

NORTH CAROLINA
COOPERATIVE EXTENSION
MAJOR PROGRAM
ACCOMPLISHMENTS
OVERVIEW

1998



NORTH CAROLINA COOPERATIVE EXTENSION 1998 PROGRAM ACCOMPLISHMENT REPORT

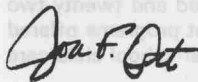
Program Overview

North Carolina State University and North Carolina A&T State University deliver coordinated Extension educational programs to all people in North Carolina to improve the quality of their lives.

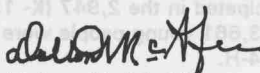
In 1998, North Carolina Cooperative Extension completed the third year of its long range plan, *Foundations For The Future*, consisting of twenty Cooperative Extension Major Programs, which address priority needs of the state's citizens within the construct of Extension's mission.

The successful achievements indicated in this report reflect the vast array of impacts that Extension programs are having on the people of North Carolina. These results are the end products of educational programs coordinated by the two cooperating land-grant universities in each of the state's 100 counties and the Cherokee Reservation. The programs are supported through the cooperation of county, state and federal governments, and a wide variety of organizations, groups, and individuals.

Extension's educational programs were planned and implemented in collaboration with thousands of the state's citizens. These programs reach all areas of the state and a vast proportion of its population. The programs were evaluated to assess the resulting contributions to a profitable and sustainable agriculture; a protected and enhanced environment; stable communities; responsible youth; and strengthened families. The cumulative information that is reflected in the reported accomplishments demonstrates some of the scope and quality of Extension's programs.



Jon F. Ort
Assoc. Dean and Director



Dalton H. McAfee
Assoc. Dean and Assoc. Administrator

4-H PROGRAMS

Celebrating Our Mission

The mission of the 4-H Youth Development Program in North Carolina is to create helping relationships to enable youth to become responsible, productive citizens. Those helping relationships are created through 4-H and in the related missions of 4-H, the North Carolina Cooperative Extension Service, the College of Agriculture and Life Science, and North Carolina State University and North Carolina A&T State University. Celebrating 4-H in North Carolina is a celebration of the youth, families, and communities of our state.

The treasure that is 4-H actively involves youth, adult volunteers, and donor/sponsors in the creation, implementation, and maintenance of educational program designs which celebrate both tradition and innovation. We strive continuously to "make the best better."

Celebrating Tradition and Innovation

4-H programs in 1998 were productive and efficient through both traditional and innovative educational program designs. Each program strives to help young people:

- learn to live
- learn to make a living
- learn to make our communities better
- become lifelong learners

Basic programs respond to innovations found in four related and collaborative Cooperative Extension Major Programs (CEMP):

- Child Care
- Leadership and Volunteer Development
- Resilient Youth, Families, and Communities
- Youth Development

Participation Demographics

In 1998 a total of 212,563 youths participated in one or more of 4-H's basic programs. Of these 30,546 were active in 1,426 4-H clubs, 106,862 were active in the 3,518 short term or special interest programs. Ninety-six thousand, six hundred and twenty-two (96,622) youth participated in the 2,947 (K- 12) school enrichment programs offered statewide. Another 33,661 young people were involved in 662 after-school child care designs managed by 4-H.

Seventeen thousand, three hundred and twenty-seven (17,327) kindergarten age youths were active. Every grade was involved including high points at 37,469 third graders and

29,155 fourth graders. Three hundred one (301) post-high school youth were involved. 4-H'ers continue to come from farm: 17,009; small towns: 112,640; big towns: 55,092; suburbs: 7,621; cities: 20,201; to total: 212,563.

Adult volunteers continue to be the heart and legs of 4-H. It would be difficult to estimate the value of the 23,303 adult volunteers involved in 1998. Nineteen thousand, one hundred fifty-eight (19,158) of these were direct youth contact volunteers. Four hundred five (405) were master volunteers in support of volunteer skill development. A total of 20,024 volunteers completed structured training to invest in their friendship groups, families, and communities. Three thousand, nine hundred and ten (3,910) of these volunteers were youth volunteers.

4-H Camping: A Legacy of Excellence

North Carolina's youth and families continue to "Discover the World Through 4-H Camps." Camps and educational center operations continue to grow in celebration of being exemplary units in the certification system managed by the American Camping Association. Seven thousand, five hundred and fifty-five (7,555) youths had a 4-H camping experience in 1998.

Over 3,500 youths "discovered the world" during 20-unit weeks of junior camping and 14 weeks of specialty camps including: Marine Science and Sailing, Cloverbud Camping (ages 6-8), Fur, Fish, and Game Camp, Horsemanship, Shooting Sports, Mountain Biking, Science and Technology, Adventure Camp, Challenge Camp, and 4-H Forestry Camp.

Our commitment to ongoing facility improvements through collaborations was realized with the construction of "Challenge Cabin" at Sertoma 4-H Center thanks to the North Carolina Bankers' Association, sponsors of "Challenge Camp," for at-risk youth.

Cooperative Extension Major Program Impacts

CEMP # 5 - CHILD CARE

The Child Care State Major Program focuses on opportunities which Cooperative Extension has to impact the quality, accessibility, and availability of child care and has two objectives.

Fifty-seven counties targeted the first objective: improving the quality of child care. Nine thousand, seven hundred and eighty-eight (9,788) child care providers were trained. Of these, 33 were credentialed, and 205 different sites were licensed. The list of collaborators is long and varied. It includes, community colleges, the Department of Human Resources, Head Start, the Red Cross, the North Carolina School-Age Care Coalition, the North Carolina Day Care Association, the Corporation for National Service, public schools, and the Partnership for Children.

More and more agents report that their work is augmented by grant funds. Typical funders include the Appalachian Regional Commission, Child Care and Development

Block Grants, CDA funds, Smart Start and AmeriCorps.

The second objective is to increase the amount of quality child care. Two million, three hundred twenty-seven thousand, five hundred eighty nine dollars (\$2,327,589) worth of new resources were involved at 79 new centers to expand the number of available child care slots by 3,367. There were 337 collaborations increasing awareness by 3,335 people.

Working to increase availability, Cooperative Extension agents have used a variety of means to achieve their goals. They have used needs assessments to determine the exact locations where child care is most lacking. They have secured funding to address the need, often serving on Smart Start boards - but also helping to write proposals for S.O.S. (Support Our Students) middle school and after school initiatives.

Key elements of this goal include:

- 1) More child care is now offered (early childhood, full summer programs, after school, intersession and in sections of the state formerly underserved);
- 2) Families who were not being served are finding resources through Cooperative Extension. Enhancement (including training) programs for child care professionals is becoming far more available in rural areas.

CEMP # 13 - LEADERSHIP AND VOLUNTEER DEVELOPMENT

Thirty-five counties worked to accomplish objective one and three. Fifty-nine counties worked to accomplish objective two.

Objective one is to increase knowledge and application of leadership skills in response to community problems. Seven thousand, three hundred and fifty-four (7,354) participants increased knowledge of leadership skills, while 3,689 of those adopted sound practices. Three thousand, four hundred and thirty-three (3,433) identified community problems, while 2,058 of those implemented action plans. Six hundred eighteen (618) community based projects were completed.

Objective two is to increase knowledge and management for volunteer systems. Nineteen thousand, two hundred and twenty-seven (19,227) participants increased knowledge of volunteer opportunities. Of those, 6,758 adopted volunteer management system practices resulting in the establishment of 702 new volunteer management systems.

Objective three is to actively involve volunteers in the solution of community problems. Two hundred twenty-four community issues were addressed by 2,585 persons involved in leadership training.

Success Stories.....

Madison County: The need for public exercise facilities has been identified by several

communities during some phase of Environmental Scanning, including Community Voices leadership training in 1997. A \$14,000 grant was awarded and used to construct three walking trails about 1/4 mile in length in three isolated rural communities. Additional funds are being sought to complete a fourth trail. Data from previously reported community leadership development activities was used to provide the impetus for securing the \$14,000 grant from Mission Hospital Foundation to the Madison County Health Consortium. These trails will provide citizens with a safer place to walk for exercise and support other extension programs, such as "Fit for Life." This is a collaborative effort with Extension and the Hot Springs Health Program and Madison County Recreation Department.

Wake County: One of the communities targeted for The Community Voices Leadership training in Wake County was South Park, which is located in inner city Raleigh. This group of Community Voices graduates now called "South Park Outreach" recruited two young women to participate in a GED Program. One of the ladies is now a mother and better equipped to handle the role of motherhood as a result of the support system and parenting resources made available to her from this group formed as a result of the Community Voices training program provided by Wake County Cooperative Extension. One of the community leaders and graduates of Community Voices, who has helped provide a great deal of outreach assistance to the women, is blind.

Partnering with the North Carolina Cooperative Extension Service, the North Carolina Extension Homemakers' efforts to strengthening families and communities through leadership development, educational support, volunteer network and research based information resulted in 1,116,689 contacts and 456,486 hours volunteered.

CEMP # 19 - RESILIENT YOUTH, FAMILIES AND COMMUNITIES

The "Resilient Youth, Families, and Communities State Major Program" of the North Carolina Cooperative Extension Service takes action to strengthen the resiliency of youth, families, and communities. Resiliency is the ability to cultivate strengths to positively meet challenges. The program focuses on prevention programming which strengthens "protective factors" and reduces "risk factors." Participants bring together and involve educators, researchers, agency and organizational personnel, youth, families, and communities, advocates, and practioners who share an interest in strengthening the resiliency of North Carolina's youth, families, and communities.

Objective one states: youth in high-risk environments will participate in community based programs resulting in youth acquiring coping skills, making informed decisions, and developing a sense of purpose and future.

Thirty-eight counties report 17,786 youths with: increased communicating, decision making, working in groups, understanding self, and relating to significant adult life skills; 9,873 with increased literacy; 12,432 with increased community involvement; and 13,128 with increased knowledge and awareness of alternatives to drugs and alcohol use.

Ten thousand, five hundred and eighty-six (10,586) demonstrated increased life skills;

5,341 improved academic performance; 1,416 reduced use of drugs and alcohol; 631 reduced judicial involvement; 1,153 reduced incidence of violence.

Objective two states: Families will participate in educational experiences enabling them to identify problems, determine solutions, and develop skills to cope with adverse family situations.

Fourteen counties report 1,153 family money management plans made, while 3,658 increased communication skills, and 3,606 increased coping and nurturing practices for a savings of \$13,207 through effective money management. Three thousand, five hundred and thirteen (3,513) participants reduced conflict through improved family and interpersonal communication.

Objective three states: community groups will take action to strengthen communities by creating environments which reduce youth and family risks through collaborative intervention and prevention programs in high risk communities.

Eighteen Extension Centers mobilized citizens and their communities to create environments which strengthen families and provide for risk reduction for youth. Six hundred and fifty eight (658) were actively involved in leading 49 economic/ community development programs, 60 new family support programs, and 55 new prevention programs.

CEMP # 20 - YOUTH DEVELOPMENT

CEMP 20 - Youth Development focuses on three major aspects of the 4-H program that contribute to the life skill and asset development of young people; the long term 4-H Unit/Club, 4-H School Enrichment Program and the 4-H Diverse Housing Program. Four major factors have been identified that contribute to the successful development of a child: social competence, problem solving, autonomy and sense of purpose and future. Those factors along with Search Institute's developmental assets are incorporated into 4-H experiences. Four-H club activities, presentation, record keeping, judging teams, school enrichment experiences, peer helper programs, community service projects and recognition programs are designed to give the participants an opportunity to develop the life skills/assets that any child will need to succeed in life.

A major goal of 4-H Youth Development Program is to help young people participating in 4-H programs to develop life skills and assets that will allow them to become competent, caring, and responsible human beings. In 1998 emphasis was placed on helping young people improve their life skills/assets in the areas of communication skills, cooperation, empathy and caring, critical thinking and planning, and goal setting.

Objective one states: Long term support systems will develop competent youth in the following life skill areas: 1.) managing relationships; 2.) decision making; 3.) communications; 4.) serving the community.

Impacts are measured in dollars to benefit youth. Ninety-one counties reported: \$424,884 dollars saved by the community from 4-H Community Service Projects;

\$668,557 scholarship dollars received by 4-H'ers; \$756,737 dollars earned by 4-H'ers as a result of their 4-H project work.

Life skills provide a measure of increased competency in youth as illustrated by the following areas: 27,095 managing relationship; 41,685 communication skills; 44,628 making decisions; and 45,160 self-confidence.

Objective two states: Youth involved in targeted knowledge transfer development activities will demonstrate improved academic performance. Fifty-six counties reported the following impacts as reported by their teachers using 4-H school enrichment materials:

Forty-seven percent of the 48,000 students demonstrated some change or a great change in their class attendance. Fifty-one percent of the 36,487 students reported some or a great change in homework completed. Forty percent of the 39,847 students demonstrated some or a great change in the quality of their homework. Fifty-four percent of the 40,191 students demonstrated some or a great change in their science grades.

Objective three states: Limited income youth residing in Diverse/Public Housing will increase life skills development.

Thirty counties reported: 3,188 youths improving their resistance to peer pressure; 1,044 youths defining aspirations; 3,821 youths acquired decision making skills; and 1,252 youths acquired conflict resolution skills.

4-H Summary

The North Carolina 4-H Program created helping relationships to enable youth to become responsible, productive citizens during the 1998 programming year. The youth, families, and communities of North Carolina were well served by the mission accomplishment of 4-H through the related missions of the North Carolina Cooperative Extension Service, the College of Agricultural and Life Sciences, North Carolina State University, and North Carolina A&T State University.

1998 proved to be a great year of productive traditional and innovative programs focusing on four of Extension's major state programs: Child Care; Leadership and Volunteer Development; Resilient Youth, Families and Communities; and Youth Development. A total of 212,563 youths and 23,303 adult volunteers worked to involve 30,596 youths in 1,426 4-H Clubs; 106,862 youths in 3,518 special interest programs; 96,622 youth in 2,947 (K-12) school enrichment designs; and 33,061 young people in 662 after-school, child care settings. Over 3,500 youths "discovered the world" during 20 unit weeks of junior camping and 14 weeks of 4-H specialty camps.

Fifty-seven counties targeted child care to train 9,788 child care providers and license 205 different sites. Two million, three hundred twenty-seven thousand, five hundred eighty-nine dollars (\$2,327,589) in new resources was invested at 79 new centers to expand available child care slots by 3,367.

Thirty-five counties worked to expand Leadership and Volunteer Development by involving 7,354 participants to plan and implement 618 community based projects.

Thirty-eight counties focused on Resilient Youth, Families and Communities.

Resilience programs report 10,586 youths with increased life skills; 9,873 improved academic performance, 1,416 reduced drug and alcohol use, 631 reduced judicial involvement, and 1,153 reduced violence. Four hundred thirty-two (432) collaborations were established; and 103 prevention programs were developed.

Ninety-one counties targeted youth development and increased life skills in 158,568 youths while investing \$424,884 in community savings, youth scholarships, project work earnings, and project work savings. Studies representative of 4-H school enrichment programs indicated that 47% of the 48,000 students improved attendance; 51% of 36,487 students improved completing homework; and 54% of 40,191 students received better science grades. Teachers reported these results plus savings to school systems.

North Carolina's 4-H Program is a treasure shared by our state's youth, families, and communities. It demonstrates the value of collaborating effort and fiscal efficiency in the spirit of locally based, educational design. Youth, parents, educators, community, and regional and state leaders work to create the treasure that is 4-H. In 1998, that treasure blazed brightly across the state of North Carolina.

AGRICULTURE, NATURAL RESOURCES, ENVIRONMENT, AND COMMUNITY AND RURAL DEVELOPMENT PROGRAMS

CEMP # 2 - AGRICULTURAL AND NATURAL RESOURCES POLICY

Agricultural and Natural Resources Policy programs are directed toward improving the efficiency and effectiveness of policies through better informed stakeholders, decision-makers and citizens. Educational programs on policy development and decision-making were related to the technical education programs of many of the other CEMPS. Specific programs focused on environmental protection, water quality, waste management, land use management, pesticide regulations, and agricultural policies. More than 6,800 people participated in Extension programs, learning about specific policies, the process by which policies are developed, and conflict resolution techniques. Extension programs involved over 300 volunteers contributing over 4,700 hours valued at over \$47,000.

Extension continues to work to train its personnel as well as those of other agencies and organizations on the facilitation and collaborative problem solving processes as a means of minimizing conflict and enhancing cooperative solutions.

The Natural Resources Leadership Institute continues to have an impact in North Carolina, with its participants involved in a variety of local and state-wide natural resource policy issues.

Extension has been instrumental in addressing environmental issues throughout the state. Examples include water quality management in the Neuse River Basin, shellfish habitat protection in Coastal areas, air quality concerns in the mountains, and land use management conflicts in urbanizing Piedmont communities. Lessons learned from these programs are being taught to Extension and cooperating agency personnel and other customers involved in similar efforts around the state.

CEMP # 3 - AGRICULTURE AND THE ENVIRONMENT

Agriculture and the Environment Programs educate customers on the relationships between agricultural systems and the environment. These focus on applying economically and environmentally sound techniques to protect natural resource quality. Specific programs address land, air, and water quality, waste management, soil, nutrients, pesticides, and petroleum products. Many cooperating organizations play a part in successful education programs, including USDA-NRCS, NC DENR, NCDACS, and local Soil and Water Conservation Districts.

More than 17,000 people participated in Extension programs, learning about best management practices for protecting the environment. Program impacts included training of 5,500 certified animal waste operators and 14,500 certified pesticide applicators. Extension programs involved over 4,000 volunteers contributing over 23,000 hours valued at over \$230,000. More than 230 media stories were produced describing the relationship between agriculture and the environment.

More than 300,000 tons of soil erosion was reduced because of conservation practices applied to approximately half the state's cropland. In addition, 200,000 acres of cropland. Using bioengineered genetic material, growers reduced pesticide use by over 200,000 pounds. State-wide, producers saved an estimated \$5 million by application of integrated pest management and other practices and technologies designed to reduce reliance on pesticides. Wildlife habitat was established on more than 10,000 acres.

CEMP # 4 - ANIMAL PRODUCTION AND MARKETING SYSTEMS

Producers of livestock, poultry and aquatic species have selected, adopted and implemented practices or enterprises that achieve business, individual and family goals of profitability and quality of life. Reports indicated that 26,635 producers increased knowledge of improved production practices. Of these, over 9,750 adopted practices to optimize income, and 2,576 improved financial planning and management procedures. Collectively, improved nutrition, breeding, marketing, buildings and facilities, and general management practices adopted were estimated to be worth \$11,943,200 in 1998. Over

5,000 farmers and 102,000 non-farm citizens received information about animal agriculture issues and animal food quality standards. Nearly 1,000 farms adopted appropriate standards and procedures to address industry issues such as waste management. In addition, numerous animal related educational activities reached several thousand school aged children with information on animal agriculture and its contribution to the state's economy. In conducting these programs, agents and specialists engaged 2,868 volunteers, who committed 31,987 hours valued at \$319,870, to deliver these programs.

The following sampling of success stories describe some of the specific outcomes and impacts that these programs have had on individual producers, youth and other stakeholders.

*Beef producers in Cabarrus County working with Extension feed bakery byproducts, saving themselves \$50,000 in purchased feed costs and saving the commercial bakery \$35,000 in landfill fees.

*Extension worked with a group of four Edgecombe County beef producers to coordinate their breeding, feeding, management and marketing programs and netted them an additional \$5,112 above traditional approaches of selling individually at graded calf sales. In another case, Catawba County producers enhanced mineral supplementation of their cattle, and through group purchasing, saved \$3,600 in supplement costs. In another county (Rutherford County), six producers coordinated their production and marketing of feeder cattle and increased income among them by \$13,200.

*Through collaborative educational programs, turkey growers learned about biosecurity and implemented disease prevention and control measures. Four turkey companies were involved, and all reported improvements in disease control and bird performance. One company, with production of over 350 million pounds, reported medication cost savings of \$2.1 million.

*On dairy farms, Extension programs have reduced losses to mastitis and mycotoxins. On one Stanly County farm, a team of professionals (veterinarians, farm staff and specialist) worked together to reduce monthly losses of \$3,000, save the farmer \$5,000 sampling fees to determine infectious cows, and resulting in increased gross returns of 25%. On another dairy (Yadkin), milk production was improved and cow health and reproduction were improved by properly managing mycotoxins in the herd, resulting in increased milk production over a two-month period of \$12,000.

*In Franklin County, 600 third graders learned directly from 12 livestock producers about various aspects of animal production. Support was provided by United Way, and a local TV farm news program and local radio station partnered to publicize and broadcast the event.

*In Swain County, consumers learned about factors affecting meat quality and meat safety considerations. Through a pre- and post-test, participants' knowledge increased 20% units and several have indicated principles learned in the workshop are used in shopping for and preparing meats.

CEMP # 6 - COMMUNITY AND ECONOMIC DEVELOPMENT

The effort in community and economic development programs has centered around bringing more resources and enterprises to communities and rural areas, assessing community needs and assets, developing and sustaining local leadership. Twenty-two counties reported efforts in Community and Economic Development in 1998. Many more conducted programs and had impacts. Particularly effective programs have been the development of tourism educational efforts. The western area of North Carolina has held two major tourism related workshops with a third in the planning. These efforts have reached over 300 people interested in establishing, enhancing, or supporting tourism enterprises. Already, extension faculty in western North Carolina are considered leaders in tourism within the state, and creating new partnerships with other organizations and agencies. In 1999, North Carolina Cooperative Extension reaffirmed its commitment to community development through renewed agreements with long-time partners and the development of new partnerships. Extension efforts through educational programs continue to build the number of communities with trained leaders, twelve more were organized in 1998 and 68 new projects were initiated. Communities were also assisted in securing grants and other resources. Extension efforts partnering with community groups has led to the acquisition of \$100,000 for park and urban forest development in one location alone. New enterprises are being founded in rural western North Carolina as well as the development of skills to meet market demands in urban areas. Home-based businesses resulting from educational programs in 1998 was 20 with a payroll over \$150,000. Overall, at least 10,000 people participated in community development programs with an economic impact of over \$500,000 to themselves or their communities.

CEMP # 7 - CROP PRODUCTION AND MARKETING SYSTEMS

Seventy counties reported accomplishments under one or more of the seven objectives in Crop Production and Marketing Systems. The following outcomes and impacts were associated with delivery of these programs.

Tobacco farmers have rapidly adopted the practice of baling flue cured. With a premium of \$0.05/pound for baled tobacco, 10 counties reported more than \$2 million added revenue for tobacco farmers who sold baled tobacco.

Peanut farmers in three counties used weather-based monitoring to determine the need for fungicide applications for leaf diseases. Farmers eliminated one spray by using the system, reducing pesticide use of 8,620 pounds and saving \$243,900. In two other counties, growers saved about \$550,000, using the same strategy.

More than 270 part-time and limited resource farmers in 24 counties added new crops to their enterprise mix, affecting 6,500 acres and increasing income by more than \$1 million.

In addition, 852 farmers in this audience adopted variety selection, no-till systems, and IPM strategies on about 14,400 acres, generating 1.2 million in added income.

Two floriculture growers were experiencing disease problems in their crops. After consulting with extension agents, the disease problems were solved, generating additional income of about \$50,000.

Almost 8,000 growers implementing IPM, nutrient management strategies, variety selection, and disease resistant varieties, resulting in increased profits of \$13 million. IPM practices were implemented by over 3,500 growers on 368,780 acres, reducing pesticide use by 346,000 pounds and saving farmers about \$6 million.

An estimated 2,400 growers reached through extension programs adopted bioengineered plant genetic material on 208,000 acres, saving an estimated \$1 million in pesticide costs.

Crop farmers adopting practices influencing marketing and farm product prices netted an additional \$1.8 million.

CEMP # 10 - FOOD AND FOREST PRODUCTS MANUFACTURING

This Cooperative Extension Major Program has two distinct components: Food Processing Industry and the Forest Products Industry. Both are important to the economy of North Carolina and warrant major efforts by extension faculty. In 1998 over 220 requests for assistance were received from small businesses and entrepreneurs, 25 new companies were started. Seven hundred people participated in food processor training programs to ensure compliance with regulations governing the food processing industry. Primary efforts have been to prepare seafood and large meat processors to comply with the new HACCP based regulations and Pathogen Reduction rules. Other efforts related to the rapid cooling of eggs with substantially reduce consumer's risks and improve shelf life. This could be a significant health, safety, and economic factor for North Carolina citizens State, national, and international programs on HACCP will continue to be an important component of Food Science Extension Programs.

In the forest or wood products industries, over \$2,000,000 has been saved through improved utilization, productivity, efficiency, or marketing as a result of extension programs. One firm experienced a savings of \$220,000 alone. Eighty-eight manufacturing firms have adopted recommended practices to improve their business, additionally 130 consumers have adopted practices related to selection, utilization, and maintenance of wood products. Through all wood products programs over 1,100 individuals were reached. The continued improvement in efficiency in the wood products industry is a focus of the extension programs for the coming year.

CEMP # 11 - FOOD SAFETY AND QUALITY

The Food Safety and Quality program focuses on increasing knowledge and encouraging the adoption of safe food handling practices of food service workers, consumers, youth and other audiences. These audiences are educated through innovative training, distance education, websites and demonstrations of safe food handling approaches. While the magnitude of the reduction in foodborne illness is difficult to determine, estimates indicate that the average cost of a restaurant foodborne illness outbreak is \$75,000, and the average cost of an individual case of foodborne illness of \$942

This program resulted in the following outcomes:

1. 19,726 consumers increased their knowledge of safe food handling
2. 15,471 consumers improved their attitude about the need to handle food safely
3. 2,571 food service workers increased their knowledge of safe food handling
4. 2,338 food service workers improved their attitudes about handling food safely

Impacts:

1. 10,640 consumers adopted safe food handling practices, increasing the potential to reduce the incidence of foodborne illness.
2. 2,410 food service workers adopted safe food handling practices

Eight hundred twenty people volunteered in this program, contributing 4,449 hours, valued at \$44,990.

CEMP # 14 - MARKETING AND PRODUCTION OF ALTERNATIVE INCOME OPPORTUNITIES AND ENTERPRISES

Twenty eight counties across the state participated in and reported against this program. The reported that farmers who worked with Extension invested a total of \$1.8 million in the production and marketing of alternative enterprises. Gross income from these investments were estimated to be about \$2.4 million. In addition, limited resource producers who integrated production and marketing approaches for alternative enterprises through their work with Extension reported gross income of \$380,000.

As a result of participation in the program, at least four county Farmers Markets were expanded or enhanced. Beekeeping, ornamental production, oriental vegetables, herbs, organic Christmas trees, poinsettias, raspberries, and seedless watermelon were enterprises listed among the success stories in the program. A specialty fruit and vegetable cooperative has been established in eastern North Carolina.

One hundred ninety six volunteers contributed to the program. They provided 1,308 hours of service, valued at \$13,080.

CEMP # 15 - NATURAL RESOURCES CONSERVATION AND MANAGEMENT

The Natural Resources Conservation and Management program has as its primary focus the education of adult and youth audiences about the benefits of natural resources and how to management in a sustained and responsible fashion. This program has included nearly 1,300 extension volunteers reaching over 10,000 people. Many of these 10,000 people were youth reached via environmental programs at schools, through Project Learning Tree, Project Wild and others. Successful environmental camps were conducted by county faculty in several counties. One county alone reached over 300 youth.

Natural resources decision-making is an important component of this program. The Natural Resources Leadership Institute continues to receive support, the third class graduated in 1998 and the number and complexity of projects continues to increase. The NRLI is now addressing some of the most controversial issues in the state. Overall at least 6,000 people gained from educational programs in this area with 425 adopting new technologies to solve environmental problems.

The Forest Stewardship Program has continued to have impact in North Carolina. With our partners in the program, an additional 115 stewardship plans were prepared covering 24,471 acres. Benefits from all participants in the Forest Stewardship Program include \$302,799 received for leasing recreational opportunities, \$14,300,000 received from timber sold on stewardship forests, and \$1,878,000 in enhanced value from planning and management.

This program has also been responsible for continuing to educate citizens and landowners about wildlife and fishery management. Overall 276 landowners attained new knowledge while 162 adopted new practices. This increased the acreage managed by 4,150 and an additional 10,400 acres put under lease in 1998. The emerging agriculture-wildlife research demonstration project is beginning to provide educational opportunities on increasing desirable wildlife populations and values on agricultural land in eastern North Carolina. This collaborative project will be the source of agent training and other programs in coming years.

CEMP #17 - RESIDENTIAL AND COMMUNITY HORTICULTURE, TURF, FORESTRY AND PEST MANAGEMENT

Demand for programs in the area of non-commercial horticulture and forestry and residential pest management continues to increase. The greater awareness of more diverse publics of the economic as well as environmental importance of landscape stewardship has emerged. Extension programs seek to educate target audiences so they adopt best management practices for residential and public use facility pests. Programs also educate target audiences about proper selection and management of plants for residential landscapes, including turf, edible plants, ornamental plants and trees. The use

of IPM (Integrated Pest Management) is important to fulfilling the objectives of this major program. At least 35,000 people increased their knowledge of IPM practices, and 21,000 adopted IPM as a practice. This resulted in a savings to consumers of over \$330,000 through reduced insecticide use and related purchases. An additional \$197,000 was saved through reduced pesticide related contamination problems in municipal sewer systems, container disposal and other problems. Efforts continue to proactively educate audiences through printed materials at retail centers, meetings, mass media and newsletters. Responding to calls and identification of pests also provides educational opportunities. Most calls regarding pests will not require over \$10 in additional purchases, but save about \$75 in professional fees.

The adoption of landscaping practices provided in Extension programs has increased property value of participants by an estimated \$7 million. Over 250,000 people have increased protection of the environment and urban ecosystem through proper plant health care, proper plant growth, and integrated pest management. A WaterWise program that promotes wise use of pesticides, fertilizer, water and proper soil care has been offered and proved successful in several counties. The Master Gardener Volunteer program continues to be an economical way to educate the gardening public, involving over 2000 volunteers donating over 110,000 hours valued at over \$1 million. These volunteers helped more than 400,000 gardeners statewide save unnecessary expenditures and increase the adoption of proper plant production and pest control techniques.

CEMP # 18 - RESIDENTIAL AND COMMUNITY WATER AND WASTE MANAGEMENT

Residential and community water and waste management programs have environmental and economic impacts on both private and public sectors. Proper management of solid waste, wastewater and watersheds is necessary for optimum environmental and economic health. Through Extension programs, more than 40,000 people increased their knowledge and awareness of best management practices to protect drinking water quality, better manage on-site wastewater systems, recycle household waste, and prevent residential water quality problems. Recycling programs resulted in over 79,000 gallons of used oil collected from farmers and over 620,000 pounds of household hazardous materials collected from homeowners. Extension programs involved over 1,200 volunteers contributing over 8,500 hours valued at over \$85,000.

The value of Extension programs to local communities totaled more than \$10 million through reduced waste in landfills. The value to homeowners totaled more than \$1 million, including over \$200,000 in saved healthcare costs due to early detection of contaminated drinking water; \$360,000 saved in avoiding replacing septic systems through proper maintenance; \$200,000 saved through residential water conservation; and \$180,000 saved through recycling programs.

FAMILY AND CONSUMER SCIENCES PROGRAMS

CEMP # 1 - AGING WITH GUSTO!

Thirty counties reported that 6,568 people increased awareness and knowledge of financial management techniques and consumer issues. Approximately 1,999 people adopted financial management and consumer practices. 1,570 people increased awareness and knowledge of estate planning. Over 500 people adopted estate planning practices. 1,826 people increased awareness and knowledge of retirement planning and savings. 728 people adopted retirement and savings practices. 1,625 people improved their financial status through adoption of consumer and financial management practices. People reported that they increased their savings and/or retirement contributions for future financial stability by \$166,720. 6,760 people adopted behaviors to meet the Food Guide Pyramid guidelines. 2,550 people adopted practices which lead to healthy physiological changes, such as decreases in blood cholesterol, blood pressure, blood sugar, and/or excess weight. People reported avoiding \$463,079 of costs through reduced risk of chronic disease. People reported avoiding \$37,895 of costs through improved health status via fewer visits to physicians. 11,299 people improved their health status through adoption of health practices. 1,639 people increased awareness and knowledge of community resources. 416 caregivers reported improved quality of life and decreased stress. 313 people adopted housing technologies that make housing accessible, such as design features, furnishings, and products. Twelve counties reported that 1,497 people increased awareness and knowledge of practices that promote health such as use of medicines. 707 people increased awareness and knowledge of practices that promote food safety. People reported avoiding \$22,470 of costs through adoption of practices that lead to proper food storage and safety. 1,100 volunteers contributed 5,640 hours valued at \$56,400.

CEMP # 8 - FAMILY & CONSUMER ECONOMICS

More than 43,000 people with diversity in age, marital status, gender, education level, income, and type of employment gained knowledge from program activities reported under one or more of the five CEMP#8 objectives. FCE Agents worked closely with other agencies and organizations in teaching working poor audiences to achieve financial self-sufficiency. Other program priorities were: elder health care/insurance; consumer fraud prevention; and selection/care of affordable housing. Other targeted audiences were: military personnel & families. 1585 volunteers gave 14438 hours valued at \$144380 to help Family and Consumer Education Agents deliver effective programs. 4307 people increased awareness and knowledge about money management and the decision-making process; \$40747 dollars of debt were reduced. Limited resource families in 33 counties reported saving or reallocating \$84299 in 1998.

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Six hundred and forty-five individuals reduced their debt load by \$40747. 6335 people increased awareness and knowledge of financial resources. 30 counties reported working with a variety of general and targeted audiences. Young people were reached through: workshops/day camps for the public, 4-H and other groups. 1136 people adopted

practices which led to living independently or living in affordable housing; 1749 people increased awareness and knowledge about housing financial decisions. 1477 people succeeded in budgeting for repair, maintenance &/or remodeling costs. 11536 increased awareness and knowledge of consumer decision making skills in such areas as financial services, insurance, transportation, health care, elder care; 3565 increased awareness and knowledge of public policy issues affecting consumers. \$147356 financial status of individuals and families improved. 40 Counties reported educational programs on consumer decision-making issues of concern to general audiences such as senior citizens, young families, and youth. 3187 increased awareness and knowledge of practices to extend or increase income. In one county consumers spent \$53 billion on home furnishings. A 3-hour workshop was held challenging consumers with practical skills in making wise consumer choices in spending money on home furnishings. They estimated the impact realized by attending the workshop averaged over \$600 per person.

CEMP # 9 - FAMILY AND PARENT EDUCATION

Thousands of individuals and families across the state were contacted, taught, mentored, encouraged, and impacted by the combined efforts of 65 county partners working on one or more of the objectives in CEMP 09. Utilizing various evaluation techniques including observational, self-reporting questionnaires, pre-post tests, telephone surveys, one-on-one conversation, purposive sampling, and in some cases extrapolation, the awareness and knowledge levels related to one or more content concepts of 64,222 participants were increased. 17,567 persons reported adopting practices as a result of Extension programs that would improve their personal or family context, and 7,144 reported learning new skills that would enhance their ability to deal with the challenges of life. An overall improvement in the quality of life was reported by 8,304 program participants. 4,289 families demonstrated improved family relationships through the resolution of financial conflicts. 4,333 families demonstrated improved responsibility of parents and children. 5,478 families adopted improved quality of family life by adoption of effective parenting through appropriate discipline techniques and critical nurturing practices. 1,207 families demonstrated improved responsibility of parents and children. 1,028 people improved their interpersonal relationships through the adoption of skills in critical thinking, communicating, leadership, managing finances, and managing stress. 992 reported improved self-esteem by implementing suggested strategies for strengthening families.

CEMP # 12 - HEALTH AND HUMAN SAFETY

More than 26,000 Extension customers have improved their quality of life related to health and human safety issues. 850 customers removed safety hazards in their homes such as eliminating raised door thresholds. Sixteen hundred customers learned how to use health care services and facilities in a more appropriate manner. More than 400 medical personnel were educated concerning agricultural related illnesses and injuries. More than \$897,000 was saved due to the reduced need for medical attention. The adoption of practices for better handling and storage of pesticides resulted in about \$400,000 in potential savings for Extension customers. 26,119 participants increased their awareness and knowledge of preventative health behaviors such as eating properly, exercise, and safety in the home. 11,462 participants adopted recommended health care practices such as dietary intake. 1,260 individuals adopted practices to remove safety

hazards in the home and 857 adopted practices to increase home safety. Approximately \$1.6 million in costs have been avoided by program participants such as reduced high risk behavior and preventative health behaviors. \$682,800 was avoided in costs through reduced agricultural illnesses and injuries.

CEMP # 16 - NUTRITION AND WELLNESS

Education programs addressing diet, health, and chronic disease prevention were attended by North Carolinians of diverse income levels, age groups, genders, and/or cultural backgrounds in every county of the state and on the Cherokee Indian Reservation. CEMP members brought in more than 2.5 million dollars in grant and contract funding. Over 76,000 participants increased awareness of their need to have good nutrition habits and over 50,000 changed diet and lifestyle habits, and improved their quality of life and the quality of life of others. Over 8,000 decreased dietary fat consumption, 5,410 decreased dietary sodium consumption, 6,558 increased fruit and vegetable consumption and over 4,000 increased dietary calcium consumption. 1,000 decreased high blood cholesterol levels, over 500 decreased high blood glucose levels, over 1,000 decreased high blood pressure levels, over 2,000 decreased excess body weight and over 2,000 adopted behaviors to improve their chances of delivering a normal weight baby. 50,989 participants improved diets to be more consistent with dietary guidelines for good health and the Food Guide Pyramid.

Program Volunteers and Hours Contributed for Each CEMP for the Year of 1998

CEMP	Number of Volunteers	Hours Served
01	1062	5704
02	302	4740
03	3948	23283
04	2870	32012
05	3004	42491
06	1343	12018
07	2424	20307
08	1619	14525
09	1455	6611
10	not applicable	not applicable
11	820	4499
12	1679	13334
13	20543	216076
14	213	1312
15	1438	7127
16	4224	41256
17	4981	74151
18	1282	8525
19	3316	46711
20	17834	257958
Total	74357	832640

Value @ \$10 per hour = \$8,326,400.

1998 COOPERATIVE EXTENSION MAJOR PROGRAMS ACCOMPLISHMENT REPORT

CEMP # 1 - AGING WITH GUSTO!

