

NORTH CAROLINA  
COOPERATIVE EXTENSION SERVICE

VISIONS  
*FOR THE*  
FUTURE

PROGRAM ACCOMPLISHMENT  
REPORTS

1995



**North Carolina  
Cooperative Extension Service**

NORTH CAROLINA STATE UNIVERSITY  
NORTH CAROLINA A&T STATE UNIVERSITY

# **NORTH CAROLINA COOPERATIVE EXTENSION SERVICE**

**1995**

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# NORTH CAROLINA COOPERATIVE EXTENSION SERVICE

## ANNUAL REPORT 1995

### Program Overview

The North Carolina Cooperative Extension Service, with its strategic plan, "Our Commitment to Excellence", and its four-year plan of work, "Visions for the Future", provide educational programs to help North Carolinians improve the quality of their lives. North Carolina State University and North Carolina A & T State University deliver a coordinated Extension educational program available to all people in North Carolina.

This annual report represents the cumulative results of four years of Extension educational programs from 1992 to 1995. The accomplishments indicated in this report reflect the 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 wide variety of organizations, groups, and individuals.

Extension's educational programs were planned in collaboration with over twenty thousand of the state's citizens. These programs were effectively implemented, reaching all areas of the state, and a vast number of the state's 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 the scope and quality of Extension's programs for the benefits of the state's citizens.

## ACCOMPLISHMENT REPORT 1992-1995

### NC 01 - ALTERNATIVE INCOME OPPORTUNITIES

#### A. OBJECTIVES

1. 6,000 individuals will learn about income diversification, enterprises marketing strategies, and how to properly analyze, evaluate and integrate alternative income opportunities into their current farming operation or traditional livelihood.
2. 1,500 individuals will generate income from one or more alternative income enterprises.
3. 50 small, part-time and/or limited-resource farmers will participate in a comprehensive educational program, entitled "Ways To Grow", on alternative agricultural enterprises.

#### B. NON-EXTENSION RESOURCES

1.	Number of volunteers	556
2.	Total number of volunteer-days	1,622
3.	Value of federal government funding (grants)	\$11,225
4.	Value of state government funding (grants)	\$ 8,250
5.	Value of local government funding (grants)	\$20,000
6.	Value of private funding (grants)	\$12,680

#### C. INDICATORS OF SUCCESS AND ACCOMPLISHMENTS

Fifteen thousand, five hundred and seventy-seven (15,577) individuals, representing 24 counties increased their awareness about income diversification, alternative income opportunities and how to properly analyze, evaluate and integrate alternative income opportunities into their current farming operation or traditional livelihood. Eight thousand, nine hundred and thirty-one (8,931) of those contacts were generated by two counties alone in FY '93. Individuals continue to explore and/or establish new enterprises, such as meat goats, catfish, llamas, emus, ostriches, plastic-culture strawberries, cantaloupes and lettuce, greenhouse vegetable production, oriental vegetables, farmers markets and skilled labor for hire. Two hundred and fifty-three (253) meetings and two hundred and twenty-six (226) demonstrations were conducted over four years, exposing 8,744 individuals to the economic opportunities offered by alternative income enterprises/opportunities.

Nine hundred and forty-six (946) individuals generated income from the production and marketing of alternative income enterprises. Estimated gross income generated from these new alternatives is \$2,939,350.00, with an average income of \$3,107.13 per individual involved in alternative income opportunities. Net income varied from a few hundred dollars to several thousand dollars (in the case of plastic-culture strawberry production) depending upon the enterprise and cost of production.

One county alone had seven farmers produce plastic-culture strawberries. Through improving their management and production skills each year, they were netting approximately \$16,000/acre in FY '95. They observed also a 10% increase in acreage of pickling cucumbers (up to 900 acres), 25 acres specialty melons planted, 250 acres of lima beans and southern peas planted, 10 acres of staked tomatoes grown, 2 ornamental plant producers established business plans and two traditional farmers (tobacco and swine) converted their operations to nurseries. One field grown nursery has expanded exponentially over the four year plan to cover approximately 2500 acres in trees and ornamentals. Farmers' market participation in the county has grown to greater than 12 farmers selling on the market per day with good minority representation among them.

Fifty "new" small/part-time farmers, representing 36 counties, were selected for participation in "Ways To Grow", a comprehensive educational program on alternative agricultural enterprises. Participants were involved in an intensive 2 1/2 day Small Farm Institute dealing with the marketing, decision-making process, financing and production technologies associated with the production of alternatives. Subsequent to the institute, each participant returned home and began to implement a plan of action, leading to the establishment of 48 on-farm demonstrations on various alternatives. Currently, there are forty-seven (47) "Ways To Grow" on-farm demonstrations situated across North Carolina; sharing information about the production and marketing of alternatives with other small and part-time farmers in their communities, counties and regions of the state.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

#### **E. NARRATIVE AND IMPLICATIONS**

Agriculture, as well as its relating technologies, is changing at an escalating pace. Producers are learning to improve their economic situation by adopting new technology, using resources available to them, better using existing markets and exploring new marketing strategies. Individuals are beginning to understand the importance of enterprise selection and enterprise diversity. Direct marketing, via farmers markets, roadside stands, etc., has increased significantly and will play an even larger role in the marketing of alternatives in the future. Creative Extension programs and technology are still needed to assist agents,

paraprofessionals and farmers in making correct decisions relative to the production and marketing of alternatives, as well as to the integration of these alternative income opportunities into existing farming operation.

