrition Connections program involved 367 volunteers this year who assisted with nutrition education programs. It's calculated this equals 5 FTE's valued at \$100,000.
- e. Total Expenditures:

Funding - Smith-Lever 3b&c funds - \$266,437
Smith-Lever 3d - \$214,000
State matching funds - \$938,699
County funding - \$329,582
Grants, Contracts, Other - \$544,360
FTEs - 22

Human Health – Val Long & Colette Janson-Sand

A. Brief description of program

The goal of human health activities is to optimize the health of consumers by reducing health risk factors through non-formal educational programs to improve physical exercise practices and lifestyle choices. Human health activities in New Hampshire include physical activity, osteoporosis prevention, and strength training.

B. Short impact/accomplishment summary

State-wide, 1,349 low-income youth and 267 low-income adults participated in a series of programs (four or more) which included fitness activities as an integral part of the program. Most incorporated walking into their programming as it can be done anywhere and at no cost. Many of the programs, which consisted of week-long interventions, included physical activity three times per week. The instructors in the Nutrition Connections Program and Family Lifeskills Program modeled lifestyle behavior for their clients.

Another one of the very successful programs initiated in New Hampshire Cooperative Extension is the Tufts University *Strong Living Program*. The *Strong Living Program* is a research-based strength training program for older adults and the developmentally disabled to help these populations live healthy, independent lives. Strength and balance training improves fitness, mobility, strength, balance, emotional well-being, bone health, and helps to reduce falls. Nutrition Connections Program staff conducted five 12-week *Strong Living Programs* which reached 69 senior citizens. Evaluations revealed that participants averaged a 26% improvement in lower body strength and a 27% increase in balance. One hundred seventy senior citizens learned about osteoporosis through programming and health fairs held in several counties.

Additional fitness activities included the *Walk-Fit* program which was implemented in Rockingham County through a New Hampshire Celebrates Wellness grant. The *Walk-Fit* program for adults provides participants with pedometers, logbooks, and educational materials in the form of weekly tips. Participants set personal walking goals, log their progress, and evaluate their level of physical activity at the beginning and end of this 10-week program. Twenty-five adults from Community Development Services and Great Bay Services, a VNA Diabetes Support Group, and Exeter Healthreach Osteoporosis Support Group completed group programs. Evaluations revealed that most participants increased their physical activity from not exercising or walking regularly, to doing moderate physical activity five or more times a week. One client credits losing 59 pounds over a five-month period by adding walking to her daily routine and eating a healthier diet. Increased energy, less stress, and an increase in fruit and vegetable consumption were also noted. Sixty-three youth from a Portsmouth school serving low-income youth, set walking goals and used pedometers during gym class throughout the school year. Also during this program year, two walking wellness booklets were developed with the assistance of UNH interns to motivate clients to adopt a regular walking habit by providing information on how to get started on a walking program and stay motivated.

- C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, grant funds
- D. **Scope of impact:** State specific

Human Nutrition – Val Long & Colette Janson-Sand

- A. **Brief description of program** Nutrition education activities in New Hampshire are based on the revised Dietary Guidelines 2000 and the Food Guide Pyramid. Educational interventions are typically preceded by a needs assessment process which provides essential information for instructors in the field.
- B. **Short impact/accomplishment summary:** 493 families graduated from the Nutrition Connections Program. 87% graduated with a positive change in any food group at the exit of the program. 82% of graduates showed improvement in one or more nutrition practices (plans meals, makes healthy food choices, prepares foods without adding salt,

reads nutrition labels or has children eat breakfast). 51% of graduates showed improvement in two or more nutrition practices. 28% of graduates showed improvement in three or more nutrition practices. 6% of graduates showed improvement in four or more nutrition practices. And, 3% of graduates showed improvement in all 5 nutrition practices. 74% of graduates showed improvement in one or more food resource practices (plan meals, compares prices, does not run out of food or uses grocery lists). 43% of graduates showed improvement in two or more food resource practices. 20% of graduates showed improvement in three or more food resource practices. And, 6% of graduates showed improvement in all four food resource practices.

A statewide initiative of the FSNEP grant involved a social marketing campaign targeting the food stamp audience. Funded by USDA FNS, this nutrition campaign included mailing three newsletters to each food stamp household (over 19,000 households each time) for a total of 57,000 contacts. A self-mailing evaluation card was returned by more than 1050 food stamp recipients and the evaluations were extremely positive, with 35% self-referring to the Nutrition Connections Program. In addition, three :30 second TV commercials were developed, focus-group tested by 25 low-income clients, and played on cable and commercial channels in August and September 2002. Four cable television stations aired the three commercials a total of 1526 times during the two months for an estimated 415,300 households that had the opportunity to view the commercials. In addition, WMUR, our statewide news channel, estimates that 500,000 households in the state are able to view each broadcast, which yielded millions of opportunities for households to view the commercials during the time they were shown.

4,111 youth participated in a series of nutrition interventions resulting in 75% of 3120 youth from 146 groups now eating a variety of foods; 86% of 3172 youth from 136 groups increased knowledge of the essentials of human nutrition; 86% of 2198 youth from 124 groups increased their ability to select low-cost, nutritious foods, and; 88% of 2875 youth from 142 groups improved practices in food preparation and safety. \$681,563 grant dollars were awarded to New Hampshire this year, as well as \$2,815 contributed for programming. Nutrition Connections had a total of 367 volunteers who assisted with nutrition programming which accounted for 5 FTE at a value of \$100,000.

The Family Lifeskills Program provided nutrition education to 324 individuals who were in the process of making the transition from public assistance to work. 85% of participants had a positive change in any food group at exit from program. Teachers who are carrying on work from the Team Nutrition Summer Institute, this year provided nutrition education in their schools for a total of 3,748 hours with a value of \$149,932. Additional nutrition education efforts included: 48 people reached with the *Making Lifestyle Changes and Healthier Choices* program. Some of the outcomes for this program included eating smaller servings, working out with a TV fitness program, walking 20 minutes a day, eating more vegetables, and drinking more water daily. Another program provided by family development educators was *Soy Delicious*, a program to increase knowledge about the nutritional benefits of soy beans/soy foods. A total of 25 adults participated in this program with 24 increasing knowledge about the

nutritional benefits of soy beans/soy foods, and 18 increasing knowledge about how to purchase and how to prepare soy foods.

- C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds
- D. Scope of Impact: State specific

Goal 4 - Greater harmony between agriculture and the environment

Executive Summary

- a. This goal encompassed a large part of the UNH Cooperative Extension program in FY2002. The natural environment and the state's natural resources are highly valued by New Hampshire residents. Protecting and preserving the environment is 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. Concern is growing about manure storage and nutrient management resulting from federal legislation and pressure from neighbors and town officials about handling and disposal of animal wastes.
- b. Extension's many accomplishments and successes are reported under this goal in the areas of forest management and harvesting, Integrated Pest Management, management of a broad range of natural resources, sustainable agriculture, water quality, and wildlife habitat. Cooperative Extension is well-known in New Hampshire for its expertise and educational programs in these areas. An advantage, too, is the close working cooperation and partnerships between Cooperative Extension, state and federal agencies, and public and private organizations all concerned with natural resources-related industries and protecting the environment. Cooperative Extension's Forestry & Wildlife program focuses on sustaining forests that support the state's \$1.7 billion forest products industry. It educates citizens to make informed natural resources decisions by providing technical assistance, promoting forest stewardship and increasing knowledge and skills in natural resources protection and management. The Community Conservation Assistance Program assists communities and conservation commissions with land and water conservation planning projects. This year 24 towns and conservation groups were assisted in developing conservation inventories, conservation planning and land acquisition. The economic impact of proper manure management is reduced fertilizer purchased for crops, reduced litigation from pollution problems and less money spent to clean up streams and treat water for public consumption.
- c. The Integrated Pest Management program assists growers in handling pest problems while reducing dependency on chemical insecticides, and maintaining or improving crop profitability. Primary focus of this program is commercial crop production with efforts this year involving apples, greenhouse crops, strawberries and field corn. Nutrient management is another major NH effort as it can have negative effects on both the

environment and profitability. The state has about 102,000 acres in cropland with most receiving some type of nutrient application. Educational programs include soil testing and nutrient recommendations, use of cover crops and composts, application of organic residues and phosphorus management.

- d. New Hampshire is home to 15,000 species of plants and animals. The *Living Legacy Project* is a partnership of public and private agencies working together to guide the protection of critical wildlife habitats, outstanding natural plant communities, lakes and ponds, rare plants and animals, and other ecologically significant lands and waters. The goal is to integrate these ecological values into land and water conservation, land use planning, and resource management decisions. Cooperative Extension also conducts the Pesticide Applicator Program responsible for training commercial and private pesticide applicators to be certified and re-certified by the state.

- e. Total Expenditures:

Funding - Smith-Lever 3b,c&d - \$399,656
State matching funds - \$1,408,049
County funding - \$494,373
Grants, Contracts, Other - \$816,539
FTEs - 34

Agricultural Waste Management - John Porter

- A. **Description:** Federal legislation dealing with feedlot run-off is causing commercial farmers to be concerned about manure storage and nutrient management plans. Backyard operations with horses, sheep, goats, etc., are under pressure by neighbors and town officials to properly handle animal wastes. The Agricultural Waste Management program supplied engineering expertise to help solve these problems as well as provided information to producers about how to comply with regulations. In addition, there has been research to look at crop management practices which can better retain manure nutrients in the crops and lessen run-off.

- B. **Impact/Accomplishment:** The economic impact of proper manure management is reduced fertilizer purchased for crops, reduced litigation from pollution problems and less money spent to clean up streams and treat water for public consumption.

In New Hampshire the manure management program has involved engineer consultation visits to help producers design adequate storage facilities for manure. The cost of the visits were covered by a \$9,500 grant. Eight producers were given advice on manure storage designs and were saved over \$20,000 in construction errors. Many of these projects were done in cooperation with Natural Resources Conservation Service (NRCS).

As urban sprawl reaches out to rural communities in N.H., there continues to be increased conflict with agriculture and rural residents. Material was provided to two goat owners

and five horse owners to help them follow best management practices that would make their operations environmentally sound. One result of these contacts was that one goat operation was allowed to continue to operate after being threatened with closure by the town

The impact of the manure management program has been felt statewide. Research and ideas have been integrated from Cornell University, Vermont and Massachusetts. This program has also involved attending regional meetings such as the Dairy Practices Council and ideas have been exchanged regionally to help make new technology available for handling waste management problems.

- C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds
- D. Scope of Impact: Multi-state

Biodiversity - Ellen Snyder

A. Program Description: The UNH Cooperative Extension Biodiversity Specialist leads the NH Living Legacy Project (NHLLP). The NHLLP is a public-private partnership working with land trusts, communities, landowners, researchers, agencies and organizations to guide the protection of critical wildlife habitats, outstanding natural plant communities, lakes and ponds, rare plants and animals, and other ecologically significant lands and waters. The goal is to integrate these ecological values into land and water conservation, land use planning, and resource management decisions at the state, regional and community level.

B. Accomplishments 2002

The 171,500 acres recently protected in the Connecticut Lakes region included a 25,000 acre natural area. The location of the natural area was determined using the ecological criteria developed through the NHLLP and brought into the decision making by several of the Project partners.

The Land and Community Heritage Investment Program (LCHIP) was created in part because of the science-based information brought to state legislators by NHLLP partners. The data showed the development pressure and corresponding impacts on natural habitat and open space. The Living Legacy ecological criteria are included in the list of criteria used by the LCHIP Board to decide on land protection projects.

The Living Legacy Project ecological criteria and expertise are being used in several conservation planning projects including: an assessment of significant wildlife habitat in the Lower Lamprey River and Piscassic Rivers; an Office of State Planning initiative to identify wetland mitigation sites in the seacoast, and land trust partnership in the Piscataquog and Ammonoosuc Watersheds to identify ecologically significant lands.

Science-based resource materials developed by Project staff and partners are used and referred to repeatedly by conservation groups and initiatives in New Hampshire and

beyond. The documents provide the foundation for many land conservation projects in the state.

The Project Coordinator reached more than 1,000 people (natural resource professionals, landowners, natural resource volunteers, conservation commissions, land trusts, teachers, students, conservation groups and the public) with biodiversity information via presentations

Educational material was provided and updated throughout the year on the NHLLP web page: <http://ceinfo.unh.edu/forestry/documents/nhlivleg.htm>. Five issues of the NHLLP electronic newsletter were written and distributed to over 500 readers.