Brief Program Description. The issues of aging cover a broad spectrum of topics and concern diverse audiences. The aging process is a continuum, beginning at birth and ending with death. It is a relative process, different for each person. Some people feel old at 50; others age with gusto and feel 90 years young. Extension aging programs are designed to help people age with gusto by teaching them how to achieve optimum financial, physical, and mental well-being in their later years. Older adults learn how to prepare for and cope with problems related to finances, legal issues, health, caregiving, housing, and self-care. Primary audiences served are older adults, mid-life adults, caregivers.

Abstract: For the year 1998, the following information was reported under the Cooperative Extension Major Program 01, Aging with Gusto. Thirty counties reported that 6,568 people increased awareness and knowledge of financial management techniques and consumer issues. 1,999 people adopted financial management and consumer practices. 1,570 people increased awareness and knowledge of estate planning. 546 people adopted estate planning practices. 1,826 people increased awareness and knowledge of retirement planning and savings. 728 people adopted retirement and savings practices. 1,625 people improved their financial status through adoption of consumer and financial management practices. People reported that they increased their savings and/or retirement contributions for future financial stability by \$166,720. 405 people developed and implemented an estate plan. 349 people developed and implemented a plan for possible future incompetency and dependency. Seventeen counties reported that 5,261 people adopted practices such as decreased fat intake, decreased sodium intake, or increased fruit and vegetable intake. 9,904 people increased awareness and knowledge of healthy "behaviors" such as lowering the fat or increasing the fiber in their diets. 6,760 people adopted behaviors to meet the Food Guide Pyramid guidelines. 2,550 people adopted practices which lead to healthy physiological changes, such as decreases in blood cholesterol, blood pressure, blood sugar, and/or excess weight. People reported avoiding \$463,079 of costs through reduced risk of chronic disease. People reported avoiding \$37,895 of costs through improved health status via fewer visits to physicians. 11,299 people improved their health status through adoption of health practices. Fourteen counties reported that 492 people adopted stress management and other self-care practices, including use of formal and respite services. 1,639 people increased awareness and knowledge of community resources. 769 people increased awareness and knowledge of caregiving skills. 313 people adopted caregiving practices that improve the care of the impaired elder or other care receiver. 949 people increased awareness and knowledge about the need for coordinating legal, financial, and health care decision making. 416 caregivers reported improved quality of life and decreased stress. 474 people reported improved care for impaired elders and other care receivers. 230 people increased utilization of community resources by participants caring for older adults. 463 instances of improved

interagency cooperation on aging and health promotion issues were reported. Four counties reported that 427 people increased awareness and knowledge of housing options, financial options, and accessibility options that lead to affordable or accessible housing. 313 people adopted housing technologies that make housing accessible, such as design features, furnishings, and products. 10 collaborations and linkages with housing related agencies and individuals that foster affordable and accessible housing. 108 more people live in affordable housing. 110 people improved or increased their accessibility to housing. Twelve counties reported that 1,497 people increased awareness and knowledge of practices that promote health such as use of medicines. 1,201 people adopted practices that lead to improved health status. 707 people increased awareness and knowledge of practices that promote food safety. 566 people adopted practices that promote proper food storage and safety. People reported avoiding \$2,321 of costs through adoption of practices that lead to safe use of medicines. People reported avoiding \$22,470 of costs through adoption of practices that lead to proper food storage and safety. 1,100 volunteers contributed 5,640 hours valued at \$56,400.

Objective 1. Participants in aging issues programs will increase awareness, gain knowledge, change attitudes, develop skills, and adopt practices and behaviors to help make their later years more financially secure.

Counties reporting: 30

Measures of Progress: 6,568 people increased awareness and knowledge of financial management techniques and consumer issues. 1,999 people adopted financial management and consumer practices. 1,570 people increased awareness and knowledge of estate planning. 546 people adopted estate planning practices. 1,826 people increased awareness and knowledge of retirement planning and savings. 728 people adopted retirement and savings practices.

Impacts: 1,625 people improved their financial status through adoption of consumer and financial management practices. People reported that they increased their savings and/or retirement contributions for future financial stability by \$166,720. 405 people developed and implemented an estate plan. 349 people developed and implemented a plan for possible future incompetency and dependency.

Volunteers Involved: 542 volunteers contributed 2,935 hours valued at \$29,350.

Narrative: Older and mid-life adults received information through meetings, tours, educational publications, consultation, teletip, and/or videos on the following topics: consumer, telephone and credit card fraud, Medicare changes, Medicare eligibility, Medicare benefits, Medicare myths, Medicare managed care plans, supplemental policies, long-term care insurance, car leasing options, home safety (from crime, bathroom, kitchen, drug, and electrical safety), health insurance, advance medical directives, estate planning, estate planning for families with minor children, retirement planning, housing, healthy living, planning for possible future dependency, guardianship, durable powers of attorney, health care powers of attorney, living will, long-term care issues, physical and mental health, medical and financial information needed in cases of emergency, elder care plans, maintaining independence, health insurance for self-employed small business owners,

financial management, budgeting, shopping to stretch food dollars, Roth IRAs, investment options, accessible housing, warning signs of cancer, physical fitness and exercise, and nutrition.

Objective 2. Participants in aging issues programs will increase awareness, gain knowledge, change attitudes, develop skills, and adopt practices and behaviors to help them improve their health status.

Counties reporting: 17

Measures of Progress: 5,261 people adopted practices such as decreased fat intake, decreased sodium intake, or increased fruit and vegetable intake. 9,904 people increased awareness and knowledge of healthy "behaviors" such as lowering the fat or increasing the fiber in their diets. 6,760 people adopted behaviors to meet the Food Guide Pyramid guidelines. 2,550 people adopted practices which lead to healthy physiological changes, such as decreases in blood cholesterol, blood pressure, blood sugar, and/or excess weight.

Impacts: People reported avoiding \$463,079 of costs through reduced risk of chronic disease. People reported avoiding \$37,895 of costs through improved health status via fewer visits to physicians. 11,299 people improved their health status through adoption of health practices.

Volunteers Involved: 255 volunteers contributed 1,383 hours valued at \$13,830.

Narrative: Older and mid-life adults received information through meetings, tours, educational publications, consultation, teletip, and/or videos on the following topics: nutritional needs of the elderly, how to change eating habits, exercise, information on strokes, reducing fat, health and disease prevention, diet and exercise, diet and disease prevention, lifestyle changes, health and wellness, how to reduce health care costs by better health and nutrition, positive outlooks on life, exercise in building self-esteem, how to prepare nutritional meals, growing intellectually as you age, nutrition, health and women over age 55, blood pressure, cholesterol, weight, resistance exercise, food safety, sodium, shopping and cooking for 1-2 people, choosing nutritious and tasty meals, decreasing fat intake when eating out, choosing foods low in fat and sodium, increasing vegetable and fruit consumption, using herbs to reduce fat and sodium, diabetes, increasing calcium intake, cooking class for low income seniors, nutritional needs of cardiac patients, and osteoporosis prevention.

Objective 3. Caregivers will increase awareness, gain knowledge, change attitudes, develop skills, and adopt practices and behaviors to help them provide better caregiving.

Counties reporting: 14

Measures of Progress: 492 people adopted stress management and other self-care practices, including use of formal and respite services. 1,639 people increased awareness and knowledge of community resources. 769 people increased awareness and knowledge of caregiving skills. 313 people adopted caregiving practices that improve the care of the impaired elder or other care receiver. 949 people increased awareness and knowledge

about the need for coordinating legal, financial, and health care decision making.

Impacts: 416 caregivers reported improved quality of life and decreased stress. 474 people reported improved care for impaired elders and other care receivers. 230 people increased utilization of community resources by participants caring for older adults. 463 instances of improved interagency cooperation on aging and health promotion issues were reported.

Volunteers Involved: 82 volunteers contributed 283 hours valued at \$2,830.

Narrative: Caregivers and home health aides received information through meetings, tours, educational publications, consultation, teletip, and/or videos on the following topics: community resources available to caregivers, elder care directories, caregivers support group, mental and physical stresses of caregiving, coping with caregiving, legal aspects of caregiving, health and well being of the caregiver, stress reducing techniques, distance care issues, and Social Security benefits and financial benefits available to caregivers and care receivers.

Objective 4. Participants in aging issues programs will increase awareness, gain knowledge, change attitudes, develop skills, and adopt practices and behaviors to help promote affordable and accessible housing for older adults.

Counties reporting: 4

Measures of Progress: 427 people increased awareness and knowledge of housing options, financial options, and accessibility options that lead to affordable or accessible housing. 313 people adopted housing technologies that make housing accessible, such as design features, furnishings, and products. 10 collaborations and linkages with housing related agencies and individuals that foster affordable and accessible housing.

Impacts: 108 more people live in affordable housing. 110 people improved or increased their accessibility to housing.

Volunteers Involved: 67 volunteers contributed 88 hours valued at \$880.

Narrative: Older and mid-life adults received information through meetings, tours, educational publications, consultation, teletip, and/or videos on the following topics: accessible housing, maintaining independence, residence options for older adults, how to retrofit a home, community resources to help make the home more accessible, bathroom accessibility, ADA standards for ramp design, and affordable housing.

Objective 5. Older adults on fixed incomes will increase awareness, gain knowledge, change attitudes, develop skills, and adopt practices and behaviors to help them improve the quality of their physical health and enhance their self-care.

Counties reporting: 12

Measures of Progress: 1,497 people increased awareness and knowledge of practices that

promote health such as use of medicines. 1,201 people adopted practices that lead to improved health status. 707 people increased awareness and knowledge of practices that promote food safety. 566 people adopted practices that promote proper food storage and safety.

Impacts: People reported avoiding \$2,321 of costs through adoption of practices that lead to safe use of medicines. People reported avoiding \$22,470 of costs through adoption of practices that lead to proper food storage and safety.

Volunteers Involved: 154 volunteers contributed 951 hours valued at \$9,510.

Narrative: Limited income older and mid-life adults received information through meetings, tours, educational publications, consultation, teletip, and/or videos on the following topics: adopting better health practices, how to save health care costs, sharing the information learned, care management systems, long term care systems as part of the centralized care management system, fabulous and fit after 50 program, starting the day with a healthy breakfast, a fitness checklist, boosting body image, the importance of sleep, vitamins, supplements, herbs, sunshine, eating fruits and vegetables, coping with mood blues, and exercise, universal life span housing, vision and depth perception in the home, home safety, safe food handling, super foods for senior years, skin care, medication management, storing medications, discussing medications with your physician, heart disease, exercise programs for people over age 65, bone health and how to improve bone health, coping with depression, stress management, and food preservation practices.

Success Stories:

Gaston County: Two SHIP volunteers visiting a congregate meal site were approached by a senior citizen who shyly asked if there was some way she could get some help from Medicare for her arthritis, maybe through disability? The volunteers were concerned because she was eligible, according to the information she provided them upon questioning about age, employment, spouse, etc. They could not understand how she could be over 65 and never have been asked by her doctor about Medicare or insurance coverage. After consideration, they asked her to look through her purse for a red, white and blue card. She said she had such a card and showed it to them, verifying that she had Part A and B coverage. They explained the process of presenting the card at the time of treatment. The client stated that she had not known what the card was or that she was eligible.

Buncombe County: Working with senior citizens to change eating habits and to cook for themselves can be difficult but to work with legally blind elderly consumers to achieve these same goals can be very challenging. Working with a rehabilitation teacher we developed a microwave cooking instruction book and special recipes for one person. The recipes were done in large print and demonstrated to the clients. In a letter from the district rehabilitation teacher she stated, "The information the Cooperative Extension Service supplied enabled us to develop a cooking instruction book which is a model for our entire state independent living program". Over fifty legally blind senior citizens received the training in Buncombe County and the contractual teachers are now using the training in other counties.

Perquimans County: The 1998 Aging with Gusto Extravaganza was held to promote awareness of issues relating to older audiences. Topics targeted food safety, sittercise fitness, herb gardening, colorectal cancer, hearing impairment, urinary incontinence, modifications in the home, and stress management. By networking with local aging contacts, 230 families were able to learn about available services and meet specialist face-to-face. Evaluations indicated that knowledge was improved at least 2 or more degrees on the Likert Scale. With an estimated value of \$75 or greater, this program saved participants at least \$17,250 in needed services.

Currituck County: The North Carolina Cooperative Extension Service in six counties in the Northeast District collaborated with the Albemarle Hospital to sponsor a Regional Aging with Gusto Extravaganza. One hundred seventy adults attended the program which included a keynote speaker, eight educational workshop sessions, exhibits, entertainment and lunch. \$3,000.00 private dollars were secured to conduct the program. The evaluations noted a very high level of satisfaction by all participants in attendance. Participants reported they saved \$12,875 by receiving information from this program rather than paying for professional services. They also reported being motivated to making 292 changes such as begin exercising, follow American cancer guidelines, use food safety tips, etc. Some of their comments were: "Delightful, informative. Enjoyed every minute." "A very good, enjoyable day!", "Sitting exercises were very helpful, will share this." 15 other agencies/groups were also recruited to exhibit their educational information.

Currituck County: As our aging population continues to grow, more emphasis has been put toward educating this audience to enable them to have productive older years. Twelve aging with gusto programs were conducted including Medicare Update, Warning Signs of Cancer, Physical Fitness & Exercise, Clothing, Crime Prevention, Aging Process and other nutrition topics. A total of 532 adults were reached. An evaluation method was used to measure knowledge gain at each session. 89 percent of participants surveyed reported some knowledge gain. A telephone interview (2 weeks and 3 months after program) of Cancer program participants with 50 percent reported scheduling a cancer screening appointment as a result of the program.

Iredell County: One of the caregivers in the Caregivers' Support Group, which has been in existence 6 years, extended an invitation to the Family and Consumer Educator to speak at a local civic group. The caregiver told the group of calling to ask about coming to the support group. She said she was so mentally burdened and physically stressed that she had to have her husband drive her to the first meeting and then go in with her. She told of crying most of the meeting, pouring out her heart and soul of taking care of 2 elderly parents at a distance. She has attended several months and has learned to face and cope with some of her problems. She has reduced her amount of medicine and is taking tennis lessons. She said I could not have made it without the help and support of others in the group.

CEMP Contact Persons: Carol A. Schwab, Co-Chair, Ila Parker, Co-Chair
Team Members:

Jewel Winslow	Denise Baker	Jean Baldwin
Luci Bearon	Sarah Kirby	Jackie McClelland
Angela Fraser	Pearl Stanley	Chuck Moore

CEMP # 2 - AGRICULTURAL AND NATURAL RESOURCES POLICY

Public policy issues recognize the need for both policy and technical dimensions in educational programs. **CEMP #2 focusses on improving the efficiency and effectiveness of agriculture and natural resource policy through better informed stakeholders, decision-makers, and the general public. Informed individuals and groups increase their knowledge of the policy-making process and become involved in it. They increase their knowledge of how laws, rules and regulations are developed. They gain greater understanding and awareness of agriculture and natural resource issues and develop problem solving and consensus building skills to deal with them.**

Controversial issues addressed through public issues education principles and concepts under CEMP #2 include: water quality, water use, animal waste management, economic development, the future of farm programs, agricultural rules and regulations, land use, zoning, and solid waste.

1998 program accomplishments under CEMP #2 (Agriculture and Natural Resources Policy) included the areas of water quality, pesticide and fertilizer stewardship, land use planning, farmland protection, changing farm programs, and waste management.

Water quality education programs in the Neuse Riverbasin educated landowners, farmers, livestock producers, and forest owners on proposed rules and regulations and how they could get involved in the public policy process. People learned about community design, development run-off, water table management, sand filters, buffers, and animal waste technology and their impacts on water quality through tours, meetings, and conferences. Through participation in the policy making process, alternative management plans to preserve water quality were developed. Livestock producers and landowners were able to provide input for development of rules.

Cooperative Extension coordinated citizen involvement and promoted recognition of agriculture as consensus was reached on a county-wide **land use plan** to be recommended for adoption by officials in Moore County. In Chatham County where expanding bedroom communities potentially conflict with adjacent farmland on environmental issues, a county agriculture advisory board and agricultural enterprises were consulted and included in the county economic development plan. In Durham County, voluntary Agricultural District agreements benefit the public through preserving open space.

Other policy issues in which Extension has facilitated farmer and citizen involvement through education and collaborative problem solving include **tobacco program changes, local health department ordinances dealing with hog farms, promotion of agricultural needs to legislators, and natural resources legislation.**

Number of Units reporting accomplishments:

Objective 1: 10

(Participants will improve their understanding of existing and evolving domestic/international agriculture and natural resource issues, legislative and regulatory options, and their impacts.)

Objective 2: 7

(Participants will increase their understanding of, and involvement in, the process by which US, NC, and local agriculture and natural resource legislation, rules, and

regulations are developed.)

Objective 3: 5

(Participants will understand and use the public issues education process including the principles of conflict resolution and facilitation in conducting educational programs and in helping to resolve local issues.)

Measures of Progress (Statewide):

Objective 1:

1. Participants in educational programs focusing on environmental and natural resource issues: **4523**

Objective 2:

1. Participants in educational programs that focus on the process by which agricultural and natural resources legislation, rules and regulations are developed: **1975**

Objective 3:

1. Participants in educational programs dealing with public issues education and conflict resolution: **369**

Impacts (Statewide):

Objective 1:

1. Increased knowledge and awareness of environmental and natural resource issues and policies: **2202** (number demonstrating)

2. Increased knowledge and awareness of environmental legislation and regulations affecting agriculture: **1181** (number demonstrating)

Objective 2:

1. Participants with increased knowledge of the policy making process: **1318** (number demonstrating)

2. Increased public participation in policy making: **1730** (number participating)

Objective 3:

1. Participants adopt public issues education, conflict resolution, and facilitation principles and techniques: **239** (number adopting)

2. People participating in a collaborative problem solving process to resolve a community/public issue: **275** (number participating)

3. Community/public issues resolved through collaborative problem solving: **6** (issues resolved)

Volunteers involved and value:

Objective 1.

Number: **136**

Hours: **2056**

Value: \$ **20560**

Objective 2.

Number: **106**

Hours: **2085**

Value: \$ **20850**

Objective 3.

Number: 60

Hours: 599

Value: \$ 5990

Success Stories

The Neuse River rules proposed by the NC Environmental Management Commission have caused a great deal of confusion for landowners in the Neuse Basin. The existing buffer rule has changed twice and people are unsure how they are affected. Forest landowners in particular are concerned. Responding to the need to bring understanding to this issue, Extension hosted a meeting specifically for the forestry community. We presented background information on how the rules came about. We also had a DWQ Field Rep. tell what they were looking for and how they interpret the rule. After lengthy discussion, the 70 people attending developed a greater understanding of the rule and Extension's educational role within the regulatory nature of the Neuse rules. Many attendees commented that they had a much better understanding of what they should do to comply with the buffer. (reported by Craven Hudson)

The Upper Neuse Basin Association is working on an **alternative management plan** to what has been developed by the EMC. Elected officials who serve on its board of directors often make statements that show an incomplete understanding of land use/water quality relations. Cooperative Extension sponsored a tour for these officials that started in the headwaters and ended at the Neuse estuary in Craven County. Officials saw a host of demonstration projects that covered urban and agricultural issues. A highlight of the tour was a meal and dialogue with farmers and lower basin officials. Lower basin citizens were appreciative that board members wanted to hear their concerns. Upper Basin officials commented that the tour opened their eyes to what is really happening down river. One said, "The weeds weren't there until we got to the homes and green lawns. Homeowners are definitely impacting the river." (reported by Craven Hudson)

Martin County is the 9th most ag related income dependant county in the state. Tobacco in Martin County accounts for 28% of total farm income and 40% of crop income. Government policies have become decidedly unfriendly to the tobacco industry. **Changes for tobacco** spell drastic changes for the county. An educational effort has been mounted in order to educate farmers and the public to some of the likely impacts of these changes. Newspaper articles(3), civic club presentations, and a presentation before the county commissioners has helped to raise awareness of the economic impact of tobacco on the county. County citizens will now be expecting and receptive to change. (reported by J. B. Coltrain)

A rapidly growing retirement community, tourism and leisure activities and changes in agriculture are **changing land-use practice** in Moore County. Elected officials recognized the need to develop a county wide land-use plan(LUP). The diverse population (retirement, newcomers, native) caused this to be a very controversial subject. The Moore County Cooperative Extension Service entered into a memorandum of understanding to work as a team with the planning staff in coordinating citizen participation, preparation and delivery of educational programs. Extension provided leadership in cooperation with Co. Commissioners, and Planning Department in organizing a committee of 21 citizens representing the diverse population of the county to assure the involvement of citizens.

A total of 1050 citizens participated in the educational and community input meetings. A consensus has been reached to recommend a county wide LUP and implementation suggestions. While a controversial subject, through the team effort of citizens, extension, planning dept. and county commissioners the LUP is a reality. (reported by Charles Hammond)

North Carolina Farmers have been portrayed as polluters of surface and ground water. The **River Friendly Farmer** Program was adapted from Minnesota to assist farmers in combatting this stereotype. The program was expanded from Lincoln County and is currently operating in 10 North Carolina Counties. Local farmers allowed 67 East Lincoln High School students to monitor water quality monthly on their farms. The results were impressive. No pesticides or fertilizers were found to have escaped into the water. This surprised some of the students who believed that farming always caused pollution. Local media were instrumental in spreading the word regarding the excellent state of farming in the county. Plans are to continue this program locally for years to come. Several other farmers have come forward to participate in the River Friendly Farmer program as a result of reading about it in the newspaper. (reported by Matt Taylor)

To help maintain water quality in the **White Oak River Basin** and the Neuse River Basin, NC Cooperative Extension Service - Jones County Center has promoted Best Management Practices (BMPs) for a value to the community of \$5,000. Local citizens and government are increasingly aware of the importance of maintaining the quality of natural resources in the county. A local volunteer committee has been formed called, the Jones County Quality of Natural Resource Alliance, to examine the state of natural resources in the county, have a understanding of what influences the quality of natural resources, review environmental concerns of the citizens, and make informed recommendations to the Board of Commissioners on how to protect and enhance our environment. These volunteers make up or represent different stakeholders who's goal is to have a consensus on any issue that may be examined by the Alliance. (reported by Minton Small)

Approximately 35 leaders representing various **business sectors** from the upper and lower **Neuse Basin** met in New Bern over dinner to discuss **water quality issues**. Bankers, Chamber representatives, developers, farmers, and elected officials participated. This meeting's purpose was to facilitate a better understanding of perceptions of potential impacts on water quality (population growth, urban development, agriculture, etc.) as viewed by people from opposite ends of the basin. Participants left better informed as to how different business sectors perceive water quality which is somewhat related to location within the basin. This meeting also opened the door for future communication and understanding that everyone contributes and is responsible for being a part of the solution. (reported by David Hardy)

Extension success occurred recently at the **Agricultural BMP Field Tour** which was a part of the 1998 Neuse Conference held in New Bern in November. The purpose of this tour was to educate people interested in the Neuse rules as to possible BMP strategies to attain necessary nitrogen reductions as mandated by the state. Approximately 45 people representing various local and state agencies attended and visited two watersheds where water quality practices were discussed by NCSU Extension and Research Faculty, Division

of Water Quality, and Division of Soil and Water staff. Teaching was emphasized through use of background data of watersheds, topographic maps, and hands on evaluation of site conditions (soil augering). After the tour, participants were surveyed as its value. Over 90% rated the tour as exceeding their expectations, very good as to organization and presentation, and very good as to meeting the intended objectives. (reported by David Hardy)

An **agricultural, forestry, and wetlands tour** to Plymouth heightened agribusiness, landowner, citizen and farmer senses of awareness to wetland environments, made them more aware of the value and benefits of precision agriculture; allowed them to understand the methods, importance and benefits of wetlands plants; and see how paper is produced. Nearly all of our county lies in the Neuse River Basin, which makes many areas similar to the wetland environments toured. As a result of this tour, participants realize the similarities in all wetland environments and are constructing or evaluating usage. Nurserymen, farmers and homeowners are implementing practices identified in the Deer Exclusion Research to protect plants from the hungry deer as populations grow. Since the tour, two participants have pursued the nursery aspect of wetland construction, another is considering converting a tobacco greenhouse into a planting bed for Atlantic white cedar, and another agribusiness has implemented precision farming services. (reported by Eric Spaulding)

The **White Oak River** and its estuarine waters are primary nursery waters and an anadromous fishery for herring, shad, striped bass, and sturgeon. The overall objective of **WECO (Watershed Education for Communities and Local Officials)** is to improve water quality in the White Oak River through education of citizens and government officials who live and work in the watershed. To support these objectives the project maintained participatory, collaborative working relationships with five state agencies and met monthly with a stakeholder Advisory Board representative of the local government entities and interests in the White Oak River watershed, including mining, forestry, crop agriculture, livestock agriculture, urban development, tourism, residential and commercial development, sport and commercial fishing, as well as environmental and civic interests. The work of this group has been facilitated by NC Cooperative Extension Service of NC State University and County Extension offices of Carteret, Onslow and Jones Counties. This project broadens the role of the NC Cooperative Extension Service for providing educational opportunities to teach facilitative, collaborative leadership skills to citizens and local officials. It also formalizes a methodology for implementing multi-jurisdictional, watershed-based, locally-supported, water quality programs which can be applied to other watersheds. Techniques for linking technical and scientific information with policy development to resolve issues are emphasized, demonstrating that Extension can achieve success in policymaking on controversial issues by implementing an educational role featuring citizen and stakeholder involvement and empowerment. (reported by Leon Danielson)

CEMP #2 program accomplishments and progress in 1998 encompassed many areas of agriculture and natural resource policy including animal waste management, water quality, land use, urban/rural land interface, farm programs (especially tobacco), economic development, and various agricultural rules and regulations. Some of the accomplishments reported under other CEMPs also involved policy issues (Animal waste -CEMP 4, Use of

best management practices - CEMP 3, natural resource management - CEMP #15, and developing facilitation and consensus-building skills among leaders - CEMP 13.

Because of proposed Neuse River rules aimed at improving water quality and reducing nitrogen loading, many program accomplishments involved water quality educational programs in the Neuse Basin. These programs focused on educating citizens and especially farmers about water quality issues so they could be involved in the rule making process and understand of how rules are interpreted. Extension has brought stakeholders and environmental management commission boards together through tours, meetings, and conferences. In the Upper Neuse Basin, buffer rules were explained by NC Division of Water Quality field representatives, and an alternative management plan is being developed. In Johnston County, a constructed wetland was developed to demonstrate its effectiveness in improving water quality. River Friendly Farmer groups have been organized in many areas to promote the farmer's positive role in improving water quality. In Jones County a local volunteer committee has been formed to look at environmental concerns of citizens and make recommendations on environmental protection. Tours in the Lower Neuse Basin have educated many about best management practices as strategies to reduce nitrogen loading.

Other riverbasins are following similar strategies in anticipation of water quality rules and guidelines. Buncombe County and Lincoln County also have River Friendly Farmer programs to recognize farmers working to improve water quality.

Animal waste operators in the swine and poultry industry have been trained in all aspects of waste management as required by NC regulations. Farmers have learned the reasons behind the waste management rules and the importance of nutrient management and how to avoid negative water quality impacts. After passing an exam and being initially certified, continuing education credits are provided by extension so licenses can be retained.

Land use issues are of concern in many counties that are facing increased urbanization and also see a need to protect farmland as "open space." With Extension's guidance, a Moore County steering committee reached consensus on developing a countywide land use plan to be presented to the planning board and county commissioners. In Chatham County, a workshop helped market the importance of agriculture, so that now, agricultural interests are represented and provide input for an economic development plan.

Several counties have formed groups of concerned farmers to deal with changes in the tobacco program. As these and similar policy changes affect agriculture, it is important for farmers to learn how they can address an issue and come to consensus. In Sampson County, a "Friends of Agriculture" farmer group plans to present its concerns on agricultural issues to legislators.

As continued changes occur in the agricultural and natural resource arena, there will be continued opportunities for Extension to address policy issues surrounding these changes and educate those involved in policy development and how they can be part of the process.

CEMP #2 Team Members:

Leon Danielson - co-chair	Craven Hudson		
Marjorie Rayburn - co-chair	Greg Jennings		
Ted Feitshans	Todd Lowe	Lanny Hass	Steve Smutko
Rick Hamilton	Michele Marra	Steve Hodges	Nancy White
Charles Hammond	James Parsons		

CEMP #3 - AGRICULTURE AND THE ENVIRONMENT

2. Program Overview

Agriculture and the Environment State Major Program mission is to develop and implement educational programs to improve the clientele understanding of the complex relationships between agriculture and the environment. Programs were targeted to seven clientele groups:

- Livestock, poultry and fish producers;
- Field crops producers;
- Nursery, greenhouse, turf and landscape professionals;
- Agribusiness professionals;
- Agricultural service agencies;
- Special interest groups; and
- Pesticide certification and training.

3. Abstract

Production of livestock, poultry, agronomic, horticultural and ornamental crops is economically, socially and environmentally important to the citizens of North Carolina. Roughly 30 percent of North Carolina's GNP is derived from on-farm production or value added to farm products. Migration of non-farm population into agricultural production areas has resulted in much conflict between producers and non-farm residents. Concern about nuisance odor and pollution of surface and ground water from mismanagement of agricultural production systems has lead to adoption of many laws and regulations aimed at protecting the environment. In order for agricultural producers to comply with environmental regulations and maintain economic productivity, many are having to implement management and/or structural practices. Agriculture and the Environment educational and demonstration programs are targeted to producers, agribusiness and agricultural service agencies to make sound decisions that protect the environment and maintain productivity through adoption of sound practices to manage water, waste, soil, nutrients and pesticides. Targeted practices include nutrient and waste management, practices to reduce soil erosion and sediment delivery to surface waters, sustainable production systems that utilize reduced tillage and integrated pest management, and ecosystem management through restoration of habitat, wetlands, riparian buffers and streambank stabilization.

Program impacts include: utilization of more than 30 million pounds of nutrients derived from livestock waste or other recycled biosolids; use of conservation practices on roughly 50 percent of the states cropland resulting in a reduction in soil erosion by over 300,000 tons; certification or re-certification of 5,500 waste operators, 1,500 nursery, greenhouse or turf professionals and 14,500 pesticide applicators. The use of biotechnologies rather than traditional/conventional practices reduced pesticide usage by over 200,000 pounds. Over 200,000 acres were treated with field borders, filter strips and permanent cover resulting in wildlife habitat establishment on over 9,000 acres. Over 500 miles of riparian buffers were established along intermittent and perennial streams. Extension faculty conducted 157 industry meetings and trade shows promoting environmentally sound

agriculture with nearly 5000 agribusiness professionals participating. Two hundred and fifty community and special interest environmental educational programs resulted in 20 policies being adopted that reflected both the agricultural community's and the special interest groups' needs. Public awareness and knowledge of the link between agriculture and the environment was increased by participation of 17,313 citizens in educational programs. Enhanced attitude toward agriculture was reflected by 238 media stories promoting a positive image of agriculture. Over the past year, roughly 4000 volunteers contributed over 23,000 hours valued at over \$230,000. Agriculture and the Environment programs costing roughly \$1.7 million are valued at \$28 million to the targeted audiences and nearly \$45 million to society through advertment of negative environmental impacts.

Objective 1: Livestock, poultry, and fish producers will adopt and promote economically and environmentally sound practices to manage water and waste materials for the purpose of improving air and water quality protection.

4.1 Units Reporting Accomplishments: 46

5.1 Statewide Measures of Progress:

5,459 land application operators of animal waste trained and certified
500,000 acres nutrient testing (273,393 acres soil test analysis; 236,788 acres land application having waste analysis; 13,512 acres having plant tissue analysis)
1,373,348 tons feed analysis
84,617 acres conservation practices implemented/maintained
262,862 tons waste composted
785 manure application equipment calibrated

6.1 Statewide Impacts:

94,985 tons reduction in soil erosion (loss) resulting from conservation practices implemented on animal production lands
31 M pounds nitrogen, 20 M pounds phosphorus with a value of \$8.5 M were utilized as crop fertilizer.
3,095 out of 5,597 producers utilize approved waste utilization plans.
550 farms utilized best management practices: (84 walking trails, 119 stream crossings, 185 managed streambank vegetation and 365 mortality composters)
86 permit and water quality violations or odor complaints against livestock producers were issued

7.1 Volunteers involved

424 volunteers contributed 1,734 hours valued at \$17,340. The estimated value of the animal waste management education programs in counties making cost/benefit analyses were as follows:

Value to Targeted Audience:	\$ 8,572,300
Value to Society:	\$ 9,939,000
Estimated Program Cost:	\$ 307,330

8.1 Success Stores:

Local System: Lenoir

Person Reporting: Jackie Nix

Hay production is preferred method of utilization of nutrients from animal wastes. However, unless hay is removed from application fields, nutrients have not been properly removed. In an effort to help livestock producers sell hay to outside sources (thus removing nutrients) the Southeastern NC Hay Directory was formed by collaborative effort. The directory provided advertisement for 32 hay producers from 9 SE NC counties in 1998. Seventeen producers responded to an Extension survey. It was found that these producers collectively gained 71 new buyers due to participating in the directory in the past year, resulting in an increased \$53,000 in hay sales. All have observed the educational material in the directory as being useful to their buyers. In fact 51 buyers have requested forage analysis reports as a result of information received in the directory.

Number 2: An on farm research demonstration conducted on low cost feed alternatives for stocker calves demonstrated that feed costs can be reduced by 50 percent by using a ration of composted broiler litter and soybean hulls. Stocker calves that were fed a commercial ration lost \$11.57 per head while calves that were fed soybean hulls and composted broiler litter netted a profit of \$31.50 per head.

9.1 Summary Narrative

Nutrient management educational programs for both wet and dry animal waste management systems continue to be an educational program focus. During 1998 a team of 35 county and state faculty conducted over 135- 4 hour workshops on dry poultry litter nutrient management with over 3065 poultry growers completing the workshop. The growers attending the workshops represented over 123 million bird production capacity and are producing an estimated 1 million tons of poultry litter. One county survey indicated that of the growers who attended the workshops from that county a 41 % adoption rate of nutrient management plans was achieved within 6 months of the completion of voluntary educational workshops. Educational programs for wet animal waste management systems with both certification and continuing education programs. Impact of these program as reported by county agents include adoption of BMP's that resulted in improved record systems, more stream buffers zones, less soil erosion, decreased operating costs, and reduced excess nutrient build up in soil.

Objective 2: Field crop producers will adopt and promote economically and environmentally sound practices to manage water, soil, nutrients and pesticides for the purpose of improving water quality protection.

4.2 Counties Reporting Accomplishments: 43

5.2 Statewide Measures of Progress:

2 M acres conservation practices on cropland : (Conservation tillage, 426,881 acres; no-till, 659,193 acres; residue management, 500,905 acres; nutrient management, 310, 019; controlled drainage, 252,778 acres)
506 miles of forested riparian buffers were installed along intermittent and

perennial streams.

884 acres of biotechnological controls were used: IPM (394,011 acres), scouting (425,442 acres), and biological control (175,544 acres).

192,469 acres on 2,961 farms were treated with field borders, filter strips and permanent wildlife cover.

6.2 Statewide Impact:

219,291 pounds reduction in pesticides usage

17,471 pounds reduction in commercial nitrogen fertilizer usage

22,389 pounds reduction in commercial phosphorus fertilizer usage

200,000 tons reduction in soil erosion compared to conventional tillage practices

9,296 acres wildlife habitats established

7.2 Volunteers involved and value

502 volunteers contributed 5,495 hours valued at \$54,950. The estimated value of the field crop environmental education programs in counties making cost/benefit analyses were as follows:

Value to targeted audience -	\$ 9,227,605
Value to Society -	\$ 13,917,615
Estimated Program Cost -	\$ 397,297

8.2 Success Stories:

Local System: Craven

Person Reporting: David H. Hardy

Extension success occurred recently at the Agricultural BMP Field Tour which was a part of the 1998 Neuse Conference held in New Bern in November. The purpose of this tour was to educate people interested in the Neuse rules as to possible BMP strategies to attain necessary nitrogen reductions as mandated by the state. Approximately 45 people representing various local and state agencies attended and visited two watersheds where water quality practices were discussed by NCSU Extension and Research Faculty, Division of Water Quality, and Division of Soil and Water staff. Teaching was emphasized through use of background data of watersheds, topographic maps, and hands on evaluation of site conditions (soil augering). After the tour, participants were surveyed as its value. Over 90% rated the tour as exceeding their expectations, very good as to organization / presentation, and very good as to meeting the intended objectives.

Local System: Moore

Person Reporting: Tyler Mitchell

This Spring we have been establishing BMP's in Moore County, through the EPA 319 program. There are 5 landowners working in this project. At the headwaters of McClendons's Creek is the wildlife preserve of Fred Rose. Mr. Rose approached us to help him with a severe erosion problem. It is estimated that on 15 acres, up to 56 tons of soil

per acre were lost each year over the last 30 years. With the help of the Soil and Water District in Moore County, we have renovated the land and established a good groundcover of Atlantic Coastal Panic Grass. This forage is very wildlife friendly and is currently doing well, even through a drought.

9.2 Narrative Summary

The use of biotechnologies rather than traditional/conventional practices reduced pesticide usage by over 200,000 lbs. Nitrogen commercial fertilizer, compared to conventional use or previous rates, was by 17,000 lbs while commercial phosphorus fertilizers were reduced by over 20,000 lbs. Soil loss was reduced by an estimated 200,000 tons. Wildlife habitat was established on over 9,000 acres. The estimated value of the field crops environmental programs is estimated at over 20 million dollars.

OBJECTIVE 3. Nursery and greenhouse growers, turf and landscape professionals will adopt and promote economically and environmentally sound practices to manage water, soil, nutrients and pesticides for the purpose of improving water quality protection.

4.3 Counties Reporting Accomplishments: 28

5.3 Statewide measures of progress:

1172 (10% increase from 1997) Commercial Nurserymen and Greenhouse Growers adopted BMPs related to water, soil and nutrient management strategies including techniques such as cycled irrigation (347 ; 5% Increase over 1997) ; water re-use (255; 33% increase); split application and/or controlled release fertilizers (1205; 10% increase); foliar/soil test analyses to determine fertilization rates and timing (994; 17% increase); conservation practices (915; 25% increase); and integrated pest management (1622; 14% increase over 1997).

9,466 tons waste products re-cycled due to nursery, greenhouse, turf and landscape education programs: (9083 acres of where water management programs have been implemented, and an estimated 4,337 acres where erosion control practices have been included in the use and activities).

1352 new licensed pesticide applicators for ornamentals and turf in 1998. Other certification and licensing training held and number of participants include: new registered landscape contractors (65); new certified plant professionals (129); and new certified landscape technicians (54).

6.3 Statewide Impacts:

2000 people adopted environmentally friendly pest management practices.

9500 tons of waste products are re-cycled.