**F. COORDINATOR & TEAM MEMBERS:**

McKinnie, Ray	Chair
Claeys, Matt	Team Member
Ferguson, Janet	Team Member
Green, James	Team Member
Mickey, Scott	Team Member
Niedziela, Carl	Team Member
Roper, Larry	Team Member
Simpson, Frank	Team Member



## ACCOMPLISHMENT REPORT 1992-1995

### NC 02 - THE ENVIRONMENT AND CONSERVATION OF NORTH CAROLINA'S NATURAL RESOURCES

#### A. OBJECTIVES

1. Government officials and other decision-makers will be more knowledgeable about natural resources and familiar with available resources and professionals knowledgeable in these areas.
2. Youth, volunteer leaders, teachers, and 4-H agents become more aware of the environment, environmental issues, impacts of production practices on natural resources, global climate change, atmospheric sciences and air pollution problems.
3. Landowners will increase their knowledge of stewardship of the land and enroll in the Forest Stewardship Program.
4. Natural resource consultants, managers, and related agency personnel will improve their abilities in developing multiple use management plans and be knowledgeable of how to implement the provisions of the 1990 Farm Bill.
5. Landowners will learn the compatibility of wildlife management, forestry, and agriculture, including the impacts of and alternatives to various production practices on wildlife populations and habitat will be increased.
6. Farmers will meet the conservation compliance provisions of the 1985 Farm Bill.
7. Landowners will become aware of and begin to comply with the provisions of legislation regulating wetland usage and management.
8. Wetland regulatory agency personnel will be able to utilize quantitative evaluation procedures to improve reliability of wetland determinations.
9. Citizens will be more aware of wetland types, values and functions.



10. County governments, businesses, and citizens will meet new air quality standards in counties where new clean air restrictions are imposed.

**B. NON-EXTENSION RESOURCES**

1.	Number of volunteers	1,116
2.	Total number of volunteer-days	2,381
3.	Value of federal government funding (grants)	84,000
4.	Value of state government funding (grants)	264,200
5.	Value of local government funding (grants)	243,425
6.	Value of private funding (grants)	80,650

**C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1. Number of new wildlife management plans developed 259, acres impacted 141,058.
2. Number of new landowners leasing land for recreational purposes 173, value of these new leases \$89,716.
3. Number of pond owners improving fish production and water quality 989, acres impacted 2,577.
4. Number of elected and appointed officials who increased their knowledge of forest management, wetlands, endangered species, or air quality issues 989.
5. Number of new acres established in longleaf pine 2,140 and in Atlantic white cedar 115.

**D. OTHER INDICATORS AND ACCOMPLISHMENTS**

The Forest Stewardship Program has been a major educational effort in North Carolina. Extension has had primary responsibility for the development of educational materials and the training of professionals in the development and implementation of forest stewardship plans. From 1992 through 1995 there have been 705 plans written and certified. There has been a steady increase in the number written each year.

The Wetlands Reserve Program has interested landowners in North Carolina. In the 1995 sign-up, landowners representing 1176.7 acres signed intentions of entering the program. Extension has had the responsibility of developing educational materials and disseminating them to potential counties and

landowners.

Air quality in Gaston County has been a major initiative. To bring Gaston County into the ozone attainment category, significant educational programs were initiated. Business and industry representatives, government officials, members of the Quality of Natural Resources Commission, automobile owners, other citizens and youth have all been targets of various educational programs, workshops, and publications. Over 4500 people in the county have been reached with these efforts, additionally news articles appeared in newspapers reaching 42,000 households.

#### **E. NARRATIVE AND IMPLICATIONS**

Landowners are becoming more interested in gaining income from the wildlife potential on their property. As an example, one landowner in Bladen County turned a \$350 investment in 8 acres of sunflowers into a \$1,000 return from dove hunters.

In efforts to further proper forest management and conservation of natural resources, 438 forest management plans and 30 forest stewardship plans were written and implemented in Franklin County. Efforts to educate local loggers, 75 alone in the last year, have resulted in a steady decline in the number of water quality violations.

Extension agents on the Cherokee Reservation work closely with Tribal and Community leaders concerning environmental awareness and conservation of natural resources. Extension staff assist with an annual reservation-wide trash clean-up and promote the use of the Cherokee Reservation Recycling Center and backyard composting. They also promote and implement the WNC Beautification program on the reservation and conduct an annual beautification contest with donated prize monies amounting to \$7,000 for all community contests. The Cherokee Reservation relies heavily on its environment and natural resources due to the large number of tourists who visit the area each year to fish and enjoy the natural beauty that surrounds them.

Farm ponds are numerous in Alamance County. They are used for recreation, irrigation, and watering livestock. More than 60% of the ponds have some weed species present. Pondowners are advised of the chemical and biological options to regain desirable usage. Only a small percentage are willing to commit the funds necessary for reclamation, thus letting ponds become a liability rather than an asset.

Extension Forestry, worked in conjunction with the College of Forest Resources, Division of Forest Resources, Environmental Defense Fund, North Carolina

Wildlife Federation, North Carolina Forestry Association and other organizations to produce the Governor's Conference on Forestry. This conference has resulted in the establishment of a task force of leaders to map a strategy for maintaining and sustaining the natural resources and productive forest industry.

**F. COORDINATOR AND TEAM MEMBERS:**

Edwin J. Jones  
Peter T. Bromley  
Claire-Marie Hannon  
Charles Hammond  
Tom Hoban  
Robert Williamson  
Sandra Zaslow

## ACCOMPLISHMENT REPORT 1992-1995

### NC03 - FAMILIES IN CRISIS

#### A. OBJECTIVES

In North Carolina all families are vulnerable to experiencing some type of crisis. The crisis may be in terms of one or more of the following: financial difficulties, family disruption, family dislocation, family violence and family care needs. Many times a family in crisis incurs economic, social and/or legal stresses. Specialists at N.C. State University and A & T State University in conjunction with twenty-nine county staffs focused their efforts on developing and implementing coping programs and strategies to help families who are experiencing one or more crises. Specific objectives to help families in crises were:

Families having financial difficulties will improve their financial positions by learning to manage and maintain their monetary and non-monetary resources, and if needed, to acquire appropriate job skills using available community resources.