Numerous papers, articles, and posters on topics such as: *Guiding Biodiversity Conservation, Identifying Critical Wildlife Habitat, Criteria for Identification of Special Sites, and Biodiversity and the Web of Life* were written for distribution through partner newsletters and programs.

- C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, grant funds
- D. **Scope of Impact:** Integrated Extension and Research

Forest Resource Management - Karen Bennett

- A. **Program Description:** Since 1925, the University of New Hampshire Cooperative Extension Forestry and Wildlife Program has been caring for New Hampshire's forests. Our mission is to educate New Hampshire's citizens about rural and urban forest environments, enhancing their ability to make informed natural resource decisions. Ten Forest Resources Extension Educators, four statewide Extension Specialists (Forestry, Forest Industry, Wildlife, and Biodiversity), a Land and Water Conservation Educator, and a Community Forestry Volunteer Coordinator provide technical expertise and information about managing forest and community resources to people in each county across the state. Target audiences include forest landowners, natural resource professionals, communities, volunteers, NH forest-based industries, and the public. Extension provides technical and educational assistance to these audiences through site visits, publications, workshops and seminars.
- B. **Impacts:**
 - Provided technical assistance to encourage landowners to adopt environmentally sound practices and to improve management**
 - Extension provided on-site assistance to 1,853 forest landowners influencing approximately 42,950 acres.
 - The Coos County Extension Forester provided technical assistance to land managers responsible for over 139,000 acres of land in the northern part of the state.
 - Increased the level of sustainable forest stewardship activities occurring in NH**

- Over 2,000 forest stewardship plans have been written for NH landowners by public and private sector foresters since 1990. These plans cover over 520,000 acres or approximately 15% of the private forestland in the state.
- Extension Educators encouraged over 350 landowners (owning approximately 25,000 acres) to continue or expand their management using the assistance of a private licensed forester.

Increased participant's knowledge and skills regarding natural resource management and protection

- Extension provided over 310 natural resource related seminars, workshops and programs throughout the state – *the equivalent of nearly one program every day of the year* – reaching nearly 14,000 participants.
 - Forty-seven of these programs were offered to natural resource professionals reaching over 2,300 participants.

Increased public awareness about New Hampshire's forest resources:

- Extension's forestry and wildlife web pages, found at <http://ceinfo.unh.edu>, were accessed over 10,000 times this past year.
- Extension's *Habitats* newsletter reached over 4,600 natural resource professionals, landowners, volunteers and educators.
- Natural resource information was distributed through statewide and county Extension newsletters that collectively target 35,000 to 40,000 people.

C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds

D. **Scope of Impact** - State Specific

Global Change and Climate Change - Sharon Meeker

A. Description: The public is mightily confused by the various reports they get through the media about global climate change. Now, with the publishing of the *National Environmental Assessment of Climate Change* in the US and the regional versions of this report, coupled with the *2001 International Panel on Climate Change*, there is conclusive evidence of human influence on our changing climate. It is important to begin to address this issue with the best, up-to-date information on the subject. The Marine Docents are positioned to help with this effort.

Objectives: The Global Climate Change Education program this past year has been a modest one, with three objectives:

- To bring global climate change education materials and information to educators and continue to assist them as they fit the subject into the NH Frameworks for science and social studies.
- To have at least five docents become pursue their interest in Global Climate Change and create both a one-hour program and a possible course for adults
- To continue education of the entire Docent program on the subject and offer opportunities to learn more through their Wider and Deeper Experiences

Program.

-To assess funding possibilities for our global change projects.

- B. Impact: The Docent program has distributed materials to 50 or more educators through exhibits at state and regional teachers conferences and upon request. We have developed a small data base of interested educators, including those who attended the summer course we offered in 1998, and keep teachers informed of new opportunities to extend their knowledge through direct contact and also through our Marine Education web page.

Five docents have been attending informational meetings held by the New England Global Change Collaborative for Museums, Aquariums and Science at UNH and at the US Army's Center Cold Climate for Research and Education in Hanover, NH. In their first attempts to create a one-hour program on Global Climate Change, they decided to take a global systems approach and developed a 100-page primer which includes all the major earth systems: the hydrosphere, atmosphere, cryosphere, biosphere, and anthrosphere (a recent addition in the literature which details human influence on the other systems). They have studied the subject extensively and now have the outline of a course which they can teach to adults and to high school students. We will be proposing the course to the Active Retirement Association as a pilot effort. Then, if successful, we will try to get it listed with the College for Lifelong Learning and/or Division of Continuing Education. We are still in the process of detailing the NH Science Frameworks that are supported by the course.

- C. Source of Funding: Grant funds

- D. Scope of Impact: State specific

Intergrated Pest Management – Alan Eaton

- A. Description: The Integrated Pest Management program is primarily directed to people in commercial agriculture. NH growers are caught in a difficult situation. Consumers expect products (fruit and poinsettias for example) that are free of pests and their blemishes. In many cases, minor blemishes result in dramatically lower crop prices. At the same time, consumers strongly prefer that NH growers not use chemical pesticides. They worry about residues, contamination of the environment, drift, and risk to people and animals. Growers need help stepping down from this pesticide treadmill, while still maintaining crop quality and yield. The IPM program offers just this kind of help. We teach growers to take a more holistic approach to pest problems, combining preventative measures, monitoring, and various controls. We (extension specialists, county staff, and researchers) collaborate to achieve the impacts listed below. Many efforts are the result of multi-state collaboration. We write publications, conduct workshops, do research, make farm visits, and offer regular updates of pest conditions using automated telephone, worldwide web, and mail.

B Impact: The apple program has been a major area of emphasis since the beginning of the IPM program in 1978. In 2002, we impacted virtually all NH acreage (2300) of apples. Growers (on 100 farms) reduced the number of insecticide, fungicide and miticide sprays by approximately 45% (compared to pre-IPM records), worth at least \$100/acre on 2800 acres. Simultaneously, they reduced the incidence of pest injury on apples by 6% (compared to pre-IPM levels) on the state's 548,000 bu. apple crop. This is equal to the price difference between #1 and extra fancy grades (\$3) on 32,880 bushels (\$98,640 statewide).

A small part of the apple impact came from the introduction of a predator mite from New York. We continue to move the mite to new orchards, but it spreads slowly. Once the mite is established in an orchard, the grower no longer needs to spray summer miticides (ever). The mite is now established on at least 8 farms.

We initiated another biological control program this year, by introducing a parasite of European apple sawfly. It will take several years to see if we are successful, but hopefully this will permanently reduce the need to spray for this insect.

Greenhouse growers also benefit from this approach. We run three annual workshops, and soon will complete a greenhouse IPM pocket guide for NH/VT/ME growers. Our current IPM research is focused on barriers (instead of pesticides) to control fungus gnats. Backyard growers also benefit from this work. This year we upgraded many of our on-line gardening publications to include the IPM approach. We also wrote and published a new one titled "Think Before You Buy Pesticides", available at our website <http://ceinfo.unh.edu>

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

D. Scope of Impact: Multi-state

Land Use - Frank Mitchell

A. Situation: Among the most significant risks to New Hampshire farm, forest and other open space lands is the rapid loss of land to development. According to New Hampshire's Changing Landscape, a 1999 study released by the Society for the Protection of NH Forests and the NH Chapter of the Nature Conservancy, New Hampshire is losing critical forest and agriculture lands to development. New Hampshire, the fastest growing state in the Northeast, currently loses about 15-20,000 acres per year to development. Farm land declined 20% from 1974 to 1997 with over 83,800 acres lost to other uses. Long-term protection of farm and forest land prevents the conversion to uses that can lead to degradation of land and water quality. The following priority problems identified by the NH Comparative Risk Project, a public/private partnership established to study and rank environmental risks, can be reduced through land and water conservation, particularly if thoughtfully planned using scientifically derived resource information: degradation of surface water habitat, loss of land habitat from development, physical alteration of water and shoreland habitat, loss of water habitat (filling, draining) and degradation of forest habitat by fragmentation. Communities that protect open space benefit through a

heightened sense of community character, water quality and habitat protection, reduced service costs and scenic values.

During the 2002 reporting year, Extension staff working with CCAP assisted 24 towns and conservation groups with natural resources inventories, conservation planning and land acquisition. A total of 1836 people were directly reached by programs. A brief summary of community accomplishments follows:

- Approximately 200 people participated in a New Hampshire land conservation conference (Land & People, Conservation Tools for a Growing State) co-sponsored by the Center for Land Conservation Assistance and UNH Cooperative Extension.
- Three communities involving a total of 65 participants (the # of people at the initial presentations) have started working towards comprehensive natural resource and land conservation strategies following the *Dealing with Growth* presentation by the Natural Resources Outreach Coalition, of which UNH Cooperative Extension is a part. (Exeter, Newfields and Stratham).
- Two communities involving 20 participants have worked on developing education and outreach programs to educate the public and develop stronger community support for open space and natural resource protection. (Dover, Exeter).
- Seven communities involving 116 people received assistance with open space protection/land conservation projects (Belmont 20, Brentwood 40, Deerfield 10, Pelham 20, Exeter 10, Newfields 8, Stratham 8)
- 118 participants from 69 communities were trained in the use of the Natural Resources Inventory and Significant Wildlife Habitat Guides (Fall 2001 workshops).
- One community involving 8 participants was trained in Wetland Evaluation using the *Method for the Evaluation of Nontidal Wetlands (NH Method)*. (Orford)
- One community has developed a comprehensive natural resource conservation strategy on a 1,350 acre parcel of land acquired by the town in 2001. Twelve people are directly involved through a Stewardship Plan Committee. Dozens of other residents and town officials have participated in other ways in this project. (Barrington)
- Four communities have established open space groups (involving a total of 66 people) to work on land conservation issues (Deerfield, Brentwood, Stratham and Newfields)
- Four communities (50 participants) received training in natural resources inventories and conservation planning (Sugar Hill 7, Mont Vernon 20, Rumney 8, Temple 15)
- One community is using the *Following the Flow* procedure to monitor water resources (Stratham)
- 105 participants from 22 communities were trained in land conservation and landowner communication techniques through two series of workshop sessions (Bear Paw and Summer Land Conservation series).
- One watershed group has developed an ongoing water quality monitoring program involving approximately 15 people. (Green Mtn).
- Eleven communities completed resource inventories, wetland assessments and other conservation projects with assistance from the UNH Senior Projects Course.
- In Rockingham County, the Land and Water Conservation Educator gave 24 workshops on land conservation and estate planning to communities, attended by more than 400 participants.

B. Economic Impacts:

Both communities and landowners can benefit economically from conserved farm and forest land. Several studies in New Hampshire, including "cost of community services" reported by UNH Cooperative Extension in *Does Open Space Pay?*, demonstrate that open space land uses such as agriculture have a positive revenue to community service cost ratio, whereas residential land uses cost communities more than the property taxes generate. There is also a correlation in the state between higher property taxes and commercial and industrial development. Land conservation can also be economically advantageous for landowners, primarily through federal income tax deductions, reduction of estate taxes or by selling development rights. The economic incentives can improve the landowner's ability to pass farm and forest land down to the next generation while minimizing the financial burden of doing so. Sale of a conservation easement, for example, can be a boost to farm businesses in need of capital improvements. Permanently protected land may also qualify for reduced property taxes.

Environmental Impacts:

Research on development and water quality such as that reported by the Center for Watershed Protection in Maryland, appearing in *The Economics of Urban Sprawl*, indicates that "subtle and profound changes in stream quality have been reported to occur when impervious cover exceeds 10%." This information reinforces the concept that protecting farm and forest land from development has direct and substantial water quality benefits. In a paper titled, *Working Farms and Forests Hold the key to a Sustainable Future*, Audubon Society of New Hampshire Vice President Richard Cook states that "...we must rely on agricultural and other managed lands to provide the habitats needed to support plants and animals that require grasslands and edge habitats where woodland and open areas meet... As the pressure of population growth and development increases, New Hampshire's working farms and forests become ever more critical to quality of habitat for wildlife and humans alike." Conserved agricultural and forest land can contribute to local or regional efforts to establish "reserves" of protected land that include agricultural lands, managed forest land and wild lands.