9,000 acres involved in 'Green Industry' management.

7.3 332 Volunteers contributed 1764 hours valued at \$17,640. The total estimated value of nursery, greenhouse, and landscape environmental education programs

was:

Value to Targeted Audience:	\$ 1,746,390
Value to Society:	\$ 3,566,300
Estimated Program Cost:	\$ 168,517

8.3 Success Stories

Local System: Johnston
Person Reporting: Jay Darden

Chlorotic plants, disease, high labor and water quality are all factors facing ornamental nurserymen. Cooperative Extension in cooperation with fertilizer companies conducted a fertilizer study on a 32 acre nursery. As a result of the study the nursery has purchased two slow-release fertilizers with plans to convert the entire nursery. The two replicated studies on the nursery concluded that slow-release fertilizer eliminates root burn and the 4X minor nutrient application, thus chlorotic plants and phytophthora were at a minimum. (this represents an average revenue gain of \$83,475) In addition labor costs will be cut 75%.(this represents an annual savings of \$19,977) Lastly, the water leaving the nursery will contain less nitrogen. Instead of the four applications/year (15.21 gms Nitrogen/year/pot) the nursery is going to make one application (10.1 grs Nitrogen/year/pot) Across the nursery this represents a reduction of 3.48 tons of Nitrogen.

Local System: Caldwell County
Person Reporting: Craig Adkins

Ornamental nursery growers in the foothills are growing up to 125 species of flowering and ornamental shade trees. Some growers planting these trees have had little exposure to the vast array of potential pest problems. An IPM grant in the amount of \$5,050 was obtained by the NCCES agent for the purpose of developing an IPM program and manual for flowering and ornamental shade trees. Growers were educated on the principals of establishing an IPM program so that potential pest problems were recognized and dealt with in a timely manner. Ten growers participating in the 1998 program estimate a savings potential of \$5,000 to \$8,000 on chemical and labor costs by adopting and implementing IPM on acres planted in flowering or ornamental shade trees. Those participating in the 1998 program have indicated that implementing IPM helped them to grow better plants by staying on top of potential pest problems.

9.3 Narrative Summary

The Ornamental, Turf and Landscape industries make up one of the largest population of professional clientele trained by the cooperative extension programs. Nearly 7000 participants (6968) were provided training and re-certification credits as licensed pesticide applicators for ornamentals and turf. Concern for the environment and timely training are changing soil, water, nutrient and pesticide application and management practices of "Green Industry" professionals. Over 2000 people have adopted environmentally friendly pest management practices. Nearly 9500 tons of waste products are re-cycled. As a result extension education programs, best management practices have been implemented

on over 9,000 acres involved in 'Green Industry' management. Conservation programs including water conservation, erosion controls, run-off water capture and re-use and practices to reduce nutrient application rates and loss have been implemented.

Objective 4: Agribusiness professionals will adopt and promote economically and environmentally sound practices to manage water, soil, waste materials, nutrients, pesticides, and petroleum products for the purpose of improving air and water quality protection.

4.4 Counties Reporting Accomplishments: 16

5.4 Statewide Measures of Progress

157 industry meetings and trade shows

4740 agribusiness professionals acquired information

130 environmental educational programs sponsored by agribusiness.

6.4 Statewide Impacts:

225 companies produced literature

147 environmental products and equipment marketed

7.4. Volunteers involved

729 volunteers committed 1698 hours for a estimated value of \$16,980 of volunteer labor. The estimated value of the environmental educational programs were:

Value to targeted audience	\$ 1,654,665
Value to society	\$ 1,824,540
Estimated program cost	\$ 117,040

8.4 Success Stories

Local System: franklin

Person Reporting: William Lord

Smithfield, the county seat of Johnston County in the Neuse River basin is in the process of adapting its development policies to meet the proposed Neuse River rules. Agents Jay Darden, Gary Pearce, and Bill Lord were able to work with the town to retrofit a constructed wetland onto a community stormwater management project to demonstrate use of wetlands to treat and improve stormwater water quality. The constructed wetland site has now been expanded to include a variety of stormwater management practices and will become a county stormwater demonstration park to demonstrate to developers and citizens best management practices that can improve the quality of storm water runoff.

Local System: Johnston

Person Reporting: Eric Spaulding

Sixty 4 to 8 year old youth, and 6 day care teachers have increased their knowledge of where food comes from and know how to tell when popular fruits and vegetables are ripe as a result of an agricultural awareness program. The oldest preschool group and after school students attending Doris Day Care received one week of Summer classroom instruction by their teachers on agricultural production provided by Extension and Farm Bureau. The classroom instruction was followed with interactive visits to Sonny and Janice Batten's livestock farm and Keith and Jan Hill's Berry & Produce Farm, guided by local agricultural agents. The day care staff evaluated the program with the youth, which revealed that both the staff and children learned the most during that week than from other activities held during the summer. The field trip was rated as the most fun and interesting that they had ever been on.

9.4 Narrative Summary

Extension faculty conducted 157 industry meetings and trade shows promoting environmentally sound agriculture, with 4740 agribusiness professionals participating. In addition, there were 130 environmental educational programs sponsored by agribusiness. During the year, 225 companies produced literature promoting the use of BMPs and environmentally sound production. In addition, 147 environmental products and equipment were marketed for use in agricultural pollution control.

Objective 5: Extension will network with agricultural service agencies including NRCS, ASCS and NCDA to promote economically and environmentally sound practices to manage waste materials, nutrients, pesticides, and reduce nonpoint source pollution for the purpose of improving air and water quality protection.

4.5 Units reporting accomplishments : counties

5.5 Statewide measures of progress

196 multi agency coalitions initiated
190 multi agency educational programs delivered

6.5 Statewide Impacts:

190 collaborative projects implemented
1040 publications, reports and interactions were generated

7.5 Volunteers Involved

630 volunteers contributed 4222 hours valued at \$ 42,220.

Value to targeted audience: \$ 1,743,769
Value to society: \$ 6,932,601
Total estimated program costs: \$ 541,116

8.5. Success stories

County: Columbus
Reporting: James Norris

The Columbus County Extension office has established an Inspectors Committee. The committee serves to discuss current situations with animal waste management facilities and improvements that might be made by all agencies involved to better protect the environment. This year, Extension and NRCS have reviewed and rewritten 250 hog waste management plans. An additional 25 plans are anticipated to be reviewed next year. The NC Division of Soil & Water Conservation is in charge of a pilot program in Columbus & Jones Counties. The inspector works daily with Extension to find solutions to any existing problems and solutions to all potential problems. Other activities include: serve on NRCS Environmental Quality Initiative Program Committee, provide educational information to farmers and serve on the Forestry Stewardship Committee, and work with Columbus County Health Department concerning county wide swine farm ordinances.

County: Bladen

Reporting: Kathy Dugan

The training and continuing education of Operators of Animal Waste Management Systems has taken place in Bladen County and on a regional basis in a collaborative effort between the NC Department of Agriculture, the Natural Resources Conservation Service, and the NC Cooperative Extension Service with assistance from the Division of Water Quality and the Division of Soil and Water. The use of multiple trainers from different agencies with expertise in a variety of areas of animal waste management has made the trainings more pertinent for producers and enhanced communication and other collaborations between all the agencies.

9.5 Narrative Summary

The collaboration of Extension with other state and federal agencies continues to be successful as we partner to protect the waters of North Carolina from nonpoint source pollution. Nutrient and manure management continues to be extremely important in North Carolina. Animal waste management plans written as a part of the North Carolina Nondischarge Rules (.0200s) will reduce nutrients entering the waters of the state. Mandatory and voluntary education programs that have been conducted have and will continue to minimize the potential for environmental impacts.

Objective 6: Special interest groups (including public officials, environmental activists, the media and consumers) will increase their understanding of and appreciation for the complex relationships between agriculture and the environment.

4.6 number of Units Reporting: 26

5.6 Statewide measures of progress

258 community and special interest environmental educational programs.
95 educational programs on BMPs

6.6 Statewide Impacts

20 local policies adopted

238 media stories promoting a positive image of agriculture

7.6 Volunteers involved

781 Volunteers contributed 3,069 hours valued at \$ 30,690. The total value of citizen type agricultural/environmental educational programs is:

Value to Targeted Audience:	\$ 93,164
Value to Society:	\$ 166,560
Estimated Program Cost:	\$ 24,324

8.6 Success stories

Local System: Lincoln

Person Reporting: Matt Taylor

North Carolina Farmers have been portrayed as polluters of surface and ground water. The River Friendly Farmer Program was adapted from Minnesota to assist farmers in combating this stereotype. The program was expanded from Lincoln County and is currently operating in 10 North Carolina Counties. Local farmers allowed 67 East Lincoln High School students to monitor water quality monthly on their farms. The results were impressive. No pesticides or fertilizers were found to have escaped into the water. This surprised some of the students who believed that farming always caused pollution. Local media were instrumental in spreading the word regarding the excellent state of farming in the county. Plans are to continue this program locally for years to come. Several other farmers have come forward to participate in the River Friendly Farmer program as a result of reading about it in the newspaper.

Local System: home

Person Reporting: Betty A. Green

Elementary schools need for students to be involved in environmental education programs. The Home County Center and volunteers had an opportunity to involve youth at all elementary schools in recycling aluminum cans. This effort has created an awareness of environmental quality among young people. The recycling of aluminum cans allowed youth to contribute to the protection of our environment in a productive and profitable manner. 115,621 pounds of cans were collected by 208 elementary schools classroom teachers generated \$1,156.00 dollars. In addition the county gave first, second, and third place cash incentives for the highest pounds collected by the classrooms.

9.6. Narrative Summary

Cooperative extension coordinated 258 community and special interest environmental educational programs. Ninety-five programs were conducted to promote greater use of best management practices. Twenty local policies were adopted that reflected both the agricultural community's and the special interest groups' needs. Public awareness and knowledge of the link between agriculture and the environment was increased by participation of 17,313 citizens in educational programs. Enhanced attitude toward

agriculture was reflected by 238 media stories promoting a positive image of agriculture.

Objective 7: Pesticide Certification and Licensing Program

4.7 Number of Units reporting accomplishments: 74

5.7 Statewide Measures of Progress totals:

11,850 pesticide applicators adopted one or more BMPs on 868,530 acres.

14,393 applicators were certified or recertified to purchase and use restricted use pesticides.

157,800 plastic pesticide containers were recycled.

6.7 Statewide Impacts totals:

\$3.3 million were saved in production costs

213,000 pounds less pesticides used on cropland

\$170,000 were saved in disposal costs from recycled pesticide containers

29 citations for improper pesticide application or handling practices

5 cases of pesticide worker illness

7.) Volunteers involved and value:

545 volunteers contributed 5276 hours valued at \$52,760. The total estimated value of the pesticide certification and licensing program was:

Value to Target Audience:	\$ 5,205,047
Value to Society:	\$ 8,519,248
Estimated Program Cost:	\$ 182,780

8.7 Success stories:

Local System: Henderson

Person Reporting: Danny Peek

Many pesticide applicators expressed concern with equipment calibration as a result of pesticides being highly concentrated and expensive. In order to minimize crop damage and protect the environment, precision pesticide applications are critical. Thus, Henderson and Buncombe Counties' Pesticide coordinator provided pesticide applicators with a hands-on sprayer calibration clinic. Because of the differences in spraying equipment we taught applicators how to calibrate boom type and backpack sprayers. Ninety six applicators learned proper calibration techniques. Since this clinic, seven Henderson County applicators have received one-on-one calibration instructions resulting in accurate pesticide applications.

Local System: Lincoln

Person Reporting: Matt Taylor

A significant issue concerning pesticides is what to do with unwanted, dated, or

discontinued pesticides that are no longer legal to use in North Carolina. The NCDA has a solution to this problem. Working in cooperation with area Extension personnel, the NCDA conducted a pesticide pick up day to remove these materials for FREE so that they do not pollute the environment. Lincoln County's pesticide pick up on October 8th removed nearly 4000 lbs of pesticides. One individual who's pesticide storage facility caught fire 5 years ago was able to dispose of nearly 1600 lbs of pesticides. This free pick up saved this farmer over \$3500 that he would have had to pay a company to remove the same pesticides.

9.7 Narrative Summary

The Pesticide Certification and Licensing Program provides a vital link between NC CES and NC's farmers. Training conducted by NC CES field staff has resulted in substantial financial benefits to producers and contributed to environmental quality. Building a strong partnership with the NCDA & CS undergirds this successful outreach.

CEMP-03 TEAM MEMBERS

Dan Bailey	Ted Bilderback (Obj3)	Wayne Buhler (Obj 7)
Allen Calwell (Cochair)	Daniel Campeau	Tom Carter (Obj1)
David Crouse (Obj5)	Robert Evans (Cochair)	Ted Feitshan
Billy Little	Rich McLaughlin	Deanna Osmond (Obj2)
James Pitman	Matt Poore	Kim Powell
Karl Shaffer	Ron Sheffield	Matt Taylor
Stephen Toth	Mitch Woodward	Kelly Zerling

CEMP # 4 - ANIMAL PRODUCTION AND MARKETING SYSTEMS

Objective 1: Producers of livestock, poultry, and aquatic species will select, adopt and successfully implement practices or enterprises that will achieve business, individual, and family goals related to profitability and quality of life.

Narrative: Objective 1

Extension agents reported that 26,635 producers of livestock, poultry, and aquaculture products increased knowledge of improved management practices. Of these over 9,750 adopted practices to optimize income and 2,576 improved financial planning and management procedures. Collectively, improved nutrition, breeding, marketing, building and facilities, and general management practices adopted by these producers were estimated to be worth 11,943,200 in 1998. Extension workers in the animal commodity areas also made significant contributions to youth program efforts.

Aquaculture: Aquaculture continues to expand state wide and currently provides an estimated \$17 million dollars in on-farm income to approximately 200 farms in North Carolina. The Cooperative Extension Service provides daily assistance to this growing industry from the trout farmers in the west to catfish and striped bass farmers in the east. Each extension professional is also involved in development projects with industry partners. Some examples include: 1.) a project to determine the feasibility of producing yellow perch in ponds in eastern North Carolina; 2.) development of a large scale state-of-the-art catfish hatchery at Pantego Plantation Farms; 3.) development and construction of a large-scale tilapia hatchery and nursery in Franklin County; 4.) establishment of a prototype new 4,000 square foot fish production facility at NCSU in cooperation with Carolina Power and Light, and the Electric Power Research Institute that allows effective production using filtered, recirculated water to minimize fresh water requirements. Cooperation with the College of Veterinary Medicine is also underway to assist producers of hybrid striped bass in strategies to manage the yellow grub parasite on aquaculture farms. The commercial trout aquaculture web site in NC received nearly 130,000 hits from 18,993 information seekers in 1998. Responses to e-mail requests for information on trout were provided to 8 countries and numerous states.

Beef Cattle: The North Carolina Certified Beef Production (NC CBP) program was initiated in 1997 as a cooperative effort among Cooperative Extension and several partners including funding support from the NC Cattlemen's Beef Council and the NC Cattlemen's Foundation. To date, 63 extension agents, 61 producers and 14 veterinarians have been trained as certifiers for the program - exceeding the goal of 100 certifiers set for the program for the first five years! Agents then trained 1,277 beef producers of which about 720 became certified beef producers almost at the 5-year goal of 750. Certified beef producers have qualified more than 3,500 calves as certified preconditioned animals. Three large NC CBP displays were used in 20 two-hour educational programs for non-traditional extension audiences. Livestock auction markets sponsored and over 2,500 producers participated in those programs conducted by specialists and agents. Average evaluation rating for all sessions was 9.0 on a 10-point scale. Most (86 %) producers indicated they would improve some production practices; 26 % of the producers indicated earlier castration and dehorning to reduce stress to the animals and potentially increase

net income by about \$225,000. In Iredell County alone, evaluations indicated that intended use of proper injection sites should increase value of cattle produced by about \$200,000.

Feeder cattle production is an important beef enterprise in North Carolina. **Graded sales** continue to be viable alternatives for marketing these cattle and increasing profits for producers who choose to participate. A total of 16,663 feeder calves, 335 preconditioned calves and 1,466 yearlings were sold this fall through 20 graded cattle sales across North Carolina. These sales are designed to provide a marketing outlet for small to medium sized beef operations, where producers can co-mingle their calves into larger, uniform lots of similar type cattle. Increased lot size is critically important in the current beef cattle marketing system. If a producer sold an average weight steer (583 lbs.) or average wt. heifer (530 lbs.) at one of the graded sales, they brought an average of \$25.12 and \$20.70 respectfully more per head than if they were sold at a weekly market. This is an economic value to cattle producers of \$244,668.80 (for steers) and \$150,240.60 (for heifers) for those who utilized these graded sales.

Forage Management has continued to be the basis and major emphasis of cattle producers. Extension personnel conducted numerous field days, tours, demonstrations, meetings and test plots which concentrated on forage varieties, rotational grazing, forage equipment and quality and disorders associated with forages. Establishment and use of electronic "**Hay Directories**" in several areas of the state has helped facilitate marketing for both buyers and sellers. A significant achievement has been the continued success of the **Grazing Management Schools**. Five intensive training sessions were conducted for 68 beef producers, 21 goat producers, and 20 NRCS workers in 1998. All participants rate the schools highly, encourage others to participate and indicate that they plan to incorporate changes in their **forage management systems**.

Dairy Cattle: North Carolina hosted a **Large Dairy Herd Management Conference** in February that attracted over 100 participants from several states. Producers indicated that they would implement or improve: employee training; employee relations and motivation; written job descriptions; improved forage types and feed quality; cow/calf health management; risk management strategies; and use of PCDART software. Evaluation of the conference was 4.4 on a 5-point scale and 96 % of respondents indicated that they would participate in similar programs in the future. This conference idea was developed at an annual Tri-State dairy retreat among extension workers in VA, NC, and SC. Cooperative Extension has cooperated with various dairy interest groups in conducting various conferences, and about impacts of a Southern Dairy Compact on milk marketing and dairy farm competitiveness in the region. Extension workers assist dairy producers through on-farm consultations on a variety of management topics and issues. A series of 6 area "**Dairy Road Shows**" held in fall, 1998 addressed several dairy management issues. Collectively, extension agents report benefits to dairy producers for improved nutrition, milking management, breeding, equipment and facilities of over \$2.2 million in 1998. Dairy production systems based on intensive use of pasture are being examined at a new dairy facility at the Center for Environmental Farming Systems in Goldsboro.

Horses: The extension horse **short course** and **clinic series** attracted participants from throughout the US and several foreign countries. Nine courses and three clinics provided

horse owners with detailed information on nutrition; forage management; health care; foal, broodmare, and stallion management; breeding; judging and selection; facility design; fencing; training; behavior and exercise physiology. Participants included 2,952 horse owners from 19 states whose surveyed responses valued the short courses at an estimated \$896,745. Horse management information was provided in five, two-hour **interactive television** broadcasts to 11 sites to over 700 participants saving 289 hours of professional time and over \$6,800 in travel compared to county meetings. The **Regional Equine Information Network System (REINS)** is in its third year and 19 new volunteers were trained bringing the volunteer total to 131. Three coordinator's courses were conducted in cooperation with agribusiness for 47 regional leaders. Content of courses focused on health care, ration balancing, and emergency management and disaster relief. REINS volunteers, working with 16 coordinating extension agents in 14 regions have provided 5,102 hours of volunteer service valued at \$143,500 and over 10,250 horse owners have received direct assistance through REINS.

Poultry: Poultry Science Extension faculty cooperating across departments and with industry, developed an educational and biosecurity monitoring program to combat **Poult Enteritis Mortality Syndrome (PEMS)**, a serious undefined turkey disease threatening the industry. Significant reductions in PEMS and other diseases were achieved by producers using the program. Moreover, one producer reduced medication costs by 0.6 cents per pound which translates into an annual savings of \$2.1 million dollars. Successful field trials by NCSU with feeding a **probiotic** have resulted in over 200 **quail producers** feeding naturally occurring bacteria to day-old Bobwhite quail with a reduction in mortality of 10% resulting in annual savings for producers of approximately \$300,000. The **nutritional quality of NC grown wheat** intended for poultry diets was significantly improved through enzymatic modification of the non-starch polysaccharides in wheat. Birds fed the modified diet performed as well as birds fed corn or Canadian wheat-based rations. An economical and environmentally friendly method of grinding and **preserving poultry and swine farm mortality by lactic acid fermentation** or direct acidification with phosphoric acid was developed by NCSU Extension and Research faculty. It is estimated that greater than 10,000 tons of acid-preserved mortality will be processed by renderers into valued-added products. This should save poultry and swine companies in excess of \$2 million annually in transport and handling costs. An evaluation of mortality incinerators versus composting practices was published as an aid to poultry growers in selecting economical and environmentally sound mortality disposal systems.

Swine: The new **Nutrient Requirements of Swine** as prepared by the NRC were presented in a highly successful, two-day conference that combined lecture with hands-on learning with computer modeling. The producer participants in this program were collectively responsible for the nutrition programs for over 700,000 breeding swine and their offspring. Additional producer education on methods to reduce nutrient excretion by changes in the nutritional program has also been developed. **Pork quality and safety** have been identified as important areas by NCSU and the pork industry. Applied research was designed to investigate practices including feed withdrawal strategies that will improve color and enhance processing characteristics of pork while reducing the prevalence of Salmonella and minimize lacerations of the intestinal tract during processing. Producers of over 50% of finishing swine in NC have adopted feeding practices that will improve fat quality. The **3rd International Conference on Salmonella and Pork** has also been organized. Four

successful farm visits have been conducted by **Swine Management and Review Teams**. The S.M.a.R.T. teams are comprised of county and state faculty that provide broad expertise to solve specific production and management problems. Outcomes have been strategies for improvement in swine financing and the development of a plan for an independent producer to move gestation from dirt lots to confinement and a new production schedule that will allow more pigs to be marketed without increasing building needs or breeding herd numbers. Implementing recommended strategies on one farm in Pitt County is expected to increase annual productivity by about \$150,000. **State and Area Swine Conferences** continue to be important educational programs to reach producers and farm employees. Two "**Healthy Hog**" seminars attracted about 240 participants representing production units totaling 706,820 sows, 3,082,380 nursery pigs, and 4,150,860 finishing hogs. A special afternoon session at one of those seminars was provided in Spanish for Spanish-speaking workers. Methods of euthanasia have been developed and demonstrated that are safer and minimize animal suffering. The second edition of the highly popular **Swine AI Book** has been published. Nearly half of swine production in NC now uses AI.

Sheep and Goats: The production of goats continues to increase while sheep numbers have been stable. In 1998 over 1625 producers of sheep and goats increased awareness and knowledge of best management practices with 715 producers adopting practices that optimized income. These adopted practices and procedures held a total economic impact of \$239,750. Producers have adopted flock health; nutrition, marketing and facilities recommendations that have increased income and allows part-time and limited resource farmers to improve their quality of life. Wool pools have been held across the state for sheep producers allowing them to combine their wool and give them some marketing advantage. In **Cleveland County**, extension developed strategies for increasing income with sheep and goats. Two program participants incorporated sheep and goats into their farming operations generating \$4700 in additional profits through the sale of slaughter and breeding stock, wool and mohair. A highly praised workshop was held in **Chatham County** for 100 sheep and goat producers where local agri-businesses had a 120% increase in flock health products, feeds and minerals as a result of the workshop.

Number Of Units: 63

***MEASURES OF PROGRESS:**

1. Increased awareness/knowledge of BMP practices:

Dairy:	524
Beef:	10714
Hog:	2151
Horse:	7051
Sheep/Goat:	1626
Poultry:	3057
Aquatic:	805
Limited Resource:	707

2. Adoption of BMP to optimize income:

Dairy:	421
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Beef:	3638
Hog:	1053
Horse:	1969
Sheep/Goats:	715
Poultry:	1478
Aquatic:	123
Limited Resource:	361

3. Application of improved farm financial planning procedures/practices:

Dairy:	210
Beef:	947
Hog:	453
Horse:	354
Sheep/Goats:	227
Poultry:	236
Aquatic:	62
Limited Resource:	87

***IMPACTS:**

1. Income optimized by adopting recommended nutrition practices:

Dairy:	766979
Beef:	1391293
Hog:	201911
Horse:	216842
Sheep/Goats:	43640
Poultry:	255758
Aquatic:	101364
Limited Resource:	7682

2. Income optimized by adopting recommended breeding practices:

Dairy:	179045
Beef:	767695
Hog:	264969
Horse:	59514
Sheep/Goats:	44146
Poultry:	18300
Aquatic:	60000
Limited Resource:	19632

3. Income optimized by adopting recommended marketing practices:

Dairy:	427000
Beef:	1259572
Hog:	2118460

Horse:	45100
Sheep/Goats:	127589
Poultry:	903400
Aquatic:	21600
Limited Resource:	22088

4. Income optimized by adopting recommended buildings/facilities:

Dairy:	837160
Beef:	474208
Hog:	121178
Horse:	64997
Sheep/Goats:	24375
Poultry:	961770
Aquatic:	81200
Limited Resource:	14733

VOLUNTEERS INVOLVED AND VALUE:

Volunteers (number)	2097
(hours)	27235
(\$value)	\$272,350

SUCCESS STORIES:

1. Carl Pless

Farmers, a large commercial bakery and the public all benefit from a project led by the North Carolina Extension Service in Cabarrus County. The Livestock agent worked with a large commercial bakery to investigate the potential use of bakery waste as a livestock feed source. Five farms now use waste bakery product as cattle feed. This saves the bakery \$35,000.00 annually in hauling and landfill fees. Farmers save \$50,000.00 annually in reduced feed purchased. The public benefits by over 500 tons annually of bakery waste not needlessly filling landfills.

2. Ralph Blalock

Four beef producers in Edgecombe County were searching for better marketing opportunities for their feeder calves. The producers felt they were not receiving the real value of their calves based on the improved genetics and management practices they had adopted. Extension was asked to help with better marketing possibilities. Extension conducted two meetings with producers and three on-farm tests to help coordinate breeding programs and management practices. The four producers formed a cooperative to market their calves together as a truckload lot directly off the farm. Three cattle buyers were contacted and bids were accepted. Extension coordinated the grouping and description of the cattle. The result of the cooperative effort netted the producers \$5,112 extra dollars of \$50.12 per head above what they would have received individually at the graded calf sale. The producers plan to continue this cooperative management and marketing effort.

3. Jackie Nix

High levels of nitrates in hay can prove to be fatal if fed incorrectly. Death losses of 20% or more are not uncommon. Due to the forage analysis generated as part of a hay probe demonstration in Lenoir County, one cattle producer learned that his winter hay supply contained excessive nitrate levels. Because of this knowledge the producer administered a microbial preparation, designed to prepare the rumen for high nitrate forages, to 15 head of cattle valued at roughly \$5,500. With this treatment, the cattle will be able to safely eat this hay. Preventative treatment cost just \$62 and averted at least \$1,100 in replacement costs (20% x \$5500) plus potential veterinary bills.

4. Jeff Carpenter

Cattlemen's Association members in Catawba County identified a need for unbiased information on mineral supplementation for beef herds in this area. Many cattlemen were confused with the variety of mineral supplements available and the wide range of prices. Animal Husbandry specialists at NCSU were consulted for a recommendation on a custom mineral mix for cow-calf herds and association members then solicited bids based on that formula. A bid was awarded and since March of 1998 local cattlemen have fed approximately 30 tons of this custom mineral supplement. At a savings \$3.00 per bag this group has collectively saved \$3,600 by pooling orders. Many members had previously fed a substandard mineral or had provided a high quality mineral only occasionally.

5. Darrel Conley

Marketing of feeder calves has always been a concern of beef producers in Rutherford County. As a result of Extension sponsored tours, field day and educational meetings, producers have realized the advantages of cooperatively marketing calves. In 1998 six producers worked together to pool 240 feeder calves to sell in trailer load lots. Figures from producers indicate that these cattle averaged approximately 550 pounds and sold approximately ten cents per pound above weekly livestock auctions. With these figures these six producers increased their income by \$13,200. Reduced shrinkage of calves, no sale fees and no hauling fees make this program even more beneficial to these producers.

6. Jeff Copeland

The northeastern area wool pool is one of only three held annually in North Carolina. A joint effort of Cooperative Extension Service, N. C. Department of Agriculture and sheep producers, this year's pool held in Chowan County covered an area from Virginia Beach, Va. through eastern N.C. Cooperative Extension agents in Chowan, Perquimans, and Washington counties and Extension Livestock Specialist conducted the wool pool. It would be impossible for producers to market their small amounts of wool individually. (The average payment would be \$100 per farmer.) The bottom line results were that 38 sheep producers, many of which are small or part-time farmers gained market accessibility for 8,115 pounds of wool worth \$3267.

7. Donna Carver

County and area poultry Extension agents, and poultry Extension specialists from several NCSU CALS Departments worked with other researchers, integrator personnel and turkey growers to reduce production losses caused by disease exposure.

Monitoring and educational programs were developed in order to combat Poultry Enteritis and Mortality Syndrome (PEMS) which resulted in growers implementing disease prevention and control measures. Educational efforts focused on "why" biosecurity is important in disease prevention. Monitoring efforts centered on the presence and control of human traffic and pests in and around the poultry facilities. This initiative, along with other changes in production schemes, is credited with reductions in cases of PEMS and other diseases. Four turkey companies were involved and all reported improvements in disease control and bird performance. One company reported medication cost savings of 0.6 cents per pound. With production of over 350 million lbs., that's an annual savings of over \$2.1 million.

8. W. G. Simmons

The economics of livestock production, particularly swine, is significantly reducing the disposable income of most producers forcing them to seek methods of saving money when possible. The producer cooperative I advise continues to grow adding new members and products and services to those members. The membership now represents 5 states and is offering goods and services for livestock and row crop farmers. The organization serves as a platform or method for me to assist growers with time being the limiting factor. Market attempts have taken much time and effort and will continue to do so. Purchases in 1997 neared 6 million dollars with members reporting savings ranging from 5 to over 20 percent.

9. Martha L. Mobley:

The Region 8 REINS program reached over 3,400 horse owners in a nine-county area in 1998 through the work of twelve certified equine volunteers. They provided an estimated 771 hours of volunteer service valued at \$11,861. In 1998 alone! Approximately 900 horse owners are receiving their quarterly educational newsletter. Agents in the region work with the volunteers to assist with the programs. Martha Mobley, Franklin County Agent, serves as the regional coordinator in Region 8.

10. Susan Block

Initiated a contagious mastitis control program on a local dairy farm after determining that the herd was infected with an extremely contagious mastitis pathogen. Income lost to culling, reduced milk production, mastitis treatment, increased labor and veterinary consultation were costing the farm an average of \$3000 a month. Pathogen identification involved the collaborative work of a local veterinarian team, farm staff and the help of an area area specialist. We were able to sample and culture every quarter on the farm at minimal expense saving the dairyman over \$5000. Farm was able to reduce infection rate and begin on the path to eliminating the pathogen from the herd. Program recommended to eliminate the pathogen should increase gross profits by at least 25 percent.

11. Nancy W. Keith

A dairyman was experiencing problems of lowered milk production, reproductive problems, and overall unhealthy cows. Feed samples were taken several times and sent to different labs to test for mycotoxins as well as nutrient analysis. The feeds were high in mycotoxins and the ration being fed was not balanced. After balancing feed rations for them and making recommendations on practices which could reduce mycotoxins in the

feeds, they began to see an increase in milk production, reduced reproductive problems and overall much healthier looking cows. Milk has increased approximately 13 pounds/cow/day. This increase in milk production over just a 2-month period adds up to approximately \$12,000.

OBJECTIVE 2: North Carolina citizens (farm and non-farm) will address controversial issues(of mutual concern) that relate to animal agriculture, including human nutrition, nuisance identification, food quality assurance, quality of life, economic impacts, and the appropriate treatment of farm animals.

Narrative: Objective 2

Over 5,000 farmers and 102,000 non-farm clientele were provided information about animal agriculture issues and animal food quality standards through a variety of media and youth programs. Nearly 1,000 farms adopted appropriate standards, and procedures to address industry issues. A **Farm Animal Awareness Workbook** was developed in Lenoir County and distributed to nearly 1000 school children and the internet version has been accessed over 900 times. About 3,000 visitors to Hillsborough Hog Day went through Extension's **petting pasture** and learned positive aspects of agriculture in Orange County; About 20 % of 14,000 visitors to Ice Cream Days at the Triad Farmers Market visited the Extension display - "**Ruminant Recyclers**" that illustrated the variety of products a cow can eat in producing milk for various dairy products. "**Ruminant Recyclers**" and a "**Day at the Dairy**" along with many live animal exhibits were set up for over 6,000 visitors to NCSU's **Farm Animal Days** in Wake County. **Farm tour visits** to animal farms were provided for non-farm youth and adults in Forsyth County and to leadership groups sponsored by the Chambers of Commerce in Randolph and Onslow Counties. Extension agents in Buncombe County worked with other organizations to provide factual information to clarify errors in a local newspaper article about use of **bovine somatotropin (BST)** and the unrelated bovine disease (**BSE**). Jackson and Swain Counties worked with consumers to teach about animal and meat handling factors that affect meat quality. A **Farm Safety Day Camp** was held by Yadkin and Davie Counties involving 75 volunteers, 125 children and 75 of their parents. Organization of a **Livestock Producers Association** in Buncombe County and a **Pork Producers Association** in Columbus County will help provide public information on producer issues as well as support for producers. A pilot program committee including swine producers, public officials, and environmental group representatives was formed to address the issues of the swine industry in Columbus County. **Rabies** information was provided through offices of local veterinarians in Rockingham County; Concerns about **animal cruelty** issues in Currituck County have led to use of an objective body condition scoring system for horses. Many counties used the opportunity of county **fairs** to educate the public about animal agriculture. The **Beef Quality Assurance Program** teaches producers the proper techniques for injections. This will assure wholesome, top quality meat products for consumers.

Number of Units: 36

Measures of Progress:

1. improved knowledge and attitudes about animal agriculture

No. of Farmers 3779

No. of Non-farm citizens 33,422

2. newspaper and other mass media stories/commentaries indicating enlightened information and knowledge about animal agriculture
- | | |
|-----|-----|
| No. | 310 |
|-----|-----|

Impacts:

1. Increased understanding and appreciation of animal agriculture

No. farmers	3056
No. of non-farm citizens	21,509
2. Increased understanding of food supply facts and quality standards

No. of farmers	2827
No. of non-farm citizens	75435
3. Farm adopting appropriate standards, practices and procedures to address industry concerns and issues

No.	1468
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Volunteers Involved and Value

Volunteers	(number)	771
	(hours)	4752
	(\$ value)	\$74520

Success Stories:

1. Martha Mobley
In May, 1998, the second annual "Animal Agriculture Field Day" was held in the county with 600 third graders learning directly from 12 livestock producers about animal production. Issues such as waste management and water quality were also discussed. A United Way grant was acquired to assist with conducting this very successful event. WRAL Channel 5 Farm News, along with a local radio station, broadcast live during the event also reaching the non-farm public about the importance of animal agriculture in Franklin county.
2. Karen Spivey
410 fourth graders and 72 adults gained knowledge and understanding of the importance of beef cattle production as a result of the "Ag On The Go in Onslow" field day led by Onslow county Extension. Participants were shown an actual cattle skull and digestive system to learn about the unique way that cattle utilize forages in their diet. Students were allowed to touch samples of the linings of the four distinct "stomachs" of cattle. A display featuring by-products of cattle production was used to teach participants about the ways livestock impacts our daily lives. Evaluations returned by the teachers indicated that the interactive learning opportunity had increased their students' interest in agriculture.
3. Brian Beer
A high percentage of consumers have an unsatisfactory eating experience involving meat dishes. To help educate consumers about this problem, the livestock agent and the FCS program assistant for the Swain county Extension center organized a "Factors Affecting Meat Quality" workshop. Participants learned how animal genetics, meat preparation and cooking methods affect the tenderness and quality. Food safety issues were also discussed, along with precautions and procedures that should be

followed to prevent foodborne illnesses. Through the use of pre and post tests, it was determined that participants had an average increase in knowledge of 20 percent. Several participants have stated that they use tips learned in the workshop while shopping and preparing meat dishes at home with success.

4. Karen Spivey

Onslow county agriculture producers, county commissioners, other citizens and the media gained knowledge of the research and programming efforts of the CES through a Agriculture Production Tour conducted by Agriculture Extension Agents. This tour highlighted on-farm tests and projects relating to waste management, cotton pest management, new forages for use in animal waste management, and an innovative greenhouse to teach youngsters about horticulture. Participants have expressed that they gained a greater understanding and appreciation of the work of Extension and the ag producers have indicated an interest in learning more about the new techniques being researched.

CEMP TEAM MEMBERS:

Steve Washburn
Gerda Rhodes
Ben Chase
Barry Foushee
Richard Melton
Richard Lichtenwalner
Todd See
Walter Earle
Mike Stringham
Bob Mowrey
Tom Losordo
Geoff Benson
Ken Anderson
Brian Sheldon

CEMP # 5 - CHILD CARE MAJOR PROGRAM

2. Program Description

The child care Cooperative Extension Major Program has two goals. These goals are 1. to improve the quality of child care and 2. to increase the availability of child care in North Carolina.

Objective #1 is stated as "child care professionals in North Carolina will provide safe, nurturing, appropriate programs for children". This objective has four measures of progress:

- number of providers trained for quality programming
- youth developing skills for baby sitting
- increased number of child care sites licensed or registered
- increased number of sites increasing licensing from A to AA

Objective #2 "The amount of quality care will be increased as a result of improved collaboration among community agencies, increased resource development, and the education of business leaders, county officials, and school personnel". It has three measures of progress:

- Increased awareness and utilization of child care referral agencies and information materials by providers
- number of new and expanded Extension collaborations with community groups
- amount of new financial resources supporting quality child care acquired as a result of Extension collaboration

3. Program accomplishments

Objective 1

Quality child care has many components. Among these are staff training; safe, nurturing environments; positive staff/ child interactions; nutritious food; and appropriate activities for children. Research proves that the quality and amount of staff training have a direct, positive influence on the quality of care offered to children. In 1998 Cooperative Extension Agents had a major impact on quality care in North Carolina through extensive training offered in rural as well as urban areas of the state. In one year over 9,000 child care providers were trained through Cooperative Extension. Agents report that providers who had never been to training before are now coming to their training. The sessions are offered in locations that are convenient for providers and are scheduled at times that fit their needs. In addition 34 child care staff received Child Development credentials with the guidance of Cooperative Extension Agents. All of this work by Cooperative Extension builds the capacity of the staff in child care centers to offer warm, nurturing care for North Carolina's children.