Families who experience violence, disruption and dislocation will learn about community resources and become involved with support groups that provide emotional help in alleviating the traumas incurred by the specific crisis.

Families of diverse structures will gain knowledge, acquire skills and develop strategies to better use available economic and social support systems to enhance quality of life.

Care givers of children and/or adults who have special care needs will gain knowledge and acquire skills needed to provide appropriate physical and emotional care for the individual, to acquire coping skills to reduce the physical and mental stresses of care giving, and to access community resources.

Parents, expectant parents and Care givers will gain knowledge and acquire skills in parent education and the selection of quality child care.

Families of diverse structures will acquire information about their legal rights, responsibilities and obligations.

Limited resource single parents and child day care workers will increase their knowledge and skills in effective parenting, child growth and development, and self esteem.

Objectives for 1890 Staff were:

Limited resource single parent families will learn problem solving techniques needed to facilitate positive interpersonal and family relationships and to manage stress.

Limited resource single parents and child day care workers will increase their knowledge and skills in effective parenting, child growth and development, and self-esteem.

**B. NON-EXTENSION RESOURCES**

Thirty-two counties reported programs targeted at the Families in Crises audiences. Specialists and agents in 26 counties received \$1,352,774 to support programs in the Families and Crises State Initiative. Volunteers and financial contributions were as follows:

1. Number of Volunteers - 29 counties reported 3,145 volunteers.
2. Total Number of Volunteer Days - 29 counties reported 6,159 days.
3. Value of Federal Government Funding (Grants) - \$29,000.
4. Value of State Government Funding (Grants) - \$1,242,678.
5. Value of Local Government Funding (Grants) - \$47,845.
6. Value of Private Funding (Grants) - \$39,651.

**C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

Thirty-two counties reported the following program results targeted at the families in crises clientele.

1. Thirty counties implemented 863 programs to reach families in crises audiences as a result of collaborating with 445 agencies.
2. Eighteen counties presented 303 work-site programs to 12,104 people in 149 industries.
3. Thirty-two counties gave 321 programs on Family Preparedness for Natural Disasters, reaching 8,876 persons, face-to-face, and with mass media (radio and newspapers), 2,067,692 persons.

4. Twenty-five counties implemented 2,283 programs targeted at the Working Poor and Homeless, reaching 19,459 persons with family resource management, consumer credit and housing information.
5. Thirty-two counties reported participating in the Economic Development for Women Project, reaching 1,628 limited resource women, 98 of whom found a job as a result of the training, and 458 of whom reported developing better self-esteem and increased confidence.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS.**

More than 10,000 families have been served through worksite programs, Chapter 13 bankruptcy classes, home study courses, consultations, mass media stories, and other activities. Worksite programs have reached more than 3,000 working families. Programs targeting families with limited resources have served more than 2,591 families.

Five hundred and sixty-eight limited resource families learned financial planning and management skills, effective communication skills, and basic life skills.

One AFDC recipient has maintained employment for almost 3 years and has become an Extension/volunteer by serving on the Family Resource Management Specialized Committee.

Over 320 JOBS clients have increased their parenting, budgeting, survival, and self-esteem skills.

Forty low income families received tax assistance for Earned Income Credit. These families saved over \$15,000. Over 13,000 families learned of the credit through an article written for the local newspaper.

One thousand eight hundred and twenty-three male and female inmates at detention centers participated in 99 programs about basic living skills including budgeting, parenting, building self-esteem and managing conflict.

One thousand and two hundred info-grams with parenting information were placed in six limited resource housing areas.

One hundred forty-two limited resource family members participated in time and money management workshops; seven of these participants set and followed through on goals to purchase a house and car.

Sixty-five families reported improved record-keeping system and increased knowledge and skills in management of finances.



Forty-eight limited resource clientele participated in three machinery maintenance workshops.

One hundred and thirty-two resource youth participated in educational activities dealing with peer pressure, conflict resolution, leadership, self-esteem, and life skills.

Twenty-five families learned about spousal abuse, how it affects families, and the available resources.

At risk families learned about child abuse, what it is and what it is not.

Three hundred and forty-five high-risk parents increased knowledge and skill in child development, nutrition, and parenting through a series of special parenting classes, 26% of the youth showing improvement at home, 39% showing progress in school, and 76% showing progress in juvenile court.

Thirty-seven Social Services' clients who had lost custody of their children graduated from a parenting class taught by Extension in which they learned skills in discipline, child development, nutrition, self-esteem, and communication.

Twelve House of Raeford employees learned about budgeting, nutrition, first aid, child development, diseases, wellness, and abuse by attending a CHAPS 8 week session.

One hundred and forty-five teen parents (11 of these males) have learned discipline techniques. Thirty-five of these graduated from an additional Extension parenting class in which they learned discipline, child development, nutrition, self-esteem, and responsibilities of parenthood.

Two hundred and thirty-five young single parents learned about budgeting and parenting, child growth and development.

Seven community medical personnel received parenting information and resource information.

Single parent council has been formed to assist family members in crisis. Over 1,500 single parents have increased their parenting skills through a quarterly newsletter.

One hundred single parents have participated in the support group and other activities designed to increase their knowledge of raising children.

Over 100 single parent families participated in a hands-on activity for parents and

children.

One hundred single parents have increased their feelings of self worth.

One Partnership for Children was established with four Family Resource Centers to provide education, services, and referrals for children and families. A Family Support Group was formed with 70 mothers receiving \$200-\$300 monthly so they can stay at home with their new-born. They also attend classes in parenting, nutrition, etc.