Societal Impacts:

Agricultural and forest land conservation has important positive impacts for society. For farm and other rural families, it can improve the ability to pass land to subsequent generations by reducing the value of the land to reflect only agricultural and forestry uses rather than highest development value. Farm and forest land conservation also ensures that these activities will be able to continue on the property as it passes from generation to generation. It assures a land base from which agriculture and forestry can operate indefinitely, supporting local economies. This value is recognized by the NH office of State Planning which states in its publication *Preserving Rural Character: The Agriculture Connection* that, "As communities become more developed, surviving parcels of farm land which may not constitute "a farm" increase in value to local farm enterprises that need more land, or for start-up farming opportunities. Access to additional land may be critical to the viability of farm businesses in high-cost land areas like much of New Hampshire."

- C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds

D. Scope of Impact: State specific

Nutrient Management – Tom Buob

- A. Description: Nutrient management issues extend across all commodities from field corn to greenhouse tomatoes. Since the situations vary by commodity, the approaches employed to address a specific concern will vary. Dairy, livestock and vegetable enterprises are faces 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. The expanded use of mycorrhizae fungi in shade tree installations will result in better P availability and lower application rates. The continued support and improvement of the current Soil Testing Program is essential for this effort to proceed.

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). Increasing the expertise of the UNHCE Ag staff and producers in different commodity areas is the first step in a long-term educational program. Establishing research locations and links with other states and organizations will provide a basis for future expansion. The attempt to address the risk of nitrate leaching to groundwater will include the use of PSNT and a nutrient credit system. The issues of P movement to surface water will be addressed thru the development of a more accurate P Site Index for the State of N.H.

- B. Impacts: Development of collaborative relationship with ARS researchers and staff
- Research to identify the soil test factors most closely related to offsite P movement in N.H. soils.
 - 75% of STP levels are \geq High; this places NH in a similar position to other states with a much more intensive agriculture
 - multi state collaborative efforts have been developed and are being enhanced
 - two demonstration sites have been identified for on farm research efforts
 - buffers were established to observe (and monitor) their effects on sediment and nutrient transport; various mixes of shrubs and sod were established to observe their ability to trap sediments and nutrients
 - nutrient credit research has been establish and will hopefully be expanded
soil test recommendation system is being revised and updated to account for nutrient credits
 - Data collection effort has indicated that over feeding of P (dairy cows) range from 5-50% above new NRC recommendations.
 - Nutrient Management Field Day provided training and update for 24 UNHCE, DES, NRCS and Conservation District Staff.
 - Workshops provided education and training on nutrient management plans and issues to 85 farmers/producers/growers around the state.
 - The lack of funding has required a major effort in grant writing to allow for this program

to continue.

- Nutrient monitoring with 24 growers (6 greenhouse tomato and 18 bedding plants) resulted in improved fertilizer practices, improved plant quality and reduced costs.
- Installation of drip irrigation systems by 4 vegetable and small fruit growers resulted in a reduced risk of nitrate leaching; use of shade trees inoculated with mycorrhizae resulted in increased P availability and lower application rates.

C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds

D. Scope of Impact: Multi-State Extension and Integrated Research and Extension

Pesticide Application – Stan Swier

A. **Description:** The Pesticide Applicator Training Program (PAT) has the responsibility to train commercial and private applicators to be certified and recertified by the NH Division of Pesticide Control. Certification requires the passing of a test covering pesticide safety, IPM, regulations, worker protections standards, pesticide storage, environmental protection, calibration, labeling, and knowledge of the target pest. Recertification for private applicators requires 15 hours of updated additional education every 5 years to maintain certification. Commercial applicators require 12 hours of additional education for every category every 5 years. Without certification and recertification, farmers, landscapers, and pest control operators cannot use any pesticides.

B. **Impacts/Accomplishments:** To meet the need of certification and recertification, training manuals are produced and sold to the applicators. The county extension educators either put on classes or help tutor private applicators. In FY02, over 200 applicators were initially certified and 35 meetings were held to help recertify over 1000 applicators.

Without the PAT program, our 500 certified farmers could not apply any pesticides for pest control, losing millions of dollars from crop losses. Our 1000 commercial applicators need the PAT program to prevent millions of dollars in losses from landscape and structural pests. The PAT program also improves human health by reducing the risk of exposure to disease vectors, as well as to the pesticides themselves. The PAT program also saves millions of dollars in environmental damage from the misuse of pesticides by teaching applicators how to use them safely.

C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds

D. **Scope of Impact:** State Specific

Water Quality – Julia Peterson

A. **Description:** Water is essential for life and its protection is critical. Stormwater runoff carries pollution 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 nonpoint source pollution depends on education and behavior changes that put water quality protection at the forefront of home, farm, workplace and municipal practices.

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 the practices that affect water quality. 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.

B. Impacts:

Increased audience knowledge

- Greater individual knowledge in water quality monitoring concepts, pond care, land protection for water quality benefits, water conservation, riparian buffer guidelines, home and farm assessment, estuarine characteristics, estuarine research and in identifying wetlands.
- Greater youth knowledge about watershed concept, nonpoint source pollution, groundwater principles and storm water pollution prevention.

Changes in audience attitude

- Increased willingness to adopt water quality friendly home, yard and farm care practices.
- Increased interest and concern for protection of coastal environments.

Increase in individuals' skills

An increase in the number and skills of trained water quality monitoring volunteers in both fresh and salt water systems contributing to an 8-10% increase in sampling statewide and a 25% increase in the Lakes Region.

Increase in community capacity

- Greater capacity of conservation group's ability to conduct nutrient monitoring.
- Continued expansion of "neighbor to neighbor" effect of monitoring programs in which trained volunteers educate other members of their associations, commissions and towns.
- Greater capacity of New England wide monitoring collaborative through NH participation. (Multi-State)
- Greater capacity of other New England states to expand training opportunities for watershed stewardship collaboratively. (Multi-State)

Improved decision maker capacity

- Improvements to NH source water protection program and regional TMDL model by incorporation of research results on statewide nutrient coefficients. (Integrated Res/Ext)
- Increased capacity of NH Department of Environmental Services to detect harmful algal toxins and use screening tools. (Integrated Res/Ext)
- Increased natural resource scientist, educator and decision maker awareness nationally of integrated GIS watershed analysis approach. (Integrated Res/Ext & Multi-State)
- Anticipated improvement in decision making about riparian buffers based on applied research of water quality benefits. (Integrated Res/Ext)

Changes in audience behavior

- Road agents installed more effective drainage culverts anticipated to moderate erosion

and nutrient loading problems. (Integrated Res/Ext)

Changes in policy/decision making

- Acceptance of volunteer monitoring QAPP protocols by EPA.
- Volunteer collected data is used by state/fed agencies to help determine shellfish bed openings and closures, coastal restoration project budgeting and in 305B report to Congress.
- Additional state and federal funding for volunteer monitoring programs to assist with local habitat restoration, stormwater management, and data collection.

Changes in economic conditions

- Savings to communities in water quality sampling costs. (over \$9000)
- Additional earnings to local environmental consulting firms and labs by providing low cost technical and laboratory assistance to them. (\$150,000 - \$250,000)
- Potential increases in property values (and tax revenues) around lakes because of improved water quality associated with WQ assessments and education on preventing degradation.

Changes in water quality

- Evidence of 80-95% reduction in nutrient load and nutrient concentrations (in Chocorua Lake) as a result of roadside BMP implementation

C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, grant funds

D. **Scope of Impact:** State specific

Wildlife Management - Darrel Covell

A. Brief Description of Program

New Hampshire is home to more than 10,000 species of wildlife, including mammals, birds, reptiles, amphibians, fish, insects and other invertebrates. This rich biological diversity depends on New Hampshire's forest, field and wetlands habitats for survival. New Hampshire's population has nearly doubled in the last 30 years. This growth and associated development has placed increasing pressures on the landscape. Studies estimate that approximately 13,000 acres of habitat are lost to development each year in NH. In addition to the direct loss of habitat, continued land development leads to greater fragmentation of natural habitats with resulting adverse impacts to fish and wildlife populations. The protection and enhancement of essential habitats is central to sustaining New Hampshire's fish and wildlife populations.

With a majority of the state's land in private ownership, the collective decisions of private landowners and community-decision-makers have a major impact on wildlife and their habitats. Since 1985, NH Fish and Game and UNH Cooperative Extension have worked together to provide a Wildlife Habitat Conservation Program. Through this program, a Wildlife Specialist provides technical information and assistance to landowners, natural resource professionals, community leaders, land use planners, and conservation groups to help them identify, manage and protect critical and significant fish and wildlife habitats.

B. Accomplishment Summary for 2002

Land Management Assistance: This year, the Wildlife Specialist provided on-the-ground habitat management recommendations on 7 properties totaling over 2,300 acres. Two of these parcels were municipally owned lands in the towns of Rochester and Whitefield.

Training for Natural Resource Professionals and Land Managers: This year, workshops were held reaching nearly 700 resource professionals. Workshop topics included: managing early successional habitat, beavers and habitat management, forest fragmentation, identifying and protecting significant wildlife habitats, and mapping wildlife habitat using GIS data.

Community Conservation Planning: In addition to providing training to natural resource professionals and land managers, the Wildlife Specialist presented a series of programs on *Identifying and Protecting Significant Wildlife Habitats* and *Mapping Wildlife Habitats Using GIS Data* to town conservation commission members, local and regional planners and conservation group members.

Information and Education: The Wildlife Specialist created and edited two issues of the Extension Forestry and Wildlife and Water Resources newsletter, *Habitats*. The newsletters were distributed to over 4,000 natural resource professionals, teachers, landowners and community decision-makers. Wildlife habitat management information was presented to landowners through numerous workshops, tours and slide programs.

NH Coverts Project: Begun in 1995, the NH Coverts Project promotes wildlife habitat conservation and forest stewardship through volunteer education and outreach. Each year, 25 new volunteers are trained during an intensive 3 1/2 day workshop. These volunteers then work on projects in their local communities. There are currently over 160 active volunteers who reach thousands of their neighbors and other landowners each year through activities such as woodland tours, articles and youth programs.

Connecticut Lakes Headwaters Partnership Task Force: This year the Wildlife Specialist continued to serve on the Technical Committee of the Connecticut Lakes Headwaters Partnership Task Force. This partnership resulted in the long-term protection of 171,500 acres of International Paper Company land in northern New Hampshire. The Wildlife Specialist prepared four technical reports on hunting, fishing, trapping and wildlife viewing. He also provided technical assistance regarding the ecologically appropriate location of a 25,000 acre natural area as a member of the Technical Committee.

C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funds

D. Scope of Impact: State specific

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

Executive Summary

- a. UNH Cooperative Extension conducts a wide array of programs under this national goal. These include implementation of a State Strengthening grant for work with youth and families at risk; programs targeted to limited-income/low-income families that include Nutrition Connections and the Family Lifeskills Program which is part of NH's welfare reform effort; parenting programs offered through various deliveries including a program for incarcerated parents and their families; family finance education for various audiences including a volunteer counseling program for seniors needing assistance with Medicare and Medicaid insurance; community development including Extension's successful Community Profiles program; and youth development programs including traditional 4-H programs, 4-H camping and the Teen Assessment Program. Another key aspect of this goal is the extensive use of trained volunteers in implementing many of UNH Cooperative Extension's program.
- b. Key successes described in detail below include: establishing community-based youth programs that impact and provide support for at-risk families; continued accomplishments in preparing youth and adults on public assistance for the workforce; safety education for loggers, sawmill operators, municipal workers and landowners; continued contract funding from the State Dept. of Health and Human Services for Extension to provide the Family Lifeskills Programs for individuals in transition from welfare to work; parenting education delivered through a comprehensive newsletters series, workshops conducted by certified volunteers, and a program conducted for parents in prison with axillary support for their families; financial education programs targeted to farmers, midlife and older women, families with debt, families unable to manage finances, and elders needing assistance dealing with Medicaid and Medicare insurance; continued success and demand from new communities for Extension to conduct a Community Profile; and success in teaching youth life skills, project skills, and in providing positive, healthy learning experiences through 4-H clubs and activities, summer residential camping programs and after-school program sites.
- c. Significant impacts have been achieved for all of the programs identified and are described below. Based on these impacts all programs have been continued in FY2003.
- d. We are proud of the accomplishments reported under this goal that are described below. Also significant is the impact achieved through the involvement of over 4,500 volunteers during FY2002. The involvement of volunteers is a high priority for UNH Cooperative Extension and we have mobilized volunteers to conduct a wide variety of programs. These include lake and bay water monitoring, teaching landowners to protect wildlife habitat, master gardeners who conduct community service projects or provide other educational services, 4-H leaders, marine education docents, parenting educators, and trained counselors who advise seniors on health insurance. Another very significant accomplishment in FY2002 is expanding operation of Extension's Family, Home & Garden Education Center. Several years in the planning, the Center opened in January 2000. The Center's Info Line is staffed by 50 extensively trained volunteers who responded to 17,000 callers in 2002 seeking information and assistance with home, garden and related issues.