There is also evidence of the correlation between licensing standards and quality care. In 1998 NC Cooperative Extension assisted 33 child care programs to voluntarily increase their licensing rating from A to AA. This means lower child/staff ratios and therefore more attention to the individual child. While licensing standards are the baseline in care, national accreditation is considered "best practice". With assistance from Cooperative Extension Agents, 9 early childhood centers were accredited by the National Association for the Education of Young Children. Cooperative Extension is crucial to improving the quality of child care in North Carolina.

Objective 2

Finding high quality, affordable care for children is a dilemma for families. It is particularly

difficult to find care in rural areas of the state. Through needs assessments Agents determine where new programs are needed and seek financial assistance to begin programs. In 1998, through the work of Cooperative Extension Agents over \$2,327,589 were secured for this important endeavor. This support allowed over 3,000 new slots for children to be created. In addition, 79 new child care centers were started. Clearly the needs of North Carolina families are being addressed by the Cooperative Extension Service.

4. Number of programs reporting accomplishments

Objective 1 - 57

Objective 2 - 33

5. Statewide measures of progress totals:

Objective 1

Number of providers trained for quality programming - 9,788

Number of youth demonstrating skills in babysitting - 1,203

Increased number of child care sites licensed or registered - 205

Increased number of sites increasing licensing from A to AA - 33

Objective 2

Measures of Progress:

Number indicating increased awareness and use - 3,335

Number of new and expanded Extension collaborations - 337

Amount of new financial resources supporting child care acquired as a result of extension collaboration - \$2,327,589

6. Statewide impact totals:

Objective 1

Improved skills adopted by child care providers - 8,131

Number of centers accredited by National Assn. for the Education of Young Children - 9

Number of staff who receive Child Development credentials - 34

Objective 2

Increased number of new slots in programs for children - 3,367

Increased number of new child care centers - 79

7. Volunteers involved and value:

Objective 1

Volunteers - 1,817

Hours - 26,489

Value - \$264,890

Objective 2

Volunteers - 1,156

Hours - 11,493

Value - \$114,930

8. Success Stories

Objective 1

Baby sitting courses are a major component of the training offered by the FCS Agents. One youth who took the course several years ago credited her decision to become a teacher to her babysitting class. In that class she realized that she worked well with children, gained self confidence in working with them, and enjoyed working with children. She is now studying to be a teacher.

Cooperative Extension and the school system collaborate to bring CES resources to youth through after school programs. The After School Care Coordinator for the Iredell-Statesville school system reports an increase in cooperation, an increased sense of community awareness, and an increase in positive leadership traits among the youth of the school system due to the work of the Cooperative Extension Service.

Staff turnover is a major problem for the child care profession. The CCR&R in Harnett County which is sponsored by the Cooperative Extension office has offered extensive training and technical assistance to child care providers. One innovative series of training is geared toward lowering staff turnover. This "new worker" orientation training is offered to staff in both child care centers and family child care homes.

New state regulations regarding training for school-age professionals will be in place starting in September, 1999. To meet the need for course work for school-age providers, the Agent in Gaston County has taught a course at the Community College. This fifteen week course (30 contact hours) was completed by fifteen students. Participants were required to implement concepts discussed in the course in their own programs. Several providers made their programs more child centered, and used more open ended activities. All the participants developed additional skills in working with school-age children.

Objective 2

Because of the school-age care program in Alleghany county, over 150 families have quality care for their children. Without this program, employers would have been negatively impacted because their workers (parents) would have to miss work due to a lack of care for their children.

Test scores of elementary school children in Wilkes county have risen 28%. The Community Schools Coordinator credits this rise in scores to "having a scheduled homework time that is conducive to learning" in the after school program run by Cooperative Extension.

Cooperative Extension Agents are assisting the Governor's Smart Start initiative in many ways. In many counties the Agents were responsible for writing the proposal for the county. They sit on community advisory boards and in some cases chair the committee. Additional grant money coming into the county from Cooperative Extension's efforts on the Smart Start Initiative has led directors to report an improvement in morale among staff and an increased awareness of child care issues among parents.

After school and summer programs have decreased the number of latch key children in Mitchell county by at least 350. A tutorial component of the program has been a factor in the increase in reading and math scores in the schools.

9. Overall narrative (committee work)

1998 was a seminal year for the Child Care (5) CEMP committee.

During this year the child care CEMP:

- Fine tuned the objectives, measures of progress and impact statements
- Created a new template for county reporting
- Carried the suggested changes through the review process becoming the first CEMP to update its reporting system
- Developed a notebook for county Agents
- Conducted training for counties reporting under this CEMP
- Created a Cooperative Extension child care marketing brochure
- Expanded the child care exhibit to illustrate work in the early childhood field

After working and reporting under the original guidelines of our program for 3 years, a decision was made to change/fine tune our objectives and measures of progress. Counties reporting under this program indicated to the committee that we were not accurately recording the work of agents. In September the committee conducted a thorough review of the objectives. Although the two main goals were not changed, the committee felt it necessary to change the measures of progress and impact statements. Given these changes the committee re-wrote the reporting template and took the suggested changes through the review process of the long range plan committee. The new reporting template will be in place for 1999 reporting. A comprehensive notebook was developed and used during training at annual conference. The notebook contains sections on evaluation, reporting, marketing, and resources. The notebook was sent to all counties who did not attend the training so that all 100 counties and the Cherokee reservation now have copies.

The need for child care marketing materials was addressed this year. Three agents on our committee took responsibility for the development and publication of a brochure describing the work of the North Carolina Cooperative Extension Service in child care. The child care exhibit was updated this year by adding new graphics of young children. The exhibit now has illustrations appropriate for early childhood and school-age children. It has been used in 8 counties this year as well as at the Division of Child Development staff conference, the SOS (Support Our Students) conference, the School-Age Care conference, the 4-H Gala, the NC Community College Presidents conference and a training for the NC Prison Association.

Finally, the number of counties reporting under the child care CEMP has increased this year. Under objective one - 38 counties reported last year while 57 counties reported this year. An increase of 19 counties. For objective two, there was an increase of 8 counties from 25 in 1997 to 33 in 1998.

The work of the CEMP 5 committee will result in:

- increased accuracy in reporting by counties
- more informed county staff
- better marketing of the work of the North Carolina CES

10. Committee members Wanda Hardison, Co-chair, Barbara Vandenbergh, - Co-chair

Carolyn Dunn,	Carolyn McKinney,	Lou Woodard,
Karen DeBord,	Howard Scott,	
P. Carolyn Goodman,	Carrie Thompson,	
Julie Landry,	Deborah Womack	

CEMP # 6 - COMMUNITY AND ECONOMIC DEVELOPMENT

I. Brief Program Description: This cooperative extension major program has four major objectives: (1) integrating special audiences into the local community development process; (2) teaching economic development concepts to local leaders; (3) informing local leaders and citizens about economic trends and their expected impacts on the local economy; and (4) facilitating business development assistance by bringing together local private expertise with local needs for business management information.

II. Units Reporting Accomplishment:

Objective 1: 14 counties reporting accomplishments

Objective 2: 8 counties reporting accomplishments

Objective 3: 8 counties reporting accomplishments

Objective 4: 7 counties reporting accomplishments

III. Statewide Measures of Progress Totals:

Objective 1

5. Number of participants gaining awareness and knowledge:
1604

Total number of participants: 1966

6. Number participating in groups: 3088

Total number of participants: 6143

7. New community organizations formed: 12

8. New community development projects formed: 68

Objective 2

1. Number of participants gaining awareness and knowledge of
computer models, videos, and fact sheets: 1048

2. Applications made of computer models: 120

3. Applications made of videos: 54

4. Applications made of fact sheets: 137

Objective 3

1. Number of persons attending conferences who increased their
awareness and knowledge: 1275

2. Number of requests for additional information: 383

Objective 4

1. Number of persons attending workshops: 1168

2. Number of applications made of videos, notebooks, and fact
sheets: 126

3. Number of persons increasing their awareness and knowledge

- of opportunities: 766
4. Number of persons increasing their awareness and knowledge of market plans and community analysis: 279

IV. Statewide Impact Totals

Objective 1

1. Number of special audience persons participating in local public hearings: 1790
2. Number of additional special audience persons participating in voting: 189
3. Number of additional special audience persons participating in the labor force: 259
4. Number of additional special audience person participating in the community development process: 1925
5. Number of additional special audience persons participating in community development organizations: 1859

Objective 2

1. Number of persons attending local conferences and distance learning conferences: 1325
2. Percentage of persons rating conference information useful: 75%
3. Businesses and payrolls attracted to counties as a result of educational information: 33 businesses payroll \$250,000

Objective 3

1. Percentage of conference participants rating conference information useful: 84%
2. Number of guidance counselors using information: 4
3. Value of lines of newspaper stories on subject, at \$1.50 per line for 10129 lines: \$15193.50
4. Value of radio time on subject, at \$20 per minute, for 188 minutes: \$3760
5. Value of TV time on subject, at \$100 per minute, for 42 minutes: \$4200

Objective 4

1. Number of small and home based business start-ups and annual payroll resulting from educational efforts: 20 start-ups \$158739 annual payroll
2. Number of small and home based business plans developed: 30
3. Number of persons increasing their income through participation in the community development process: 130
4. Number of community analyses performed: 4

V. Volunteers and Value

Objective 1

Number: 975
Hours: 10214
Value @ \$10/hour: \$102,140

Objective 2

Number: 230
Hours: 622
Value @ \$10/hour: \$6,220

Objective 3

Number: 56
Hours: 384
Value @ \$10/hour: \$3840

Objective 4

Number: 62
Hours: 730
Value @ \$10/hour: \$7,300

VI. Success Stories

Over 100 community club members and volunteers have worked together to improve the Oconaluftee Island Park. \$90,000 has been raised to build a bridge, add bathrooms and a native plant garden. Over 200,000 people have used this island during the last year. This saved the tribe over \$25,000 of tribal levy.

The County Extension staff provided continuous training for advisory boards of non-profit community based organizations. Training provided assistance to organizational leaders for planning and implementing community and economic development projects to support work force development, economic development and tourism efforts in the county. One new community development organization was established to build the base of an emerging economic development coalition in Beaufort County. More than 200 new community leaders participated in the community development programs. Eight grassroots leaders trained in the program are serving on public boards and commissions. A business incubator, established with technical assistance from the Cooperative Extension Service, created two new businesses and is conducting small business training for future job creation in the county. A Heritage Tourism project was implemented by a community organization. Funds were garnered to establish a Heritage Tourism and Education Center.

Family CHAMPIONS (Collaborating to Help and Assist More People in Obtaining Necessary Services) expanded the core program services to the clientele. These services include: parent education, literacy education, job readiness, housing assistance, immunizations, and health services. Extension staff served on the Board of Directors and gave leadership to the parent education component of Family CHAMPIONS. Parents completed 30 contact

hours of training. They have changed a number of their practices as parents.

Community residents who met in focus groups in 1995 indicated that communication about available services, programs, and information was a significant need in Jackson County. In response, the Cooperative Extension Service lead an effort to raise over \$15,000 to purchase, establish, and maintain a computerized telephone information system. Jackson CountyLINE is provided to all agencies and organizations in the county to record their public information. Teachers can record homework or other information. The system has provided exceptional service to notify citizens when schools are closed due to snow. Many organizations are using the system as a means to disseminate information. As evidence, the system has received about 56,000 calls during the first 18 months. The system has additional community-wide communication potential when a new CountyLINE directory is published and distributed in the summer of 1998.

A group of investors has selected a site in Yancey County for a new hydroponics greenhouse operation. Blue Ridge Greenhouse, Inc., plans to construct approximately 17 acres of greenhouses in Yancey County to produce hydroponically-grown vegetables. An investment of over \$10 million is expected to produce about 30-40 new jobs in Yancey County; utilize several hundreds of thousands of dollars in fuel each year; and produce gross sales estimated at \$7-9 million annually. Realtors say the site in Yancey County was selected largely because of the considerable assistance and cooperation provided by the Cooperative Extension Service's staff in securing valuable climatic data, networking with various agencies, and genuine concern for location in Yancey County.

WNC Cluster Group 1 coordinated the "Great Smokey Mountains Ecotourism Workshop", held July 26-27, 1998, in Graham County, in order to provide education about and promote ecotourism in extreme WNC for sustainable economic development and conservation in the region. One hundred public and private community officials and leaders attended. International, national, regional, and local speakers from public institutions and private industries presented materials and educational information pertaining to sustainable development, conservation, and tourism to the participants in this two-day initiative. The success was great enough to pursue additional educational opportunities for the public.

A demand for cake decorators, particularly in Charlotte-area grocery stores, has turned into one more way for Mecklenburg County welfare recipients to find work. Nine welfare recipients graduated in June from a two-week pilot course that was a collaboration among the Cooperative Extension Service, Mecklenburg County Department of Social Services, Central Piedmont Community College, and Harris Teeter grocery stores.

VII. Narrative

The effort in community and economic development programs has centered around bringing more resources and enterprises to communities and rural areas, assessing community needs and assets, developing and sustaining local leadership. Twenty-two counties reported efforts in Community and Economic Development in 1998. Many more conducted programs and had impacts. Particularly effective programs have been the development of tourism educational efforts. The western area of North Carolina has held

two major tourism related workshops with a third in the planning. These efforts have reached over 300 people interested in establishing, enhancing, or supporting tourism enterprises. Already, extension faculty in western North Carolina are considered leaders in tourism within the state, and creating new partnerships with other organizations and agencies. Extension efforts through educational programs continue to build the number of communities with trained leaders, twelve more were organized in 1998 and 68 new projects were initiated. Communities were also assisted in securing grants and other resources. New enterprises are being founded in rural western North Carolina as well as the development of skills to meet market demands in urban areas. Overall, at least 10,000 people participated in community development programs with an economic impact of over \$500,000 to themselves or their communities.

Efforts in 1999 will continue to build on the momentum related to tourism in sustainable and heritage tourism throughout the state. Extension participation will be important as communities in rural areas work toward eliminating unsanitary disposal practices through utilization of state bonds for water and sewer. Leadership and conflict resolution as well as home-based businesses continue to be important as the rural economy fluctuates. As communities struggle to maintain viability, efforts with design professionals will be emphasized and incorporated into community leadership and asset development programs.

VIII. CEMP Members

Edwin Jones
Mike Walden
Chuck Moore
John O'Sullivan
Mitch Renkow
John Richardson
Ellen Smoak
Marilyn Cole
Glenn Woolard

CEMP # 7 - CROP PRODUCTION AND MARKETING SYSTEMS

PROGRAM DESCRIPTION: Agriculture continues to be critically important to the citizens of North Carolina, bringing in an estimated \$2.5 billion annually (approximately 15 percent of the state's total income.) The production of agronomic, horticultural, and forestry crops, while critical our state's economy, also affects the well-being of our rural communities and farm families, and the security of our environment. The diversity of agricultural crops produced in North Carolina has been a key ingredient in establishing and maintaining a viable economy. Yet this diversity is threatened by public opinion, foreign trade agreements, and the elimination of tobacco and peanut quota production. The "Crop Production and Marketing Systems" CEMP addresses the educational needs of full-time farmers, part-time limited resource farmers, agribusiness, and non-farm citizens. Our goal is to provide unbiased, research-based information on production practices, marketing options, understanding and use of new technologies in crop production, environmental concerns, and governmental regulations.

Program Overview: 1998 was a year of change for agribusiness and many North Carolina farmers. Tobacco farmers began to realize the impact of new federal policies and the threat of complete elimination of the tobacco program. Peanut farmers faced a second year of production under reduced quota prices for their commodity, dramatically reducing farm income. Extension state and county programs have partnered to help farmers understand the national program changes and what impact these changes will have on all segments of the industry. In addition, programs through applied research, on-farm demonstrations, and workshops explored potential new production practices that reduce farm inputs and increase product quality. Marketing workshops helped peanut and tobacco farmers realize farm profits in a reduced price market.

1998 also brought a tremendous increase in the use of genetically engineered crops. An estimated 800,000 acres of soybeans, 350,000 acres of cotton, and 7,000 of corn were planted with varieties or hybrids that contain traits inserted through genetic engineering. This acreage is approximately three times that planted in 1997. Growers received variety and hybrid selection information and production updates at field days, county meetings, through newsletters, and in some counties through the Internet. NCCES production and marketing programs have emphasized the need for market awareness of the European and Asian resistance to the use of genetically modified organisms. Besides production and marketing programs, educational programs for the non-farm public were initiated in several counties to address consumer food safety concerns.

A total of 70 counties reported accomplishments under one or more of the seven objectives outlined in the Crop Production and Marketing Systems CEMP. Accomplishments and impacts for each objective are discussed separately.

Objective 1: Tobacco and peanut farmers will be assisted in evaluating alternative production practices, investigating innovative agricultural opportunities and exploring marketing options to ensure continued farm productivity and enterprise profits.

Counties Reporting Accomplishments: 38

Tobacco continues to be an extremely important crop for many North Carolina farmers. One innovation in tobacco production, developed by NCCES faculty and introduced through extension programming, is the marketing of flue-cured tobacco in bales rather than burlap sheets. This concept increases efficiency and competitiveness of North Carolina tobacco. Baling was used on less than 0.1 percent of the crop in 1995, but has been rapidly adopted by farmers and industry to a level of 13 percent of the 1998 crop. Ten tobacco-producing counties reported educational programs related to tobacco baling. With a premium of \$.05/pound paid for baled tobacco, these 10 counties reported more than a \$2 million increased revenue from receipt of the baling premium. It is estimated that baling will be used on 50 percent of the 1999 crop.

Three peanut producing counties used weather-based monitoring to make decisions about fungicide applications for leaf diseases. These stations monitor weather conditions in the field. This allows fungicide sprays to be based on actual weather conditions instead of making routine sprays. Farmers who used the program in these three counties were able to eliminate one spray this season. This reduced how much pesticide introduced into the environment by 8,620 pounds. At a cost of \$10 per acre to spray a fungicide, the growers saved \$243,900. Farmers can receive this monitoring information from special call-in lines, newspapers, and agent contacts.

Marketing options were the subject of many extension educational programs. NCCES presented programs that explained the new tobacco program and explored market options and as a result 1,112 farmers in 27 counties adopted new marketing options. These new marketing strategies increased profits for growers by more than \$3.4 million.

More than 3,600 producers in 37 counties adopted improved production practices on an estimated 326,900 acres resulting in profits of more near \$13 million.

An estimated 1,600 farmers in 31 counties increased awareness of alternative production systems affecting a potential 95,300 acres because of extension tobacco and peanut education programs.

Objective 2: Part-time and limited resource farmers will increase the sustainability of their farms through crop diversification, intensive management practices, water and nutrient management, and expanded markets.

Counties Reporting Accomplishments: 27

There is a continued need to provide part-time, limited resource farmers with information to help increase farm profits. Several counties are making special efforts to involve part-time farmers in extension programs that promote production of high value crops like tobacco or specialty crops. In one county, a tailgate market was formed for a number of part-time farmers. This market allowed farmers to diversify their operations and gave them an outlet for marketing the different crops.

Two counties were particularly innovative in creating market information for consumers. After receiving several calls from individuals looking for choose and cut Christmas trees, the Cross- County Horticulture Agent developed an Internet page listing those growers

who were open to the public for retail sales. This web site brought in buyers from several areas of the Southeast. Part-time Christmas tree farmers remarked about their increased sales because of the Internet listing and at least three requested their names be removed because they had sold out. It is estimated that the site helped sell more than 1,500 trees at \$30.00 each.

In 1998, extension programs resulted in more than 270 North Carolina farmers in 24 counties including new crops in their operations affecting 6,500 acres. Farm profits for these individuals increased more than \$1.1 million because of the extension programs.

Programs on variety selection, use of no-till, BMP and IPM strategies to manage pests and reduce pesticides resulted in 852 adopting the recommended practices in counties, affecting more than 14,393 acres in 24 counties. Profits for these farmers increased more than \$1.2 million in 1998.

Objective 3: Farmers will continue to evaluate recommended or conventional production practices and management systems, integrating them into sustainable farming systems.

Counties Reporting Accomplishments: 68

The Cooperative Extension Service conducts powerful educational programs that include the use of meetings and short-courses, electronic and conventional publication, and a vigorous and extensive on-farm test and demonstration programs. Local on-farm demonstrations were critical in illustrating the practicality and economic value of integrating appropriate production practices into the farming systems used by our growers. Such programs led small grain growers in one county to reduce nutrient application by 115 lbs. per acre on 2,000 acres for a savings of approximately \$40,000. Farmers in another county have reduced nitrogen use in sweet potato production by 70 pounds per acre, and other growers used 40 pounds less nitrogen on 3,000 acres for a savings of \$50,000. In addition to reducing production costs, this reduction in nitrogen use helps protect our state's surface- and ground-water quality.

The use of IPM continues to be a central theme of our educational programs directed to farmers and their consultants. Small grain producers in one county who adopted a new scouting procedure for cereal leaf beetle optimized treatment timing which resulted in an additional \$78,400 income. In another county, growers using this program reduced crop protection costs by \$4,500 and increased gross return by \$47,000. Peanut growers in one county using the NCCES leaf spot advisory program reduced pesticide costs by \$20,000.

Continual reevaluation of available pesticides, varieties, and other management decisions is vital to efficient farming. Because of educational programs reviewing available pesticides, small grain producers in one county switched to a more effective (and less polluting) herbicide and increased net returns by \$13,750. In another county, cotton and soybean growers modified their weed management programs to reduce per acre costs by \$2.00. This resulted in an increase in net profits of \$131,000. Proper selection of disease resistant tobacco varieties produced large savings in pesticide input costs and increased yields. Increased profits were \$193,000, \$169,000, and \$505,000.

respectively, for the three reporting counties.

In 1998, 67 counties reported that 17,739 citizens increased their awareness and knowledge of efficient production systems with 7,956 growers adopted extension recommendation for BMPs resulting in an increase in farm profits of \$13 million state wide. It is estimated that more than \$6 million was saved through improved pest management.

Efforts were made to educate producers about practices that help keep production costs below farm income. More than 6,443 North Carolina farmers in 53 counties adopted recommended practices affecting close to one million acres.

Objective 4: Growers and agricultural professionals evaluate and adopt appropriate alternatives to conventional pesticides, nutrients and tillage to enhance environmental quality and maintain profitability.

Counties Reporting Accomplishments: 37

Extension efforts to educate producers about the importance of reducing adverse environmental impacts of farming have been effective. Through meetings, workshops, demonstrations, and field days, extension agents have increased grower awareness of IPM practices and benefits. Programs discussed new disease, insect, and herbicide tolerant varieties and their impact on reducing pesticides. In addition, growers were informed about the potential shift and resistance in pest populations if the same control measures are used without proper rotations. Care must be taken to use the new pest management tools wisely. Educational efforts have also targeted the importance of the use of scouting and spray thresholds to provide more effective pest control and reduce pesticide use. Farmers and consultants were offered scouting training in several areas of the state. Those who participated in the workshops have a better understanding of how to scout for pests and when control measures are needed.

One county introduced an early season cotton insect scouting program. Through the programs, growers were informed of the need to scout for early season insects before making treatment decisions. Many treatments were avoided and beneficial insect populations were enhanced for future pest control. Savings to growers were estimated at \$10 per acre when considering labor, machinery and pesticide. Also, 0.5 pounds of pesticide per acre was not introduced into the environment.

Peanuts require high levels of production inputs. Variety NC343, a potential new variety for North Carolina, has significant resistance to many pests affecting peanuts. A test plot was established in one county to determine the potential of using this variety to reduce inputs and maintain profitability. Production was found acceptable with greatly reduced inputs. Use of this variety could reduce production costs by as much as \$75 per acre and reduce pesticide use by 2.5 pounds per acre.

Across the state more than 6,500 citizens in 36 counties increased awareness and knowledge of IPM with more than 3,500 producers carrying out recommended practices on 368,780 acres. Implementing these practices saved farmers close to \$6 million and

reduced pesticide use by 345,877 pounds of active ingredient.

Educational programs have also targeted the benefits and restrictions of no-till production. An increase in no-till production in some areas has resulted in a reduction of soil erosion in environmentally sensitive areas. Some concern about no-till and management of perennial weeds has resulted in additional educational efforts to help growers lower risk of profit loss. Other educational programs have helped growers choose management practices that reduce nitrogen use or promote the use of timely applications. The results are a reduction in nitrogen contamination of surface and ground water. The nursery industry has benefitted from educational programs addressing the proper application of fertilizers, tissue and water analysis, and soil sampling. High quality plants have been produced when growers follow nutrient recommendations and apply nutrients at the proper time. Close to \$7 million was saved in 35 counties through the adoption of recommended management practices.

Objective 5: Producers will become knowledgeable of regulations and environmental constraints on production practices, evaluate the impacts of these constraints on their farm, and develop least cost methods of compliance that will maintain quality of farm and rural life.

Counties Reporting Accomplishments: 23

North Carolina farmers at all levels have been affected by changes in the Farm Bill and in federal and state government regulations. Extension programs have been designed not only to inform farmers about new regulations but also to help them comply. Agents report the continued use of meetings and workshops for pesticide training at the county level. Included were topics such as new regulations, proper storage, application and container disposal, worker protection standards, and record keeping. The information presented to producers and agribusiness has given them the knowledge and skills needed to comply with state and federal regulations.

Animal waste management is a critical area for educational need. Extension programs across the state help growers adhere to specified guidelines and make efficient use of waste on crop land and pastures. Emphasis was placed on monitoring nutrient levels to prevent environmental damage. Producers have been helped in the development of waste and nutrient management plans with some agents going further to offer assistance in developing whole farm plans.

Because of a new regulation, all livestock operations exceeding certain numbers are required to have a designated person as the "Operator in Charge" of animal waste management. This individual must be certified and maintain their certification by attending training classes. One county's extension staff has played a major role during these training classes, emphasizing the importance of proper soil and waste sampling and using the results to maximize waste application efficiency for a maximum crop yield. In this one county alone, 11 operators, representing more than 1,500 acres of crop land, received continuing certification credit, and have improved their efficiency by at least \$7.50 per acre above any expense of sampling or record keeping. This increases their bottom line as a group by at least \$11,250.

More than 4,900 growers in 23 counties increased awareness of BMPs such as soil, water, and tissue analyses, responsible pesticide use, and IPM strategies. More than 2,550 growers in these counties adopted these practices. More than \$2.3 million profits were seen when growers adopted extension recommended practices.

Approximately 2,950 producers in 21 counties increased their awareness of the regulations and constraints.

Objective 6: Farmers will utilize and citizens will become knowledgeable about biotechnology and the use, benefits, and risks associated with the production of genetically engineered plants.

Counties Reporting Accomplishments: 19

1998 saw a dramatic increase in the use of genetically engineered varieties, from a little more than 300,000 acres in 1997 to more than a million acres in 1998. An estimated 60 percent of the total soybean acres in 1998 were planted with herbicide resistant varieties created through genetic engineering. Approximately 50 percent of the cotton acreage was planted with varieties that contained Bt and/or Roundup Ready traits. Corn acreage planted with Bt hybrids represented only 1 percent of the acreage and will likely remain low as long as Bt cotton acreage is high. NCCES responded to educational needs in the use of these new varieties through several avenues. Agents in many counties provided side-by-side demonstrations of how herbicide and insect tolerant varieties compare with varieties with traditional pest management strategies. Emphasis was placed on differences in input costs, environmental impact, and management strategies. These Extension programs helped growers understand the potential and limitations of these crops and allowed growers to determine if the new varieties fit into their current management practices. An estimated 2,400 of the producers reached through NCCES programs adopted the application of biotechnology, using the new varieties on more than 208,000 acres. This represented a profit of approximately \$2 million that includes a savings of one million dollars in pesticide use.

Many counties reported efforts to educate the public about the positive and negative aspects of using genetic engineering in agriculture. Some counties provided programs for secondary schools. Others targeted adult civic groups. The result of these programs was an increase in knowledge of the use of genetic engineering to produce food, feed, and fiber. Citizens are better qualified to evaluate the use and safety of the new technology. Extension programs reached more than 14,400 citizens giving them an understanding of the use, benefits, and risks associated with food, food products, feed, and fiber crops generated from genetically engineered crops.

Objective 7: Farmers, farm organizations, and agribusinesses will become knowledgeable of local and global market factors and develop strategies to cope with or take advantage of these factors to maximize farm profits.

Counties Reporting Accomplishments: 23

Education programs were delivered in several counties to help producers explore new

markets and marketing options. County or multi-county meetings provided North Carolina farmers and agribusiness with information about alternative marketing systems and the benefits of using these systems. Workshops in several counties focused on global markets, global competition and their impact on North Carolina producers. The information helped producers make better decisions about when and how to market commodities produced on their farms.

In 1998, more than 4,050 citizens in 23 counties became aware global trends and trade policies. Eighteen counties reported 453 producers adopted practices associated with new products and 614 in 21 counties adopted practices that influence marketing success. The result was an increase of \$1.8 million because of the adoption of new marketing strategies and \$809,200 increase due to adoption and marketing of new products.

Success Stories:

Person Reporting: Ruth Cliff

The demand for professionalism in the ornamental nursery and landscaping industry continues to grow in Western North Carolina. Three Cooperative Extension Agents collaborated to teach a plant identification course to prepare employees of local ornamental enterprises for the North Carolina Nurserymen's Certified Plant Professional Exam. Of the more than 45 participants of the training over 50% took the exam. This group had an average passing rate of 90 percent compared with 55 percent for the other constituents who had not participated in the training. At a time when trained employees are a scarcity, this certification will serve to increase the retention of quality employees in the ornamental industry.

Person Reporting: William J. Griffin, Jr.

Peanut diseases cost producers in Bertie County several million dollars each year. A peanut disease monitoring system to predict disease development is being used in the county to alert farmers of leaf spot and sclerotinia blight disease development. Readings are taken each day and recommendations given on an answer machine to inform farmers if conditions are favorable for disease development. Making needed spray protections when conditions are favorable is very critical for disease control. The decision not to spray during unfavorable conditions saves growers' money and reduces pesticide use. In 1998, the use of peanut disease monitoring and following recommendations of the agent saved farmers \$338,040.

Person Reporting: Roger N Cobb

Tobacco baling, a new way to market flue-cured tobacco in the US, was demonstrated on three farms last year. In 1998, 28 farmers used baling as a way to increase farm income. Approximately 40 percent of the tobacco in the county was baled and sold for an average four cent premium. The net increase in income was \$80,000.

Person Reporting: Craig R. Adkins

A small greenhouse grower was experiencing bacterial disease problems with his 1998 poinsettia crop. When plant decline and death started, the grower was having to cull an average of \$125 worth of plants per day. The grower contacted the NCCES agent after losing \$1,250 of his potential \$40,000 crop. The problem was identified and appropriate control measures started. Over the next two months the grower lost only three plants to the disease. The grower was able to sale 92% of his 1998 crop for \$36,000.

Person Reporting: James R. Pearce

Peanuts are a major crop in Edgecombe County. In the past it has offered farmers an opportunity to make a reasonable profit per acre. Unfortunately the support price for peanuts was dropped by 10% in 1996 and was also frozen for the next seven years. The only way to keep or increase profits is to increase yield and cut inputs. The Extension Center has targeted educational programs that stress maintaining yields while decreasing the use of pesticides. A major effort to lower fungicide usage based on weather conditions saw one-half of all producers saving an average of \$30 per acre. This resulted in a savings of \$216,000 in 1998 while also reducing the amount of pesticides being released to the environment.

Person Reporting: Peter Hight

The Agricultural Extension Agent visited with seven Vance County growers who had tobacco dying. The agent identified the problem as black shank, a soil-borne fungus disease that kills tobacco. Each of these growers was anxious to take some action, primarily to apply a systemic fungicide. The agent advised them not to apply the fungicide, because at the advanced stage of crop growth, research conducted at North Carolina State University suggested that no benefit would be derived. The growers followed the agent's advice, saving \$17,094 in chemical and application expenses more than 462 acres. In spite of some losses from disease, the growers produced a full crop because of excellent yields in the non-diseased portion of their crop. The growers saved money and avoided unnecessary chemical application in the environment.

Person Reporting: Craig R. Adkins

A cut flower grower producing field grown sunflowers for an early spring market was experiencing poor stands and yields (20% in 1997). He approached the NCCES agent about ways to increase his spring stand and yields. The grower was open to the agent's advice of seeding the sunflowers in the greenhouse and then transplanting them to the field. This resulted in a 90% yield in 1998, and an increase in profits from \$3,600 (1997) to \$16,200 (1998) on his spring grown sunflower crop.

Person Reporting: Derek Day

In 1997, a Person County tobacco producer lost 22 percent of his crop to black shank. This grower's situation was made difficult because of his inability to rotate with non-susceptible crops. By following recommendations provided by the North Carolina

Cooperative Extension Service, this grower reduced his losses to zero in 1998 and was able to produce an additional 1,100 pounds of tobacco per acre, increasing his gross income by \$175,000 in one season.

Person Reporting: Donald G. Nicholson

Repeated cultivation of cotton is an accepted production practice used by many cotton producers to keep the crop weed free. Three cotton producers chose to use a hooded sprayer to keep the cotton weed free. With Extensions guidance, these farmers were able to clean up their crops and conserve the available soil moisture in an extended drought. This allowed them to harvest an extra 200 pounds of lint per acre on 1,400 acres, compared with farmers who chose to cultivate. The extra lint was worth \$168,000.00.

Program Progress and Accomplishments:

County and campus faculty working under The Crop Production and Marketing Systems CEMP have developed and delivered programs addressing needs of all segments of the agricultural industry, from the producer to the consumer. Local programs have helped limited resource farmers diversify, producing crops that meet local needs and taking advantage of alternative marketing strategies. These programs increased farm profits more than \$1.2 million in 1998.

Extension has helped tobacco growers understand and prepare for the change and inevitable loss of the tobacco program by providing information to reduce inputs, increase farm profits through diversification, improve farm management strategies, and make better marketing decisions. Educational programs have helped farmers reduce farm labor costs through better management of the labor force and better pest management programs. Growers have also made better decisions about variety selection. The incorporation of new disease resistant varieties have saved growers money, reduced the amount of pesticides, and reduced labor costs. A new marketing system of baling tobacco was introduced through extension education programs. This new system has increased net farm income with little investment.

The decline in the peanut support price made reducing production costs even more critical. Extension programs provided weather-based advisory systems to decide the need for foliar fungicide sprays. This strategy, part of an overall Integrated Pest Management approach, has reduced pesticide use and production costs. More growers are implementing insect and disease management programs based on need rather than a regular spray schedule. Not only are profits maintained, but production is more environmentally sensitive. Growers are delivering a more mature and thus higher quality peanut to the sheller because of extension programs that offer assistance in evaluating maturity of a farmer's field.

Extension efforts to educate producers on the importance of reducing adverse environmental impacts of farming have been effective. Through meetings, workshops, demonstrations, and field days, extension agents have increased grower awareness of the benefits of Integrated Pest Management and Best Management Practices. Programs discussed new disease, insect, and herbicide tolerant varieties and their impact on reducing pesticides. In addition agents discussed potential concerns about weed shifts

and resistance and talked about measures growers should take to avoid major problems in the future. Educational efforts have also targeted the importance of the use of scouting and spray thresholds to provide more effective pest control and reduce pesticide use.

Educational programs have also targeted the benefits and restrictions of no-till production. An increase in no-till production in some areas has resulted in a reduction of soil erosion and run off in environmentally sensitive areas. Some concern about no-till and management of perennial weeds has resulted in additional educational efforts to help growers lower risk of profit loss. Other educational programs have helped growers choose management practices that reduce nitrogen use or promote the use of timely applications. The results are a reduction in nitrogen contamination of surface and ground water. The nursery industry has benefitted from educational programs addressing the proper application of fertilizers, tissue and water analysis, and soil sampling. High quality plants have been produced when growers follow nutrient recommendations and apply nutrients at the proper time.

Animal waste management is a critical area for educational need. Extension programs across the state help growers adhere to specified guidelines and make efficient use of waste on crop land and pastures. Emphasis was placed on monitoring nutrient levels to prevent environmental damage. Producers have been helped in the development of waste and nutrient management plans with some agents going further to offer assistance in developing whole farm plans.

County and multi-county meetings and workshops, provided North Carolina farmers and agribusiness with information about alternative marketing systems. Several tobacco programs focused on the global market and on global competition and its impacts on North Carolina producers as well as alternative marketing strategies. The information helped producers make better decisions about when and how to market the commodities produced on their farms.

Committee members: Jan Spears, Chair, Steve Hodges, Doug Sanders, Blake Brown, Michael Shaw, Craig McKinley, Mike Linker, Roger Cobb, Sterling Southern, David Smith.

CEMP # 8 - FAMILY & CONSUMER ECONOMICS

PROGRAM DESCRIPTION: The Family & Consumer Economics CEMP promotes informed financial management and other consumer decision making by individuals and families. Serious problems at all income levels can in many cases be prevented, and Objectives 8.1 through 8.4 emphasize problem prevention through education on basic money and credit management, saving/investing for the future, obtaining and maintaining affordable housing, consumer fraud, and senior health care/insurance. For financial problems requiring immediate attention and assistance, Family&Consumer Education Agents provide accurate information about and make referrals to appropriate counseling and intervention services. Objective 8.5 emphasizes that household members are also producers of goods and services to extend &/or increase income. Agents are encouraged to recruit and organize experienced volunteers to deliver skill training to youth and adults, while the Agents focus on family and business resource management aspects of income extension and production.

ABSTRACT: As of 1/13/99, 63 units had submitted 139 County Reports for 1998. More than 43000 people with diversity in age, marital status, gender, education level, income, and type of employment gained knowledge from program activities reported under one or more of the five CEMP#8 objectives. Highest priority was given to providing educational programs for persons with limited access to information, limited resources, lower reading levels, &/or specific concerns requiring consumer information on budgeting, credit, &/or the need for savings. FCE Agents worked closely with other agencies/organizations, teaching working poor audiences trying to achieve financial self-sufficiency, including: Work First w/DSS; EBT (food stamp debit cards) w/DSS; EIC (Earned Income Credit) w/IRS & CBPP; EFT'99 (Direct Deposit campaign) w/U.S.Treasury; and IDAs (Individual Development Accounts) w/ NC Depts.of Commerce and Labor. Other program priorities were: elder health care/insurance; consumer fraud prevention; and selection/care of affordable housing. Other targeted audiences were: military personnel & families (Marine Corps, Army and plans for work w/ the Air Force in '99); young people (promoting HSFPF and other Jump\$tart Coalition-recommended curricula as part of a 10-year national campaign to promote K-12 personal finance education); and mid-life adults, including farmers and other family-owned businesses (as part of the five-year national SAVER campaign to provide critical information on saving and investing for future financial security. 1585 volunteers gave 14438 hours valued at \$144380 to help FCEA deliver effective CEMP #8 programs.