Four "at-risk" girls raised their self-esteem and built up their confidence by participating in a 10-week sewing workshop.

Eighty children increased their knowledge by participating in five lessons focusing on being home alone.

Eight hundred and fifty-eight at risk youth have been exposed to 4-H career development, citizenship, leadership, and achievement curriculum.

Eighty-two older teens learned ways by which to become prepared to enter the work force.

Seven hundred and fifty-two day care providers and child professionals increased their knowledge of child development and positive discipline by attending Day Care Association Meetings sponsored by the NC Cooperative Extension Service. Sixty providers were certified in first aid and CPR.

Two hundred and thirty-five family Care givers increased their knowledge about caring for elderly family members and learned of the available community resources.

Twenty-five day care providers participated in an 8 week teleconference on Feeding Young Children. Final evaluation shows participants gained new knowledge and skills.

Sixty day care providers and 75 Extension Homemakers increased their knowledge in stress management.

Twenty-five day care workers and parents were certified in the Red Cross Child Care training.

Forty-one young adults in the EFNEP program learned ways by which to become prepared to enter the work force.

Two thousand five hundred teens were made aware of factors relating to teen pregnancy.

Forty-six residents attended a special program on Teen Suicide Prevention after three teens committed suicide in their county.

One hundred and eighty adults increased knowledge of stress management and techniques for healthy lifestyle and mental health.

A Mid-Life Support Group for Menopausal Women was started, co-sponsored by Extension, the Mental Health Center and local hospital.

Information on diet and illness was provided to the increasing Mexican population through the Hispanic Coalition.

Two hundred and fifty people attended a Health Fair and learned about healthy snacks, health reform, high blood pressure, heart disease, and other health related diagnostic tests.

One hundred and eighty "cosy caps" were made for cancer patients for a local hospital to cover the exposed scalp as a result of cancer therapies. Fifty volunteers were involved in this project with over 250 homes involved.

Eight SHIIP Volunteers have been retained with four new volunteers recruited and trained as SHIIP Volunteers, assisting more than 292 persons with Medicare and health insurance questions, with one county reporting 602 volunteer hours.

One hundred and fifty adults learned about Medicare Myths to avoid crisis due to misinformation about Medicare.

Thirty people received training on Medicare Myths. Ninety-eight percent said they felt more confident concerning retirement and more knowledgeable relative to Medicare regulations.

One hundred and eighty Extension Homemakers received training on Medicare Myths. 85% said the increased knowledge helped them feel more secure concerning Medicare benefits.

One hundred and three people were reached with programs focusing on Attention Deficit/Hyperactive Disorders; Depression and Other Mood Disorders; Child Abuse -- What it is and What it is Not.

Four hundred and sixty-four people were trained in Elder Care programs, more than 6,000 households were made aware of the importance of advance planning

for elder care responsibilities through newspapers and radio.

Two hundred and ninety-seven people participated in Adult Sitters volunteer Information Providers and Master Parenting programs.

Twenty-five family Care givers received information through "Care givers Solutions Newsletter." Care givers report that the information has assisted them in reducing stress and in learning care giving techniques for themselves and their care giver.

One hundred and seventeen senior adults learned special skills by which to improve self-esteem in 16 special classes.

"Helping Older Adults at Mealtimes" was used to train volunteers to feed nursing home residents, family members, or neighbors who cannot feed themselves.

Twenty-five family Care givers participated in family care giver training, "Home is Where the Care Is." 100% of the participants reported increased knowledge of resources available for assistance. All reported benefits from the materials. All participants indicated they acquired coping skills to better deal with stress and guilt feelings.

Networking efforts with long term care facilities and the Extension Homemakers Association have resulted in long term volunteer placements at the local nursing center and in 50 discovery aprons being distributed to local health care facilities.

One hundred and fifty employed women and men learned to use management skills to reduce stress.

Eighty-seven programs for male and female inmates held at the detention center reached 1,320 young to middle-aged family members with self-help basic living skills (budgeting, positive parenting needs, improving self-esteem, handling conflict, low-cost decorating, heart healthy eating, etc.)

Eleven people participated in a teleconference called "Balancing Work and Family."

Fifty young farmers and their wives learned to improve their family relations and communications skills.

One hundred and thirty-one volunteers were made aware of the facts relating to literacy and learned ways they could help.

Thirty-two of them are now involved in local illiteracy efforts.

Three hundred and forty people learned about nutrition, parenting, exercise, carseat laws, and other topics.

Extension Homemakers were trained to provide information on crises prevention programs, such as Home Alone, and How to Reduce Household Hazardous Waste.

Six hundred and fifty persons learned the value of care of clothing, clothing coordination, clothing appropriateness, self esteem, and good grooming.

Thirty-eight men and two women have graduated from a 10-week course called the Men's Cooking Class, in which men who are in the role of care giving learn skills in purchasing food, meal planning, food safety and storage, meal preparation, and kitchen clean-up.

Eight hundred and twenty citizens and Extension Homemakers increased their awareness of crime, family and personal safety issues. One group of 116 women, 81% reported a change in daily activities to protect themselves.

One hundred and sixty-one people received instruction on protection from fraud, conducted by a local attorney. Of the participants, 32% reported this program had prompted changes in their response to telephone or door-to-door solicitation. 76% feel they now know sources of assistance when questions arise concerning fraud.

One hundred and sixty middle-school-age youth received positive after-school programs in life, academic, and cooperation skills.

Two hundred people learned how to budget, basics of money management, investment options, and sound financial planning options. Eight graduates of the Master Money Manager class are working individually with HELP referrals to help them manage their money. Six non-readers have learned to budget their money.

Fifteen people participated in budget counseling and have developed a budget plan.

One single parent family saved \$1,200 by developing a financial plan and increasing her budgeting skills.