- e. Total Expenditures:
Source of Funding - Smith-Lever 3b&c - \$818,345
State matching funds - \$2,883,149
County appropriations - \$1,012,289
Grants, Contracts, Other - \$1,671,962
FTEs - 69

Agricultural Financial Management – Mike Sciabarrasi

- A. Description: Agricultural financial management and development of business plans are essential to the success of exiting and new agricultural firms. Farms must be able to assess whether they are meeting goals with respect to profitability, efficiency, liquidity and solvency. New farms and farms considering major changes must be able to realistically evaluate and project budgets for alternative enterprise combinations and size scenarios.

Business planning and financial management workshops utilize university marketing and management specialists as well as bankers and industry experts from across the state and region. In many programs, human resource and family development experts often present material on the human aspects of a family firm, such as identification of goals and objectives and development of a family budget. Marketing specialists help with assessing market potential and forecasting sales. This mix of experts provides participants with a well-balanced and comprehensive approach to business and financial planning.

“Ag-Biz” farm management programs are multi-state efforts that teach farmers business and financial management skills. These programs are run jointly by the Cooperative Extension staff in New Hampshire and Vermont. Participants learn about balance sheets, cash flow statements, profit projections and spread sheets.

Individual consultations and invited presentations represent more focused and targeted efforts.

- B. Outcomes
- Eighteen farmers completed the “Ag-Biz” course series, leading to increased understanding of business records and financial projections
 - Thirty-five apple producers improved their ability to project sales and evaluate financial condition
 - Fifteen farmers developed or improved upon farm business plans
 - Twenty-six beginning farmers adopted better financial record systems
- C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds
- D. **Scope of Impact:** Multi-state

Child Care/Dependent Care

- A. **Description:** During the 2002 program year, UNH Cooperative Extension offered the Pennsylvania State University's satellite workshop program *Better Kid Care* in six counties. Program topics included: Secrets for Preventing Problem Behaviors, Food: It's More Than Just Eating, Music for the Nonmusical, Using Computers in Child Care - Parts I & II, Ups & Downs of Outdoor Play, Toddlers: Terrible or Terrific?, and Child Care for Mixed Ages. Additional workshops were presented to child care providers in selected counties, including Childhood Obesity, Child Care – Is it the Job for Me?, Partnering with Parents, and Making Healthy Lifestyle Changes & Healthier Choices.

Additionally, Extension Educators from seven counties were trained to conduct interviews for a research study to assess the needs of informal caregivers in the state. The study, conducted in conjunction with the NH Institute for Health Policy and Practice, was to be conducted in the FY 03 program year. The goal is 26 interviews per county, for all ten counties of NH. Seven counties will have these interviews conducted by Cooperative Extension staff.

- B. **Short Impact/Accomplishment Report:** Forty-eight workshops were held reaching approximately 500 providers of children. Of those completing end of workshop evaluations, 81% stated they learned new information by attending the program and 81% found the information to be relevant. Participants indicated they would use the information now (76%) or in the future (86%), and use or refer to the handouts again (86%). Comments from providers included:

- "I will integrate a computer into my preschool classroom in a practical way."
- "I will introduce computer technology to enhance preschool themes and programs."
- "I will check on some of the playground safety dimensions,"
- "I will rethink outdoor games and add more mulch."
- "Use specific language redirectives toward behaviors that are undesirable."
- I will use more positive words or phrases, react less, and stay calm."

All impact of the Informal Caregivers Study will be reported for FY 03. The only aspect of the study conducted in FY 02 was training the interviewers.

- C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds
- D. **Scope of Impact:** State specific

Children, Youth and Families at Risk/4-H Camps – Ann Dolloff

- A. **Description:** 4-H Camps operated two sites in the state during the summer of 2002. Eight hundred and thirty-nine individual youth attended a NH 4-H Camp, with a total of

1220 camper weeks. One hundred and eighty-three campers were identified as youth at-risk and with disabilities (22%). NH 4-H Camps receives significant funding from organizations around the state which support families who do not have the resources to send their child to camp, such as NH Department of Children, Youth and Families, School Administrative Union #19, Riverbend Community Mental Health, Inc., Listen, Inc., and Developmental Services of Strafford County. The majority of sponsored youth is at-risk or has specific disabilities.

- B. **Impact:** In 2002, NH 4-H Camps received \$59,645.00 in “camperships” from 64 different organizations, supporting one-third of all campers who attended camp. Positive collaboration with NH school districts enabled six youth with significant disabilities to attend camp, with 1:1 aide, funded by their individual school district through extended school year funding. This is an increase of 200% from 2001, with the campers from 2001 returning in 2002. The aides received a pre-camp orientation to the site and programs. The reputation of NH 4-H Camps as an inclusive and accommodating environment contributed to the significant growth of referrals and support received from special education department and school districts statewide. It is anticipated that NH 4-H Camps will support 10-12 youth who receive extended school year funding in 2003. Through the support of one of the collaborating school districts, Crisis Prevention Intervention (CPI) training was provided for six camp staff who worked with one camper. This training provided valuable information and strategies to work with all youth when behavior escalates into anger and aggression. This training was offered free to camp staff, at an estimated cost of \$3,000.00. This training directly impacted the successful eight week experience a 10 year old boy with significant special needs had while enrolled at Bear Hill 4-H Camp. Camp staff *never* had to intervene by physically restraining him (which is a current occurrence during his school year). Because of the philosophy and program emphasis of inclusion in NH 4-H Camps, Bear Hill 4-H Camp was awarded the Steelman Award, by the School of Health and Human Services at the University of New Hampshire. This award directly supports an undergraduate in the School to pursue employment in an agency related to her/his field of study. Kristi Reardon, a therapeutic recreation major in the Department of Recreation Management and Policy, was employed at Bear Hill 4-H Camp as an intern with the Camp Behavioral Specialist, to provide support for campers at-risk and with disabilities. Kristi’s experience directly assisted 10 youth that required her guidance and intervention to be successfully integrated into the camp programs this summer. Kristi will be returning in the same position for the camping season 2003.

C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, user fees

D. **Scope of Impact:** State specific

Children, Youth and Families at Risk/Teen Assessment Program - Charlotte Cross

- A. **Description:** Youth face many challenges as they grow and develop. While most adolescents manage the transition from the world of childhood to adulthood successfully,

some youth have problems negotiating these changes. Many young people in New Hampshire engage in risky behaviors. The prevention of these risk behaviors among our youth is an excellent investment in the future. If left unaddressed, these behaviors can lead to greater societal costs.

The Teen Assessment Project (TAP) strives to support youth, strengthen families and build strong communities. The first phase of the project involves building a local youth coalition. This group develops and administers a survey to youth in grades 7-12 about teen concerns, attitudes and behaviors, both positive and problematic. Results are shared to increase community awareness and knowledge of teen issues. Community education includes a parent newsletter series containing local data, a comprehensive statistical report and abstract, community forums, youth and family programs and education through media outlets. Communities strategically plan and collaborate to support positive youth development, addressing areas needing attention.

B. Impact: To date, TAP has surveyed 24,303 youth in 22 different school districts/regions representing 89 communities. In FY '02, 1,736 students were surveyed in 2 school districts including 11 communities. Survey results were featured in the media creating community awareness of youth issues. Adolescent data sharing and related programs reached 2,550 youth and adults. A newsletter series entitled, "*Whose Kids?... Our Kids!*" was distributed to the parents of 1,725 youth in the following school districts: Pemi-Baker (Plymouth area), Raymond and Lin-wood (Lincoln/Woodstock). Newsletters were also sent to 850 school personnel, community members and youth professionals. Six months after mailing the last newsletter, a random sample telephone survey was conducted of middle and high school parents (N=87) in one school district. These results show:

- 79% are now more aware of youth issues in their community
- 58%-82% increased their knowledge of youth issues such as parent-teen communication, substance use, sexuality, and depression and suicide
- 42%-62% reported increased parent-teen communication about a variety of adolescent issues
- 81% shared their own opinions and values about risky behavior with their teens
- 35% increased parental monitoring
- 46% wanted to become involved with others in the community to address teen issues.

A random sample survey of parents in a second school district showed similar results. TAP provides youth data that enables communities to secure funding for local initiatives. To date, over \$9,000,000 has been received in the form of grants and awards to complete TAP in communities throughout the state and to initiate new programs as well as enhance existing programs. In FY '02, \$300,000 was awarded to conduct TAP and carry out follow-up programs in communities. Examples include: after school programming, substance use prevention, peer mediation, inter-faith council youth group, teen center, health curriculum changes, youth leadership efforts and strategic planning. TAP has developed and/or strengthened collaborative efforts with both state and local groups. Increased interest in adolescent issues resulted in an Adolescent Health Institute reaching 257 professionals working in the field of adolescence. On a scale from 5 (strongly agree)

to 1 (strongly disagree), 127 participants evaluated the conference in the following manner: met my professional needs (4.4); increased knowledge of adolescent issues (4.3); gained important ideas, information and research (4.5).

- C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, grants
- D. **Scope of Impact:** State Specific

Children, Youth and Families at Risk/State Strengthening – Paula Gregory

A. Brief description of program

Most parents want their children to have out-of-school opportunities to have help with homework, make friends, try new things, and develop talents. Children who spend time in quality out-of-school programs do better on work habits, school attendance, interpersonal skills, and non-aggressive responses to peer conflicts (Vandell & Pierce, 1999); and are less likely to drop out, use drugs or become teen parents (Mahoney & Cairns, 1977). Opportunities for out-of-school programs are scarce in rural NH communities.

UNH Cooperative Extension partnered with three rural communities (CSREES CYFAR program, 1998-2003) to establish local coalitions and start after school programs at two middle school sites (grades 4-8) and an elementary school site (grades 1-5). Over 65% of participating youth (265 of 401 youth) qualify for free/reduced school lunch; over 50% live with a single parent. Each site offers a mix of homework assistance, enrichment, community service learning, computer labs, and activities to build life skills (social skills, teamwork, goal setting, decision-making, conflict resolution, and self-discipline). University faculty and students evaluate program effectiveness/impacts.

B. Impact / accomplishment summary

Over a four year period, one fourth of youth participants (25% of 401) at all sites report the program helps them with their homework, and believe it helps them do better academically, learn to respect others, make friends, and resolve conflicts. Three fourths of youth (75%) at one middle school site also believe the program helps them at home with family relationships. Eighty percent of parents (80%) report the program helps their child improve in self-responsibility, social skills, homework completion, self-discipline, and getting along with others. School personnel support these findings, reporting improvements among 85% of participants in educational aspirations, class participation and homework completion, pride in school performance, conflict resolution, and leadership in the school. At one site in the past year, 39% of 6th-8th grade youth participants improved one-half grade or more in math; 31% showed similar improvement in language arts grades; and 30% showed a decrease in referrals for behavioral issues. For students' at-risk of dropping out, these are important changes.

Systemic changes are evident in the 3 communities. Two of the local school districts secured over \$1.7 million in additional grant funding to expand the after school

programs. One site has expanded annual programming from 50 students (6th-8th grade) to over 500 students at five schools (grades K-12). A second site added 35 youth (7th-8th grade) to the existing 4th-6th grade program. Lessons learned in creating community support and building after school programs in these 3 communities have been used to assist 10 other NH communities write proposals or establish programs under new initiatives (21st Century Community Learning Centers, Nellie Mae Education Foundation/Out-of-School Time Matters®, and Workforce Opportunity Council). Training of out-of-school program staff from across the state has also made a difference. Staff (n=123) who received training on positive behavioral supports report they were able to modify programs at ten sites, resulting in the effective inclusion of more youth with disabilities.

C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, grant funding

D. **Scope of impact:** State Specific

Community Development – Charlie French

A. **Brief Description of Situation and Program:**

New Hampshire communities face many challenges, including changing demographics, shifting economic structures, emerging societal crises, unprecedented growth in some regions, and decline in others. Hence, the goal of Cooperative Extension's community development programming is to help communities achieve long-term well being by building human, economic, social, and environmental capacity. In order to build communities' capacity, Extension Educators provide a variety of educational services to community residents, organizations, and local governments. Examples of these educational services include facilitation of community forums, training in leadership development, assistance with planning activities, and provision of technical assistance for economic development, tourism, and communications. Additionally, Cooperative Extension is working to connect campus-based resources – particularly faculty and students – to New Hampshire communities.