NUMBER OF UNITS REPORTING ACCOMPLISHMENTS FOR EACH OBJECTIVE:

63 counties submitted 139 accomplishment reports: 8.1 = 33, 8.2 = 30, 8.3 = 19, 8.4 = 40, 8.5 = 17

STATEWIDE MEASURES OF PROGRESS, IMPACTS, VOLUNTEERS & NARRATIVES

OBJECTIVE 8.1 - Basic Money Management for LRA - 33 counties. Limited resource consumers and families will make and use money management plans and adopt decision-making practices that will help them achieve family financial goals. (Info on programming for Work First and other LRA was also reported under 8.2, 8.3, 8.4, and 8.5)

Measures of Progress: 4307 people increased awareness and knowledge about money management and the decision-making process; 1216 personal goals were made and written; 2530 people identified family and community resources; 1829 people demonstrated ability to use the money management skills and decision-making approach learned; \$40747 dollars of debt were reduced.

Impacts: 1093 money management plans were made; 686 people attained personal goals; \$84299 dollars were saved or reallocated to meet family needs; 1136 individuals or families improved self-sufficiency; 645 people succeeded in the reduction of debt level.

Volunteers: 161 volunteers donated 731 hours, valued at \$7310.

Narrative. Families striving to obtain self-sufficiency through improved money management skills participated in programs ranging from basic money management, to rebuilding and establishing credit, to consumer saving strategies. Training was conducted on the MoneyMax for staff who agreed to participate in pilot testing this program for LRA. Four team members took part in 5/98 agent training on: From Welfare to Well-Being. Other training on designing money management programs for LRA was conducted for county staff and other state agencies. The skills obtained helped limited resource families qualify for home ownership subsidies, lower expenses for utilities and household goods, and reduce the amount of debt owed. Through follow-up evaluation, limited resource participants revealed how the information and skills learned are being used, and the impact on their daily lives. Many limited resource families are saving for the first time. They are also implementing strategies that reduce wasteful spending, which allows them to meet their basic family needs and make progress toward reaching goals. For instance, limited resource families in 33 counties reported saving or reallocating \$84299 in 1998. Goals were set and written by 1220 individuals. A total of 690 participants reported reaching their goals. Shedding their costly debt situation was considered to be a major way to improve their financial situation by limited resource participants. Six hundred and forty-five individuals reduced their debt load by \$40747.

OBJECTIVE 8.2 Financial Planning Over the Life Cycle - 30 counties. Consumers will increase knowledge of and adopt financial planning techniques to meet changing responsibilities for self and others over the life cycle. (Programming on financial security is also reported under Objective 1.1)

Measures of Progress: 6335 people increased awareness and knowledge of financial resources; 1400 people demonstrated goal setting, making financial plans and record keeping skills; 2907 people acquired knowledge of best management practices such as increased savings and investments, reduced consumer debt, more money designated for retirement management; 4418 people increased satisfaction with ability to use resources

Impacts: 2009 demonstrated success in obtaining, protecting and using financial resources; 1106 adopted a financial planning and record keeping system; 752 documented a plan for resources over life cycle; 1151 people improved their financial status resulting from financial planning

Volunteers: 261 volunteers donated 2462 hours, valued at \$24620.

Narrative. 30 counties reported working with a variety of general and targeted audiences. Young people were reached through: workshops/day camps for the public, 4-H and other groups; in the schools (esp. the High School Financial Planning Program). Financial management programs were offered to adults on: budgeting & record keeping; credit management; how and why to save money; investment fundamentals; budgeting for home ownership; planning for college costs; pre-retirement planning; tax issues; living on a retirement budget; and the impact of consumer fraud on otherwise sound financial plans. The new Money In/Money Out curriculum was introduced at 9/98 agent training and 23 agents began pilot testing it with worksite audiences. Targeted adult audiences included: mid-life and older women for the Women's Financial Information Program; prospective/current Medicare beneficiaries (7/98 agent training); prospective and current Habitat for Humanity homeowners; and pre-retirement audiences, especially farmers and other family-owned businesses (6/98 agent training). Extensive retirement planning resources were provided to every county from an Ag Foundation grant, and a poster on the program titled "Aim for Financial Security in Retirement" was manned at all seven of the Nickels for Know-How meetings.

OBJECTIVE 8.3 Housing Affordability - 19 counties. Families, individuals and special needs groups will make informed decisions in securing and maintaining affordable housing that meets their changing needs. (Info on housing programming for LRAs is also reported under Objective 8.1)

Measures of Progress: 1136 people adopted practices which led to living independently or living in affordable housing; 1749 people increased awareness and knowledge about housing financial decisions; 1380 increased awareness and knowledge of household budgeting; 2473 people increased awareness and knowledge about housing maintenance and/or repair; 2723 increased awareness and knowledge about selection of affordable home furnishing and home improvements

Impacts: 387 people had success finding, securing and maintaining housing; 581 people adopted and implemented successful budgets for housing; 1477 people succeeded in budgeting for repair, maintenance &/or remodeling costs; 505 people succeeded in living independently in own home.

Volunteers: 170 volunteers donated 552 hours, valued at \$5520.

Narrative. 19 counties reported on a variety of affordable housing programs. Topics included whether to rent or buy, multiple aspects of the home buying decision and post-home buyer decisions. Educational activities were reported on how to budget for: getting into new housing (rental or purchase); selecting and caring for furnishings; maintenance and repairs; and remodeling. Counties reported specific programming for residents of housing authority units, first-time home buyers, Habitat families, Independent Living groups, and other homeowners. Agents were trained in 5/98 on Home Modifications and Basic Home Construction, and Housing Issues were presented as part of 5/98 training on: From Welfare to Well-Being.

OBJECTIVE 8.4 Consumer Decision Making - 40 counties. Individual consumers and families will learn decision-making skills and adopt practices that make better use of

available resources and improve their financial status.

Measures of Progress: 11536 increased awareness and knowledge of consumer decision making skills in such areas as financial services, insurance, transportation, health care, elder care; 3091 adopted practices in the selection and care of consumer products that extend use and reduce costs; 2720 adopted practices in the selection and use of consumer services; 2963 increased knowledge of consumer credit options and concerns; 3565 increased awareness and knowledge of public policy issues affecting consumers

Impacts: 4657 increased skill and satisfaction with consumer decisions; \$133797 costs avoided through selection and care of consumer goods; \$147356 financial status of individuals and families improved; 1308 people increased participation as informed consumers in the public policy debate on consumer issues

Volunteers: 598 volunteers donated 5908 hours, valued at \$59080.

Narrative. 40 Counties reported educational programs on consumer decision-making issues of concern to general audiences such as senior citizens, young families, and youth. Targeted audiences included worksite groups, agency staff, prison inmates, teen parents, Work-First families. Topics included: shopping skills and consumer credit decisions; auto purchase, insurance, and maintenance; clothing selection and wardrobe management; credit and telemarketing fraud prevention; elder care options; Medicare + Choice and Medicare Fraud (7/98 agent training plus 17-site videoconference). EH Liaison Agents facilitated telemarketing fraud training in preparation for the 11/98 FCE Sting.

OBJECTIVE 8.5 Extending and Increasing Income - 17 counties. Individuals and families will extend and/or increase income through home production for family use &/or production and marketing of goods or services through employment or self-employment.

Measures of Progress: 3187 increased awareness and knowledge of practices to extend or increase income; 2197 attained skills to produce consumer goods; 1705 adopted practices to extend or increase income; 742 increased knowledge of home-based/other small business; 2725 increased decision-making skill regarding employment or self-employment

Impacts: \$55487 dollars saved through practices to extend income: \$29625 increased income through employment: \$39775 increased income through self-employment: 1031 improved use of human and financial resources

Volunteers: 395 volunteers donated 4785 hours, valued at \$47850.

Narrative. 17 Counties reported on educational programming for individuals and families to extend income &/or increase income. The overriding need for better management of available income is met in part by educating adults and youth to produce some of their household goods and services. The need for additional income is met in some cases by educating adults and youth about home-based and other types of small business, and providing info on available resources. Agents reported on: organizing volunteers to teach the skills needed for home production (to extend income) and/or to increase marketable

skills (to increase income); and on educational activities, in cooperation with other groups that counsel and assist small business, to meet the educational needs of current and prospective small business owners. Nineteen FCE Agents and three FCS Specialists took part in national training on the new CES curriculum: Cashing In on Business Opportunities - A Guide to Building a Home-Based and Micro Business Program, and a copy of the curriculum was provided to every county from a CRD grant.

OVERALL CEMP#8 SUCCESS STORIES

8.1 Greene County: 24 Even-Start participants identified personal goals in a four-week money management course designed to reduce debt load and increase savings. 18 participants received their credit report for the first time and learned how to read it. 20 percent found errors that were corrected or expected to be corrected in the following year. Six participants began savings, which totaled \$500. Three single parent moms saved \$126 in utility bills by lowering thermostats. They also lowered water bills by \$20 by adding a two-liter bottle to their tank to decrease water levels. Goals were set for 1999 by each participant to reduce debt and obtain personal items.

Sampson County: Extension and First Citizens Bank joined forces to instruct Work First participants in the mechanics of basic consumerism. The seven hours of training consisted of money control practices, budgeting, banking services and decision making. Of 26 participants, 20 reported increased efficiency in consumer skills, 8 reported developing a budget, 9 reported positive improvement in use of banking services, specifically eliminating the writing of checks when there are insufficient funds (avoiding costs to participants of approximately \$1080).

Guilford County: Individuals receiving public assistance have been forced to restructure spending practices due to welfare reform and cuts in government funding in general. To address this problem, a program was implemented in Guilford County with the objective of teaching basic money management principles, entitled "Money Talks." The four-week series was conducted for twenty individuals who reside in two government-subsidized housing communities through collaborating with Westminster Properties. As a result of the program 20 individuals reported that they developed and were using a personal budget, 20 individuals set personal financial goals, and participants reported a combined savings of approximately \$1000 from using information from the program. The resident services manager said the program was super and greatly benefited both communities.

8.2 Union County: To address the need for financial education among women, a Women's Financial Information Program was offered. A planning coalition of 6 agencies and 3 citizen volunteers planned and implemented the program, recruiting 10 speakers, 6 facilitators, 26 participants, a free facility, and sponsored graduation lunch. All participants rated the 7-week series as "excellent." Specific impacts involved empowerment to be better organized, take care of details, know helpful resources, plan ahead, invest for the future, and have confidence in handling financial affairs. All said they would recommend the series to a friend, and to women of all ages. For \$12 each, participants received hundreds of dollars worth of expert information.

Rowan County. NCCES in Rowan County developed four investment clubs to provide

educational knowledge/strategies to improve savings/investments, and to enable improved personal financial confidence. Results: one club's investment return = 39.5%; other return ranges are from 21-32%. Monthly the 92 members study, research and expand knowledge under Extension's guidance, using local/regional resources for program implementation. 88 committed people express gratitude for providing valuable learning experiences: "learned to comprehend/apply value lines," "transferred knowledge to improve family retirement plans," "opened a new world of interest," "started at ground 0" and can now research/analyze and make stock judgments," and "feel much more confident in making family financial decisions." Members improved family investments.

Forsyth County. In response to an increasing need for employees to understand work-related retirement planning options, CES's Triad Money Management Center collaborated with EFG Technologies and presented an investor education series to 74 employees. 48 enrolled in their ESOP plan for the first time as a result of the classes. 34 changed investment options for a better return over the long term as a result of education. 94 percent of participants said this program reinforced the value of unbiased investor education for employees from an educator, not a salesperson.

8.3 Guilford County: Many limited resource families need sound consumer information in order to effectively manage their resources. To address this need, Extension cooperated with DSS and the Summit House Corrections Program in sponsoring workshops for 35 participants on Cleaning with Pizazz: Housecleaning Made Easy. Participants gained knowledge and skills, and became aware of ways to keep their houses clean without being costly to their budget. They learned how to mix household ingredients to create homemade window cleaner to cut costs, and how to organize and prioritize work to get housekeeping done. 21 participants acquired skills and adopted practices to make better use of available resources and improve home management practices. 31 participants indicated they saved an estimated \$1743.

Johnston County. In conjunction with Johnston County Housing Assistance Program (HAPP) and USDA Rural Development, Extension prepared ten low income adults for new home ownership. For the second time, a six-hour course was offered to take participants through the steps necessary to locate and finance a new home, and after the purchase to maintain the interior of the property. The benefits of homeownership were made clear. All participants said the classes helped alleviate some of the fears they had about the homebuying process and cleared up a lot of the mystery. In order to become eligible for monies available from HAPP and Rural Development, participants had to complete the entire six-hour course. All participants from last year's program still own their homes.

Guilford County. Consumers in 1997 spent \$53 billion on home furnishings (American Manufacturers Assoc.) "It's Spring - Revitalize Your Home" was a 3-hour workshop challenging consumers with practical skills in making wise consumer choices in spending money on home furnishings. All 68 participants reported that they had gained new ideas, the information was useful, information will save money, and that they will put what they learned into practice. They estimated the impact realized by attending the workshop averaged over \$600 per person.

8.4 Edgecombe County. According to an AARP survey, fraudulent telemarketers cost

North Carolina consumers over \$200,000,000 each year. Twenty-seven percent of the public admits being persuaded by potentially fraudulent telemarketers, who often target the elderly. To address this concern, educational programs on telemarketing fraud were conducted for 85 senior adults. The program focused on prize offers, sweepstakes scams and recovery schemes. The majority of participants acknowledged they received unwanted phone solicitations. More than 60 percent of participants indicated that the knowledge gained would increase their skill and confidence in responding to phone solicitations. The seniors also responded they would better protect their financial status by refusing to send money or give credit card or bank account numbers to telemarketers.

Iredell County. Twenty-nine high school students participated in a two-session SMART SHOPPING class developed by the FCE Agent. Impacts were collected from visual observation, class discussion, written reports and follow-up observation/discussion. Sixteen students learned the importance of having a written budget, 7 planned to use the envelope method of budgeting, 9 learned the importance of keeping records/files, 8 learned the necessity of keeping sales slips/receipts, 15 began using a shopping list, 18 started comparing price and quality before making a purchase, and 15 learned the importance of saving for a desired item. Seventeen of the students shared handout materials with their mother or guardian.

Lincoln County. There is a need to keep the growing population of older adults informed concerning changes in Medicare and other health insurance, and how to handle the paperwork involved. Extension coordinates the work of 8 SHIIP volunteers who assist individuals with health insurance decisions and present health insurance programs to various groups in the county. The volunteers receive update training bi-monthly from the Department of Insurance. Forty individuals have saved an average of \$30 monthly as a result of information provided by SHIIP volunteers.

8.5 Cherokee Reservation. Extension hosted seven Area II workshops for 65 persons. Many local people supplement their income by making mountain crafts, which is economic development for the area. These workshops preserve mountain and native American crafts and culture. An estimated \$30,000 has been made by local participants from their sale of crafts. Many people must depend on craft sales in the winter months when their livelihood of tourism is low.

Carteret County. Sixteen girls, age 7-17, registered for sewing workshops. Thirteen completed at least one garment; 12 modeled in a Fashion show at the county level; 8 went to the state Back-to-School Sewing with Cotton contest; one participated in the State 4-H Fashion Review during 4 -H Congress. Seven Extension Homemaker leaders helped with the workshops, and 3 mothers attended sessions. Children learned about fabric selection, pattern selection, types of fabric, fibers, how to use a guide sheet, sewing tools, parts of the sewing machine, and how to use a sewing machine. Their sewing enabled them to save money [both at the time and in the future.]

Dare County. "Ready, Set, Go...Empowering to Succeed" is a seminar for Work First participants. A joint effort of DSS's WorkFirst Coordinator and Extension's FCE Agent provided participants with the opportunity to attend three mornings of fun and informative seminars to enhance their job-seeking skills. Topics included Getting Motivated, The

Winning Look, Managing Stress, Makeup in the Marketplace, Where Are the Jobs? and more. Participants stated that the sessions were very valuable and appreciated the many speakers who volunteered time to make them aware of the opportunities and resources available.

CEMP #8 TEAM MEMBERS and CO-CHAIRS

Linda Aycock - Nash CED (8.4)

Glennie Beasley - Chatham FCE Agent (8.1)

Jo Ann Cope - Macon FCE AGENT (8.5)

Jim Daughtry - Jones et al. Area Farm Management Agent (8.2)

Sarah Kirby - NCSU Housing Specialist (8.3)

Janice Holm Lloyd, Co-Chair - NCSU Area FRM Specialist (8.4, 8.2)

Ellen Miller - NCSU Apparel & Textiles Associate (8.5)

Nita Royal, Co-Chair - Area Specialized Agent in Financial Planning

Education at Triad Money Management Center (8.2)

Claudette Smith - NCA&TSU Family Resource Management Specialist (8.1)

Deborah Taylor - FCE Agent (8.3)

Bob Usry - NCSU Youth Economics Specialist (8.4)

Mike Walden - NCSU Extension Economist (Consumer Economics) (8.2)

CEMP # 9 - FAMILY AND PARENT EDUCATION

Brief description of CEMP Program focus: The Family & Parent Education Cooperative Extension Major Program is helping parents and families acquire and develop the skills needed to foster qualities of responsibility, cooperation, courage and self-esteem. Appropriate actions are being taken to provide quality information on how to strengthen family relationships through improved parenting skills, financial management, problem-solving skills, empowerment, conflict resolution, effective communication, and stress management. In addition, Extension personnel are equipped to make appropriate referrals for family services, support services, and self-help support groups.

Abstract/Overview of 1998 CEMP 09 Program Accomplishments: Thousands of individuals and families across the state were contacted, taught, mentored, encouraged, and impacted by the combined efforts of 65 county partners working on one or more of the objectives in CEMP 09, Family and Parent Education, during 1998. The many educational efforts initiated and facilitated by County Family and Consumer Educators were immeasurably enhanced by hundreds of volunteers, collaborators, county government representatives, funding partners, state faculty members, and many members of our support staffs. Literally none of our successes are accomplished without a coordinated team effort.

Program content fit within the confines of CEMP 09's four objectives. Individual educational efforts focused heavily on Parent Education, Child Care, and Child Development. In addition, different programs emphasized topics related to overall human development such as stress management, conflict resolution, personal improvement skills, decision-making, personal responsibility, communication skills, and other life skills. Program methodologies were often highly creative and non-traditional, involving diverse audiences including limited resource families, incarcerated parents, as well as cross-cultural groups. Many venues were utilized in disseminating our research-based information related to family and parent education.

The results of the CEMP 09 educational programs conducted throughout the state are quite impressive. Utilizing various evaluation techniques including observational, self-reporting questionnaires, pre-post tests, telephone surveys, one-on-one conversation, purposive sampling, and in some cases extrapolation, the awareness and knowledge levels related to one or more content concepts of 64,222 participants were increased. In addition to learning concepts, 17,567 persons reported adopting practices as a result of Extension programs that would improve their personal or family context, and 7,144 reported learning new skills that would enhance their ability to deal with the challenges of life. According to 7,758 learners, stronger family relationships were perceived as a result of participating in CEMP 09 educational opportunities. An overall improvement in the quality of life was reported by 8,304 program participants.

Objective 1: *Participating individuals and families will increase parenting skills related to caring for oneself, understanding ones children, motivating, nurturing and guiding them, and serving as advocates when needed.*

Counties(units) reporting accomplishments:

Alamance, Alexander, Alleghany, Anson, Avery, Brunswick, Buncombe, Cabarrus, Caldwell, Chatham, Chowan, Cleveland, Columbus, Currituck, Davidson, Franklin, Gaston,

Gates, Granville, Greene, Harnett, Haywood, Henderson, Iredell, Jackson, Lenoir, Lincoln, Madison, McDowell, Mecklenburg, Mitchell, Moore, Newhanover, Northampton, Orange, Pasquotank, Pender, Perquimans, Pitt, Randolph, Richmond, Robeson, Rockingham, Rowan, Sampson, Stanly, Stokes, Surry, Union, Warren, Watauga, Wayne, Wilson.

Respective MOPs description and numbers: 21,105 individuals increased awareness and knowledge of developmental stages, basic needs, and appropriate behavior of children. 14,461 individuals increased awareness and knowledge of appropriate discipline strategies. 3,627 individuals adopted appropriate discipline strategies. 8,516 individuals increased awareness and knowledge of techniques to control stress, time, and energy. There was 3,750 adoptions of techniques to control stress, time, and energy.

Respective Impacts description and numbers: 4,289 families demonstrated improved family relationships through the resolution of financial conflicts. 4,333 families demonstrated improved responsibility of parents and children. 5,478 families adopted improved quality of family life by adoption of effective parenting through appropriate discipline techniques and critical nurturing practices.

Volunteers-numbers-hours served-value:

Number: 743

Hours: 3,266

Dollar Value at \$ 10/hr: \$ 32,660.

A concise narrative to capture all accomplishments for Objective 1: Counties reported offering a variety of educational programs related to parenting and child care including health and stability of the family; fatherhood issues; incarcerated parents; building strong relationships; discipline strategies; communicating with children; developmental stages of children; nutrition education; financial planning; and child safety. These programs were conducted in a variety of ways with diverse target audiences, and frequently in collaboration with other government and community agencies. Listed below is a sampling of programming efforts throughout the state:

JOURNAL ARTICLE -- The Child Development Specialist and two of CEMP 09 county team members were successful in publishing a refereed journal article based on one of the pilot projects conducted last year as a part of our CEMP program:

DeBord, Karen; Roseboro, Jacqueline; and Wicker, Karen (1998). Creative approaches to parenting education. Journal of Extension, 36(5), 6-1 Published electronically on the internet at <http://joe.org/joe/1998october/ent.html>

ANSON COUNTY -- "Fatherhood: What You Should Know" is a program that Anson County's Cooperative Extension Service developed for Brown Creek Correctional facility. This program strives to increase the parenting skills of Brown Creek's inmates. Information is shared about communication with children, the developmental stages of a child, how to be a nurturing absent parent, and the basic steps to relationships.

Male inmates value this program at \$300, but they say that the relationship with their child has no monetary value. Most inmates start the program with no contact with their

child. The goal is to encourage inmates to become better parents and focus on their children. The Extension Service hopes that this program will stop criminal activity of participants or of the participants's children in the future.

CHATHAM COUNTY -- The Latino youth entering kindergarten are not as ready to start school as other youth. This is partially due to the language barrier, low educational level of the parents, and lack of familiarity with the school system. For the first two years this program was open to only Latino youth. To make the program more like the kindergarten class experience and to benefit the other youth and parents, the program was opened up to all youth. This gave the program more cultural diversity, but also made it more difficult to manage the language barrier. The program teaches both the parents and the children. Parents learn developmentally appropriate ways to teach their children and help them get ready for kindergarten. The children learn school readiness skills. The program was taught by four school teachers and four teacher assistants. Four of the teaching staff were bilingual. The youth and parents participated in eight two-hour classes with one class per week March-May at Siler City Elementary School. Fifty-three children and 53 parents participated. The children took pre and post tests. The elements evaluated were knowledge of colors; shapes; numbers; body parts; concepts such as big/little, hot/cold, day/night, and happy/sad; matching and sorting; and motor skills such as cutting with scissors and holding a pencil. 89 percent of the children increased their school readiness skills. Post-test scores increased by 31 percent. 100 percent of the parents learned how to better prepare their children for kindergarten. 100 percent read a book to their child during the program. 10 percent had never read a book to their child before being in this program.

UNION COUNTY -- Parenting classes are a need in the county that several agencies have networked to offer. Educational classes, transportation, children's snacks, parental incentives, child care, and educational instruction were provided to 52 parents who were referred by the courts system, DSS, and health department workers. If this preventive education were to prevent or eliminate foster care for 104 children (number involved), that would be a savings of \$375 per month per child. For the 43 families involved to be removed from the DSS roles, that would be a savings of \$150 per month per family. The economical impact of this supposition would total approximately \$48,675 over a five week period. 100 percent of the parents answered "yes" to: "This class has taught me to be a better parent by teaching me to take care of myself, and to understand, teach and protect my child(ren)."

WAYNE COUNTY -- Research shows that children of incarcerated parents have a high rate of incarceration themselves. In an effort to break the cycle, Extension provides six week parenting series for male inmates at Neuse Correctional Center. During the two series held in 1998, 16 inmates completed the six sessions. All participants indicated they learned new knowledge that they would use to change their current parenting practices. One inmate commented "I have a teenager and this class has helped me to answer some problems with talking to her and really listening." Because of the program developed for inmates at Neuse Correctional Center, Extension was asked to present a workshop at the NC Department of Prisons State Conference. 42 Program Supervisors participated. Comments indicated a strong interest in copying the program in their facilities.

Objective 2: *Limited resource parents will use effective parenting skills and identify possible solutions to family problems associated with money to promote optimal child development and to reduce stress to improve their ability to face the daily challenges of parenting.*

Counties(units) reporting accomplishments: Anson, Buncombe, Catawba, Columbus, Forsyth, Guilford, Lincoln, McDowell, Onslow, Richmond, Robeson, Stokes, Union.

Respective MOPs description and numbers: 858 limited resource parents demonstrated proper application of techniques learned to resolve financial conflicts. 841 limited resource parents increased knowledge and awareness of strategies to resolve family financial conflicts. 2,268 limited resource parents increased knowledge and awareness of child growth and development. 1,376 limited resource parents adopted appropriate discipline techniques and critical nurturing practices.

Respective Impacts description and numbers: 859 families demonstrated improved family relationships through the resolution of financial conflicts. 1,207 families demonstrated improved responsibility of parents and children. 923 families adopted improved quality of family life by adoption of effective parenting through appropriate discipline techniques and critical nurturing practices.

Volunteers-numbers-hours served-value:

Number: 196

Hours: 468

Dollar Value at \$ 10/hr: \$ 4,680.

A concise narrative to capture all accomplishments for Objective 2: A variety of educational programs were implemented in 13 counties with limited resource clientele including budgeting; teaching children about money; use of children's car seats; alleviating stress; effective discipline; self-esteem, self-control, and responsibility. Some of the programs include:

ANSON COUNTY -- Upon the request of T.I.P.S. (an adolescent parenting program and Anson County's Smart Start), the Cooperative Extension Office implemented "Becoming a Mother: Keeping in Touch With You". This program promotes self-esteem and self-control over life's circumstances. The program meets twice a month to encourage young mothers that they can improve their situation and provide for their children.

All T.I.P.S. participants start the program as welfare dependents. This program helps them to move toward self-sufficiency by increasing participants self-esteem and self-awareness. This support group has been a great success at reducing second pregnancies. The program also covers basic parenting skills and child development.

This program has reduced welfare dependency among participants and has increase parenting skills. It is through this program that participants feel that they can face the daily challenges of parenting.

ROBESON COUNTY -- The past six months 241 limited resource families/individuals were

reached by the FCS program. 105 were reached one-to-one and 126 in a group setting. Six families have regained custody of their 12 children. 75 stated that their home life is much better as a result of these classes. They understand their children and have a different outlook on life.

Objective 3: *Families and individuals will improve skills in critical thinking, family, conflict resolution, and effective decision making.*

Counties(units) reporting accomplishments: Alleghany, Avery, Bladen, Brunswick, Buncombe, Catawba, Columbus, Davie, Harnett, Mecklenburg, Mitchell, Person, Stokes, Union, Wilson.

Respective MOPs description and numbers: 5,025 people increased awareness and knowledge of skills in critical thinking, communicating, leadership, managing finances and managing stress. 843 persons adopted skills in critical thinking, communicating, leadership, managing finances, and managing stress.

Respective Impacts description and numbers: 988 program participants reported improved self-esteem of family members by adopting strategies of affirmation, positive reinforcement, and expression of affection. 896 persons said their quality of family life improved through the adoption of skills such as improved communication, conflict management, and effective decision making. And 1,028 people improved their interpersonal relationships through the adoption of skills in critical thinking, communicating, leadership, managing finances, and managing stress.

Volunteers-numbers-hours served-value:

Number: 172

Hours: 1,224

Dollar Value at \$ 10/hr: \$ 12,240.

A concise narrative to capture all accomplishments for Objective 3: Counties reported conducting programming in leadership development; children's school readiness; parenting skills; stress reduction; conflict resolution; domestic violence; life skills; effective decision-making; communication skills; building self-esteem; handling problems relating to pressures in daily living; and building strong families. Some of the programs include:

SURRY COUNTY -- Violence within families is more visible at this time in Surry County than ever before--more than 2,000 calls were received by local police regarding domestic violence during the past year. Surry County Extension has led the effort to obtain a shelter facility. A grant from the Governor's Crime Commission for \$85,000, a grant/loan from the Surry County Housing Consortium of \$50,000/\$100,000, along with several smaller local grants have allowed the purchase of a facility. Staff has been hired, training of staff is in progress, items for furnishing home have been collected from the community, and the facility will be open for assistance to violence victims as of January 1, 1999.

CATAWBA COUNTY -- Cooperative efforts among Catawba County Schools, Minority Women for Change, Hickory Parks and Recreation, and Extension resulted in workshops to identify issues causing time, financial, and interpersonal relationship stress among

families and to introduce coping strategies. Fifty-seven percent of participants demonstrated the ability to design a time management plan; 38 percent identified points of stress and developed plans for dealing with them. One hundred percent of participants reported a greater empathy for other individuals.

Objective 4: *Families will become aware of support services and will use them effectively.*

Counties(units) reporting accomplishments: Cherokee, Columbus, Harnett, Hertford, Iredell, Lee, Lenoir, Onslow, Orange, Pamlico, Richmond, Rowan, Stanly, Stokes, Watauga.

Respective MOPs description and numbers: 10,185 people increased awareness and knowledge of community services. 1,193 persons increased their ability to communicate with service agencies. 1,821 persons increased their awareness and knowledge of skills such as listening, managing finances, and managing stress. And 576 people adopted skills such as listening, managing finances, and managing stress.

Respective Impacts description and numbers: 1,007 people said they improved their quality of family life through utilization of community services. 992 reported improved self-esteem by implementing suggested strategies for strengthening families. In addition, 630 persons reported improved family relationships through the adoption of skills such as listening, managing finances, and managing stress.

Volunteers-numbers-hours served-value:

Number: 344

Hours: 1,653

Dollar Value at \$ 10/hr: \$ 16,530.

A concise narrative to capture all accomplishments for Objective 4: Extension educators often serve as a referral system to help families access specific kinds of professional help. Some of our CEMP counties chose this objective as a focus of emphasis, and conducted programs in key issues facing our young people; poor achievement among youth; collaboration among agencies; health services; care-giver services available; survival skills for women; community service exhibitions; advocacy for children and families; healthcare insurance; and others. Examples of Extension's efforts include the following:

IREDELL COUNTY -- "Friends of the Young Child" group works to promote the services of about 40 agencies in Iredell County. We meet once a month to plan events sponsored by the group or share with the group a specific program in an agency. Each agency supports the other as we work with families and promote parenting and children's programs. We have also begun making referrals to each other and have cut out some duplication of services by working on projects together.

ROWAN COUNTY -- Families often do not realize the number of support services available to them. Extension responds to this need by collaborating with other human services agencies to inform Rowan County's families about needed services. Through collaborative efforts with the Department of Social Services, Health Department, Head Start, and other

agencies, over 2000 families and individuals have received information about support services and opportunities which will help them meet their families' needs. This has been accomplished through networking meetings, scheduling of events at the local Extension center and dissemination of printed materials. Extension will continue to evaluate impacts of these efforts.

WATAUGA COUNTY -- CES Agent is a member of the Interagency Council in Watauga County which networks with each other to keep informed of the programs available to our consumers. Our county has developed a Community Resource Book, and is part of the High Country's first comprehensive resource and referral system which links people and services together. CES has had numerous displays at the Community Fair, TEAM Nutrition for Children Fair, Hispanic Health Fair, Cancer Awareness Fair, etc., which makes families aware of community resources and support services. Special efforts have been made to refer members of the Hispanic community and the Developmentally Disabled.

CEMP 09 contact persons (co-chairs): Georgia Kight and Wayne Matthews

CEMP 09 Team Members:

Nancy Abasiekong
Jean Baldwin
Sandra Brown
Joyce Boatwright
Lucille Carter
Deborah Crandall

Karen DeBord
Reba Green-Holley
Marilyn Gore
Melissa Hight
Carmen Long
Thearon McKinney

Margo Mosley
Pam Outen
Jackie Roseboro
Claudette Smith
Verlene D Stephenson
Karen Wicker

CEMP # 10 - FOOD AND FOREST PRODUCTS MANUFACTURING

PROGRAM DESCRIPTION

Food Science

The North Carolina Cooperative Extension Service, Department of Food Science works closely with the North Carolina food industry. The last few years, a major focus has been in the area of regulations. Since the E. coli outbreak in the western part of the United States, the industry has redoubled its effort to produce a safe and secure food supply. Most of the industry is changing or will change to a Hazard Analysis Critical Control Point (HACCP) based safety system. This system has recently been mandated for the seafood industry and by the Food and Drug Administration (FDA). There is a proposal to institute HACCP in the juice industry. The National Conference on Interstate Milk Shippers (NCIMS) has appointed a committee to propose a voluntary HACCP program for Grade A Milk products to the next conference. Regulation of other products will follow. More recently the United States Department of Agriculture (USDA) regulated meat and poultry industries have incorporated the process into their inspection program. This means the industry has turned from an inspection-based safety system heavily dependent on regulatory input, to a system now in tune with Total Quality Management. In this new system, the production processes are analyzed for potential hazard(s), controls are identified for the hazard(s), and monitoring of these controls by measurable criteria is affected. Reporting and verification steps keep the system working.

Food Science extension specialists have worked hand-in-hand with other agencies to help small businesses and new food entrepreneurs. Program coordination with the North Carolina Department of Agriculture and Consumer Services' (NCDA & CS) regulatory agencies, their marketing group, the Speciality Foods Association, and the Small Business and Technology Development Centers lends a hand to these individuals.

Wood and Paper Science

The North Carolina Cooperative Extension Service, Department of Wood and Paper Science works to increase the competitiveness and profitability of North Carolina's forest products industry, improve markets, and increase consumer understanding of forest products and their proper use. The continued long-term expansion of the state's primary and secondary wood products industries not only depends on the national and international economy, but on the individual firm's abilities to compete by obtaining and efficiently using raw materials and utilizing existing and new technology. Wood Products Extension concentrates its efforts on providing educational opportunities for managers and key personnel of primary and secondary wood products firms and the consumers of wood products. These opportunities allow clientele to develop their knowledge and skills to further their effectiveness in the assembly, processing, distribution, and use of wood products. The forest products industry modernization will increase their competitiveness in our growing international economy.

UNITS REPORTING ACCOMPLISHMENTS

Department of Food Science Extension Specialists: Dan Carroll, Pat Curtis, David Green, Kevin Keener, Barry Nash, Dwain Pilkington, John Rushing, Lynn Turner, Donn Ward

Department of Wood and Paper Science Extension Specialists: Joe Denig, Craig Forbes, Larry Jahn, Phil Mitchell

Martin County Extension Center: Jim Kea

STATEWIDE MEASURES OF PROGRESS TOTALS

Objective 1: Food processors will adopt new technology, hire and train qualified personnel, and develop in-house quality systems to ensure regulatory compliance along with sustained growth and profitability.

Increased participation in training

Number participating: 700

Number increasing understanding: 700

Objective 2: (A) Forest products manufacturers will increase their competitiveness, productivity, profitability, and utilization of innovative technology, and (B) North Carolina citizens will increase their knowledge of wood products, their proper application, and maintenance.

Adoption of new manufacturing techniques

Number of firms adopting: 88

Consumer adoption of practices related to selection, use, and maintenance of wood products

Number adopting: 130

Increased knowledge of economic importance of the wood products industry

Number increasing knowledge: 400

Increased consumer understanding of forest products and their proper use

Number increasing understanding: 402

Objective 3: New and potential entrepreneurs especially in the food and forest products manufacturing areas will benefit from programs in business setup, management, quality, technology, and regulations by entry into the marketplace showing sustained growth and profitability.

Requests for assistance from small business and entrepreneurs

Number: 220 (in foods)

Number of new companies in food and forest products manufacturing

Number: 25 (in foods)

STATEWIDE IMPACT TOTALS

Objective 1: Food processors will adopt new technology, hire and train qualified personnel, and develop in-house quality systems to ensure regulatory compliance along with sustained growth and profitability.

Processors in the area of fruits and vegetables, dairy products, poultry, seafood, and meat and meat products are rapidly adapting new quality systems based on HACCP to improve

quality and safety to meet regulatory requirements and increase profits.

Objective 2: (A) Forest products manufacturers will increase their competitiveness, productivity, profitability, and utilization of innovative technology, and (B) North Carolina citizens will increase their knowledge of wood products, their proper application, and maintenance.

Dollars saved through improved utilization or productivity

Dollars: \$1,070,000

Dollars saved through improved yield, efficiency, productivity, and marketing

Dollars: \$1,220,000

Objective 3: New and potential entrepreneurs especially in the food and forest products manufacturing areas will benefit from programs in business setup, management, quality, technology, and regulations by entry into the marketplace showing sustained growth and profitability.

Increase in number of small businesses in food and forestry manufacturing

Number: 25 (in foods)

NARRATIVE PROGRAM PROGRESS AND ACCOMPLISHMENTS

Food Science

Specialists in the Department of Food Science have taken an active role in preparing the food processing industry for the advent of new HACCP based regulations. With the new seafood rules from FDA and the USDA Food Safety Inspection Service (FSIS) Pathogen Reduction final rule for red meat and poultry, food processors are turning to training to learn how to comply. Seafood processors and large meat poultry processors were required to comply in January 1998. Currently, the medium-sized plants are being readied for implementation. Food Science specialists have been conducting training throughout the state, nationally, and internationally.

A Seafood HACCP Training Curriculum has been developed that is recognized by the FDA as the national model. The development committee was chaired by a NC State Food Science Specialist. North Carolina processors and regulatory specialists have been trained. Currently, the training is being reassessed and some plans are being readied for "encore" training to increase the levels of adoption and compliance.

The Red Meat and Poultry extension activities included training programs to ensure regulatory compliance in implementation of the Sanitation Standard Operating Procedure (SSOP) portion of The Pathogen Reduction Act of 1996. In the poultry area, a food science specialist serves as an instructor in state and national HACCP workshops. In addition, specialists trained large processors for compliance required in January 1998 and in 1999 for medium-sized processors.