A single parent minority family has received assistance in budgeting, which saved the family \$100 per month.

A minority family has acquired budgeting skills. After financial planning, the

family will save \$65,000 over the term of their mortgage, and reduce their annual debt by \$7,000.

Six hundred families increased their food buying power by \$5,850 as a result of participating in the Farmers Market Nutrition Program.

Twenty-one Head Start Parents learned about budgeting.

Sixteen couples had individual financial counseling.

One hundred and thirty-four family members learned marketing skills.

One hundred and fifty-five military personnel and civilians learned techniques of running a small business.

Twenty-five retired women have supplemented their income by earnings of \$132,272 as a result of linkages established with local industrial personnel.

Fifteen people have used Extension information to make their home improvements affordable and energy efficient. One home that used Extension recommendations throughout the total renovation is now an Extension Demonstration home in which over 300 people have toured. Hundreds of dollars have been saved by these homeowners.

Twenty people sought help in refinancing their current mortgage. Ten reported refinancing.

Ninety-five people completed the first time homeowners program and increased their knowledge of how to buy a house.

Five have purchased a home.

One family reduced its heating and cooling bill by an average of \$200 by implementing energy saving techniques.

One hundred consumers have increased their knowledge of simple home repairs and retrofits they can make to make living areas more accessible to the elderly and handicapped.

Six hundred and ninety-seven individuals participated in programs about the Living Will and Health Care Power of Attorney. A new audience has been reached for Extension and new clients visit Extension for this information.

One hundred and fifty people acquired information about the benefits and options



of making informed estate planning decisions.

One hundred and six people acquired information about the need for coordinating legal, financial, and health care decision making for the possibility of personal dependency and the dependency of aging relatives.

Twenty single parents increased their knowledge of estate planning. Four are in the planning process.

One farm family avoided a potential estate tax liability of \$190,000 due to an increased awareness of estate tax laws and establishing an estate plan.

Twenty-five forest landowners increased their knowledge in estate planning.

By one county's participation on the Quality of Life coalition Board, over 75 community leaders have become more knowledgeable of the North Carolina Cooperative Extension Service and the many resources we have.

Fourteen CHEEP volunteers trained.

#### **E. NARRATIVE AND IMPLICATIONS**

Family problems addressed within the parameters of the Families In Crises State Initiative are complex and many have no clear cut solutions. To address the problems of families in crises, the Cooperative Extension Service is striving to collaborate with other agencies and organizations to help families help themselves. During 1992-1995 four-year plan, counties have sought out other agencies and organizations to join forces with to implement a variety of programs, initiate support groups, initiate councils and task forces that can address specific problems of families and communities. One county reported that eleven different programs targeted at specific families in crises audiences was the result of forming four county/area networks and coalitions. One Extension unit reported working with fifty-five different agencies\organizations in order to implement effective programs. Another county reported co-organization with the North Carolina Extension Homemakers Association, the medical community, schools, and church leaders a Council on Adolescent Pregnancy targeted at seventh graders. County staffs developed new clientele, such as the working poor, industry workers, homeless, the incarcerated, and minorities with an English language barrier.

Counties have continued to reach the working poor through a variety of different delivery strategies. One of the strategies was to target industries who have a majority of women employees. Many of the programs delivered focus on money management, credit, consumer education and nutrition. Since these programs are

delivered during the thirty minute lunch break, the information has to be concise and presented in an interesting manner to hold the audiences attention. One Family Resource Management Specialized Committee was created in response to plant closings to deliver educational programs on site. Another way one county has reached 300 working poor is to provide a Financial Management quarterly newsletter. One-on-one assistance is another strategy that helped one limited resource family to reduce their annual debt payment by \$7,000.

With the number of natural disasters that our state has suffered from in the recent past, blizzards, wind storms, hurricanes, and tornadoes, the Natural Disaster Program For Families has given county staffs camera ready materials to give to their local radio stations and newspapers. One agent reported that their county was without electrical power for eight days. The survival information quickly written with the aid of the camera ready PA's for the newspapers during the blizzard helped people to better cope with being on their own. Two days after the blizzard of '93 hit, when auxiliary power to the courthouse was resumed, the agents faxed PSA's to the radio stations in the county. When telephone service was restored after four days, one agent handled approximately 50 calls a day during the first week and approximately 30 calls during the next several weeks. Both the radio stations and the local newspaper referred calls they were getting to the Cooperative Extension Service.

Another county continues to serve as an integral part of the Opportunities for Family Fund Coalition which provides educational programs to families who are moving out of poverty. Still another county is involved with a 13 organization coalition to provide women with financial information to assist them with entrepreneurship. The need for affordable housing remains a big problem for the working poor. One county developed a three-hour seminar in conjunction with various governmental agencies, local Realtors, builders and bands to help 46 working, low income potential first-time homeowners. Since the program, 9 families have asked for help in financial planning in order to purchase their first home with 29 persons who did not attend the seminar asking for similar financial planning assistance. Habitat for Humanity families are another housing and financial management special interest audience where Extension programs have readily been received as a source to obtain non-bias information.

The proliferation of Extension initiated support groups is another way to focus on the needs of specific audiences. For example, care giver support groups are beginning to fill the emotional and social nurturing for persons who care for other persons. Forty-three members of a widow-to-widow support group meet monthly. Alzheimer Support Groups have also tapped Extension to help spouses of the Alzheimer s patients to figure out practical aids and assistance in dealing with daily life situations.