B. **Impacts - Societal:**

- Extension's Community Profiles, a strategic planning/visioning program for New Hampshire communities, has reached over 500 New Hampshire citizens in 8 towns in FY '02. Each of these towns has formed an action plan, resulting in the recruitment of volunteers to work on local action committees that address community issues and concerns.
- The Community Profiles Program has resulted in the recruitment of over 150 citizen volunteers to work on community action committees in 8 communities.
- With regard to improving local communication capacity, Extension has provided planning and organizational assistance that has led to the development of 4 town websites, 3 community newsletters, 1 public directory, and 1 community bulletin board.
- Over a dozen volunteers and professionals were trained in the art of small group facilitation by Extension. Subsequently, five of the trainees have volunteered to facilitate community forums around issues of natural resources, juvenile justice, health and well-being, and recreation.

- Extension's Community Development initiative received a \$75,000 endowment and a graduate assistantship to support applied graduate work in communities. Our first grad assistant developed a forum format to collect citizen input for developing community Master Plans in the state.
- Five students – both volunteers and paid interns – received community development outreach training through Cooperative Extension. Subsequently, these students have provided technical assistance and information to communities. One student helped to facilitate a series of forum to generate statewide input for the State Comprehensive Outdoor Recreation Plan (SCORP).

Economic:

- Cooperative Extension has helped the community of Belmont to add an Economic Development section to the Master Plan, thus mobilizing the community around job expansion/retention.
- Training in local economic analysis was provided to two New Hampshire communities, thus instilling local leaders with tools for making better decisions that impact economic growth.
- The Community Profiles Project has lead one community to research and enact commercial zoning changes, thus enhancing the pattern and compatibility of future commercial land-use.
- Partially as a result of Extension programming in the natural resources arena, at least one community has acquired funding to preserve community land from development, thus warding off haphazard residential growth in a community that is straining under the burden of town services.
- Extension has provided organizational and management assistance to a community farmers market in Belknap County which has helped to influence the market's longevity.

Environmental:

- UNH Cooperative Extension helped the Dover Outreach and Education task group organize and conduct a 'Growing Greener' workshop during spring of 2002. The effort received a Gulf of Maine Visionary Award for protecting and managing the region's natural and cultural resources. Through the workshops, hundreds of residents, decision-makers, landowners and developers learned about the benefits of permanent land protection and strategies for mitigating harmful impacts of development. Also, through changes in zoning ordinances and subdivision regulation, the Planning Board is managing residential growth and protecting natural resources.
- In the past year, dozens of volunteers have been trained by Cooperative Extension to assist communities with conservation efforts via the COVERTS Program. These volunteers have organized/conducted natural resource inventories and community cleanups.
- Extension's Marine Docent volunteers have implemented community-oriented projects, including pollution monitoring, river clean-up, shoreline restoration, and water quality monitoring.
- At least four communities have received assistance with the planning, development, and construction of trails.
- Several community landowners received education and training on placing easements on their land to help preserve valuable natural resources and environments. One community even received Federal dollars to match local efforts.
- Extension's Master Gardening program has spawned dozens of community beautification projects around the state.

C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds

D. **Scope of Impact:** State specific

Family Resource Management - Suzann Knight

A. **Description:** Americans in 2001 are saving less than 4 cents of every dollar while 16 to 21 cents of every dollar goes toward debt. Households are saving less and spending more putting their financial security at risk. Spending habits start early. In 2001, U.S. teens spent \$172 billion. The Jump\$Start Coalition for Personal Financial Literacy 2002 survey found 12th graders' personal finance knowledge level to be 50.2% 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.

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 goals. 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 range from those on public assistance to Individual Development Account participants, teachers, adults, youth and Medicare beneficiaries.

B. **Impact:** During this reporting period, 176,362 people were reached with family resource management education (28,741 adults and 5671 youth through face-to-face education, 7550 through learn-at-home publications and 134,400 through print and nonprint media). Throughout New Hampshire UNH Cooperative Extension sponsored 26 workshop series for 280 adults within the Financial Security in Later Life national initiative with either the curricula "Taking Charge of Your Finances" or "Making Money Work For You". These series include pre/post/follow-up evaluation tools. Evaluative data is based on 187 pre-evaluations (67% of participants) and 145 post-evaluations (52% of participants). As a result of this education: 59% decreased debt and paid-off bills, 74% are saving and 26% plan to start, 79% now follow a spending plan, and 63% reported they felt more confident making money decisions. Furthermore, fewer participants indicated they were paying bills late at the end of the workshops: 35% compared with 47% at the beginning of the workshops. The most dramatic decrease was for those reporting they "often" paid their bills late: 7% after compared with 24% before the workshop experience. From beginning to end of the 5 week series, 39 participants saved \$7,570 and also reduced their debt by \$11,635.

To increase the number of students gaining from the High School Financial Planning Program (HSFPP), UNH Cooperative Extension teamed with NH Jump\$Start Coalition. In Fall 2001, HSFPP trainings were held in each NH county and in Spring 2002, at the annual NH Jump\$Start "Money Smarts" Conference for Teachers, a preconference educated teachers about the HSFPP. As a result of both efforts, the number of students reached increased from 2037 students in years 2000-2001 to 5671 in years 2001-2002. The evaluation results of the High School Financial Planning Program are: 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.

- C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, grant funding
- D. **Scope of Impact:** Multi-state Extension and Integrated research and extension.

Farm Safety - Sarah Smith

A. Program Description:

NH's Rural Safety Program encompasses safety activities within a variety of program areas. New Hampshire is 84% forested. NH'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. There are also over 3,000 individual operations that qualify as commercial farms in New Hampshire, and a growing number of people who are undertaking farming and forestry related activities on a part-time basis. 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/ hobbieist farming and forestry activities, and rural families. Extension Educators and Specialists incorporate safety messages into their programming and publications.

B. Accomplishments:

Safety Workshops:

This past year, 28 workshops were held for loggers, sawmill operators, state and municipal workers and landowners reaching over 650 participants. These workshops included: Safe and Productive Felling (3 programs); Advanced Felling (2 programs); First Aid and CPR (for loggers) (6 programs); Safe Chainsaw Operation for Municipal Employees (2 programs); Chainsaw Safety Training – NHDOT (2 programs); Trucking Safety and Regulations (3 workshops); Non-Native Invasive Plants Identification and Control (3 programs); Hazard Tree Identification (2 programs); Chainsaw Safety for Landowners (1 program); Christmas Tree Management/ Pest Control/Shearing (4 programs). A Farm Safety video was purchased and shared with Farm Bureau for use with farm audiences

Safety Messages Incorporated into Site Visits, Educational Programs and Publications:

In addition to workshops focusing specifically on safety considerations, safety topics were continually incorporated into site visits and workshops on other topics. During site visits on farms and woodlots this past year, Extension Educators and Specialists addressed a variety of safety related topics such as: the use of dust masks, manure pit safety, safe animal handling practices, traffic safety at farm stand entrances, safe use of pesticides, where to get poisoning related information, using chaps and other protective gear when operating chainsaws, and safety around wind and ice damaged trees. Safety was an important topic during Barn Restoration Programs (particularly regarding jacking up old barns).

Extension Educators assisted Christmas Tree Growers in the managing and caring for their Christmas tree plantations, identifying and control of Christmas tree pests, and using safe pruning and shearing techniques.

Safety considerations were incorporated into numerous newsletters, fact sheets and other materials for Extension audiences. The article, “Personal Protective Equipment – One Pathway to Healthy Living” was featured in Extension’s quarterly ornamental horticulture newsletter, News and Views for New Hampshire’s Green Industry.

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

D. Scope of Impact: State Specific

Leadership Training and Development/Strengthening NH Communities - Judy Bush

A. Brief Description of Program:

New Hampshire communities are faced with challenges and constant change, as they continue to be impacted with changing demographics, economic forces, growth or decline of population, and societal restructuring. As UNHCE’s initiative of strengthening NH communities continues to grow and support NH communities, the importance of training and supporting leaders becomes more and more vital. To build community capacity, strong volunteer leaders with skills, knowledge and time are critical. In support of programs offered, leadership training and opportunities are structured and emerge.

B. Impacts/Activities:

Extension has provided planning and organizational assistance that has lead to the development of 4 town websites, 3 community newsletters, 1 public directory and 1 community bulletin board.

- 20 professionals participated in a year-long training of group facilitation taught by Extension. Subsequently, trainees have volunteered to facilitate community and organizational forums around issues of natural resources, juvenile justice, health and well-being, and recreation as well as organizational strategic, priority and action planning.
- During FY’02 the Community Profile Event has resulted in the recruitment of over 150 citizen volunteers to work on community action committees in 8 communities.
- In communities (Jackson, Brentwood, Loudon and Mt. Vernon) where Community Profiles were held, four individuals involved in the profiles were elected to the office and now serve as selectman in their communities.
- Communities of Brentwood and Jackson have organized community structures for follow-up and cohesiveness to their Profile action committees.
- New Hampshire Celebrates Wellness trains 80 Wellness Team Leaders with the support UNH Cooperative Extension Educators. These teams provide health and wellness activities and publications for NH workplaces, communities and schools.

- Development of a community Leadership Skill training series was developed and has been marketed with some inquiry from community groups.

C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, user fees

D. **Scope of impact:** State specific

Leadership Training and Development/4-H Camps – Ann Dolloff

A. **Description:** In 2002, NH 4-H Camps operated two sites in the state, serving 839 individual campers in 14 weeks of camp programs. Seventy-seven staff provided the necessary supervision and support to operate the programs. Staff participated in an extensive, six day, mandatory pre-camp orientation. During this time, they were trained in the areas of child development, ages and stages, behavior management, activity leadership, health care, first aid, risk management, safety issues, and other topics relevant to supporting a nurturing camp environment and promoting positive youth development.

B. **Impact:** The average salary of a summer camp counselor at NH 4-H Camp in 2002 is \$1,800.00 for nine weeks of employment. This young adult is typically on-duty for approximately 100 hours each week; working, living, sleeping, playing and eating with children at all times. Unit leaders, who supervise groups of counselors and help develop the necessary leadership skills in their counseling staff, mentor counselors. Couple this experience with hands-on learning through direct assistance with the instruction of swimming, canoeing, archery, environmental studies, hiking, cooperative games, and crafts, the typical college age counselor this summer was exposed to over 900 hours of training and experiential learning.

The impact of this quality experience is best reflected in the 60% return rate of staff in 2002. Of the seventy-seven staff hired for 2002, forty-six had previously been involved with the leadership training opportunities at a NH 4-H Camp.

The summer camp staff receiving this hands-on and extensive leadership training provided inexpensive, quality childcare for NH children during summer vacation, when childcare needs are at a high level. The average cost of a week of overnight camp in 2002 was \$255.00. The opportunity for staff to apply the concepts learned throughout their leadership training, in a supervised and nurtured environment while providing a needed service for families and youth, is the strength, uniqueness and power of the summer camp experience for young adults.

C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, user fees

D. **Scope of Impact:** State Specific

Leadership Training and Development/Volunteers – Wendy Brock

A. **Description:** More than 4500 volunteers are educated through the UNCE programs to extend the ability of Cooperative extension to meet it's mission in the state of New Hampshire.

Volunteer programs consist of:

- UNH Lay Lakes Monitoring Program (LLMP) 500 active volunteers donating 1500+ hours and 12 students conducted research at more than 300 lake sites and 370 tributary and outlet sites.
- Sixty-nine Family Focus Parent Educators (volunteers) volunteered 2760 hours delivering effective parenting education in their communities of work and communities of residence.
- The Coverts Project educated 26 new volunteers and 187 existing volunteers to promote wildlife and habitat conservation and forest stewardship in NH.
- 165 marine docents and 70 Great Bay Coast Watch volunteers are dedicated to providing a lens through which students, educators and the general public can view the coastal environment, its natural resources and monitor coastal waters at 30 sites with a toxic phytoplankton monitoring program.
- HICEAS (Health Insurance Counseling Education Assistance Service) 250 volunteers receive initial and continuing education so they can accurately answer and provide free, confidential information to NH Medicare beneficiaries' questions about Medicare.
- Master Gardeners are 336 volunteers shares their knowledge of gardening by serving 12,062 hours as volunteer educators in their communities or Family, Home & Garden Education Center
- 4-H youth development program 2735 volunteers help 21,000 youth acquire knowledge, develop life skills and form attitudes to enable them to become self-directing, productive and contributing members of society.
- 157 Community Tree Stewards volunteered over 4500 hours in 69 NH communities and 4 Maine communities with the goal to strengthen communities, promote social change, and enhance urban ecosystems through the practice of urban forestry.