Assistance was given to over 220 businesses involved in food processing. At least 25 new companies were assisted during startup.

In addition to working with established processors, Food Science Extension has worked with entrepreneurs and small business owners who are establishing new products for the market. When regulatory agencies or small business centers are approached by these persons, they recommend the person obtain guidance from Food Science Extension. There they receive assistance in formulation, processing, safety, and labeling. Their product is tested for shelf stability. The entrepreneur is then directed to the appropriate regulatory agency and to marketing and small business assistance.

Wood and Paper Science

The mission of Wood Products Extension within the Department of Wood and Paper Science is to increase the competitiveness and profitability of North Carolina's forest products industry, improve markets, and increase consumer understanding of forest products and their proper use. Wood Products Extension concentrates its efforts on providing educational opportunities for managers and key personnel of primary and secondary wood products firms and the consumers of wood products. Faculty conducted, organized or participated in numerous workshops, conferences, seminars, short courses, and classes for forest industry and consumer audiences. Sample topics included wood drying, quality control, rough mill processing, marketing, wood preservation, and proper uses of wood products. These efforts reached an estimated 1,132 individuals. Major events are listed below.

Conducted, organized, and taught at the following events:

Profiting from Improved Practices in Furniture Manufacturing Workshop, Hickory
Hardwood Lumber Grading Short Course, Raleigh
Hardwood Plywood Manufacturing: Quality Control for Increased Profits Short Course, Raleigh
Southeastern Dry Kiln Club Spring Meeting, Lynchburg, VA
Advanced Dry Kiln Operators Short Course, Hickory
Basic Home Construction Workshop, Raleigh
In-House Lumber Quality Control Workshop, Dudley
In-House Hardwood Lumber Management Quality Control Workshop, Dudley
Basic Dry Kiln Operators Short Course, Clyde
CNC Router Technology Workshop, Raleigh
What You Should Know About Wood Products Agent Training, Raleigh
Southeastern Dry Kiln Club Fall Meeting, Marion, VA

Presentations at the following events:

Wood Technology Clinic and Show, Portland, OR
Parks and Recreation Maintenance School, Wheeling, WV
RMA Agricultural Lending Conference, Raleigh
New Zealand Forest Industry Engineering Association Seminar Series, Rotoura, New Zealand and Melbourne and Sydney, Australia
Oregon State University's Plywood Manufacturing Short Course, Corvallis, OR
Small Scale Forestry in the Urban-Rural Interface Field Day, Raleigh
Hardwood Plywood and Veneer Association Spring Meeting, Ottawa, Canada
Forest Products Society Annual Meeting, Merida, Mexico
Carnage Middle School Career Day, Raleigh
Alamance-Burlington School System Career Fair, Burlington
National Extension Natural Resources Conference, Deerwood, MN

Pesticide Certification School, Raleigh
Anson County Rotary Club, Wadesboro
New South Wales Forest Products Association Annual Meeting, Sydney, Australia

Helping producers and buyers in solving problems or answering their questions associated with the production and use of wood products is also an important activity. Many of these problems and questions require extensive time in gathering the information needed by an agent, industry or final consumer. Faculty handled 207 requests of this type in 1998.

Martin County Center

ProLogger, which focuses on continuing education requirements for North Carolina's loggers, is designed to improve logger safety, environmental concerns, and business management within one year. Those who complete the required 24 credit hours of training will receive the Professional Logger designation and a diploma. Approximately 55 local firms have participated in this training. Organizations involved in the training included the North Carolina Forestry Association, the Cooperative Extension Service, the North Carolina Division of Forest Resources, the Society of Consulting Foresters, the American Pulpwood Association, and insurance carriers and equipment vendors for the forest products industry.

SUCCESS STORIES

Food Science

Shell Egg Rapid Cooling

Issue: As consumers become more aware of food-safety issues, producers are challenged to find new ways of ensuring that their food products are the safest, highest quality that money can buy. Cooling shell eggs after they are hatched is one way to ensure quality and a longer shelf life. But with traditional refrigeration methods, it can take seven to 10 days to reduce the internal temperature of eggs to 45 degrees, the optimal temperature required by the USDA.

What has been done: Researchers at NC State University have developed a system for cooling eggs cryogenically that will dramatically reduce the time for cooling eggs. In this new system, eggs will pass through a 15-foot cooler filled with carbon dioxide gas at a constant temperature of minus 60 degrees Fahrenheit, after being graded, washed, and placed in cartons. This process will reduce the cooling time for shell eggs from days to a matter of minutes.

Impact: By rapidly cooling eggs, producers can further reduce consumers' risk of contracting salmonella enteritis from eggs. In addition, this process will increase the shelf life of eggs from eight weeks to 10 weeks, increase opportunities for exporting eggs and reduce producers' refrigeration costs, while enhancing the overall quality of shell eggs. The unit is expected to be commercially available this summer.

Hazard Analysis and Critical Control (HACCP)

Food Science extension faculty have taken a leadership role nationally, in providing HACCP training programs to various segments of the food processing industry (poultry, meat, seafood, dairy, etc.). In 1998, 20 programs were conducted with over 500 participants in an intensive three-day format. HACCP has been mandated by USDA for meat and poultry processors, and by FDA for seafoods. Implementation of HACCP is proving to be complex, thus it is vital to the industry, and ultimately consumers, that food processors receive training from extension professionals competent in HACCP and the sciences associated with food safety.

Wood and Paper Science

There is a great need to increase the competitiveness and profitability of North Carolina's forest products industry and to increase consumer understanding of forest products and their proper use. To meet this need, extension specialists within the Department of Wood and Paper Science are actively involved in providing educational and technical assistance to North Carolina forest product manufacturers and consumers of wood products. The following examples are indicative of the many impacts accruing as a result of useful educational opportunities being provided in a timely and inclusive manner to industry and consumers of wood products.

A sawmill operation established monitoring procedures to identify losses. By instituting these procedures, this mill has reported annual savings of \$950,000.

"Profiting from Improved Practices in Furniture Manufacturing" was held in cooperation with the Furniture Technology Center at Catawba Valley Community College in Hickory. This was a series of seven weekly workshops conducted by Wood Products Extension faculty. The workshops emphasized practical techniques concerning lumber yard practices, lumber drying, rough mill cut-up, wood machining, wood shrinkage and movement, gluing of panels and veneers, and waste minimization. Comments on the workshops were excellent. One participant's evaluation summed it up best by stating, "You guys did an outstanding job."

A lumber quality control workshop for a major sawmill manufacturer. The participants rated the workshop 9.1 (scale 1-10, with 10 being extremely valuable). Most importantly, the participants averaged scoring 33% better on the post-test versus the pre-test. The manager of organization development and training for this company commented, "this is a definite reflection on the instructor's teaching style and his ability to reach the people."

A specialist participated as a speaker at the Parks and Recreation Maintenance Management School in Wheeling, WV. A pre-test and post-test comparison of the speaker's topic importance to current job were performed. Among 14 different topics, the percentage increase between the post-test and the pre-test ranged from 26% to -2%. The extension specialist's topics were rated first (26%) and third (23%).

During the last several years, 17,000 copies of a publication entitled *A Comparison of Floor Joist Spans* were distributed. This publication was produced by Wood Products Extension to minimize confusion caused by new lumber design values. To evaluate its effectiveness a survey was mailed to individuals requesting the publication (building code officials, builders, engineers, architects, building inspectors, building material dealers). The

response rate to the survey was 63%. The overall average rating of this publication as to how good it was is 4.56 (1 = poor; 5 = excellent). Average ratings (1 = not at all; 10 = a great deal) for three additional questions indicate its effectiveness: Did the publication increase your knowledge of floor joist spans? (7.11); Were you able to use this knowledge to solve problems? (7.69); Were you or others able to benefit by using this publication? (8.14)

A sawmill changed their material flow in the production process. Due to this production process change, this mill has reported annual savings of \$220,000.

Martin County Center

The 1997 Carolina Log'n Demo had 3,500 attendees who had the opportunity to view state-of-the-art harvesting and transportation equipment. Since the show, 12 portable scales have been purchased by loggers in the Martin County area. The purchase of the scales has resulted in saving loggers an extra trip per day by correctly loading their trucks to the legal limit. Estimated amount savings for these loggers are \$120,000.

ProLogger, which focuses on continuing education requirements for North Carolina's loggers, is designed to improve logger safety, environmental concerns, and business management within one year. This program continues to reduce injuries and keep fatalities in the range of three to seven per year. Savings for 1998 due to reduced workers compensation are estimated at \$1,000,000.

TEAM MEMBERS

Tom Campbell

John Rushing, Co-Chair

Larry Jahn, Co-Chair

Donn Ward

Jim Kea

CEMP # 11 - FOOD SAFETY AND QUALITY

1. A very brief Program Description

The food safety and quality CEMP focuses on increasing knowledge and encouraging the adoption of safe food handling practices of food service workers, consumers, youth and other diverse audiences

2. An abstract/overview of your entire 1998 CEMP program accomplishments in a Narrative format not to exceed one-half page single spaced. (please write this as if it was a total stand alone document)

County offices throughout North Carolina delivered a variety of food safety programs, (safe food handling, hygiene, food preservation, food service, master food preserver, sanitation, youth cooking classes, etc.) to diverse audiences (children, high school students, adults, senior citizens, Work First clients, child care providers, garden and civic clubs, Extension Homemaker Clubs, Meals on Wheels volunteers, college students, limited resources families, etc.). A growing number of agents are partnering with others (Departments of Aging, schools, Environmental Health, universities, community colleges, etc.) to provide various programs. In addition, state specialists have provided assistance on a wide array of food safety related issues to a variety of audiences. The topics have ranged from food processing to biotechnology. The food processing industries (poultry, meat and eggs; dairy, seafood, fruits and vegetables, etc.) have been inundated with new regulations related to food safety. Specialists in cooperation with various commodity and processing associations have spent a great deal of time trying to assist industry in meeting these new challenges.

4. Number of Units reporting accomplishments:53

5. Statewide Measures of Progress totals:

1. 19,726 Consumers increased knowledge about safe food handling.
5. 15,471 Consumers improved their attitude about need to handle food safely.
6. 2,571 Food service workers increased their knowledge about safe food handling.
7. 2,338 Food service workers improved their attitudes about the need to handle food safely.

6. Statewide Impacts totals:

1. 10,640 Consumers adopted safe food handling practices. Adoption of these practices has the potential to reduce the incidence of foodborne illness in homes.
2. 2,410 Food service workers adopted safe food handling practices.

7. Volunteers involved and value:

820 volunteered for a total of 4,449 hours. Based on a \$10/hour rate, the value of the volunteers' time is \$44,990.

8. A few Success Stories that indicate real program impacts:

Consumers Education Success Story Example: The Lincoln County Housing Authority has had problems with their tenants keeping their homes clean; the kitchens and lack of sanitation practices with food storage and handling have been major problems with young

mothers and their children. Nineteen different families attended sessions and learned techniques for cleaning, food storage, and safe food preparation practices. The families are now helping each other in cleaning and practicing safe food handling practices. They are keeping records of their accomplishments, and sharing this with the Housing Authority.

Home Food Preservation Success Story Example: Several of the young homemakers in Caswell County were concerned about the methods they were using to preserve food for their families. As a result we formed a "Pantry Club" which met six times in late summer and early fall 1998. Sixteen homemakers and their teenage children attended classes on canning, freezing, preserving, and drying foods. All who attended reported they had gained knowledge which they were putting into practice. Two have purchased pressure canners which they now use instead of canning vegetables using the boiling water bath method. The group will begin meeting again in the spring of 1999 for additional lessons on food safety and storage.

Food Service Employee Training Success Story Example: Through collaboration with the local health department environmental health specialists, school food service director and a group of restaurant owners and managers, a "Round Robin" series of lessons was developed to help train food service employees. Lessons were taken to the restaurants (per the restaurants' request). Forty seven food service employees participated. Feedback from employees showed the classes addressed information and techniques that will help them be safer food handlers.

Food Service Managers Training Success Story Example: There is an increased need to offer food safety training for foodservice managers and employees. A regional SERV SAFE certification course was held in the Northeast District. Of the 17 attending the training, 15 received certification from the National Restaurant Association. The SERV SAFE certification is the third course offered through the NC Cooperative Extension Service, Hertford and Pasquotank County Centers and the Pasquotank, Perquimans Chowan and Camden Health Dept. Five other volunteers were involved in the training. Since October 1997, 49 participants have attended SERV SAFE training with 41 participants receiving certification. It is estimated that by going through SERV SAFE course and applying the information a foodborne illness outbreak could be prevented. According to NRA, \$75,000 is the average cost to a restaurant after an outbreak. To date, the value to target audience of 41 receiving SERV SAFE certification is equal to \$3,075,000. Certification will continue.

Master Food Preserver Success Story Example: Food Safety covers many areas and Buncombe County has many citizens who are very interested in preserving their own food and preserving it safely. A Master Food Preserver class was offered with twenty five hours of instruction, take home study guides, a notebook, and hands on workshops in canning, freezing, pickling, soft spreads and drying. Twelve students graduated at the end of June with written commitment to give back volunteer time by working in the Extension Office, giving food preservation classes in other communities and working at the Mountain State Fair. All of the new Master Food Preservers reported at the last class they have changed their attitudes about the importance of food safety and increased their knowledge in all areas of food preservation.

Natural Disaster Response Success Story Example: The tornado in March '98 left 1000's of residents in the western part of the county without electricity. The Rockingham County office of the Cooperative Extension Service (CES) responded immediately to this emergency situation. Information sheets on what to do after a power outage were distributed to all the local radio stations and newspapers as well as the County Manager's Office, Red Cross Shelters and Health Department. Our office was inundated with telephone calls from residents wanting to know if food was safe to eat. In most instances the answer was no. It is difficult to estimate how many instances of foodborne illness were avoided by providing this information. The Virginia CES estimates a cost of \$942 per case of foodborne illness per year. 100 instances of foodborne illness were avoided, or a savings of \$94,200.

Senior Citizens Success Story Example: Twenty-one seniors at a congregate nutrition site in Pasquotank County participated in a Target Food Safety Training. The average age of the seniors was 72 years old. The seniors participated in eight lessons that were part of the Food Safety Pilot program. While about half of the seniors could not read they all stated an increased knowledge of food safety. As a result, 80 percent of the seniors said they would try to store food in smaller containers, refrigerate food promptly and discard old food.

Youth Success Story Example: With 70-85 percent of North Carolina mothers in the workforce, children are forced to prepare their own meals and snacks from time to time. In order to help these children learn to be safe in the kitchen, as well as handle food safely to prevent foodborne illness, Cooperative Extension provided food preparation workshops for 193 children. Through hands on participation, the children gained a greater appreciation for keeping hands, utensils, etc. clean during food preparation. They also reported becoming more aware of dangerous practices which could cause an accident in the kitchen. J&S Cafeterias and the Triad Area Chefs Federation provided funding for the "Chef and the Child" series in the amount of approximately \$1000 and 3 area Chefs helped lead the classes. One youngster commented, "I like how we measured flour, cleaning our hands before you handle food and I liked working with Chef Jeff and Chef John."

Biotechnology Success Story Example: The products of biotechnology have been widely accepted by American farmers. However, there are a number of important issues and questions about public perceptions and consumer acceptance of foods developed through biotechnology. Based on his original research over the past decade, Dr. Thomas Hoban, Extension Sociologist, has become the internationally- recognized expert on this subject. Through his proactive and integrated Extension programs, he has provided information and advice to a number of important clientele groups from the public and private sectors. He also has been interviewed extensively by print and broadcast media from around the world. During each of the last eight years, he has been invited to give between 50 and 75 presentations to a variety of audiences in the US, Canada, and elsewhere. Dr. Hoban's research and Extension programs have had a significant impact on public policies, as well as private sector product development and marketing efforts. By promoting the acceptance of biotechnology, his work will ultimately lead to a greater competitiveness for American agriculture, as well as enhanced food safety and nutrition for consumers around the world.

9. Develop an overall narrative to capture program progress and accomplishments

County offices throughout North Carolina provided a variety of food safety programs (safe food handling, hand washing, food preservation, food service, master food preserver, sanitation, youth cooking classes, etc.) to diverse audiences (children, high school students, adults, senior citizens, Work First clients, child care providers, garden and civic clubs, Extension Homemakers Clubs, Meals on Wheels volunteers, college students, limited resource families, etc.). A growing number of agents are cooperating with others (Department of Aging, Environmental Health, Universities, Community Colleges, etc.) to provide various programs. Several examples of food safety programs across North Carolina will be presented to provide an idea of the variety of programs and audiences which have been reached through CEMP 11.

Consumer education is a reoccurring issue that surfaces at every food safety planning meeting. It is very difficult to reach the vast numbers who need to receive food safety information. Guilford County offers one example. The majority of families in Guilford County are not familiar with appropriate food storage, safety and preservation guidelines. Using improper procedures can result in food poisoning. In order to provide a credible source of food safety related information for consumers, Cooperative Extension provides a professionally staffed Food Safety Hotline all year. The Hotline received more than 444 calls in 1998. According to Virginia Cooperative Extension's EFNEP Evaluation Team, the average cost of 1 case of food born illness is \$942. Therefore, Extension's Food Safety Hotline potentially saved callers a minimum of \$418,248 in medical fees. Another example comes from Union County who reported many citizens who casually handle food at public gatherings, civic and church meetings, etc. do not realize the importance of keeping food safe to eat. Through training for the Sheriff's Office volunteers, the agent taught guidelines to follow; after which, approximately 10 of the volunteers served beverages and snacks to over 200 guests. Both men and women in attendance at the training were interested in food safety, along with their interest in personal and community safety by way of the Sheriff's Office. Preventing foodborne illnesses prevents unnecessary medical costs. In another example, twenty-two Work First clients participating in meal planning and food preparation classes gained new knowledge of safe food handling. Evaluations showed that all participants will practice at least one technique learned.

Food preservation is another important consumer education issue. Extension is known for providing reliable consumer food safety and food preservation information. There are a number of avenues which may be used to accomplish this objective. During 1998, a Mecklenburg County Agent answered over 260 food safety related calls and over 195 calls about food preservation. Food preservation training, which included hands-on canning activities, was provided for sixteen participants during the months of June and July. The Extension Service's presence at local farmer's markets can help increase visibility as well as provide educational resources to citizens who come to purchase agricultural products grown in the state. During the summer of 1998, this agent set up a booth at the Regional Farmer's Market on five different occasions and provided food safety/preservation information to over 280 individuals. Testing of dial gauge canners was done both at the market and at the Mecklenburg Extension Office throughout the summer. Another example comes from Guilford County. Consumption of improperly home canned foods can result in food poisoning or even death. The North Carolina Cooperative Extension Service

is the only agency in Guilford County that provides testing of Steam Pressure Canners for accuracy. Of 64 canners tested, 39 were inaccurate. According to the Virginia Cooperative Extension EFNEP Evaluation Team, the cost of 1 case of foodborne illness is \$942. A potential minimum savings of \$36,738 could be realized as a result of this intervention. Since most consumers who home can are providing food for multiple persons, the savings may actually much greater than estimated.

Many times county field staff recognize a need but have problems locating the appropriate training materials. An agent in Pender County realized there was a gap in educational materials directed to seafood preparers and servers. The situation the Pender County Extension Service and the Environmental Health Department to apply in January, 1996 for a \$25,875 grant from the NC Marine Fisheries to produce a training program for restaurant managers & workers. The purpose of the proposed project, focusing on the issue of seafood safety education, would be to develop a structured, comprehensive 8 hour training program for restaurant employees conducted by the CES and the local Environmental Health Department in each participating county. After 2 years and many people assisting in intense planning, committees, researching, writing and reviewing the manual and video this is a reality. It has been completed! The training program is entitled "Seafood Safety: Keep It Safe From Purchasing to Serving." The Pender County Agent said, "I am proud & enthusiastic about training personnel directly involved with seafood handling to insure safety of customers."

Food safety training for both managers and employees of food service establishments is are major focus for CEMP 11. The ServSafe Food Safety Manager's certification course is a nationally recognized course for foodservice employees. The course teaches sanitation and safety measures to prevent contamination of food which could lead to a foodborne outbreak. According to the National Restaurant Association, the average cost to a restaurant after a foodborne outbreak is \$75,000. The value to society when such an outbreak is prevented at any given establishment is \$17,500, based on the average cost of a foodborne illness (\$1750) times the average number of persons involved in an outbreak (10). Many county extension agents team with local health departments to carry out training programs. In addition, specialists from the Departments of Entomology, Family and Consumer Science and Food Science, have assisted counties in conducting the training programs. In one example in Mecklenburg County, the agent conducted three manager's ServSafe courses with a total of 62 participants from 32 locations or establishments. Twenty-nine of these establishments will be eligible to have two points added to their health inspection grade as a result of having passed the certification exam. In another example from Lee County, working with the Environmental Section of the Health Department, 2 ServSafe - Serving Food Safely classes were taught Fifty-two individuals, representing 22 Lee County food service facilities, participated. 49 individuals completed the final exam of which 45 passed and received certification from the National Restaurant Association. Certifications were presented at the Board Of Health meeting. In another example, two train-the trainer workshops were held and 58 environmental health specialists, extension agents, and child nutrition consultants were certified to be SERV SAFE instructors. An 18 hour ServSafe Certification course for managers was held in Orange County in conjunction with Durham County, with 37 attending (18 from Orange). 35 passed the certification exam with an average score of 89. Managers reported that they had made changes after the training: they will no longer serve raw oysters, they

have revamped recipes to include more critical control points, have passed out food safety information at staff meetings, showed the cook and prep man how to take temperatures, are now checking food on delivery, and plan to evaluate their procedures and make corrections and to start employee training. A 6 hour employee training was held with 42 people attending (41 from Orange). The average number correct on a pre-test was 15, and the average on the post-test was 17.26. Employees reported learning about temperature, heating and cooling, and storing in smaller containers.

CEMP 11 has several food safety programs for youth. For several years CEMP 11 has coordinated the Food Safety and Food Quality (FSQ) Symposium. The 1998 program was held on the NCSU campus July 6 to 11. Twenty teen participants and one adult leader participated in the week long Symposium. The attendees participated in hands on workshops which included Seafood Safety, Microbiology of Muscle Foods, DNA Fingerprinting of Poultry, Egg Quality School, Food Colors that Change with pH, Sensory Evaluation and Rheology, Freezing Foods, and Career Exploration in Animal Food Production. In one example of county programs, seventy children between the ages of 5 and 16 at a two day Cloverbud Camp were given information as to the importance of hygiene in handling foods and in the difference frequent hand washing can make in their general health. Participants were able to discuss these topics and showed their understanding by our observation that 90 percent increased their hand washing before meals and after using the restroom while at the camp. In another example, the Rowan County Agent collaborated with a college instructor to teach a class on food safety as part of a health course. Sixteen students participated. All of them gained useful knowledge. In a "thank you" letter the instructor noted: "Your class generated a great deal of discussion even after you left. Several students thanked me for inviting you to speak. I'm sure more of them will be talking about food safety during Thanksgiving dinners." In one other example, the Family and Consumer Education Agent in Robeson County included safe food handling methods in 3 day series of cooking classes for youth ages 9-14. Nine youth participated. There was a surprising impact from a surprising participant. While assisting with these classes, the 4-H Program Assistant learned about preventing cross-contamination when preparing poultry. The next time she helped her church members prepare a group meal of chicken, she shared this information with them and the group now keeps hand sanitizer in the church kitchen. Also, according to pre and post tests, 100% of participating youth surveyed gained knowledge of safe food handling techniques.

Many of the county faculty have indicated a need for more extensive training in food safety. A pilot project was designed and carried out over the past 2 ½ years. Extension faculty in the Department of Food Science provided an in-depth food safety training to a select group of twelve county agents. The agents enrolled in a three-week graduate level course (FS 591Y, Food Safety for Non-Food Science Majors) that taught the scientific principles on which food safety regulations and recommendations are based. In addition, the agents worked in teams to develop educational materials that enhance extension food safety education programs in the areas of child care, food preservation, food service, and consumer food handling. Agents provided presentations on their projects during the November staff conference. Professional development opportunities were also provided, such as attending the annual meeting of the Institute of Food Technologist.

Distance education is becoming a popular way to convey food safety materials. The Food Safety Website (<http://www.ces.ncsu.edu/depts/foodsci/agentinfo/>), developed by specialists in the Department of Food Science, was ranked "Among The Best," by Tufts University, as an authoritative resource for finding accurate food safety information on the Internet. "Among The Best" ratings are only awarded to Websites that serve as outstanding resources and maintain a high level of integrity in reporting. Various articles and press releases about the NC Food Safety Website have been mentioned in local and national papers. Radio and TV stations (<http://www.wral-tv.com/news/wral/techtalk/1998/0318-ncsu-food-safety/>) have also done interviews about the site and its information. The system was designed to be a gateway to all of the food safety information on the Internet. You might ask how often the web site has been visited. The site received 518,303 hits (visits) between January and August 1998 (average 2,124 hits a day). On August 31, 1998 (a few days after Hurricane Bonnie hit our NC coast) the site received 40,502 hits. Examples such as these show the North Carolina Cooperative Extension Service is a leader in the electronic food safety and nutrition information arena.

10. List names of CEMP committee members and co-chairs:

Co-chairs: Pat Curtis & Sandra Woodard

Ken Anderson

Cynthia Brown

Dan Carroll

Gary Davis*

Angela Fraser*

Suzette Goldman

David Green

Tom Hoban*

Brinton Hopkins

Kevin Keener

Barbara Kirby

Carolyn Lackey

Carol Mitchell

Barry Nash

Mitch Owen

Alice Pettitt*

John Rushing

Brian Sheldon

Christine Smith

Melissa Taylor*

Lillie Tunstall

Lynn Turner*

Bob Usry

Donn Ward

Steve Washburn

(*Subcommittee Co-Chair)

CEMP # 12 - HEALTH AND HUMAN SAFETY

Program Description: Health and human safety are pressing public concerns at the individual, family and community levels. NCCES develops community-based programs to enable individuals and communities to address health and safety needs including 1) healthy lifestyles, 2) home safety and crime prevention, 3) agricultural health and safety, and 4) community capacity building.

Program Overview: Through the implementation of research-based educational programs, more than 26,000 Extension customers have improved their quality of life related to health and human safety issues. Among these improved lifestyle habits include better diet, exercise, as well as improved safety in the home. About 850 customers removed safety hazards in their homes such as moving throw rugs and eliminating raised door thresholds. Sixteen hundred customers learned how to use of health care services and facilities in a more appropriate manner.

On the farm, families and workers increased their awareness of chemical exposure and other health risks. Such changes not only increase farm profits but promote a better quality of life in agriculture. More than 400 medical personnel were educated concerning agricultural related illnesses and injuries. Such educational efforts are certain to further reduce the potential for accidents due to a better understanding by health service providers. In 1998, it was estimated that more than \$897,000 was saved due to the reduced need for medical attention. The adoption of practices for better handling and storage of pesticides resulted in about \$400,000 in potential savings for Extension customers.

Extension is making a difference to improve the quality of life by providing effective information concerning health and human safety issues.

Units Reporting:

Objective 1 (21)	Objective 3 (13)
Objective 2 (13)	Objective 4 (5)

Measures of Progress:

Objective 1 - 26,119 participants increased their awareness and knowledge of preventative health behaviors such as eating properly, exercise, and safety in the home. 11,462 participants adopted recommended health care practices such as dietary intake.

Objective 2 - 1,260 individuals adopted practices to remove safety hazards in the home and 857 adopted practices to increase home safety. 1,190 individuals adopted preventive measures including installing ventilation systems, radon, and carbon monoxide tests.

Objective 3 - 2561 participants were reported to have increased their awareness of agricultural (chemical) exposure and other agriculturally related health risks. 2,255 participants increased their awareness and use of personal protective equipment.

Objective 4 - 26 strategic partnerships/coalitions have been formed for improving health statuses. 19 new on-going systems were established to monitor health status and needs on the local level.

Impact Totals:

Objective 1 - As a result of educational program, approximately \$1.6 million in costs have been avoided by program participants in such as as reduced high risk behavior and preventative health behaviors.

Objective 2 - Through that adoption of practices such as reduced accidents in the home and the reduction of pollutants and improved indoor environment, \$ 84,150 in cost avoided have been determined.

Objective 3 - It was determined that \$682,800 was avoided in costs through reduced agricultural illnesses and injuries.

Objective 4 - It has been estimated that more than \$5000 in costs have been avoided due to the improved health status of Extension customers.

Volunteers Involved: In the 47 counties reporting impacts, it is estimated that 1679 volunteers contributed 13,334 hours to local programs impacting on health and human safety. The dollar value of these contributions is estimated at \$133,340.

Success Stories:

While the use of pesticides is necessary in crop and livestock management, some of these chemicals can harm humans. Thus, proper laundering of pesticide-soiled clothing is important to protect the applicator, person doing the laundry, and the entire family from pesticide residues. Many consumers are not aware first, of the need for proper care and second, the proper procedures. To address this void, Susan Noble, Family and Consumer Science Agent in Robeson County, worked with Charlie Lowery, Extension Horticulture Agent to present information on handling pesticide-soiled clothing to participants in pesticide license re/certification classes. Thus far in 1998, 117 participants have been made aware of the need to properly handle pesticide-soiled clothing. Of these, 40% indicated (via survey) they will share the specific how-to information with the person doing the family laundry. Two more classes are scheduled in the fall.

Statistics show that Hertford County citizens are at risk for health problems. The Hertford Partners for Health is a collaborative community health partnership to address compelling health needs of Hertford County residents. The partnership was formed in 1995 to oversee the REACH Community Health Assessment Project Grant received by Roanoke-Chowan Hospital and coordinated by Dept. of Family Medicine at ECU School of Medicine. The partnership has received Healthy Carolinian Certification, received Duke Endowment Funding and opened an Adolescent Health Center for 1052 Hertford County Middle School Students. 500 Community health surveys were completed and three priority areas for improvement identified: health care access, substance abuse, and nutrition. Progress toward addressing critical health needs and improving health status for county citizens is

being realized through Hertford County Partners For Health.

In response to multiple farm-related deaths within Rutherford County, a "Farm Safety Workshop" targeted at 15-16 year-old Vocational Agriculture students from four area High Schools (Rutherford & Polk counties) was implemented. Participants learned about pesticide, electrical, ATV, tractor rollover, chainsaw and PTO safety measures, along with First Aid information. Among the 233 student participants, 87% have begun to implement at least one technique learned from the training. Local agribusinesses assisted in sponsoring the event, and Extension Agents from Polk, McDowell, Henderson, and Buncombe counties were involved in with the program delivery.

Overall Narrative: Health and human safety are pressing public concerns at the individual, family and community levels. The Extension Service has developed community-based programs to enable individuals and communities to address health and safety needs in the areas of healthy lifestyles, home safety and crime prevention, agricultural health and safety, and community capacity building.

A sample of statewide program impacts include:

Over 26,119 participants increased their awareness and knowledge of preventative health behaviors such as eating properly, exercise, and safety in the home. 11,462 participants adopted recommended health care practices such as dietary intake. It has been estimated that almost \$1,610,782 in costs have been avoided due to Extension efforts.

2,561 individuals adopted practices to remove safety hazards in the home and 857 adopted practices to increase home safety. 2,255 individuals adopted preventative measures including installing ventilation systems, radon, and carbon monoxide tests.

2490 participants were reported to have increased awareness of agricultural (chemical) exposure and other agriculturally related health risks. 2068 participants increased their awareness and use of personal protective equipment.

Twenty-six strategic partnerships/coalitions have been formed for improving health statuses.

CEMP 12 Committee Members

Sarah Kirby - Co Chair
Judy Mock
Sharon Rowland
Steve Lilley
Gwyn Riddick
Wilma Hammett
Margaret Bullock

Mitch Smith - Co Chair
Donna Mull
Barbara Garland
Donna Edsel
Sarah Kirby
Sandy Wiggins
Julia Storm

CEMP # 13 - LEADERSHIP AND VOLUNTEER DEVELOPMENT

Program Description:

Leadership and volunteer Development are unique in that this focus applies to all Extension education programs. Each program has the potential for developing leadership competencies as well as volunteer development. Leadership and volunteer development provides benefits to the individual as well as the local county staff. It gives staff members a base from which to extend their on-going programs and involve new leaders in existing leadership and volunteer systems in the organization.

Leadership development builds the capacity of individuals, groups and organizations to address issues in a community. Volunteer development enhances the potential for beneficial community service. Leadership and volunteer development are separate disciplines with unique purposes and methodologies, but they share a common focus that deals with human capacity building for the public good. It is this common focus that the Leadership and Volunteer Development State Major Program addresses.

Abstract:

The goal of the Leadership and Volunteer Development Cooperative Extension Major Program is to build the capacity of individuals, community groups and organizations for involvement in their community for the public good. The results reported by counties in this major program for 1998 indicate that educational experiences offered to the public have helped achieve this goal.

Volunteer leaders, through training programs and role assignments were prepared to involve others in accomplishing goals. Reports show many volunteers being trained as volunteer managers in Master Gardener programs, 4-H, Extension Homemakers and the Advisory Leadership System. Limited resource, non-traditional (7354) and traditional participants (65441) were taught leadership skills that helped some grow as individuals while others flourished as active members in groups. Individually and as groups the trained leaders are working to improve various aspects of their communities. Program participants (7920) also learned to analyze issues and determine the impact of these issues on their lives and the lives of others. This knowledge served as the major impetus for their participation in public forums, on community boards and committees. These individuals have also facilitated discussions on issues, helped generate solutions and develop and activate plans to resolve issues. Their actions resulted in citizens/leaders addressing 244 issues and 681 problems being resolved or projects completed by limited resource/non-traditional leaders.

Number of Units Reporting Accomplishments

Objective 1:35, Objective 2:59, Objective 3:35

Statewide Measures of Progress Totals

Objective 1:

Number of participants who increased knowledge and awareness of leadership skills: 7354

Number of participants who adopted sound leadership and decision-making practices: 3689

Number of participants who demonstrated proper application of leadership skills and problem solving techniques learned: 3108

Number of participants who identified community problems: 3433

Number of participants who developed and implemented action plans to resolve problems: 2058

Number of projects completed/problems resolved: 618

Objective 2:

Increased knowledge of opportunities for volunteers to contribute: 19222

Adoption of volunteer management system practices: 6758

Number of volunteer management systems established: 702

Objective 3:

Number of persons who demonstrated improved leadership and problem solving skills: 65441

Number of persons who demonstrated acquired/improved facilitation knowledge and skills: 4045

Number of persons who participated in a community collaborative problem solving process: 4487

Number of persons who participated in community/public process as a result of leadership training: 2585

Number of community issues addressed (in progress): 224

Statewide Impacts totals

Objective 1:

Increase in the number of limited resource and non-traditional individuals with the capacity to provide valuable service to the community (assume some leadership roles in church, school, community etc., volunteer): 2731

Dollars saved by increased involvement in addressing community concerns by limited resource and non-traditional leaders: \$323370

Dollars of economic value to community/county for community projects/solving problems:
\$1049187

Community organizations developed to continue resolving community problems: 86

Objective 2:

Empowerment of volunteer systems: 789

Economic value of volunteer intervention: \$1739256

@ \$10 per hour

Objective 3:

Costs avoided through the resolution of (a) community(s) : \$280,500

Dollars saved as a result of achieving successful resolution of (a) community issue (s):
\$237,400

7. Volunteers involved and value

Objective 1

Number of Volunteers: 2701

Hours: 25223

Dollar Value at \$10/hr: \$252230

Objective 2

Number of Volunteers: 15055

Hours: 160322

Dollar Value at \$10/hr: \$1578220

Objective 3

Number of Volunteers: 3378

Dollar Value at \$10/hr.: \$314,710

Success Stories:

Henderson: The North Carolina Cooperative Extension Service in Henderson County works closely with the Henderson County Community Development Council. Litter along roadsides is an eyesore in the county. Litter reduction was identified as an issue that the Council wanted to address. Seven community development clubs participated in litter reduction and cleaned 126 miles of roadside and picked up 338 bags of trash. Sixty-one volunteers participated for a total of 248 hours. In addition to improved appearance of roadsides, there is an increased awareness and concern for our environment generated by these volunteer efforts.

Cherokee Reservation: Limited resource and other non-traditional participants in public decision making will identify, investigate and resolve problems in their community and

county that impact the well-being of self and family. The Community Club Council identified the trash on the reservation as a problem. During this time, 128 limited resource volunteers and 258 youth helped clean up trash. A two-day clean up was held on the reservation. Over 52 miles of roadside was cleaned with 142 bags of recyclable and 535 bags of trash were collected. This would have cost the tribe over \$4,000.00 in Tribal levy.

Madison: The need for public exercise facilities has been identified by several communities during some phase of Environmental Scanning, including Community Voices leadership training in 1997. A \$14,000.00 grant was awarded and used to construct 3 walking trails about ¼ mile in length in 3 isolated rural communities. Additional funds are being sought to complete a fourth trail. Data from previously reported community leadership development activities was used to provide the impetus for the securing the \$14,000.00 grant from Mission Hospital Foundation to the Madison Co. Health Consortium. These trails will provide citizens with a safer place to walk for exercise and support other extension programs, such as "Fit for Life". This is a collaborative effort with Extension and the Hot Springs Health Program and Madison County Recreation Department.

Wake Co: Janie Watkins has been living in Wake Forest for several years now. She is busy daily caring for the elderly and less fortunate people in her community. Although her plate was already full she accepted the challenge of taking part in the Community Voices leadership training program as a co-facilitator. Janie did not view herself as a leader at first; however, she accepted the role of co-facilitator. Janie did not view herself as a leader at first, however, she accepted the role of co-facilitator and helped identify issues and community needs and helped parents begin action plans to solve the problems they identified. She has also participated in the Wake County Wide-Awake Forum and is currently working on an action plan to address issues such as affordable housing, teen pregnancy, affordable childcare, substance abuse prevention, after school tutorial programs, etc. Since completing Community Voices, Janie has been asked to facilitate workshops for NC Equity Leadership to train young mothers in leadership skills.

Wake: One of the communities targeted for The Community Voices Leadership training in Wake County was South Park, which is located in inner city Raleigh. This group of Community Voices graduates now called "South Park Outreach" recruited two young women to participate in a GED Program. One of the ladies is now a mother and better equipped to handle the role of motherhood as a result of the support system and parenting resources made available to her from this group formed as a result of the Community Voices training program provided by Wake County Cooperative Extension. One of the community leaders and graduates of Community Voices who has helped provide a great deal of outreach assistance to the women is blind.