Limited resource women have also been targeted for special assistance. One hundred and three women have participated in the Economic Development for Women Project. Women who have participated have started the following businesses in the past two years: Computer Services, Health Care, Sewing, Clothing Sales, Cosmetics, Cosmetology, Nutrition Supplements, Vegetable sales, and Background Checks. One county reported the following success of the three women that were involved with the Economic Development for Women Project: one woman got a job as a mail carrier to earn \$10,000 so that she could start her own home based business; one participant enrolled in a 4-year college to continue her studies in a medical related career; and one secured a permanent part-time job as a public school bus driver and works another part-time job as a Department of Social Services JOBS program assistant.

Seventy-five percent of the women who have participated in the Economic Development Project for Women have stated that they have developed more self confidence in themselves and like themselves better as persons. By participating in the Project, these women have been exposed to a variety of education and career options, have learned to understand themselves and their families better and learned how to set attainable goals for themselves.

Extension is just beginning to make a minute dent in addressing the problems of families in crises. Limited resource families, working poor families, single parent families, dysfunctional families, and dislocated families are specific families who need program and resource assistance that Extension has to offer. To make a difference, though, requires more financial resources, more packaged programs targeted at specific clientele and more multiple delivery strategies to help these families find solutions to their problems.

**F. COORDINATOR & TEAM MEMBERS:**

Carol A. Schwab, Chair  
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Arnold Oltmans  
Lucille Carter  
Deborah Howard  
Wayne Matthews  
Jean Baldwin  
Eddie Locklear  
Carolyn Dunn

**AD HOC MEMBERS:**

## ACCOMPLISHMENT REPORT 1992-1995

### NC04 - FOOD SAFETY AND QUALITY IN NORTH CAROLINA

#### A. OBJECTIVES

1. Targeted audiences will increase their adoption of recommended food handling practices.
2. Targeted audiences will improve practices and processes that promoted the production and protection of a food supply with minimal risk.
3. Targeted audiences will improve their understanding of risks and responsible practices in relation to food and health.

#### B. NON-EXTENSION RESOURCES

- |   |           |
|---|-----------|
| 1. Number of volunteers                         | 1162      |
| 2. Total number of volunteer-days               | 1098      |
| 3. Value of federal government funding (grants) | \$133,760 |
| 4. Value of state government funding (grants)   | \$6,000   |
| 5. Value of local government funding (grants)   |           |
| 6. Value of private funding (grants)            | \$9,000   |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number who adopted safe food handling practices (temperature control, sanitation). 23,326
2. Number of participants who increased adoption of practices that protect the food supply (appropriate use of drugs and chemicals in agriculture, safe food processing, IPM practices, pesticide applicators certification exam). 9,947
3. Number of participants who increased their knowledge of food safety public policy issues (risk assessment/management, laws/regulations, surveillances/monitoring). 10,224
4. Number of participants increasing knowledge of risks and benefits of specific food components, processing techniques or food production chemicals. 25,976

5. Number of professional food handlers receiving certification Certification Course. 988
6. Number of food handlers receiving training in safest food handling (occasional quantity food preparers, restaurant personnel, etc.) 3,289.
7. Number of pesticide applicators receiving (a) certification, 2385 (b) recertification, 8,432.

**D. OTHER INDICATORS AND ACCOMPLISHMENTS**

Included below

**E. NARRATIVE AND IMPLICATIONS**

North Carolina's Food Safety and Quality Initiative was chosen by 28 counties (28%) as a major programming effort. The remaining 72 counties were engaged in food safety and quality programming at various levels, therefore, statewide programming reached with food safety information. The Initiative was addressed by multidisciplinary teams at both state and county levels. Specific programming was conducted for targeted groups such as foodservice employees, day care providers, livestock and dairy producers, occasional quantity food preparers, populations at greater risk for foodborne disease, home food preparers, commercial and private pesticide applicators, Senior Nutrition site foodservice personnel, and the commercial seafood industry. Other programs addressed consumer food handling and food safety concerns. Programming reached all ages, sexes, income levels and an ethnically diverse audience.

Programming was conducted in a variety of settings to reach the intended audiences. Clientele were reached in school systems, day care facilities, youth alternative classrooms, youth clubs, Senior Nutrition sites, processing plants, worksite wellness programs, animal production facilities, after-school programs, and in distance education classrooms. Other groups were assembled in workshops conducted in the community, at subsidized housing sites, at professional conferences, and at food certification programs. Continuing education credits and certification programs were approved for programs delivered to pesticide applicators, foodservice employees and day care personnel.

A variety of educational methods were used to reach audiences. Mass media assisted in providing timely information at teachable moments such as following a foodborne illness outbreak and during events that require special food handling practices. Television, radio, newspapers and newsletters and distance education classrooms were used to disseminate information to a wide audiences. The Extension Crisis Management Plan was in place to respond to food safety

concerns such as corn mold infestation and national incidences like E.coli 0157:H7 outbreaks. Day care personnel were reached via a satellite transmission of a cooperative program between Georgia and North Carolina Extension in the Safe Food, Healthy Children program. Students interested in food safety and quality careers participated in a week-long program of workshops, tours, and interaction with university faculty and industry representatives in the Food Safety and Quality Science Fellows program. Print media, bulletins and fact sheets were developed to reinforce the food safety message.