B. **Impact:** LLMP volunteers, students, and staff collected and analyzed a vast amount of data, ultimately convincing the NH State Department of Transportation to install new diversion ditches and culverts to reduce the amount of highway runoff reaching Lake Chocorua. This project, if carried out by a government agency or private consulting firm, the project would have cost between \$100,000-\$250,000. LLMP volunteers, students and staff delivered the results for under \$10,000.

- Family Focus Parent Educators reached more than 1500 parents. Through improved communication skills learned in the classes, parents reported that they were communicating more effectively with their children, and their children were more cooperative. One dad reported that he was seeing real improvements in his family life after five weeks of taking the classes.
- NH Coverts volunteers manage more than 30,000 acres of land in New Hampshire. Over 75% of these landowners implemented wildlife habitat management in the past year -

including managing more than 3,000 acres for early successional habitat, a habitat type that is threatened across the state.

- Teachers make the Floating Lab and Great Bay Living Lab a regular part of their science curriculum. 80-90% of the students in the Math and Marine Science Program go on to study related subjects in college and graduate to find jobs in those areas.
- In response to the closing of the paper mills in Berlin and Gorham, several hundred retirees lost health insurance benefits with very limited notice, rendering many elders with no insurance coverage to supplement Medicare. Twelve individuals from the Berlin-Gorham area were recruited and trained as HICEAS volunteers.
- NH resident concerned about the disease killing New Hampshire's butternut trees. The master gardener learned from the Division of Forest and Lands web site that a field test of resistant butternuts was already in progress, and that isolated healthy trees are less useful as seed reservoirs than healthy trees growing close to diseased ones.
- Ruth Kimball, 60 year 4-H Volunteer of Pittsfield was in the first group inducted into the National 4-H Hall of Fame. Three generations of youth have become better citizens as a result of her work.
- In Dover NH, veteran Tree Steward Anna Boudreau was the driving force behind the permanent protection acres of prime agricultural land on the Stafford County Farm. Approximately half of the Community Tree Stewards have taken on official positions within their communities, serving on Conservation Commissions, Open Space Committees, Land Trusts, Watershed Associations and Tree Committees

C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds

D. **Scope of impact** - State

Parenting – Charlene Baxter

A. **Description:** During the 2002 program year, parenting education was delivered through one-on-one interventions, seminars, workshop series, newsletter series, fact sheets, UNH Cooperative Extension's web site, and the media.

B. **Short Impact/Accomplishment Statement**

2,471 parents were reached through Family Focus, Extension's face-to-face parenting program (757 - one-on-one/home visitors; 900 - seminars/one time workshops; 814 - workshop series). 3896 parents of infants from birth to 12 months of age received the age-paced newsletter, Cradle Crier, and 3845 parents of toddlers from 13 to 24 months of age received the age-paced newsletter, Toddler Tales. 11,623 fact sheets were distributed on issues ranging from bullying to the impact of divorce on children. Approximately 250,000 people were reached per episode through 20 episodes of "Positive Parenting" - a 3 minute program aired on WMUR, NH's statewide television station. In addition, approximately 180,000 parents were reached monthly through a statewide news article dealing with parenting and family issues.

Two programs delivering parenting education to vulnerable population groups are especially worthy of mention. Family Connections is a Family Resource Center that also offers parenting education series at the NH Department of Corrections Lakes Region Facility for medium and minimum security inmates. The program provided parenting education to 103 incarcerated individuals in FY 02; of these, 90 completed the series. These individuals were parenting 132 children of ages birth through adolescence. The National Institute of Justice says children of incarcerated parents are six times more likely to end up in prison or jail themselves. Almost 1.5 million children have a parent in a U.S. prison. With the Family Connections Program, inmates must attend a mandatory eight-week parenting class as soon as they are incarcerated, even if they don't have kids. After that, participation is voluntary. But before visitation with their kids is allowed, inmates have to complete at least a month of parenting support group meetings. One-on-one visitation privileges make the program the only one of its kind in the nation. Most corrections facilities don't deal with family members. Research demonstrates that the family must be the unit on which a program focuses in order to break the cycle of incarceration.

The Family Lifeskills Program is a welfare-to-work program for those transitioning from reliance on public assistance. FLP includes parenting education, and 579 parents were reached through this curriculum. Parents reported such results as:

- "I have a better understanding of how to take care of my child and how to be more understanding. I feel that since taking this class I will be a better parent."
- "I've learned new ways to handle my son when he misbehaves. I can pass what I learned to my child care provider."
- "I learned a great deal from the parenting to discussing things and not stressing out; talking things out has given me great encouragement to do the things I need to do." (This parent was from an extremely abusive background.)
- "This has helped me to find other community resources to help me help my son."

- C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds, grant funding
- D. **Scope of Impact** – State specific

Tourism - Charlie French

- A. **Description:** While most of Southern New Hampshire is experiencing rapid job growth and an influx of new businesses and industries, Northern New Hampshire continues to face economic crisis. Resource-based industries, including tanneries, paper mills and manufacturing plants, in this rural part of the state have undergone stress resulting from international competition. In fact, over one-thousand employees in rural New Hampshire lost jobs in FY02' in the paper-products industry alone. What new economy will replace the declining industries in rural, northern New Hampshire? Because this region's natural beauty and wilderness resources are so plentiful, the state has placed renewed interest in developing a viable tourism industry, particularly in Grafton, Coos, and Carroll Counties.

Hence, Cooperative Extension provides assistance to rural communities to help them analyze the existing tourism economy and assess the potential for developing a viable tourism industry. Assistance is provided in the areas of organization, technical training, economic analysis, and financial planning.

B. Impacts
Societal

- Northern Forest Heritage Park in Berlin, New Hampshire was developed with technical and organizational assistance from Cooperative Extension's Forest Industries Specialist. The Heritage Park, designed to educate citizens about the life and history of a mill town, has already succeeded in drawing thousands of visitors to the depressed northern part of the state.
- Cooperative Extension helped several communities organize and develop local festivals aimed at building social capital and drawing people into their downtown areas. Several of these festivals were successful and will be repeated on a continuing basis

Economic:

- Cooperative Extension assisted the NH Department of Resource and Economic Development and the Office of State Planning to conduct statewide stakeholder forums, collecting public input for developing the State Comprehensive Outdoor Recreation Plan. As a result of the facilitation, the plan successfully prioritized the state's top recreation/tourism-related issues. These priority issues will form basis for determining how to distribute Federal Land and Water Conservation Funds to communities.
- Cooperative Extension staff assisted the town of Londonderry to conduct a community forum and develop a community survey aimed at prioritizing the town's recreation and tourism resources. The information was used to determine how to allocate municipal funding for current and ongoing projects.
- Cooperative Extension is working with the town of Berlin to market its tourism resources. This assistance has resulted in the formation of a regional committee who's charge it is to catalog tourism resources and analyze future tourism potential.
- Cooperative Extension has provided technical assistance to at least seven New Hampshire inns, resorts, campgrounds, hotels, and theme parks with regard to landscaping, ornamental tree planting and insect control. This educational and technical assistance has not only saved the inns/hotels money, but it has improved their aesthetic appearance and drawing power.
- Cooperative Extension provided technical assistance and support to the Balsams Inn to develop a maple sugaring operation and sugarhouse. The project is still in the planning phase.

Environmental:

- Extension has provided at least four communities with assistance in planning, development and construction of recreational trails.
- Shoreline management assistance was provided to several coastal/estuarian communities via the NH Sea Grant program and the Marine Docents Program. Such assistance has led to beach cleanups, pollution monitoring assistance, and erosion mitigation projects. These projects have succeeded in cleaning up a good portion of Southern New Hampshire's beaches, which led to media coverage and greater tourist drawing power.

- Extension has worked with the state park system to augment state park operations, provide education on facility and landscape care and maintenance, and to present exhibitions and programs. This effort directly improves the quality of tourism for thousands of visitors.
- One Cooperative Extension Specialist chairs an events committee for the summer field trip/lecture series that attracts about 2000 people each year. This effort contributes directly to the enhancement of tourism in northern NH.
- Extension has provided information to the NH Department of Resource and Economic Development's Travel and Tourism Division concerning fall foliage. This information is used directly in the state's campaign to market New Hampshire's tourism resources.
- Extension promotes the use of timber harvesting best management practices (BMPs), and promotes "logging aesthetics", which improves the visual experience for tourists and visitors.

Health

- Cooperative Extension works closely with the NH Lodging and Restaurant Association (NHRLA) to conduct food safety education for food service industry workers. As a result of the programming, food service workers around the state have been trained to properly prepare and handle food, which undoubtedly results in reduced food contamination incidents.

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

D. Scope of Impact: State specific

Workforce Preparation/4-H Camps – Ann Dolloff

A. Description: Bear Hill 4-H Camp offered 3 programs with an emphasis on workforce preparation. Thirty-three adolescents participated in the Leaders-in-Training, designed for teens, age 14 years and older. The program emphasized team building and the development of leadership skills in a child-oriented setting, helping youth explore career options in childcare, education, recreation and health care. Skills learned will be useful for entry into today's working world. LITs learn CPR and first aid, study child development, activity leadership, tour UNH campus, and learn about themselves as they work together in a group. Ten youth, ages 15-18 years, participated in the Mentor Program (an advanced LIT program) and provided support to the 45 counselors who directly supervise campers. Thirty-four youth participated in Teen Discovery Programs, with emphasis on career awareness in state parks and aquatics. In addition to campers, workforce preparation was provided to seventy-seven staff who were hired to provide the supervision and leadership for NH 4-H Camps. The staff participate in a six day orientation and training to prepare them for their upcoming responsibilities.

B. Impact: In 2002, twelve camp counselors and activity leaders, hired as paid summer staff, were graduates of the LIT and /or Mentor programs at Bear Hill 4-H Camp. Three of the twelve (25%) are college students now, pursuing degrees in education, therapeutic recreation, and occupational therapy. Their academic and career choices are directly attributable to their experience as LITs and summer camp staff.

Bear Hill 4-H Camp received the Steelman Award, from the School of Health and Human Services at the University of New Hampshire. This award directly supports an undergraduate in the School to pursue employment in an agency related to her/his field of study. Kristi Reardon, a therapeutic recreation major in the Department of Recreation Management and Policy, was employed at Bear Hill 4-H Camp as an intern with the Camp Behavioral Specialist, to provide support for campers at-risk and with disabilities. Kristi's experience directly assisted 10 youth that required her guidance and intervention to be successfully integrated into the camp programs this summer. Her experiences influenced her course selection this year (RMP 668: Youth Culture and Programs) and was reflected in many of her assignments. Kristi will be returning in the same position for summer 2003.

- C. Source of Funds: Smith-Lever 3b&c, State matching funds, County funds, user fees
- D. Scope of Impact: State specific

Workforce Preparation - 4-H Camps – Ann Dolloff

- A. Description: In a master's research thesis "Effect of Summer Camp Employment on Residential Counselors' Self-Perceptions of Life Effectiveness", a questionnaire was completed by residential camp counselors, 18 years and older, to measure the impact of summer camp employment on their personal development. The questionnaire was completed during staff training week, prior to campers arriving at camp, during the last week of their summer employment, and 3 months after the end of their camp employment. The Life Effectiveness Questionnaire measures aspects of personal effectiveness which are typically targeted and effected by personal development intervention programs, such as Outward Bound. Bear Hill 4-H Camp counselors, and counselors at two other New England Camps, were asked to rate their self-perceived life effectiveness in nine areas of personal competence (time management, social competence, achievement motivation, intellectual flexibility, task leadership, emotional control, active initiative, self-confidence, and locus of control). The questionnaire asks participants to rate their answers from 1 (not like me) to 8 (like me). Sheila Fabrizio, NH 4-H Camps Manager, presented this data at her thesis defense, May 2002, from data gathered during the summer of 2001.
- B. Impact: The short-term results showed participants significantly increased their overall self-perception during the summer camp season in time management, social competence, achievement motivation, task leadership, emotional control, self-confidence, and locus of control. In varying degrees, this growth was maintained in the three months that followed the end of their employment. Of particular interest was the continued growth of emotional control reported staff three months later. While a variety of reasons may exist for the observed changes, some potential reasons are: the supportive environment of camps, the counselors' receptivity to change, camps' ability to provide a rich learning environment.