Catawba County: Catawba elected officials participated in three Emerging Issues Forums this past year. The topics were determined by a steering committee of elected officials working in collaboration with the Cooperative Extension Service and the Institute of Government in Chapel Hill. Evaluation by steering committee members indicated the forums provided the officials an opportunity to gain a greater understanding of the emerging issues from experts in the local setting. Many of the officials found their experience especially noteworthy, for they are unable to attend meetings out of the county. Attendees also credit the forums with providing an opportunity for increased

communication and networking among the different elected official groups resulting in more opportunities to work together on the issues.

Green County: Twenty-five Greene County citizens have come together to work collaboratively on a strategic plan for this rural county. They have identified economic development, citizen involvement and human health and safety as major goals, completed their action plans and are presently implementing those plans. Committee members expressed great satisfaction with the outcome of the collaboration. Six of the members also improved their facilitation skills. The assistance of the Cooperative Extension Service also saved the county \$1500 in developing the plan.

Gaston County: The Cooperative Extension worked with 11 members of the County Wellhead Protection Implementation Committee appointed by the Board of County Commissioners. The members collected information regarding wellhead protection programs, local ordinances and programs and local options. Through the use of various decision-making tools, the group reached a consensus on a program for Gaston County. The detailed program was presented to the Board of County Commissioners and adopted. The program will coordinate services between county departments, educate businesses and residents on the risk and liability of polluting ground water that supplies community wells. This will become the first wellhead protections program for community wells in Gaston County.

Currituck County: Currituck County has trained volunteers to establish a private, non-profit foundation for the Library. The library board has begun the application process for incorporation and establishing a 501-(c)(3) entity. This foundation will permit the library to establish endowments and accept funds for library improvements from the private sector.

Gaston County: In Gaston county an Extension Marketing Committee appointed by the Advisory Council developed an "On the Road" program to take to the County Board of Commissioners and to the 14 municipalities. Volunteers recruited participants for each meeting, developed a slide presentation and presented the information.

Franklin County: Franklin County is beginning to see results from several years of leader training, staff involvement and a mix of new and experienced members on the Advisory Council. After struggling and requesting for several years to get an addition or new facility for extension programming, the council leadership developed the idea, constructed the format and delivered a proclamation from council members to fund this request. As a result, upon the adoption of the budget in July, there should be funding for architect drawings.

Surry County: In Surry County, a Master Gardener has been managing the Master Gardener program activities. These have included five group demonstrations, two displays at area malls, soil testing demonstrations at area discount stores, ten individual demonstrations, two field trips and answering the telephone.

Union County: Union county has established a 4-H Foundation to give leadership to an ambitious fund drive. The Board just received a charter from North Carolina recognizing it as a non-profit foundation.

Burke County: Burke County's Advisory council in partnership with 4-H'ers and volunteer leaders has purchased a van with cooperation from county government.

Robeson County: As a follow-up to Community Voices programming that was held in Maxton two years ago, 14 individuals sought assistance from Extension for refresher training and assistance in developing plans to address sub-standard housing problems in a low income area of town. Twelve of these participants completed the refresher course. Two individuals involved themselves in the housing issue and with their leadership were able to secure donate materials and volunteer labor to complete almost \$5,000 worth of improvements to 2 houses. As a result of their actions, several individuals within this community are beginning action. Another individual became a volunteer community park clean up project.

New Hanover: In New Hanover County the Advisory Leadership Systems and Arboretum foundation provided a background of political and economic support to leverage the message and philosophy of existing county programs to facilitate the purchase by New Hanover County of the \$10.5 million Airlie Gardens. ALS and Arboretum Board members plan to expand the facilities and educational opportunities offered through the construction of a model residential home.

Overall Narrative:

A total of 7354 limited resource individuals were exposed to leadership skills. Limited resource and other nontraditional individuals participating in the identification of community problems totaled 3433. The completion of 618 projects/ resolution of issues was achieved by limited resource and other non-traditional leaders. In addition 2585 citizens and leaders participated in community/public decision-making processes as a result of leadership training. 4045 individuals gained facilitation skills that are important in the resolution of issues. A total of 19272 individuals were introduced to volunteer opportunities. A total of 21,134 individuals provided volunteer services to their community through local organizations and agencies, involvement in organized community activities, 4-H and homemaker club activities. Some are mentor for other leaders or youth mentors to youth, officers in volunteer organizations, managers of other volunteers and leadership training facilitators.

CEMP 13 Committee Members and Co-chairs:

Claudette L. Smith, Co-chair

Pat Peele, Co-chair

Si Garber

Judy Groff

John Gibson

Rodney Sawyer

Leon Danielson

Richard Liles

Doug Clement

Shirley Rouse

CEMP # 14 - MARKETING AND PRODUCTION OF ALTERNATIVE INCOME OPPORTUNITIES AND ENTERPRISES

Program Description

The goal of the CEMP is to assist commercial (objective #1), and small, part time and limited resource producers (objective #2), to select among and implement alternative opportunities so as to increase their income. Program efforts have been made in exploring and disseminating information on high value commercial horticultural production and marketing, specialty crops and niche markets, livestock, small scale agriculture, and natural resource products. The CEMP team continued its focus on business management issues in the past year along with developing connections with research (the Center for Specialty Crops and CEFS), non-government organizations such as RAFI-USA and CFSA (especially through the W.K. Kellogg PIA Project) and with county programs to develop market outlets and to provide resources for the development of enterprises which could be supplementary to tobacco (both flue cured and burley).

Abstract of Accomplishments

There were twenty eight (28) counties across the state reporting against this Major Program. During 1998, they reported a total \$1.8 invested in marketing and production of alternative enterprises by producers and marketers who worked with Extension. Gross income from that investment was reported to be nearly \$2.4 million. In addition, limited resource producers who used an integrated production and marketing approach to implement their alternative agriculture strategies because of their work with Extension reported gross income of \$380,000.

As a result of participation in the program at least 4 county FarmersU Markets expanded or reinvigorated themselves. Beekeeping, ornamental production, oriental vegetables, herbs, organic Christmas trees, pointsettias, raspberries, seedless watermelon were enterprises listed among the success stories of the program across the state. In addition, a specialty small fruit and vegetable cooperative has been established in eastern North Carolina which had a successful first year.

STATEWIDE MEASURES OF PROGRESS TOTALS

Objective #1

1. *Producers indicating interest in developing alternative enterprises
NUMBER 939
2. *Number of producers who try alternative enterprises, methods and practices
NUMBER: 381

Objective #2

1. *Number of producers interested
NUMBER: 556
2. *Number of producers who try alternative enterprises, methods and practices
NUMBER: 260

STATEWIDE IMPACTS TOTALS

Objective #1

1. *Dollars of new investment in production and marketing of alternative enterprises.

DOLLARS: \$1,787,358.

2. *Dollars of gross income resulting from new investment and marketing of alternative enterprises.

DOLLARS: \$2,394,050.

3. *Number of producers who gain knowledge about alternative production and marketing practices.

NUMBER: 1676.

Objective #2

1. *Number of producers who gain knowledge about alternative production and market practices.

NUMBER: 583

2. *Funding support obtained

DOLLARS: \$33,648

3. *Dollars of gross income resulting from use of an integrated approach to implementing alternative agricultural opportunities and enterprises.

DOLLARS: \$380,600.

VOLUNTEERS

Objective 1:

101 volunteers provided 635 hours of volunteer assistance valued at \$6350.00.

Objective 2:

95 volunteers provided 673 hours of volunteer assistance valued at \$6730.00.

SUCCESS STORIES

1. A group of growers in eastern NC worked with Cooperative Extension to develop an alternative crop for a niche market. They produced seven acres of seedless watermelon in a cooperative demonstration program with the NCSU Specialist Crops Program. Over \$30,000 of gross sales were achieved with this new crop.

2. A grower in Brunswick County wanted to explore the option of developing a Garden Center. She and her partner worked with the local Extension Agent who had participated in the CEMP sponsored program on Managing Risk through planning. They followed the steps recommended and developed a Business Plan for their new enterprise. With the Business Plan in hand they were able to establish and open their business.

3. Limited resource vegetable/ fruit producers have few marketing options for selling their produce in Catawba County. Potential loss of the Catawba Valley Farmers Market due to

sale of the former location by the landowners threatened to further erode marketing opportunities. Cooperative Extension assisted the Farmers Market Board in securing a new site owned by the city of Newton. This collaboration has resulted in a fifty percent increase in market participation by growers while Newton planners report a significant increase in the number of citizens visiting the downtown area on days the Market is open. Longtime participants indicate renewed enthusiasm for the Market. Extension is further assisting in procurement of grant funds for future marketing/promoting of the Market.

4. Nine growers worked with the Specialty Crops Program (NCSU and the Cunningham Farm in Kinston) as the board of a new commercial vegetable and fruit marketing cooperative. Research, extension from NCSU and a marketing specialist with the NCDA&CS concentrated on seamless production and marketing of muskmelon- a new niche for eastern NC. About 70 acres of muskmelons were produced and marketed, grossing approximately \$400,000 as a new alternative enterprise.

Program Progress

The CEMP is making progress in developing a comprehensive approach to education and outreach in the marketing and production of alternative agricultural opportunities and enterprises. Production and marketing issues have been cast in a business plan and risk management context. Information has been provided to production agents so that they can assist producers and marketers to approach and handle business planning questions through two workshops. A number of specialty and niche market schools have been conducted across the state looking at both production and marketing issues. These have been conducted in some cases with NGO partners, commodity groups and communities colleges. Specialists and researchers have collaborated to develop Specialty Crop Program based at the Cunningham Farm in Kinston, the herb and vegetable collaboration in the mountain counties and the Fletcher Center and the commercial vegetable program. NCA&TSU continues to offer leadership in the Small Farm Program area with programs and a new Field Day on their farm in Greensboro.

CEMP Committee Members

John M. O'Sullivan, Bill Jester (Co-chairs)

Jeanine Davis

Morris Dunn

Bob Edwards

Ed Estes

Rick Hamilton

Ray McKinnie

Gwyn Riddick

Doug Sanders

CEMP # 15 - NATURAL RESOURCES CONSERVATION AND MANAGEMENT

PROGRAM FOCUS

The Natural Resource Conservation and Management program encompasses environmental and natural resource fundamentals and management of natural resources to benefit society. Educational programs span the range from understanding ecosystems, dealing with community decisions regarding environmental concerns, to managing forested and farmed properties to attain landowner and societal benefits.

OVERALL NARRATIVE

Educational programs on environmental education, directed mainly at 4-H youth, and programs to enhance natural resource decision making, were delivered to over 10,000 people by 1,289 extension-trained volunteers, generating an estimated net benefit to target audiences and society of more than \$1.1 million. The Forest Stewardship Program resulted in 115 new stewardship plans, while existing Stewardship lands generated over \$14 million from timber sold and additional \$300,000 from recreational leases. All of the forestry, fisheries and wildlife extension publications are available through the Natural Resources website (<http://www.ces.ncsu.edu/nreos>). New technology is being tested to cost-effectively increase desirable wildlife on farmlands in North Carolina.

VOLUNTEERS

Volunteer educators for environmental education and natural resource decision making totaled 1,289 in 1998.

NUMBER OF UNITS REPORTING

Objective 1 - 17; Objective 2 - 12; Objective 3 - 19; Objective 5 - 4

SUCCESS STORY

Randolph County, Extension Lynne Qualls reported the following:

Randolph County Extension Service has established and conducted an environmental education program for fifth graders since 1986. Seven schools have been chosen for the program; others have requested it. By providing hands-on learning experiences, youth have learned new skills, practiced decision making, and demonstrated cooperative work. For many youth, this 2-day program is their first overnight experience. Feedback from teachers and parents confirm how much youth learn; teachers report improved test scores from having certain subject matter included in the program. Demand from parents and school personnel indicates program success; one school now conducts their own program. In 1998, 307 youth benefited from the programs conducted by 53 instructors including university faculty, agency professionals, and private organizations. 84 volunteers supported the program with an average time spent of eight hours each, at a value of \$6,720.

OBJECTIVE 1: ECOLOGICAL AWARENESS THROUGH ENVIRONMENTAL EDUCATION

Program Description: Participants, particularly youth, will increase their appreciation for and knowledge of biological diversity and ecosystem management. Educational programs presented by Extension Agents to teachers of youth included Project Learning Tree, Project WILD, Aquatic WILD, Catch Clinics, and Wildlife Habitat Judging.

Units Reporting Accomplishments: 17

Statewide Measures of Progress

10,049 persons participated in environmental education programs

6,506 persons delivered educational programs

264 requests for leadership training in educational program delivery were fulfilled

Statewide Impacts

8,903 programs were delivered

896 volunteers were involved

3,190 hours were spent

\$31,900 was the value of volunteer leadership

Cost/Benefit Estimates

\$163,655 value to targeted audiences

\$269,675 value to society

\$20,101 estimated cost

Narrative:

Through the training of volunteers and direct leadership, North Carolina Cooperative Extension Agents provided vital educational programs on environmental education to the citizens of our state. Principles learned in these programs influenced attitudes of youth that will result in better environmental stewardship in the future. Often, Extension Agents act as catalysts, bringing public school teachers and adult volunteers in the community together to deliver programs developed by subject matter Extension Specialists on the campuses.

Success Story

Randolph County, Extension Lynne Qualls reported the following:

Randolph County Extension Service has established and conducted an environmental education program for fifth graders since 1986. Seven schools have been chosen for the program; others have requested it. By providing hands-on learning experiences, youth have learned new skills, practiced decision making, and demonstrated cooperative work. For many youth, this 2-day program is their first overnight experience. Feedback from teachers and parents confirm how much youth learn; teachers report improved test scores from

having certain subject matter included in the program. Demand from parents and school personnel indicates program success; one school now conducts their own program. In 1998, 307 youth benefited from the programs conducted by 53 instructors including university faculty, agency professionals, and private organizations. 84 volunteers supported the program with an average time spent of eight hours each, at a value of \$6,720.

Mary Smith, 4-H Agent, Lenior County reported:

Through funds provided by Learn and Serve America grant. 4-H trained eight teachers on the Water Sourcebook curriculum for one renewal credit. Teachers were provided with resource kits and books to use in the classrooms with the students. Data gathered to date shows 307 youth, grades third through fifth, have received 1901 hours of instruction from the Water Sourcebook curriculum developing awareness, knowledge, and skills for sound water use decisions. As a result of the use of Water Sourcebook in the schools, two other teachers have requested and used the curriculum also.

OBJECTIVE 2: NATURAL RESOURCE DECISION MAKING

Program Description: People confronted with a wide range of viewpoints on natural resource and environmental management issues will gain knowledge, awareness, understanding, and skills to develop plans for overcoming barriers that prevent them from realizing the link between informed decision making and the capacity to sustain natural resources and the quality of life.

Units Reporting: 12

Statewide Measures of Progress:

- 6,565 people gained new knowledge
- 1,128 people made presentations at group meetings

Statewide Impacts:

- 425 people adopted new technology to solve environmental problems
- 1,621 people came to environmental forums
- 392 volunteers presented programs
- 2,685 hours were dedicated by volunteers to present programs
- \$26,850 was estimated value of volunteer time

Cost/Benefit

- \$291,000 value generated for targeted audiences
- \$424,000 value to society in general from the program
- \$32,325 estimated cost of program

Narrative:

This objective involves education of youth and adults about sustainable development and environmental quality. Youth audiences were reached through publication of "School Yard Environmental Projects: A Planning Primer", written especially for school teachers and 4-H Extension Agents. This publication is available in both English and Spanish.

Success Stories

Gaston County Extension Agent Kimberly A. Lough reported:

New ozone air quality standards to be enforced by the U. S. Environmental Protection Agency were established in 1997. Gaston County currently violates these standards and will be classified as a nonattainment area unless significant changes occur. Over 50% of the ozone problem stems from vehicle emissions. The North Carolina Cooperative Extension Service partnered with the Gaston County Quality of Natural Resources Commission and the N. C. Air Awareness Program to educate citizens on their role in reducing ozone. Through group and individual education efforts, two public libraries, four hospital sites, one industry, several county administration buildings, and two local businesses actively post Ozone Action Day notices on days forecast as high ozone days. The notices alert citizens of the ozone level for that day and provide seven personal "action tips" to reduce ozone. Citizens are becoming armed with proactive tools to improve air quality in Gaston County.

Lenoir County Extension Agent Mary Smith reported:

4-H introduced and trained Kinston High School science teacher Dorcas Green on the Storm Drain Stencil project. As a result, fourteen youth stenciled storm drains in the Kinston city area, created a Power Point presentation, published a paper in the National Science Honor Society Newsletter and had Storm Drain Awareness Day pronounced by the Mayor in the newspaper. One student interviewed River Keeper Rick Dove via the internet. Their presentation won second place in the Regional Science Honor Society competition. The students also produced a booklet of awareness activities in Lenoir County this school year by Kinston High School.

OBJECTIVE 3: FOREST STEWARDSHIP

Program Description:

Participants will maintain or improve the long-term sustainability of North Carolina's forests.

Units Reporting: 19

Statewide Measures of Progress:

- 1847 people were educated
- 115 stewardship plans were prepared
- 24,471 acres were put under stewardship planning
- 369,400 acres were leased for recreational use

Impacts:

371 people were educated about the Forest Stewardship Program

\$302,799 was received by landowners for recreational leases

\$14,296,359 was received for timber sold from stewardship planned lands

\$1,878,000 of value was enhanced due to planning for forestry and wildlife resources

Cost/Benefit

\$6,417,535 estimated values provided to targeted audiences

\$6,789,020 estimated values provided to society in general

\$85,990 estimated program cost

Narrative:

The Forest Stewardship Program is the leading example of how the North Carolina Cooperative Extension Service add value to North Carolina through working with the North Carolina Forestry Division. The program is comprehensive, involving all phases of forestry from education of youth (reported above in Objective 1) to educating private landowners in planning and utilization of natural resources on their lands.

Success Story:

County Extension Director James Pearce, Edgecombe County reported:

An elderly landowner called one day asking if there was any yearly value to his property for anything besides the cropland and peanut and tobacco quotas. When questioned further he said the question was really about the value of the property for those wishing to use it for hunting. A high and low lease rate was given to him based on several factors, especially the location and amount of wooded land. After investigation, it was found that the producer renting the land for farming had been subleasing the hunting rights to others for the past 5 years for \$5/ac. This represented a loss to him of over \$9,100. The landowner began leasing the land himself at \$1,840/yr, which was enough to pay the taxes on his property. This was significant, considering his fixed income.

OBJECTIVE 5: WILDLIFE AND FISHERY MANAGEMENT

Program Description:

Participants will improve the management of wildlife and fishery resources.

Units Reporting: 4

Statewide Measures of Progress:

276 landowners attained new knowledge about wildlife and fishery management

162 landowners adopted new practices for fishery and wildlife

population and habitat management

Statewide Impacts:

- 4,150 acres were managed better for fishery and wildlife resources
- 10,400 acres were leased for fishery and wildlife recreation
- 9 people became volunteers in providing educational programs
- 46 hours were spent by volunteers in delivering programs
- \$460 of value was expended by volunteers

Cost/Benefit

- \$48,000 of value was received by target audiences
- \$85,000 of value was received by society due to fishery and wildlife education
- \$3,828 was the estimated cost of delivering the programs

Narrative:

Within this program lies the agriculture-wildlife applied research program, dedicated to increasing desirable wildlife populations and values on farmlands in eastern North Carolina through habitat enhancement and economic analysis. The applied research program is in the middle of a 5-year demonstration research effort, in which the wildlife response to field border management, predator management, and ditch-bank management is being assessed. Additionally, the project links with water quality in Bio & Ag Engineering and Integrated Pest Management in Entomology. The economic tradeoffs considered by landowners when diverting land for wildlife habitat have been measured. A series of publications on Farm-Wildlife Stewardship and a companion video are in production in 1998. These educational products should generate enthusiasm among extension agents for delivering the program to interested landowners. The program is cosponsored by the North Carolina Wildlife Resources Commission and the Natural Resources Conservation Service. The fishery management aspect of this project has been enhanced by putting the Farm Pond Management Guide extension publication on the WWW.

CEMP TEAM MEMBERS

- Peter T. Bromley, Zoology Department Extension Leader (Co-Chair)
- James Pearce, County Extension Director, Edgecombe County (Co-Chair)
- Bob Bardon, Forestry Extension Specialist
- Clare-Marie Hannon, 4-H Center Director, Riedsville
- Bill Gardner, Forestry Extension Specialist
- Rick Hamilton, Forestry Extension Specialist
- Mark Megalos, Forestry Extension Specialist
- Scott Payne, Forestry Extension Specialist
- Jim Rice, Fishery Extension Specialist
- Bob Williamson, Natural Resources Extension Specialist
- Bill Lord, Neuse River Environmental Education Specialist
- Janine Rywak, 4-H Agent, Anson County

CEMP # 16 - NUTRITION AND WELLNESS

Program Description: The Nutrition and Wellness Major Program promotes optimum nutrition and healthy lifestyle management for positive outcomes throughout the life continuum. It is based on the fact that nutritional status has a direct impact upon health, quality of life and the ability to achieve physical and mental potential. Fundamental to its concepts is the recognition that diet-related risks involved in chronic diseases can be lowered through improved (healthier) behaviors and that healthier pregnancy outcomes can result from better prenatal nutrition.

Overview of 1998 CEMP accomplishments: Promoting health and preventing disease through diet and lifestyle in all North Carolinians regardless of age, gender, income, or cultural background formed the main focus of the Nutrition and Wellness Cooperative Extension Major Program. Education programs addressing diet, health, and chronic disease prevention were attended by North Carolinians of diverse income levels, age groups, genders, and/or cultural backgrounds in every county of the state and on the Cherokee Indian Reservation. Programs offered included Give Your Heart a Healthy Beat, Healthy Heart, Our Destiny Is Our Decision, Active for Life, NoonLiting, Healthy Eating for Life Program, HomePlate, Out For Lunch, Expanded Food and Nutrition Education Program and the In-Home Breast-feeding Support Program. Programs were held in various settings including schools, work sites, churches, government buildings, businesses and outdoors, and for various lengths of time. Various methods (including the Internet, mailed materials, media, one-on-one contacts, and public meetings) were used to reach different audiences, such as day care workers, hospital employees, Head Start, Red Cross, food banks, housing authorities, and community action groups. Coalition building and collaborative partnerships with groups such as state and community agencies, universities, and private industries increased visibility, resources, and depth and breadth of the programming. To support these activities CEMP members brought in more than 2.5 million dollars in grant and contract funding. As a result of the programming, over 76,000 participants increased awareness of their need to have good nutrition habits and over 50,000 changed diet and lifestyle habits, and improved their quality of life and the quality of life of others. Over 8,000 decreased dietary fat consumption, 5,410 decreased dietary sodium consumption, 6,558 increased fruit and vegetable consumption and over 4,000 increased dietary calcium consumption. As a result of the changed diet and lifestyles over 1,000 decreased high blood cholesterol levels, over 500 decreased high blood glucose levels, over 1,000 decreased high blood pressure levels, over 2,000 decreased excess body weight and over 2,000 adopted behaviors to improve their chances of delivering a normal weight baby.

Number of Units Reporting per Objective:

Objective 1: 69 units reporting

Objective 2: 45 units reporting

Objective 3: 21 units reporting

Objective 4: 55 units reporting

Statewide Measures of Progress Totals:

- 76,811 participants increased their knowledge of nutrition and diet.
- 48,784 increased knowledge that promotes health.
- 65,287 increased attitudes and aspirations that are indicative of need for good health
- 8,337 decreased fat consumption
- 5,410 decreased sodium consumption
- 6,558 increased fruit and vegetable consumption
- 4,311 increased calcium consumption
- 12,587 gained in knowledge that leads to reduced risk for chronic disease
- 10,338 increased skills that lead to reduced risk for chronic diseases
- 2,985 parents increased awareness and knowledge of importance of good nutrition for children
- 2,891 parents increased knowledge about good eating habits for children
- 2,134 parents and children participated in food and nutrition activities together.
- 6,178 participants increased awareness of available programs such as Food Stamps, WIC, free/reduced school meals

Statewide Impacts Totals:

- 50,989 participants improved diets to be more consistent with dietary guidelines for good health and the Food Guide Pyramid.
- 1,312 decreased their high blood cholesterol level
- 1,161 decreased their high blood pressure level
- 586 decreased their high blood glucose level
- 2,399 decreased excess weight
- 4,341 children adopted improved food behaviors.
- 1,970 women practiced behaviors to help improve their chances of delivering a normal weight baby
- 2,018 adopt behaviors such as seeking prenatal care
- 4,500 changed their meal planning to improve their diets.

Volunteers Involved: 4,224 volunteers gave 41,256 hours with a dollar value of \$412,560 at \$10/hr

Success Stories:

Osteoporosis is a painful disease affecting 1 in 2 adult women, causing 1.5 million debilitating bone fractures a year in the U.S. Last Fall NCCES developed a program to educate women how to reduce their risk of Osteoporosis and presented it to 23 groups reaching 250 people. Forsyth Bone Density Imaging Center assisted by providing literature and complementary bone density scans to two agents presenting the programs. A survey conducted in March, 1998, of the participants showed that 88 percent had made changes in diet/lifestyle to reduce risk of the disease, 54 percent had talked with their doctors, and 23 percent had bone density screening done as a result of the program. The Virginia CES estimated the yearly dollars saved if the condition is avoided is \$11,582 per patient. Thus, for the participants who responded that they had a bone density scan done as a result of the program and who had made changes in diet and lifestyle, there should be a significant saving in money and quality of life in the future.

Three Duplin county physicians' offices have begun a patient referral process to Cooperative Extension for nutrition information. Patients are provided with basic nutrition and wellness information to prevent and lessen the risk of chronic diseases. 23 patients have been referred and taught skills to improve their quality of living. All referrals gained knowledge and indicated positive change in their lifestyle management.

Preventing and decreasing rates of chronic diseases remain a programmatic concern in Duplin County. Diabetes and hypertension prevalence are higher than state average. Through 13 different groups involving 15 weekly educational sessions 236 participants adopted diets and lifestyle behaviors consistent with dietary guidelines. Participants lost a total of 741 pounds and walked 7,212 miles.

NC Cooperative Extension Service, Gaston Center, provides training for child care providers to help improve the quality of child care. 50 providers attended Nutrition and Child Care in-service training. Of the 20 who took the pre, post, and delayed post test measures 95% increased knowledge of nutrition for school age children and 68% incorporated nutrition learning experiences into their classrooms. Comments from participants included: "Best workshop to date--hands-on (activities) great!" "Children loved making the new snacks and also eating them. Parents want the recipes so children can make them at home." "I enjoyed the workshop. It was very informative, fun, and entertaining. The instruction was excellent."

133 child care providers earned a total of 322 Continuing Education Credits as a result of training provided by cooperative Extension. The training topics included: Pleasing Picky Eaters, Nutrition Activities for Preschoolers, and Be Active Kids, a curriculum developed to help providers incorporate nutrition and physical fitness into the classroom. CES has worked closely with United Child Development Services to build a more positive relationship between the two agencies.

Children 5 years and younger are forming eating habits based on their experiences with foods in the home and in day care. Burke County Extension's nutrition program assistants visit day care centers and homes with a hands on nutrition learning activity for 5 sessions. The children try new foods and learn about basic nutrients. Day care providers have the chance to observe a teaching activity that can be reinforced at a later time.

Research has demonstrated that breast-fed infants have fewer respiratory-tract and ear infections than bottle-fed babies. Breast-feeding also reduces an infant's risk of food allergy and initial research suggests that breast-feeding may have a long-term positive effect on a baby's immune system. Cooperative Extension in cooperation with area agencies has provided prenatal and postnatal educational support for women interested in breast-feeding. As a direct result of this effort 150 women have been provided nutrition education for themselves and their infants. One new mother was having a great deal of difficulty with breast-feeding and considered quitting ; but, because of the educational information and encouragement that she received from the program assistant, she was very thankful that she was able to correct her feeding technique so that she could continue to nurse her baby.

Limited resource families need to acquire knowledge and skills and to change behavior for

nutritionally sound diets. Using the ERIB 3 13-week curriculum, Nutrition Program Assistants worked with 1020 participants individually and in groups. Of those graduating 90% made a positive dietary change, 77% improved in at least one food resource management practice (such as planning meals, comparing prices, using shopping lists), and 71% improved in at least one food safety practice (such as thawing and storing foods properly).

Limited resource youth need to acquire the knowledge and skills for nutritionally sound diets and to contribute to their overall health, wellness and personal development. Nutrition Program Assistants provided at least six hours of participatory nutrition education sessions for 221 young people aged 5 -19. These sessions were delivered to the youth through four organized clubs, three school age child care groups, one special-interest group and 15 school enrichment groups and involved the assistance of forty volunteers.

Heart disease is the number 1 killer in Robeson County. Cooperative Extension in cooperation with the local hospital and Health Department sponsored "heart healthy" cooking workshops for the general public emphasizing healthy recipes and cooking techniques participants can use in their daily lives. 49 consumers participated in 3 workshops. A sample (23%) of those participants were surveyed several weeks following the classes and 73% of those sampled indicated they had used class recipes or modified their own recipes to reduce fat, sodium, or sugar. According to JADA (1996) nutrition intervention saves on average \$8000 per patient. Thus, for the small group surveyed there was a savings of \$64,000. Due to the high interest of county residents, workshops will continue quarterly.

Diabetes is one of the leading causes of death in Gaston County. An estimated 7220 county residents know they have diabetes however another 7000 have the disease and don't know it. The local Diabetes Coalition, made up of agency representatives and people with diabetes, planned and implemented "Get Smart, Eat Smart," a 3-class diabetes education series. Attendance ranged from 170 to 200 residents per session with 175 attending at least 2 of the 3 sessions. Follow-up evaluation indicates 153 participants planned to make changes (were at the preparation stage of Stages of Change theory) including portion control, label reading, increasing fiber and vegetables, decreasing fat and counting carbohydrates. Future interventions are being planned.

Poor eating habits and an unhealthy lifestyle have been proven to attribute to chronic disease. Five of the top ten leading causes of death in Henderson Co. are associated with dietary factors. NoonLiting, an Extension weight management educational program, emphasizes optimal nutrition and healthy lifestyles. As a result of NoonLiting, 27 participants lost 359 pounds and one participant who had been in NoonLiting all year lost a total of 136 pounds. In her own words she says, "I've lost a whole other person, literally!" She has improved her overall health and self esteem and credits Extension for giving her the "education tools" and support in accomplishing a safe weight loss.

Fourteen participants enrolled in a twelve hour/12 week "Give Your Heart a Healthy Beat" series with all reporting 2-4 positive changes in their nutritional habits. The top three changes made were: reduce the amount of fat consumed, consume no fried food, and increase exercise. Pre/post test scores indicated that participants increased by 29 points

in knowledge scores.

Cardiovascular disease is the leading cause of death in the U.S. Diet related diseases like obesity, hypertension, and diabetes can be controlled with education and diet modification. Despite the strong link between diet and chronic disease, people fail to understand the connection. To heighten awareness and assist healthy behavior changes, health fairs, educational programs such as NoonLiting, Make Nutrition Come Alive, save Your Heart, Fitness Walking, What's On Your Plate, and A Less Fattening Holiday helped 994 individuals adopt positive attitudes and aspirations for improved health and to make behavior changes for positive outcomes. Specific indicators of change are as follows: 38 decreased high blood cholesterol, 44 decreased high blood pressure, and 683 decreased excess weight.

Rutherford County ranks 92 out of 100 counties for deaths related to heart disease. Most of the risk factors for heart disease are lifestyle related and therefore can be controlled. "Give Your Heart A Healthy Beat," an Extension program to reduce risk of cardiovascular disease, was conducted to help individuals reduce their risk of heart disease. Thirty participants completed a twelve week series of workshops on diet, exercise and stress management. Pre and post-screening showed that 21 participants reduced both cholesterol and blood sugar levels and 12 participants lowered blood pressure levels.

Overall Narrative to Capture Program Progress and Accomplishments: Promoting health and preventing disease through diet and lifestyle in all North Carolinians regardless of age, gender, income, or cultural background formed the main focus of the Nutrition and Wellness Cooperative Extension Major Program. Education programs addressing diet, health, and chronic disease prevention were attended by North Carolinians of diverse income levels, age groups, genders, and/or cultural backgrounds in every county of the state and on the Cherokee Indian Reservation. Programs offered included Give Your Heart a Healthy Beat, Healthy Heart, Our Destiny Is Our Decision, Active for Life, NoonLiting, Healthy Eating for Life Program, HomePlate, Out For Lunch, Expanded Food and Nutrition Education Program and the In-Home Breast-feeding Support Program. Programs were held in various settings including schools, work sites, churches, government buildings, businesses and outdoors, and for various lengths of time. Various methods (including the Internet, mailed materials, media, one-on-one contacts, and public meetings) were used to reach different audiences, such as day care workers, hospital employees, Head Start, Red Cross, food banks, housing authorities, and community action groups. Tools used in programming included the Dietary Guidelines, the Food Guide Pyramid and food label reading. Coalition building and collaborative partnerships with groups such as state and community agencies, universities, and private industries increased visibility, resources, and depth and breath of the programming. To support these activities CEMP members brought in more than 2.5 million dollars in grant and contract funding. As a result of the programming, over 76,000 participants increased awareness of their need to have good nutrition habits and over 50,000 changed diet and lifestyle habits, and improved their quality of life and the quality of life of others. Over 8,000 decreased dietary fat consumption, 5,410 decreased dietary sodium consumption, 6,558 increased fruit and vegetable consumption and over 4,000 increased dietary calcium consumption. As a result of the changed diet and lifestyles over 1,000 decreased high blood cholesterol levels, over 500 decreased high blood glucose levels, over 1,000 decreased high blood pressure

levels, over 2,000 decreased excess body weight and over 2,000 adopted behaviors to improve their chances of delivering a normal weight baby.

Because increasing numbers of North Carolinians live on fixed incomes and in poverty, these limited resource audiences (including the elderly, mothers with young children, youth, and people of diverse cultures including Asians, Hispanics and Native Americans) were specifically targeted with educational programming. Hispanics represent approximately 2% of the population, however the numbers of migrants are growing. North Carolina has Native American tribes located across the state and one federally recognized tribe, the Cherokee. North Carolina is one of the fastest growing states in the nation in the number of citizens over the age of 65. Also, many women are entering the work force for the first time as part of the "Work First" program. The many programs included Our Destiny Is Our Decision (for Native Americans), Healthy Eating for Life Program (for older adults), Out For Lunch (for mothers and young children), and EFNEP (for mothers and young children). Participants (who were food stamp eligible) improved knowledge and skills in meal planning, wise use of their food dollar, food safety, and time management related to food preparation. These skills are enabling them to feed themselves and their families healthier meals and delay or prevent chronic diseases.

One program, A Man's Guide To Basic Culinary Art, developed under the CEMP to target men who for the first time are responsible for purchasing and preparing food for themselves and their families, received three awards for packaged programs, as follows: first place for the North Carolina Extension Family & Consumer Science (NCEFCS) State award; first place for the National Extension Association Family & Consumer Science (NEAFCS) Southern Region award; and second place for the NEAFCS National award.

CEMP Team:

Co-chairs: Nancy Smith, Jackie McClelland,

Team members: Carolyn Lackey, Carolyn Dunn, Angie Fraser, Susan Baker, Geissler Baker, Janice Lloyd, Sharon Farless, Candace Murray, Christine Smith, Lynn Hoggard, Sarah Ash

CEMP # 17 - RESIDENTIAL AND COMMUNITY HORTICULTURE, TURF, FORESTRY, AND PEST MANAGEMENT - 1998 SUMMARY REPORT

Synopsis:

The educational programs under this CEMP aim to increase the knowledge of North Carolina citizens and nonprofit organizations in consumer horticulture activities and structural pest management. Programs primarily target home owners who seek knowledge about controlling structural pests, installing and maintaining their home landscape, and growing their own vegetables and fruits. However, programs are also provided for community gardening projects and caretakers of community property such as schools and parks and recreation grounds personnel. Through the increased knowledge provided and adoption of practices, this program aims to improve the economic and aesthetic value of private and public property while ensuring environmental stewardship.

Overall Narrative and Accomplishment Numbers:

Educational programs on pest management helped more than 35,946 people increase their knowledge of Integrated Pest Management (IPM) practices. Of these, more than 21,900 adopted IPM practices in their pest management strategies. This saved nearly \$334,000 through reduced pesticide use. Counties reported that \$197,640 was also saved through reduced pesticide-related contamination problems, e.g. runoff into municipal sewer systems and container disposal problems. About 21,200 people reported reducing risk of their own and their pets exposure to insecticides through more knowledgeable use. The programs on federal guidelines governing wildlife control and depredation reached more than 12,000 people.

Programs on proper plant selection, proper plant management, and proper plant pest management helped over 254,000 people increase their awareness and knowledge of these areas. Over 151,000 increased their skills and awareness in best management practices (BMPs) and proper pesticide use to further their role in protection of the environment and urban ecosystem. Skills specific to ornamental tree, shrub, and turf care were acquired by almost 149,000 people. About 129,800 felt the knowledge gained and subsequent actions taken increased their satisfaction with the appearance and environmental protection of their residential or community landscape. Approximately \$7 million was estimated as the increase in property value due to application of the knowledge and skills gained from these programs. Nearly 130,000 people were reported to have employed proper techniques of plant growth and integrated pest management to protect the environment in their community.

Gardeners numbering near 47,000 participated in educational programs for fruit and vegetable gardening. Over 26,000 of these gardeners adopted Best Management Practices (BMPs) for their gardens which provided them with \$361,000 in avoided costs. About 18,000 gardeners adopted BMPs that minimized water pollution and maximized water conservation, reducing water usage by over 1.3 million gallons.

The training and utilization of a Master Gardener Volunteer staff continues to be an economical way to enhance Extension teaching resources. The 2,044 volunteers donated 111,267 hours (valued at \$1, 112,670) while assisting 410,518 gardeners (excluding mass media contacts). Activities included: answering 43,806 phone calls, diagnosing

13,273 plant samples, manning 128 exhibits for 168,174 people, 108 television shows, writing 504 news articles, 179 radio programs, giving programs to 562 groups with 17,665 in attendance, conducting 193 school programs for 14,715 youth, developing 55 school gardens for 3,267 youth, sharing information with 11,441 friends and neighbors, and maintaining 109 demonstration gardens viewed by 138,931 gardeners. Volunteers contributed over \$65,700 out-of-pocket expenses, drove over 285,000 miles (valued at \$91,200), and raised \$116,970 for a total contribution of \$1,269,570.

Number of Units (Counties) Reporting:

Objective	#1	37
#2	61	
#3	38	

Statewide Measures of Progress totals

Objective #1

35,946 increased their knowledge of IPM practices.