Extension is a major provider of food safety training for food service providers. In a sample of 21 counties over 3300 food service employees received food safety training or over 150 employees per county. In a sample of 8 counties food safety certification credits were awarded to over 990 food service employees. An additional 700 successfully completed the extension taught ServSafe program. In a two-year period 113 food processor received certification in the Acidified Foods Course. Approximately 20 food product entrepreneurs were assisted each month in product safety evaluations, product formulations, labeling, and other processes in establishing a food processing business. Food Safety and Sanitation Certification courses, HACCP programs and inservice/continuing education programs were attended by foodservice employees, including day care providers, restaurant employees and managers, Head Start educators, Senior Nutrition site managers, Hospice workers, and Home Health Care assistants. Special topic classes were provided in areas such as IPM practices and food safety, seasonal food safety concerns, food laws and regulations, meat poultry and meat product food handling, pesticide residues and food safety, foodborne disease and at-risk groups, and animal feeds and pharmaceutical and food safety. Cooperative Extension agents received training in food safety. The HACCP system was taught to food processing personnel and foodservice employees. Inservice was conducted on food safety issues for youth involved in food preparation. At-risk populations of elderly and immunocompromised individuals were addressed in other inservice classes. Thirteen extension agents received certification as teachers in the National Restaurant Association's ServSaf food safety course. Many programs and materials produced through USDA grants in this state and from across the nation were used by agents in providing consumer food safety education for consumers and foodservice personnel. Bulletins such as the Home Food Safety Audit and fact sheets on Safe Food for Your Family and Acidified Foods were developed to support programming focuses. The NOTEBOOK of Food and Food Safety Information was revised. In addition to the NOTEBOOK being available in hard copy, the information has been transferred to CDROM and on-line computer retrieval program by two states and is now available on World Wide Web.

Food Safety and Quality Initiative Team members received USDA grants to a) develop and participate in food safety training for day care provider. A



four-hours satellite program was piloted in North Carolina and Georgia. Data were collected on 263 participants. Knowledge scores increased an average of 16 points on a 100 point scale (from 76 to 92). At the two-months followup, 94% indicated they had made at least one food safety behavior change in their day care facilities. The taped program and program materials are used statewide to conduct programs following the satellite date. b) develop and conduct a Food Safety and Quality Science Fellows week- long Symposium for high school youth. Twenty youth interested in food related careers participated in laboratories, industry tours, and discussions with professional in food related fields. Nineteen students completed the evaluation with all giving the overall learning experience a rating of good to excellent. The total Symposium received the same rating. The program will be offered annually with increased enrollment to 40-60 students in future years. The major focuses and breadth of statewide food safety and quality programming in NC is seen in the following reports from individual counties. Each bullet is selected from a single county's report but similar programming is occurring in other counties.

- o Poultry producers (265) attending a Regional Poultry Conference increased knowledge in poultry product packaging and handling.
- o Extension agent trained 103 volunteers who assisted with 152 food safety education programs.
- o In an urban county mass media routes were used to disseminate timely food safety messages: 32 public safety announcements to an audience of 100,000+listeners, 11 one-half hour radio talk shows, 6 television food safety spots, and a 3-part series on food safety aired on local CBS affiliate.
- o Food safety training provided to commercial food-service establishments (39 sessions), Senior Nutrition sites (15 sessions), 192 day cares, and 10 non-profit child care centers.
- o Articles appeared in agent's biweekly newspaper column which is published in two local newspaper with a combined circulation of 30,000.
- o In a rural county 78 day care providers received continuing education credits in food safety education.
- o Eight indepth trainings provided for day care providers reaching 269 providers in 3 years in a rural county.
- o Shigella outbreaks in day care facilities prompted an agent to offer food safety and sanitation training for day care providers to prevent outbreaks from occurring in her county. All 15 day care facilities in this county (25 personnel) received certification for the 25-hour training. No shigellosis outbreaks occurred in this county. Some day care centers in neighboring counties were forced to close following outbreaks.
- o The Safe Food, Healthy Children program was supported by the

governor's Smart Start initiative in one county. Seventy-seven (77) day care providers were trained. Ninety-nine percent (99%) increased their knowledge scores on the posttest. At the 2-month followup, 97% indicated they had made at least 2 food safety behavior changes. Sixty-two percent (62%) had made more than 2 changes.

- o A Spanish interpreter aided the extension agent in providing food safety programming for 32 Spanish speaking parents with young children. In addition food safety programs were conducted for migrant day care staffs.
- o Extension agent developed a video in Spanish to teach chemical safety for farm workers.
- o EFNEP Program Assistants were trained to assist families in safety preserving foods.
- o Forty-five (45) Girl Scout leaders trained to teach safe food handling to their troops.
- o A program on Food Safety, Pesticides and Biotechnology presented to 51 participants.
- o Eighty (80) senior citizens attended a program on Safe Food Storage focused on particular needs for their lifestyles.
- o Fifty-four percent (54%) of the telephone calls to one county were concerning food safety. All callers indicated they would follow the recommendations made by the extension agent in handling their requests.
- o Forty-three (43) calls to county office were received in response to a newspaper article on Salmonella written by county agent.
- o In response to a positive Hepatitis A test of a grocery store employee, agent held workshop for store employees and store customers. All 73 attendees indicated they now wash all fruits and vegetables prior to preparation/consumption. Twenty-four attendees indicated other food safety/personnel hygiene practices they adopted as a result of programming.
- o Radio used to disseminate food safety information in 32 taped 32 segments.
- o Livestock owners (315) were taught the Quality Assurance Program information on proper use of animal health products and FDA rules.
- o The correct use of pesticides in home gardens and orchards was included in 12 home horticulture programs.
- o Thirty-five (35) radio programs on food safety were aired over a 10-county radius.
- o After-school care workers (257) were trained in safe food handling practices.
- o Twenty-six (26) television programs with a 3-state viewing

- o audience were aired on "Food Safety and Health Concerns".
- o Two to three 3-day Food Safety Certification courses were conducted yearly in cooperation with the local health department reaching 261 restaurant managers and employees. Attendees quotes: 'When I return to work this evening there will be a lot of improvements in reheating [foods] and sanitation'. 'My only suggestion is to strive to make something like this course mandatory to anyone in food-service supervision', and 'will recommend that the rest of our managers in the company attend the next session.
- o Agent and committee of four other county personnel planned and conducted three 15-hour Food Handler, Food Safety Certification Courses. Foodservice employees for school system, restaurants, and day care facilities attended. Of the 128 attendees 122 (95%) passed the comprehensive exam.
- o County extension office supervised and trained the staff of the Indian Reservation Cannery. Residents bring their produce and jars and pay 25 cents per jar for preparation and processing.