It cannot be claimed that working as a residential summer camp counselor will help all older adolescents develop and enhance their abilities of time management, social competence, achievement motivation, task leadership, emotional control, self-confidence, and locus of control. While this study clearly illustrates the need for additional research, it also provides the foundation needed for the camping industry to articulate the personal and professional value to summer camp employment.

- C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, user fees
- D. Scope of Impact: Multi-state

Workforce Preparation/Mini Society - Paula Gregory

- A. **Description:** Although New Hampshire has a strong entrepreneurial base, few schools prepare youth for active participation in small businesses within their communities. Without opportunities to develop a healthy work ethic and test out the marketability of their creative ideas, youth transition into adulthood unprepared for the unique opportunities of living in an entrepreneurial state.

For the past three years, University of New Hampshire Cooperative Extension has partnered with the New England states and the E. W. Kauffman Foundation to offer the Mini-Society® entrepreneurial education program. In this program, youth, ages 8 to 12, work together over a 30-hour period to develop and run a self-organizing economic society. As businesses are started in response to needs and opportunities, children discover the complexities of competition. Through daily town meetings, children use democratic processes to debate emerging issues, and struggle to bear the consequences of their decisions. Mini-Society® helps children learn important lessons about living and working in a democratic society.

- B. **Impact:** Nineteen (19) adult volunteers from New Hampshire completed a 20-hour Mini-Society® entrepreneurial education course and learned new teaching and facilitation techniques that foster intense desire within 3rd to 6th grade children to learn and practice complex concepts of business planning, economic development, and democratic processes. Two thirds of the volunteers (68%) reported unexpected student mastery of difficult concepts as a result of the facilitation style used.

As of October 2002, 252 NH youth have benefited from the Mini-Society® program led by the trained facilitators. Daily observation logs kept by the program facilitators show over three-fourths of the children (77%) demonstrated improvements in solving problems, resolving conflicts, taking on leadership roles, and effectively communicating both orally and in writing. Facilitators also reported most participants (97%) learned about democracy through daily town meetings, and demonstrated increased understanding of the concepts of business start-up costs, scarcity, market mechanisms, cash flow, and the role of currency in a society. Parents reported an important benefit of the Mini-Society® experience was its effectiveness in bringing children with varying

learning styles and disabilities together in a setting where everyone thrives and children learn to work from the strengths of each member to achieve the goals of the group.

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

D. Scope of impact: Multi-State Extension

Workforce Preparation/Adults - Suzann Knight

A. Description: 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.

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 are 2 curricula: Lifeskills for Employment, Achievement and Purpose (LEAP – 90 hours) and Lifeskills Impacting Families Today (LIFT – 8 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 a 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.

B. Impact: During this reporting time period 474 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 201 participants found as of June 30, 2002 that 40% of the sample was employed. Seventy-nine percent reported that their relationships with people at work were good to excellent and 75% reported good or excellent relationships with employers.

- C. Source of Funding: Smith-Lever 3b&c, State matching funds, County funds, grant funding
- D. Scope of Impact: State specific and Integrated research & extension

Youth Development/4-H/Life Skills - State Activities Day Survey – Paula Gregory

A. Brief description of program

Scientific research on brain development indicates the “formative years” from birth through late teens is the prime time for the formation of emotional intelligence and related life skills (self awareness, empathy, managing emotions, communicating, cooperation, and resolving conflicts). The NH 4-H Youth Development program emphasizes goal setting, communication skills (interpersonal and presentation), self-awareness (self-confidence, self-control), and social skills (conflict management, cooperation, teamwork, and leadership). These life skills are imbedded in the “how to” sequential age-appropriate learning experiences of project areas ranging from animal science and nutrition to photography and water resources. Youth gain knowledge and develop important life skills through participation in 4-H clubs, after school programs, camps, special interest programs, and joint efforts with partnering organizations.

B. Impact / accomplishment summary

A survey of 50% of NH 4-H club members participating in state presentation events (n=88) indicates 4-H club involvement has helped youth (ages 12-18) develop the basic life skills of goal setting and communication. About half of these youth believe that since joining 4-H they have improved in being able to gather information needed to make a presentation (57%), organize thoughts before speaking (50%), and work through logical steps to achieve their goals (48%). Almost one-third also believe 4-H has helped them learn to work out problems presented to them (43%), listen carefully to others (40%), successfully persuade others (42%), and work out disagreements in ways that are not hurtful to others (31%). Parents surveyed (n=60) also agree that since participating in 4-H, their child “usually” sets goals, gathers information for presentations, organizes thoughts before speaking, presents ideas creatively and persuasively, and accepts comments and questions. Prior to participating in 4-H, parents and youth report they either did not practice these life skills, or did them “sometimes.” A majority of youth and parents also report the 4-H experience helps youth overcome shyness and fear of speaking in front of others, learn to control feelings, and practice taking on leadership roles among their peers. Other examples:

- Volunteer 4-H club leaders provided annual reports with over 100 written examples of youth overcoming personal challenges to serve in leadership roles and practice life skills through their 4-H experiences. Leaders report important changes in school performance and career aspirations among these youth.
- A survey of 120 youth and 20 volunteer leaders from a 4-H Green Thumb urban gardening program shows the program helped youth develop important work habits, including making and following a plan, listening and following instructions, getting along with others, responsibility, commitment, and safety.
- 80% of parents whose children attend NH 4-H after school programs believe the program helps their child improve in self-responsibility, social skills, self-discipline, and getting along with others.

C. **Source of Funding:** Smith-Lever 3b&c, State matching funds, County funds

D. **Scope of impact** - State Specific

Youth Development/4-H/Water & Marine Education – Sharon Meeker

A. **Description:** The tiny New Hampshire seacoast and its two major estuaries are very important to the state and region. About 65% of our coast is under public ownership in the form of state beaches and parks, and accessible to the public. It is a tourist mecca in the summer time and affords many educational opportunities year round through such sites as the Seacoast Science Center, the Great Bay National Estuarine Reserve’s Sandy Point Discovery Center, and the Aquaculture Education and Research Center in Hampton. The Marine Docent program, with its 160 volunteers helps to staff these Centers as well as staffing their own Sea Trek outreach program.

There are few marine educational programs that concentrate on reaching out to the interior of the state, so we have made use of UNH Marine Docents to do so. The Docent outreach program, SeaTrek, includes individual one-hour classroom instruction and activities, our all-school “Day of the Coast Celebration,” and all the boat-based programs: The Floating Lab, The Great Bay Living Lab, and the UNH Discovery Cruises to Great Bay and Appledore Island. Sea Trek brings exhibits and activities to state, regional and national science conferences and local community events, and includes educators workshops with each of the major programs. Docents also lend their expertise to the Great Bay Coast Watch, our other volunteer program which not only monitors the estuarine and coastal waters of New Hampshire, but also provides experiential educational opportunities for teachers and students. Objectives:

1. to provide instructional and experiential opportunities for 4-H youth (staff and leaders, families), teachers and informal educators and their students, and the general public to increase their knowledge, sense of stewardship, and knowledge of marine careers.
2. to develop activities and curriculum that support NH Frameworks in Science and Social studies and to some extent in the other disciplines that are resources to those teaching about the marine and estuarine environment.
3. to have 75% of those educators participating in the Sea Trek programs include study of the marine and coastal environment in their curriculum.
4. to increase networking with other organizations and in some cases to produce specific curriculum and educational opportunities for their audiences.

- B. One of our successes this year was to increase our networking with other programs such as the state's Lamprey River Advisory Committee. We produced materials and have a web page that bridged the gap between fresh and salt water studies. Working with two teachers at Mast Way School, we developed the Lamprey River Curriculum and held workshops for 20 teachers, most of whom used the curriculum with their elementary and middle school students in Raymond, Newmarket, Oyster River High School and Mast Way School. The curriculum includes making connections between the river as the major tributary of the Great Bay and social history of use of the river and bay for industrial purposes.

Most of the teachers participating in the Floating Lab program this year used the Floating Lab program as an integral part of their science curriculum, thus exposing 1,000 students from 7 New Hampshire counties to marine science careers and teaching them basic marine science concepts. Five UNH students were trained and worked aboard the Floating Lab as instructors. Three of them were using the experience as the required practicum in education and in natural resources.

We scheduled a workshop for 4-H staff on the marine environment. Packets of 70 marine activities have been distributed to each county office and made available especially to home-school families. I assisted in the planning process for a successful grant proposal by Julia Steed Mawson to the Office of State Planning's Coastal Program to develop specific curriculum on the marine environment which will complement 4-H's involvement with the Jason Program (Robert Ballard's national program of marine discovery and education in which Hillsboro county 4-H is involved.) One example of successful integration of marine education into 4-H programs is Penny Turner's marine discovery day camp. Through planning assistance, programs by UNH Marine Docents and our boat-based programs, Penny has a very interesting program for children mainly from the western part of the state.

Discovery Cruises this summer gave about 60 4-H members and their families some of the same opportunities, with more than 70% reporting that they had learned some basic marine science concepts. They learned more about current marine research and enjoyed their exposure to marine science careers and further education possibilities in that field at Jackson Estuarine Lab and the Shoals Marine Lab. As in last year's program, boat safety and being on a research vessel was a new experience for many of the 4-h'ers, most of whom came from Rockingham, Strafford, and Hillsboro Counties. Fourteen teen-agers from the 4-H Teen Conference participated in a variety of marine experiences through a day-long program created especially for them at Jackson Estuarine Laboratory, Sandy Point Discovery Center and the Seacoast Science Center. We hope to take the 4-H Teen Conference participants interested in marine science aboard the RV Gulf Challenger this year.

The Great Bay Coast Watch(GBCW) provides educational and stewardship experiences for youth as well as adults. This past year, the Portsmouth Elementary and Middle Schools, Oyster River High School, Newmarket High School, Winnicunet High School in Hampton, Marshwood (Maine), St. Mary's Academy in Dover all participated in the Watch. Some helped to present monitoring information collected by the Watch to their town's Conservation Committees. Others worked with Professors Ray Grizzle and David Burdick (from Jackson Estuarine Lab and the UNH Natural Resources Department), restoring salt marshes and mudflats.

The Day of the Coast Celebrations at three schools brought 6 – 12 hours of marine education for each of the 1200 students who participated last year – students who wouldn't have

otherwise had this exposure. Teachers provided introductory and follow-up projects to the actual Day, thus extending the experience and helping us reach our objectives.

Sixty marine docents impacted several thousand students, teachers and families who visited the Seacoast Science Center and the Sandy Point Discovery Center, through delivery of educational programs they taught there. Docents also are very active on committees and boards that help to run those two Centers. Docents are just beginning to be involved with the Aquatic Research and Education Center in Hampton and as such will be working both with research and education of youth.

This year, we coordinated the regional National Ocean Sciences “Nor’easter” bowl for 20 5-member teams from 12 schools in Maine and New Hampshire and presented the competition here at UNH on February 2. We fielded and trained five 6-member judging teams for the event, one staffed by researchers from the Coastal Ocean Mapping group at UNH. Additional judging teams came from the University of New England and Bigelow Laboratories in Maine. Senator Bob Smith and Congressman John Sununu welcomed the students and stayed to give prizes at the end of the competition.

- C. Source of Funding: Sea Grant funding, external grants
- D. Scope of Impact: State specific

Management Goals

Multicultural and Diversity Issues – Paula Gregory

- A. **Description:** Recent NH demographic reports (U.S. Census, NH Office of State Planning) show an increase in the racial diversity. Data shows the state’s population (1,185,048) now includes 96.5% White/Non-Hispanic (1,143,788); 1.4% White Hispanic (16,297); 1.2% Asian Pacific Islander (14,038); .7% Black (8,502); .2% American Indian, Eskimo (2,423). NH communities also show increasing diversity in other areas, as evidenced by increasing media reports of harassment, hate crimes, public policy and funding debates, and claims of discrimination focused on religion, sexual orientation, disability, age, and economic or social class. UNH Cooperative Extension staff and volunteers require ongoing information, resources, and training to ensure programs respond to the changing population and needs of the state.