12,412 increased their awareness and knowledge of current state and federal guidelines governing wildlife control/depredation.

21,921 adopted IPM practices including improved decision-making abilities in determining the need to spray and/or obtain the assistance of a pest control professional.

Objective #2

254,608 participants increased their knowledge and awareness of proper plant selection, proper plant management, and proper plant pest management practices in residential and community landscapes.

151,064 participants increased their awareness and skills in protecting the environment and the urban ecosystem through best management practices and proper pesticide use.

149,108 increased skills in tree, shrub, turf, and ornamental plant care.

129,866 increase their satisfaction (change in attitude) with aesthetic appearance of and ecological protection of their residential and community landscapes.

Objective #3

47,069 increased their knowledge and awareness of Best Management Practices for growing fruits and vegetables such as mulched gardens, drip irrigation, fertilization based on plant growth, fall clean-up, proper spacing, pruning, etc.

26,128 adopted Best Management Practices for growing fruits and vegetables.

18,328 increased their awareness and knowledge of gardening practices which have a detrimental impact on water quality.

15,370 adopted gardening Best Management Practices that minimize water pollution

and maximize water conservation.

Statewide Impact totals

Objectives #1

\$339,645 was saved (by the consumer) through reduced insecticide use (fewer pesticide purchases).

\$197,640 was saved through reduced pesticide-related contamination problems (e.g. runoff into municipal sewer systems, and container disposal problems).

21,180 participants reduced their risk of being exposed to insecticides through reduced and/or targeted insecticide use.

19,123 participants demonstrated a better understanding of the use of IPM as a means of enhancing their ability to be good environmental stewards.

Objective #2

7,682,602 increased their property value through adoption of landscaping practices, such as planning, design, establishment, and maintenance.

130,063 increased protection of the environment and the urban ecosystem through proper plant growth, plant health care, and integrated pest management.

161,727 citizen increased their satisfaction with improved aesthetic appearance of residential and community landscapes.

Objective #3

\$36,1195 was saved (avoid cost) by adopting Best Management Practices.

4,913,209 square feet of gardens were grown by program participants.

1,343,000 gallons of water was saved by adoption of water conservation measures.

Volunteers Involved:

Objective #1 876

#2 2,177

#3 1878

Success Story

Success stories from CEMP 17 can be as diverse as the audience Extension serves. Examples of how Extension programs can impact a multinational corporation or an individual homeowner show the level of commitment agents have to Extension's mission.

Craven County - Based on a survey of horticulture newsletter subscribers, 198 readers reduced fertilizer use, 126 reduced pesticide use, 418 gained knowledge about proper pesticide use, and 126 fertilized their property based on soil test results. In addition, as a result of this information 537 newsletter readers saved either time or money, estimated

by the readers at a total of \$23,000.

Caldwell County - This year's program consisted of 75 landscape, home gardening meetings, workshops and demonstrations with 2,487 participating. Two hundred professionals and 1,290 home owners adopted at least one recommended practice, resulting in an average savings of \$35.00 per individual.

Guilford County - The Novartis corporation in Greensboro has 700 employees that work in various divisions. The Turf and Ornamental division is by far the smallest and as a result it is not well known what their products are or what they do. Therefore, this division decided to hold an employees awareness day. The Cooperative Extension service was asked to participate by setting up and manning an exhibit on local pests. Employees were allowed to ask questions, bring in samples and a computer was set up to show employees where they could access horticultural information useful to themselves and the products that the Turf and Ornamental group is in charge of. A survey revealed that 630 employees came out for this day and of them 547 learned new practices that they plan on implementing.

Granville County - To encourage more youth gardening, the local Boy Scouts, the Oxford Mens' Garden Club, and the Granville Cooperative Extension Center worked together to make ten 10' X 10' raised bed gardens on vacant land owned by the National Guard Armory, adjacent to the Extension Center. The gardens are currently being used by two programs sponsored by the Granville County Schools, "Coaches Club", and S.O.S., ("Support Our Students") and a 4-H Summer Fun Program. Twice a week, 25 students from two elementary and two middle schools and 4-H'ers work in the garden with the Horticulture Agent providing instruction. Children harvested and took home nutritious vegetables.

Lee County - Residents of Sanford Public Housing had always wanted vegetable gardens, but didn't have space, money, or know how to get started. This season, Master Gardeners built raised bed gardens for 40 families, and meet regularly with these families during the growing season to supply expertise, plants, and fertilizers. The average garden feeds a family of four four meals weekly, worth \$160 for the 10 weeks the gardens have produced so far in 1998. The gardens enhance the nutrition, health, and pride of these families.

Onslow County - Hurricanes Fran and Bertha caused extensive damage to barrier frontal dunes and beachfront property on N. Topsail Island. Extension organized and conducted a Coastal Plants Workshop for area homeowners and town personnel. Extension mobilized MG volunteers, Garden Council club members and US Marines to conduct a two day planting of 25,000 sprigs of American beachgrass on 2,100 feet of public beach access frontage with an estimated value of \$1,000 per linear foot.

Buncombe County - Much of the information home gardeners receive on plant selection and cultural practices is received at local garden centers, but few garden center employees have extensive horticultural training. "Garden Facts" provided 12 hours of training to 30 garden center employees. 10 garden centers from 5 counties participated. Each garden center received an extensive notebook of NCCES publications, and part of each class was

spent "practicing" finding information in the notebook. Of the 26 participants who completed a followup survey, all indicated the training was very beneficial and that they were better able to answer questions for customers.

Pitt County - Master Gardener volunteers installed two Urban Water Quality Xeriscape sites. Each site features 40 drought tolerant perennials that will require little to no irrigation water after establishment. The purpose of this site is to develop a teaching garden to educate gardeners how to select low maintenance plants for eastern NC.

Forsyth County - Many Hispanic families living in low income housing do not add fresh fruits and vegetables to their diets. The Agriculture agent, working with the nutrition program assistant, and volunteers, placed three raised vegetable garden beds in a predominate Hispanic housing unit. Sixteen different individuals representing eight families successfully grew different vegetables in the raised beds. Participants reported new gardening skills, the use of new vegetables and greens in their diet, and increased self-esteem.

Cabarrus County - The Cabarrus county web site received over 45,000 hits this year. One user stated "I just used your decision support system to track down the problem with an azalea ('Mildred Mae') that has baffled me by turning yellow each fall. Thanks again for this easy-to-use resource."

Buncombe County - The Urban Horticulture Newsletter is mailed to an average of 1300 county residents each month. In April, 879 responded to a survey. Of these, 99.8 % indicated the newsletter increased their knowledge and 75% indicated it helped them save time or money. Increasing their knowledge of environmental stewardship, they learned: correct fertilizing practices (58%), correct pruning (52%), selecting plants suited to the location (47%), mulching (37%), soil testing (37%), and pest identification (26%).

Forsyth County - Visits to the homes of citizens are a means of assessing and positively identifying problems of shade trees in urban counties. The value of a home visit has been calculated at \$38 each. In a 5 month period, the Forsyth County Center made 34 visits to solve tree problems, a value of \$1292. In one case, a tree service had quoted work for two trees at \$1400. The disease problem was correctly identified and the resident followed the recommended practices for a net savings of \$1,000.

Wilson County - The Extension Service in cooperation with the local Appearance Commission held educational programs on specific gardening practices. Gardeners have adopted best management gardening practices such as calibrating pesticide sprayers, reading pesticide labels, fertilizing based on a soil test, using water wisely and disposing of pesticides safely. By adoption of these useful practice it was estimated to save each participant \$25 to make a total savings of \$22,700.

Moore County - The Village of Whispering Pines has traditionally fogged the neighborhoods with insecticide to control "mosquitoes" leading to a number of complaints. By identifying blackfly larvae in the water and prescribing a biopesticide (Vectobac) for control, Village Manager Chris Parillo reported that "positive results are being achieved...greatly reducing larvae."

Forsyth County - As Forsyth County becomes more urbanized, residents are more aware of concerns related to pesticide use and pest control. During 1998 approximately 680 residents have learned IPM methods via Extension sponsored classes and consultations. Consequently, at least \$2800 was saved through reduced insecticide use. Hundreds of residents were advised on the proper timing of pesticide applications as a means of getting the best use of their products while minimizing risks to the environment and nontarget wildlife.

NCSU - Entomology and Food Science extension specialists assisted a NC-based supermarket chain with a customer allegation of food product contamination. The allegations were determined to be false and the supermarket denied customers claim for \$2000 compensation.

Request from the legal affairs office of a NC-based supermarket chain to formulate their pest control contract for all stores in the southeastern U.S.

Cooperated with a pest control operator, Entomologists at Clemson University and the Smithsonian Institute to assist a medical facility with an unusual infestation of flat bark beetles that had shut down the entire surgical wing for over 2.5 weeks. Cost figures for revenue lost and for the correct measures taken were estimated to exceed \$500,000.

Request from the NC Zoological Park concerning a problem with mites infesting animal feed. The mites were biting zoo personnel handling the feed. Nonchemical control recommendations saved the zoo an estimated \$8000 that might have been expended if a fumigation had been performed.

Fly problem in a mausoleum. Lack of control was causing problems for visitors and unnecessary expenditure of money for ineffective control by the pest control operator. The source of the infestation was identified and recommendations for nonchemical control measures were implemented within days, reducing the fly population by an estimated 90%.

Two television appearances with state regulatory officials to discuss the questionable merit of a consumer termite bait product. Estimated viewing audience of over 100,000. In the ensuing months, the Federal Trade Commission and eight states (including NC) filed a lawsuit against the manufacturer for the same points outline in the TV interviews.

Membership

Erv Evans Co-chair
Mike Waldvogel
Karen Neil
Toby Bost
Carl Matyac
Lewis Howe
Bruce Williams

David Nash Co-chair
Bruce Williams
Art Bruneau
Charles Apperson
Steven Bambara
Larry Bass

CEMP#18 - RESIDENTIAL AND COMMUNITY WATER AND WASTE MANAGEMENT

1. Residential and Community Water and waste Management

2. PROGRAM DESCRIPTION: Residential and Community Water and Waste Management Cemp impacts the private and public sectors environmentally and economically. Drinking water quality, wastewater management, watershed management and waste management are the key elements. Proper management of waste wastewater, and water shed ultimately affect drinking water quality.

3. ABSTRACT: over 56,000 persons gained knowledge in water quality issues including watershed management, wastewater management and water quality improvement. 1,282 volunteers were involved in the program with a value of time of \$85, 250. The economic value of the Residential and Community Water and Waste Management Program is estimated at \$1,213,130 to the targeted audiences including businesses, industries, schools, communities, professionals, and the general public, with a program cost of \$183,730. Environmental impacts include the recycling/reuse of 620,697 lbs of household hazardous waste including 3,458 lbs of pesticides; 36.4 tons of scrap tires; 7 tons of white goods; 6,429 pesticide containers; and 9,700 lbs of plastic plant pots. In addition, 25,130 tons of yard waste; and 79, 735 gallons of used oil were recycled for reuse.

4. NUMBER OF UNITS REPORTING ACCOMPLISHMENTS

38 counties

5. STATEWIDE MEASURES OF PROGRESS TOTALS:

8070 people increased their knowledge and awareness of quality best management practices to prevent contamination of water

1673 people adopted best management practices to prevent water contamination

399 reduced water contamination risks as a result of changed practices after water screenings

2049 people increased their knowledge and awareness of waste water systems

128 people had their septic tanks pumped

368 people adopted best wastewater management practices

61 people avoided septic system failure by changing practices

5856 people increased their knowledge and awareness of the need for water quality and conservation

798 adopted best management practices to conserve industrial and residential water

38,609 people increased their knowledge and awareness of waste management principles

1669 recycling programs were implemented

66 industries /municipalities adopted waste management practices

5937 consumers adopted improved waste management practices

79, 735 gallons of used oil collected for recycling from farmers and do-it-yourselfers

620,697 lbs of household hazardous materials collected for recycling/reuse

6. STATEWIDE IMPACT TOTALS:

\$205,500	healthcare dollars saved through detection and treatment of contaminated water
\$369,900	costs avoided in replacing failed septic systems
\$207,100	costs avoided through decreased use of residential water
\$43,200	costs avoided through decreased use of public water
\$74,980	saved by municipalities through reduction of amount and toxicity of water
\$9,823,003	saved through reduced waste in landfills
\$175,573	saved through recycling materials
\$157,416	saved by counties or municipalities through Project HERO

7. VOLUNTEERS INVOLVED AND VALUE:

1282 volunteers/\$85,250

8. SUCCESS STORES WITH REAL PROGRAM IMPACT

Guilford County

Each year thousands of ornamental plants are planted into Guilford county landscapes, as a result a stock pile of plastic nursery pots has occurred. Unfortunately these are not welcome in the current city recycling program so frequently are disposed of through the landfill. To prevent this a Recycling program was established with through the cooperative Extension service with the help of Plastics revolutions a recycling company who does handle this type plastic. Television spots were conducted as well as newspaper articles to alert people to how these pots would be handled more environmentally friendly through our one day collection. We collected 5,500 lbs of plastic which will be used to make new nursery pots and parking car stops. We also collected 300 lbs which backyard propagators come and collected to reuse for producing landscape plants.

Burke County

Thirty-four homeowners participated in a Backyard Composting workshop. Using a self-anchoring scale the homeowners showed a 39% increase in composting knowledge from the workshop. A small portable compost unit was given to each participant. A survey conducted two months after the workshop showed that all participants had an active compost unit in operation. Three participants ordered an extra unit and one participant built a permanent unit.

Gaston County

Groundwater supplies drinking water to 50% of Gaston County's population. Yet, over 90 incidents of groundwater contamination have occurred. Extension linked with Gaston Quality of Natural Resources Commission and UNC-Charlotte to provide pollution prevention seminars for businesses and industries in two target areas. Attendees learned about their potential to pollute, liability as a polluter and pollution prevention options. Free environmental audits were offered. Of the 20 attendees, 3 called back for further advice, 6 requested site visits to verify sound pollution prevention practices on-site and 4 said they would make changes in their business practices. Information on Gaston County's wellhead protection program was new to 75% of the attendees. Thus, the seminar served an unmet need among key players in reducing groundwater contamination in Gaston

County.

Onslow County

Surf City (Pender County) has road flooding problems after storm events. The Surf City Planning Board requested Extension to look into their stormwater problems and make recommendations. As a result of our suggestions, one member (who is a local builder) now incorporates stormwater control measures on each property he develops. The planning board has also taken a serious stance on the impacts of impervious pavement. It is hoped that through these efforts and continued public education that the flooding problems can be improved, even with continued development in the area.

Pasquotank County

Pasquotank County citizens now load up free mulches and composts recycled from yard wastes by the city and county solid waste departments. Sometimes, loads of mulch are depleted before the county can arrange to restock them as residents haul it away for use on their landscapes. Over 50 tons of mulch per year are recycled to the public. Over 12 tons of finished compost are recycled to the public who eagerly use it to improve soils in gardens and plant beds.

Avery County

Avery County CES held a very successful water screening the week of May 18, 1998. We were able to check 80 households for Nitrate and 78 for Triazines. Most samples proved to be very low in both Nitrates and Triazines. We did find two households which were high or borderline in the presence of Nitrates and one which was high in Triazines. All participants were educated as to the importance of having their water screened and to the dangers of a high Nitrate and/or Triazine level in their water supply.

Nash County

We screened 82 well-water samples at a Farm and Home Safety Expo. The highest nitrate reading was 11. Upon visiting the family, it was found that their well was hand-dug and located under the family room floor. (Move the coffee table, lift the rug and lift the floor and there is the well.) We advised that they should purchase bottled water for drinking. We recommended that they also hook on to their son's well next door. After having his water screened, the son had his line extended to his parents house.

Person County

On March 13, 1998, Extension hosted a workshop on using "skimmers" in sediment basins to better clean up the water coming off construction sites. Local agents, specialists and the Orange County Sediment and Erosion Control Director led the workshop. Participants included engineers, developers, county employees from across North Carolina and officials from South Carolina DEHEC. Duke University sent their forester and facilities management employees. As a result of the March workshop, Duke is installing "skimmers" at the Fuqua School of Business construction site. A followup consultation with Extension and the Orange S&E Director was held at the site to insure the best implementation of the "skimmers" and optimum basin design. This sediment control best management practice is a direct result of Extension programming. Construction officials at Duke stated that they plan to use "skimmers" at other sites.

Cherokee County

The Cherokee County Extension Service staff and volunteer from across the county worked together to make Big Sweep 1998 a great success. Extensive media coverage brought much attention to the litter awareness campaign. Big Sweep is a nationally recognized waterway clean up that creates litter awareness and promotes proper waste disposal. This year was the second year that the Cherokee County Extension Service coordinated the event. A total of 70 participants cleaned litter from local rivers and lakes, collecting 146 bags of garbage and many large items such as tires and appliances that were eyesores to the beautiful waterway scenery. An estimated 19 miles of terrain was covered by Big Sweeper. Solid Waste Management brochures were disseminated to each participant in order to further promote proper waste management disposal, and to support the county's recycling program initiatives. T-shirts and door prizes were awarded.

Watauga County

With rapid urban development and high intensity agriculture, water quality is becoming an increasing concern among local citizens. To assure that sufficient information is provided regarding local water supplies, the Watauga Cooperative Extension Service conducted an extensive water quality educational program that included well water screening for nitrates and triazines. Fifty-nine wells were screened, and two were found to have high levels of nitrates. In cooperation with the Health Department, these individuals were able to do further testing and take action to rectify the problem causing the excessive level of pollutants. One learned that the well was poorly constructed, and the well contractor repaired the well at no cost. Programs such as this highlights the need to assure clean water, but also indicates to the citizens that continued vigilance will assure a clean water supply both now and in the future.

Alexander County

The Alexander County Government came to Extension asking for assistance in implementing a county-wide Swap Shed. The Swap Shed is designed to house useable items that some people want to do away with, but still have a useful life. After receiving a \$5,000 grant and using local prison labor equating to \$4,800 value, Alexander Extension managed to construct the 20' x 30' facility. The shed is loaded with shelves and a large clothing rack where clothes on hangers can be hung. Items recycled and kept out of our county's waste stream include: couches, recliners, baby cribs, bed rails, TVs, windows, blankets, clothes, books, lamps, bicycles, and much more. People can leave items or pick up useful items. This helps those in need and it helps keep items out of our waste stream. In six months, 34 pieces of furniture and 9 tons of trash have been diverted from our waste stream.

Cabarrus County

When Cabarrus Co. Commissioners decided to fund a first-ever Household Hazardous Waste Collection Day, Extension Agent was asked to co-chair the event due to Extension's past efforts in solid waste. Extension mobilized a number of volunteers, made arrangements with NCDA to remove pesticides, and coordinated steering committee meetings. Results: 625 participants; 63,557 lbs. HHW collected, including 2,400 lbs. of pesticides; 234 lead-acid batteries; 1250 gallons used motor oil; and 4,580 lbs. scrap tires collected. Participant surveys rated event very positive, and suggested a bi-annual event.

Burke County

Thirty-four homeowners participated in a Backyard Composting workshop. Using a self-anchoring scale the homeowners showed a 39% increase in composting knowledge from the workshop. A small portable compost unit was given to each participant. A survey conducted two months after the workshop showed that all participants had an active compost unit in operation. Three participants ordered an extra unit and one participant built a permanent unit.

Cumberland County

The pesticide container program continues to be successful. In 1998 2429 containers were ground for recycling with only 40 containers rejected. This represents a 1.6% rejection rate for 1998. We feel our efforts are paying off in educating producers in the importance of properly rinsing pesticide containers so they can be handled for recycling properly. pesticide container program continues to be successful. In 1998 2429 containers were ground for recycling with only 40 containers rejected. This represents a 1.6% rejection rate for 1998. We feel our efforts are paying off in educating producers in the importance of properly rinsing pesticide containers so they can be handled for recycling properly.

Onslow county

There are many septic systems in coastal NC. Frequently, residents are unfamiliar with septic systems, what they do, and how they operate. This unfamiliarity has likely contributed to early septic system failures and drainfield problems. A refrigerator magnet, entitled "Not in My Septic System", was developed that lists key cloggers and killers of septic systems. The magnet also reminds homeowners to have their tank pumped and has spaces for filling in service information. Pumping and proper maintenance can help prolong the life of a system and prevent costly repairs. The magnet is very popular. Two common responses are "I didn't know that I shouldn't add coffee grounds!" and "I have no idea when it was last pumped!"

9. OVERALL NARRATIVE:

Water quality issues have been addressed in 1998 with 1978 water samples being screened for lead and nitrate. These participants were educated on the meaning of the results and measures that could be taken to alleviate the problems. Educating youth on water quality issues was a major component during the period. Over 5,300 youth were reached with education programs in water conservation and improving water quality.

Wastewater management programs in Extension have targeted homeowners, builders, realtors, and health department professionals. The Southeast Regional On-Site wastewater Training center in Brunswick County joins 3 other sites in the state that can be used to demonstrate different system and their operation to various audiences. Maintenance of septic systems has been another focus of extension's education. A television segment on Extension's program on the public television station reached over 200,00 people. After the program over 150 people requested the Septic System Owners Guide fact sheet. Traditional programs on the topic reached 275 people. Of those approximately 40% reported having their septic tank pumped after attending the program.

Watershed management education has been conducted through the emphasis on wellhead protection, water conservation techniques, proper land application of treated sewer wastewater, storm water management, and stream monitoring. Educational

program include field days, watershed project demonstrations, and volunteer training to implement stream monitoring programs

Waste management programs have targeted businesses, industries, consumers and youth. Over 4,000 youth participated in Conservation Field Days, Big Sweep and classroom composting and vermicomposting. The Waste Education Center in Catawba County is the state's first such center. It features hands-on exhibits and activities for all ages to see and learn about waste management and its effect on the environment. It is a joint effort between Cooperative extension and County Government. One county reported a 500% increase in the amount of waste diverted from the landfill when compared to the same 6 month period in 1997. Another county reported a 400% increase in the amount of used oil collected in 1998 when compared to the 1996 totals when they began Project HERO.

10. CEMP COMMITTEE MEMBER AND CO-CHAIRS

Wilma Hammett	Co-chair	
George Autry	Co-chair	
Greg Jennings		Rhonda Sherman
Will Harman		Dorothy Miner
Sarah Kirby		Sandy Wiggins
Bill Hunt		Nancy White
Carolyn Mojonnier		Kathy Bunton
Brenda Morris		Allen Caldwell
Craven Hudson		Frank Humenik
David Lindbo		Mike Hoover
Mitch Renkow		Diana Rashash
Judy Mock		Bob Rubin
Deborah Myatt		Deanna Osmond
Suzanne Rhinehart		

CEMP # 19 - RESILIENT YOUTH, FAMILIES, AND COMMUNITIES

Program Description: The youth, families, and communities of North Carolina face challenges which threaten their resiliency. Reduced resiliency in turn threatens the economic, social, and environmental well-being of educational, corporate, and governmental systems on which the citizens of North Carolina depend.

"Cooperative Extension Major Program 19: Resilient Youth, Families, and Communities" takes action to strengthen the resiliency of youth, families, and communities. Resiliency is the ability to cultivate strengths to positively meet challenges. The program focuses on prevention programming which strengthens "protective factors" and reduces "risk factors." Participants bring together and involve educators, researchers, agency and organizational personnel, youth, families, communities, advocates, and practitioners who share an interest in strengthening the resiliency of North Carolina's youth, families, and communities.

Accomplishments for 1998 are reported in the context of three objectives:

- 6) Youth
- 7) Families
- 8) Communities

Overview:

Youth in high risk environments in 38 counties participated in community based programs resulting in those youth acquiring coping skills, making informed decisions and developing a sense of purpose and future. Over 17,000 increased basic life skills; over 9,000 increased literacy; and over 12,000 were actively involved in their communities. Almost 5,000 reduced use of drugs and alcohol; over 900 reduced their judicial involvement; and over 1,000 were less violent.

Families learned and practiced skills which enabled them to cope with adversity and be more resilient thanks to programs in 14 counties. Over 1,000 money management plans were developed; over 3,000 people became more effective communicators as well as more capable at coping and nurturing practices. These programs resulted in a savings of almost \$70,000 for involved families and a reduction in conflict for 3,500 families.

Eighteen Extension Centers are mobilizing citizens and their communities to create environments which strengthen families and provide for risk reduction for youth. As leaders and partners in collaborative efforts, Extension is building the capacity of community members to identify and address their needs. Specifically, these efforts have resulted in 55 prevention programs developed, 60 new family support programs, 49 economic and community development programs being established, and 658 citizens demonstrating increased leadership roles.

Units Reporting:

Youth	-	38
Families	-	14
Communities	-	18

Measures of Progress Totals:

Youth:

- 1) Increased communication, decision making, working in groups, understanding self and relating to significant adults.
NUMBER DEMONSTRATING 17,233
- 2) Increased literacy
NUMBER DEMONSTRATING 9,254
- 3) Increased community involvement
NUMBER DEMONSTRATING 12,753
- 4) Increased knowledge and awareness of and alternative to drugs and alcohol use
NUMBER DEMONSTRATING 12,867

Family:

- Number of money management plans made 1,175
- Increased knowledge and awareness of effective communication skills 3,579
- Increased knowledge and awareness of family, coping and nurturing practices 3,118

Community:

- 1) Prevention programs developed 55
- 2) New family support programs 60
- 3) Economic and community development programs established 49
- 4) Citizens demonstrating increased leadership 658

Statewide Impact Totals:

Youth:

- 1) Increased life skills
NUMBER DEMONSTRATING 13,984
- 2) Improved academic performance
NUMBER DEMONSTRATING 7,812
- 3) Expanded citizenship involvement
NUMBER DEMONSTRATING 6,695
- 4) Reduced use of drugs and alcohol
NUMBER DEMONSTRATING 4,830
- 5) Reduced judicial involvement
COMPARATIVE NUMBER REDUCED 924
- 6) Reduced incidence of violence
COMPARATIVE NUMBER REDUCED 1,150

Families:

- Dollars saved/reallocated through effective money management \$69,600
- Reduced conflict through improved family and interpersonal communication 3,500 families
- Adoption of family coping and nurturing practices 3,023 families

Communities:

- 1) Prevention programs developed 55

- 2) New family support programs 60
- 3) Economic and community development programs established 49
- 4) Citizens demonstrating increased leadership 658

Volunteers/Value:

Youth	1,296	8,032 hours	\$95,600
Families	773	3,070 hours	\$30,700
Communities	433	1,826 hours	\$14,890

Success Stories:

Ashe County:

With a large number of children in the county in single family situations and the rise of delinquent and at-risk behavior among children in the lower grades, the need for a positive role model continues. 4-H Ashe Youth Connection, a Governors One-on-One program, works to recruit, train and put into service volunteers to work with these children. In 1998, nine volunteers contributed over 860 hours of volunteer time with nine at-risk youth. Three of these youth were at-risk of being removed from their home. Volunteers for Ashe Youth Connection assisted in keeping these youth in their homes, therefore saving the community over \$100,000.00 in yearly costs for out-of-home placement --- not to mention the effort made to support in tact family situations.

Craven County:

4-H Camp Discovery, which was a six-week day camp, involved 60 inner city youth in grades K-5 and assisted them in learning more about themselves and their communities. Participants discovered the six pillars of character, possible career choices; and they learned how they could more positively effect their communities. Over \$11,000 in grant funds were secured to implement the program. Over 50 collaborators invested over 3,900 hours to the program valued at over \$39,000. Seventy-three percent of the campers said they felt that they knew more about themselves; 79 percent said they felt better about the choices they can make; and 70 percent said they felt they could make a difference in their communities. Work First participants were utilized as camp staff and as a result of their training, ten participants were placed in employment.

Granville County:

Court-involved youth need to learn effective decision making and conflict resolution skills while developing a sense of future. Through the 4-H BEST Community Service/Restitution program, we are reaching these goals. It has been a banner year for 4-H BEST as more than 64 youth performed over 1,500 hours of community service. Using sites throughout the county, including Granville Medical Center and South Granville High School, youth complete their court assigned community service hours --- attempting to give back to the community what their crime took away. These youth also attended a conflict mediation/juvenile justice short course teaching youth the importance of settling conflict without the use of violence and gaining an understanding of juvenile law and the court system. The 4-H BEST program is an alternative to juvenile training school. Training school in North Carolina costs \$40,000 per youth; 4-H BEST saved Granville County \$2.56 million in 1998.

Currituck County:

During the last six months of the Currituck County 4-H/SOS (Support Our Students) Program, its tutoring component has shown a 150 percent increase in attendance and a 66 percent increase in classes offered. This resulted in 25 students raising their math grade by one to three letter grades, and an increase in their year-end math scores, an average of five points, on the developmental scale. It also has impacted Social Studies and English, by increasing their letter grade by an average of one letter grade, and an increase in their year-end reading score an average of five points, on the developmental scale. Finally, the impact of the tutoring classes has also resulted in an increase in attendance, completion of homework assignments, and a decrease in maladaptive behaviors during class. These accomplishments are measured by attendance records and as reported by teacher interview.

Families:

A Bertie County Work First participant has successfully moved from welfare dependence to stages of independence, thanks to the assistance of a Work First mentor. The participant, through the Empowering to Succeed Program, secured a job, opened a bank account, and purchased a used mobile home for herself and her five children. She is also learning the responsibilities of car ownership.

Financial management and behavior modification classes were conducted for 240 Work First and court-mandated parents in Durham County. The participants reported that they gained an increased level of understanding about how to develop and utilize a budget and how to reallocate resources to improve family living. All of the Work First participants stated that they had learned some basic skills, which would help them present themselves in a positive manner when seeking employment. Participants in Rockingham County's Family Resource Management Skills programs were taught basic money management. At the conclusion of the workshops, they demonstrated an increase in their knowledge of money management by scoring 30 percent better on the post-test than on the pre-test. Eighty-two percent of the participants reported that they would begin to prepare a family budget.

Communities:

Parents in the Franklin Court Community ACE Program have been involved in several advisory committee meetings to identify community issues. Child Care was identified as one of the most significant needs. Parents are now involved in the establishment of a community daycare operation within a vacant apartment unit. This unit is provided at no charge by the owner of the facility who views the daycare as contributing to the stability of the community. Parents are now more able to maintain employment; families are mutually supported and have developed increased feelings of community safety.

CEMP 19 TEAM

Co-Chairs: Thearon McKinney
Bettina Odom

Millie Bruton
Carolyn High

Ellen Smoak
Bob Williamson
Wayne Matthews

Eddie Locklear
Robin Roper
Steve Lilly
Susan Jakes

CEMP # 20 - YOUTH DEVELOPMENT

Program Description:

CEMP 20 - Youth Development focuses on three major aspects of the 4-H program that contribute to the life skill and asset development of young people; the long term 4-H Unit/Club, 4-H School Enrichment Program and the 4-H Diverse Housing Program. Four major factors have been identified that contribute to the successful development of a child: social competence, problem solving, autonomy and sense of purpose and future. Those factors along with Search Institute's developmental assets are incorporated into 4-H experiences. Four-H club activities, presentations, record keeping, judging teams, school enrichment experiences, peer helper programs, community service projects and recognition programs are designed to give the participants an opportunity to develop the life skills/assets that any child will need to succeed in life.

Program Overview:

A major goal of 4-H Youth Development Program is to help young people participating in 4-H programs to develop life skills and assets that will allow them to become competent, caring, and responsible human beings. In 1998 emphasis was placed on helping young people improve their life skills/assets in the areas of communication skills, cooperation, empathy and caring, critical thinking and planning, and goal setting.

During 1998, over 221,000 young people between the ages of 5 and 19 were involved in 4-H programs with approximately 130,000 participants involved in 4-H club and other long term units, school enrichment and diverse housing programs. The positive development of young people through 4-H participation can be illustrated by the following results from select programs: 1. 44,628 youth increased their decision making skills, 2. 41,685 youth increased their communication skills, 3. 33,833 youth increased their awareness of community service, 4. 102,769 youth increase their knowledge in various curriculum areas, and 5. 48,000 increased their critical thinking skills. In addition, counties reported that as a result of 4-H community service projects their communities saved \$537,597.

Number of Units Reporting Accomplishments:

Objective One:	91
Objective Two:	56
Objective Three:	30

Statewide Measures of Progress:

Objective one: Long term support systems will develop competent youth.

Agents in 91 counties reported the following number of youth in 4-H clubs and other long term 4-H experiences strengthened targeted life skills:

Increased awareness of community service	33,833
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Increased communicated skills	33,607
Increased knowledge gained	102,769
Increased leadership	26,872
Increased decision making skills	86,159

Agents also reported that over 18,450 families had been actively involved 4-H.

Objective two: Youth involved in 4-H school enrichment program will demonstrate improved academic performance.

In 1998, 4-H agents in 56 counties reported training 2,790 teachers in the areas of curriculum content and program delivery process. After their training, teachers then returned to their class rooms and implemented the program. Approximately 97,000 students participated in 4-H school enrichment programs in 1998.

Objective four: Limited income youth residing in Diverse/Public Housing will increase life skill development.

Thirty 4-H agents reported working in diverse housing sittings with limited income youth to increase life skill development. They reported forming 56 new 4-H clubs for children 5 to 8 years old in addition to their programs for older youth. Youth participating in the reporting 4-H programs acquired or increased the following life skills:

Acquired decision making skills	3,821
Acquired skills to resist peer pressure	3,188
Defined aspirations	1,044
Acquired skills in conflict resolution	1,252

Statewide Impacts:

Objective one: Long term support systems will develop competent youth.

The impact of active participation in 4-H on young people is illustrated in the statistics below:

\$424,884 saved by communities from 4-H community service projects

\$668,557 scholarships received by 4-H'ers

\$756,737 earned as a result of 4-H project work

Increased competencies in:

27,095 Managing relationships
41,685 Communication skills
44,628 Making decisions
45,160 Self-confidence

Objective two: Youth involved in 4-H school enrichment program will demonstrate improved academic performance.

The 4-H School Enrichment Program is designed to provide school children with hands-on learning experiences that will enrich their class instruction. Teachers reported that while participating in a school enrichment program their students improved:

- 22,782 class attendance (48,000 students)
- 18,642 homework completed (36,487 students)
- 19,682 quality of homework (39,847 students)
- 21,739 science grades (40,191 students)

Objective three: Limited income youth residing in Diverse/Public Housing will increase life skill development.

The programs for limited income youth residing in diverse housing focused on participants improving their resistance to negative peer pressure and improving their goal setting skills. Agents reported that 1579 young people improved their resistance to peer pressure while 1157 more clearly defined their aspirations. Of the youth ages 5 to 8, 1359 increased competency within their environment.

Volunteers Involved:

Seventeen thousand six hundred ninety seven (16,697) volunteers worked with young people in 4-H clubs, school enrichment programs, diverse housing units, and other long term special interest activities. Their combined efforts total 250,932 hours for a value of \$2,509,320. On average, volunteers committed 14 hours to their local 4-H program.

Success Stories:

While the statistics reported above illustrate the impact 4-H programs are having in the lives of youth, families and communities, success stories like the ones below make the impact come alive.

Gaston County: Public speaking is a widely held fear for adults. The more opportunity youth have to speak in front of a group the more comfortable he/she becomes in that role. This year 4-H conducted a four week Arts Camp for low income youth. The curriculum focus was on reading, writing and art while the life skills focus was on team work, innovative thinking, leadership, and communication skills. By the end of camp, one very shy camper was leading and presiding at the recognition ceremony for families, peers and school personnel. In her own word..."Since I have been coming to 4-h, I am not as afraid as I used to be. 4-H also taught me how to work in a group.

Rowan County: It is sometimes hard to measure the worth of 4-H in a person's life. A former Rowan County 4-H'er recently submitted a story to Tech Corp on the 4-H web site. Carrie wrote in her story, "Through 4-H I have learned many different things that really changed my life. I am thankful for all the hard work I did in 4-H because it gave me self-confidence and organizational skills. Her club leaders and the other adults in 4-H

provided support for Carrie and the others in her club. She felt leaders were key to her increased self confidence and improved public speaking skills.

Wayne County: Many youth do not have the opportunity to experience the challenges and reward of community service. To address this need, Wayne County 4-H conducted a service learning project that involved 51 youth ages 12 and up. The participants received instruction in teaching techniques as well as content in four curriculum areas. After training, each participant committed to teach at least six hours with a youth audience. Those 4-H'ers performed over 1,100 hours of community service by teaching in 4-H summer camps, project days, after school programs and more. Some comments from the youth teachers were: "Teaching others has helped me put what I learned into practice." "By teaching others you learn more about yourself and others." "You learn to take responsibility and to be a leader when you teach others."

Randolph County: Down to Earth, an agriculture and environmental education program was introduced to youth in a 6-8 grade class. Students used the scientific method as an intellectual, hands-on learning process to stress critical thinking, reasoning, problem solving and cooperative learning. Not only did all the students gain knowledge of the basic principals of plant production and how to develop and test a hypothesis but 60% of the students exhibited a positive attitude toward learning and experiencing science through this project.

Narrative:

Active involvement in 4-H programs gives young people opportunities to develop life skills and assets that they will need to become competent, caring, and responsible human beings. Club activities, presentations, peer helper programs, community service projects, judging teams, school enrichment programs and recognition programs provide the settings for young people to improve their communication skills, learn how to work in a group, develop critical thinking skills, learn how to be a leader and learn to plan, problem solve and goal set.

In 1998, over 220,000 young people participated in a variety of 4-H programs. Agents reported that 17,697 volunteers provided guidance and support to 4-H'er, totaling 250,932 hours. These volunteers provided adult role models for youth that needed community support.

Participating in long term programs such as clubs and day camps helped 27,095 young people increase their ability to manage relationships; helped 41,685 young people improve their communication skills; helped 44,628 young people improve their decision making skills and helped 45,160 young people improve their self-confidence. In addition, many students participating in 4-H school enrichment programs improved their academic performance. Improvement was strongest in the areas of homework completed, improved quality of homework and improved science grades. Targeted programs for limited income youth residing in diverse housing focused on participants improving their resistance to negative peer pressure and improving their goal setting skills. Agents reported that 1579 young people improved their resistance to peer pressure while 1157 4-H'ers more clearly defined their aspirations.

While the statistics above illustrate the impact of 4-H programs on the lives of youth, families and communities, the true impact of this program is very difficult to measure. In fact, the results of participating in 4-H is not often seen until the 4-H'er is an adult. Becoming a caring, competent, and responsible human being is a culmination of many life experiences. 4-H is an organization that is equipped to provide young people with many of those need life experiences.

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Lou Otto

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