Family, Community & 4-H Youth Development staff participated in an Organizational Change Survey, in 1977 and 2000 as part of the CSREES funded CYFAR State Strengthening project. Results were used to guide staff orientation and annual training, including workshops on working with limited resource audiences, and inclusion of youth at risk and with disabilities. In the past year, a consultant on organizational cultural competency provided training which led to increased professional interest and capacity to work with multi cultural and diverse audiences.

- B. **Impacts:** Over three fourths of Family and 4-H Youth Development staff (45 of 57 staff, 79%) responded to the 2000 Organizational Change Survey. They identified important shifts in diversity within the Extension system, including less dominance by one culture, style or group; and increased value added by multiple cultures, styles or groups. Staff reported they

work “a lot” with diverse audiences: 25% say they work with populations not traditionally part of Extension; 75% with single parent families; 69% with low-income families; and 61% with people at risk for problem behavior. Three fourths (76%) report feeling comfortable working with diverse audiences.

Three months following training of 45 staff members on “Diversity, Pluralism and Inclusivity: Extension’s Challenge”, a majority self-reported short-term behavior changes on a pre-post survey. Staff shifted from reporting “never” or “sometimes” to “usually” or “always” on six key areas of cultural competency including: “I recognize the changing diversity within the county and state”; “I consider the background (class, culture, race, religion) of clientele and adapt methods and/or materials to achieve better results”; “I consider ways to overcome barriers created by differences”; “I practice effective ways to build trusting relationships with “people who are different from me”; “I understand and strive to ensure programs and practices are inclusive”; and “I make a commitment to develop professional awareness, knowledge, and skills in areas of diversity and inclusive programming.” Nineteen (42%) could identify one or more specific actions they had taken since attending the training to increase professional capacity to work effectively with diverse audiences.

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

D. Scope of Impact: State specific

B. Stakeholder Input Process

UNH Cooperative Extension actively involves stakeholders in Plan of Work development and in monitoring its implementation and evaluation. Included are County and State Cooperative Extension Advisory Councils, County Commissioners, State Legislators, University administration and faculty, program committees, commodity committees, state agencies and organizations, external relations volunteers and clientele input and feedback.

County Advisory Councils are designated by state statute and play a key role in both development of the Plan of Work and in monitoring its implementation and outcomes. Each council is comprised of 12 citizen volunteers plus a county commissioner and one local member of the state legislature. The State Advisory Council provides oversight for the statewide Extension program. It is comprised of two members from each of the state’s ten advisory councils, the state CARET (Council for Agricultural Research, Extension and Teaching) representative, plus five members at large, for a total of 26 members. Monitoring outcomes and impacts is an appropriate role as council members represent the state’s population and because council members have voiced a desire for an increased role in the program development process. During 2001 both county and state advisory councils, partners, stakeholders and UNH faculty were also actively involved in development of UNH Cooperative Extension’s 2001-2006 Strategic Plan.

Program outcomes and accomplishments are shared with advisory councils in a variety of forms. Specific program presentations, reports and discussions are routinely scheduled as part of advisory council meetings. Annual accomplishment reports and impact statements are widely distributed to advisory council members, elected officials and other stakeholders. The UNH Cooperative Extension web page is being increasingly used as a means for stakeholders and advisory council members to track program implementation and assess the value and relevancy of efforts and outcomes. In

addition, Cooperative Extension works closely with many partners and other stakeholders. These include state and federal agencies, public and private organizations, University faculty, town government and non-profit agencies. Key individuals representing these partners and stakeholders are routinely involved with Extension in planning, implementing and evaluating programs.

C. Program Review Process

There are no significant changes in the program review process since development and submission of the FY2000-2004 Plan of Work.

D. Evaluation of Success of Multi and Joint Activities

1. Multi-State Extension activities include a wide-range of partnership and collaborative efforts that have been in place for many years. Many of the activities reported are joint efforts with the National Cooperative Extension System, Northeast Region and the New England Region. A particular emphasis is placed on joint activities with other New England states due to our common regional issues, individual programming limitations and close proximity to neighboring states. This has been enhanced and encouraged through joint funding of the New England Extension Consortium planning and implementation grants. The Consortium awards up to six planning and three implementation grants each year to facilitate regional programming. Cooperative Extension has also benefited from the closer relationship with research. The Agricultural Experiment Station at the University of New Hampshire functions under the dean of the College of Life Sciences and Agriculture, while Cooperative Extension is a separate entity functioning under its own dean. This separate administrative structure has limited collaborative efforts in the past but the current joint activities demonstrate substantial progress in this state and the beginning of greater collaboration and partnerships between research and extension.
2. Planned programs include the under-served and under-represented among the targeted audiences. The regional EFNEP collaboration primarily targets this audience. It continues to be successful due to competent, experienced staff and the support of local advisory councils and decision-makers. After-school youth development programs and NH 4-H Camps also target and involve under-served and low-income youth, including youth with disabilities. Several agricultural and forestry programs include women as a targeted audience and also include financial management components important to producers whose income is limited by their business management skills. Several of the integrated Extension and Research projects are focused on profitability and sustainability. Due to our short growing season, lack of fertile soils and limited open space, many agricultural producers are only marginally profitable and will potentially benefit from research addressing these factors.
3. All planned multi-state and integrated Extension and Research projects have clear goals, objectives and expected outcomes. Program evaluation is a planned part of all Extension programs with outcomes and impacts to be clearly identified. In 2001 UNH Cooperative Extension formally adopted the Logic Model, also being adopted by many other states for improved program development. Extensive staff training was conducted throughout 2002, and the model will serve as the basis for future program planning including development of the next Plan of Work.
4. Both multi-state programs and integrated Research and Extension programs have improved effectiveness and efficiency. Through UNH Cooperative Extension's active partnership in the

National Cooperative Extension System, we can access and use the combined resources and expertise of the total system. Joint planning strengthens the entire system through agreement on common initiatives, goals and procedures. This collaborative effort encourages and supports joint programming due to similar structures and operations within which each partner can easily connect. Integrated Extension and Research has also improved effectiveness in New Hampshire. Because of Extension's responsibility to extend the university's knowledge and research for application throughout the state, joint work facilitates this process. As Extension Educators and faculty research scientists work more closely together, both sides benefit. Extension staff are more involved in research planning, informed of findings, and be better equipped to convey research results to those who need it. Researchers, through their closer relationship with Extension, have a better understanding of research needs in the state and witness the practical application of their research results.

E. Multi-State Extension Activities (Form CSREES-REPT)

<u>Title of Planned Program/Activity</u>	<u>Actual FY2002 Expenditures</u>
1. Multi-State Partnership Programming	\$192,747
2. New England, Regional & National Program Planning, Conferences and Professional Development	\$ 9,864
3. New England & Northeast Region Organizational Leadership and Development	\$ 4,762

	Total FY02 Expenditures: \$207,373

Brief Report of Progress in Planned Multi-State Programs:

1. Multi-State Partnership Programming

- New Hampshire continues its active partnership in the New England Extension Consortium. Annually up to 6 Planning and 3 Implementation grants are awarded to facilitate regional programming.
- Eastern States Exposition continues to provide valued youth education opportunities for 4-H members throughout New England. This opportunity is highly appealing to 4-H members and leaders and provides a strong incentive for youth to set goals and reach their potential. This event involves several staff in planning, conducting and administering regional youth development programs conducted in conjunction with the exposition.
- New Hampshire is a partner in the Natural Resources, Agriculture and Engineering Service (NRAES) structured to provide essential technical publication support for Northeast states and provide necessary coverage for topics and subjects for which individual states lack staffing or expertise. Fees paid from state funds.
- New Hampshire is a funding partner in the Northeast Leadership Development Program and had one staff member enrolled in the program during FY02.
- New Hampshire is a funding partner in the National Extension Leadership Development Program but had no participants during FY02.
- During FY2002 New Hampshire Extension staff participated in regional and New England planning meetings for producer/grower association events, professional development conferences, and multi-state collaboration including development and implementation of New England Extension Consortium program grants.
- Specific New England, regional and national initiatives in which New Hampshire was a partner in FY02 are:

- Integrated Pest Management
- Expanded Food & Nutrition Education Program
- Food Safety
- Risk Management Initiative
- Whole Farm Management regional initiative
- Agricultural Profitability and Financial Management
- Agricultural Engineering
- Nutrient Management Initiative
- Fresh-Water Aquaculture
- Diversified and Alternative Agriculture
- Agricultural Waste Management
- Sustainable Agricultural Research & Extension Program (SARE)
- Dairy Management & Marketing
- New England Vegetable and Berry Growers Association and Conference
- New England Greenhouse & Nursery Association and Conference
- New England Tree Fruit Collaboration
- New England Green Pastures Program
- New England Regional Plant Diagnostic Project
- New England Youth Workforce Preparation/Mini Society Program
- New England Water Quality Initiative
- New England Turf Conference
- New England Regional 4-H Events
- New England and National Society of American Foresters
- International 4-H Youth Exchange Program
- Northeast Center for Rural Development
- National 4-H Curriculum Committees
- Financial Security in Later Life national initiative
- Children, Youth & Families national initiative

2. New England, Regional & National Program Planning, Conferences and Professional Development

- Both the Dean & Director and Associate Director are active participants in the Northeast Land-Grant group that meets three times annually to promote multi-state Extension programs and the further integration of Research and Extension throughout the Northeast. John Pike, New Hampshire's Dean and Director served as chair of the Northeast Extension Directors during 2002 and served as a member of the planning committee for the summer 2002 Northeast Land-Grant meeting.
- New Hampshire is an active member of the American Distance Education Consortium (ADEC) and accesses numerous satellite training and educational opportunities available through the consortium.
- New Hampshire's five state Extension Program Leaders actively participate in periodic regional and national Program Leader meetings for program planning, collaboration, networking and implementation of national initiatives.
- In support of the National Cooperative Extension System, New Hampshire's Assistant Director for Finance & Human Resources, Director of Information Management &

Distance Education, and the Educational Marketing and Information Manager participated in the Administrative Officers Meeting, National Leadership Conference, National Extension Technology Conference, and Agricultural Communicators in Education meetings.

3. New England & Northeast Region Organizational Leadership and Development

- The Associate Director provided administrative support for the Dean and Director while he served as Chair of the Northeast Extension Directors during FY02. This included participation in the group's Fall and Winter meetings.

F. Integrated Research and Extension Activities (Form CSREES-REPT)

Title of Planned Program/Activity	Actual FY2002 Expenditures
1. William Lord	\$12,088
2. Dr. Peter Erickson	14,121
3. Dr. John Roberts	24,415
4. Dr. Stefan Seiter	11,079
5. Dr. Catherine Neal	22,650
6. Dr. Paul Fisher	25,490
7. Dr. Charles Schwab	1,214
8. Dr. J. Brent Loy	1,218
9. Dr. William Trumble	3,033
	=====
	Total FY2002 Expenditures - \$115,308

Brief Report of Progress

1. Salary support provided for William Lord, Extension Professor and Fruit Specialist, to conduct research projects: (1) Intensive Production for Strawberries, and (2) Multi-disciplinary Evaluation of New Apple Cultivars.
2. Salary support provided for Dr. Peter Erickson, Extension Dairy Specialist, for research in Management Systems for Improved Decision-Making and Profitability of Dairy Herds.
3. Salary support provided for Dr. John Roberts, Extension Turf Specialist, who functions in a split Extension and Research position.
4. Salary support provided for Dr. Stefan Seiter, Extension Agroecology Specialist, who functions in a split Extension, Teaching and Research position.
5. Salary support for Dr. Catherine Neal, Extension Ornamentals Specialist, for research in Nutrient Management for Production and Maintenance of Ornamental Plants.
6. Salary support for Dr. Paul Fisher, Extension Ornamental Specialist, for research in A Decision-Support System for Control of pH in Soil-less Container Media.
7. Salary support for Dr. Charles Schwab, Professor of Animal & Nutritional Science, for research projects: (1) Metabolic Relationships in Supply of Nutrients in Lactating Cows; and (2) Management of Systems for Improved Decision-Making and Profitability of Dairy Herds.
8. Salary support for Dr. Brent Loy, Professor of Plant Biology and Genetics, for research projects: (1) Conservation and Utilization of Plant Genetic Resources, and (2) Genetics and Breeding of Cucurbits.
9. Salary support for Dr. William Trumble, Associate Dean for Research and Director, NH Agricultural Experiment Station, for joint administration of Integrated Research and Extension Activities.