**F. COORDINATORS AND TEAM MEMBERS:** C. Lackey, coordinator

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M.B. Genter  
D. Sanders  
J. Walker  
D. Wesen

## ACCOMPLISHMENT REPORT 1992-1995

### NC05 - HEALTH AND HUMAN SAFETY INITIATIVE

#### A. OBJECTIVES

1. People will adopt healthy life styles and reduce risk behaviors by taking responsibility for their health decisions.
2. Individuals will make informed use of available health-related services and facilities. Extension, agencies (public and private), community groups, health care providers and volunteers will partner to improve the availability of existing health-related services and facilities.
3. Communities (counties) will improve their capacity to assess and take action related to health and health-related infrastructure needs not met by existing services and facilities.

#### B. NON-EXTENSION RESOURCES

- |    |   |             |
|----|---|-------------|
| 1. | number of volunteers  | 11,490      |
| 2. | total number of volunteer-days  | 15,792      |
| 3. | value of federal government funding (grants)<br>(to state health and safety programs) | \$1,690,000 |
| 4. | value of state government funding (grants)  | \$ 151,500  |
| 5. | value of local government funding (grants)  | \$ 75,180   |
| 6. | value of private funding (grants)   | \$372,500   |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. The number of adults and youth who have participated in programs aimed at increasing knowledge about or changing attitudes or behavior affecting health status or preventing disease and injuries.  
365,442
2. The number of community leaders and community members who have participated in workshops, seminars or other educational

opportunities on health and health related issues. 105,843

3. The number of farmers and farmworkers or their families who have participated in programs on the proper use and handling of pesticides and the correct use of pesticide contaminated clothing. 24,094
4. Counties and communities that have organized and maintained on-going health promotion and disease and injury prevention programs.

Counties reporting 38

Number Communities 349

5. Collaboration between Extension Agents and interagency colleagues and health professionals to initiate or expand networks and coalitions to increase and strengthen community health promotion and disease and injury prevention programs.

Number of collaborative networks and coalitions 984

Brief description of collaborations:

Collaborations range from agents partnering with one other agency or organization member to leading or participating in a county-wide health or health related activity.

Examples include:

- Extension Agent Alice Pettitt's leadership in organization the Orange County Coalition for Immunization, a collaborative effort of Orange County agencies and organizations.
- the leadership provided, in collaboration with a health department health educator, of the Community Health Advocacy Program by agents in Onslow, Macon, Gaston and Bladen counties among others,
- the SALIC NC Coordinators collaboration with county and community leaders and members in Ashe, Alleghany, Surry and Wilkes counties,
- Agents collaborating in Healthy Carolinian Coalitions across the state,
- Agents working with the Cancer Information Service, Duke Cancer Center, to present cancer control programs in their counties.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

Thirty-one County Extension Centers and seven special project counties, or a total of 38% of NCCES Centers reported activities under Health and Human Safety in 1995. This represented an increase of 53% over the prior three years when 18 counties participated in this state initiative. Additionally, much of the health and safety effort within NCCES is reported under Extension's core programs such as Foods, Nutrition and Health or the Farm Safety Program.

External funding for Extension health and safety programs also increased with \$456,319 originating in the counties and approximately \$800,000 at the state level during 1995. The Rural Health Program alone received \$522,000 to support the Southern Appalachia Initiative on Cancer and the AgrAbility Project.

#### **E. NARRATIVE AND IMPLICATIONS**

(optional; include program accomplishments or impacts not described in Items C and D).

##### **1. National Decisions for Health Initiative Issues**

###### **a. Health Reform**

Health Reform was the first national initiative effort supported by NCCES Rural Health and Family Resource Management Staff. A cadre of 19 agents were trained to work as facilitators and educators around health reform issues in their counties. Health reform materials were made available and a video conference was produced by the national Decisions for Health management team. All agents with Extension Homemaker education responsibilities were also provided training to prepare them to discuss health reform with Homemakers throughout North Carolina. Fifty-thousand copies of the national tabloid on health reform were distributed by county Extension Centers. While in 1995 there was a temporary de-emphasis on the health reform issue overall, two Extension sponsored regional conferences were held on health reform and its meaning for the consumer. These conferences stressed the role of the state in health reform and both increased awareness of the current state of health care and encouraged consumer involvement in community decision making. These are to be followed by a state-wide



resurgence of Extension health policy issues education on managed care in 1996.

- b. Early childhood immunization was the second priority of the Decisions for Health initiative. Approximately 60 agents have undergone training on immunizations's effect in the primary prevention of childhood diseases. Agents continue to be players in county immunization efforts and in several instances have assumed leadership of county immunization education programs (Halifax, Orange and Richmond counties in particular). Early childhood immunization continues to be a focus of the State Health and Human Safety Program.

2. Projects demonstrating Extensions expanded role in the delivery of health and human safety education

- a. The National Cancer Institute-funded Southern Appalachia Leadership Initiative on Cancer Project (SALIC) has been operating the past three years. County-wide cancer control coalitions are operative in all SALIC counties in the Carolinas and Georgia. Four of these coalitions are in North Carolina - Ashe, Alleghany, Surry and Wilkes. Approximately 40 community action groups have been formed in North Carolina under the auspices of the coalitions and have become involved in breast and cervical cancer prevention and control activities. As a celebration of the success to date and the initiation of community level efforts, an all SALIC summit was held in September 1995, bringing together SALIC staff, tri-state and county coalition members and local community volunteers for two days of training on the importance of the early detection of breast cancer in cancer control. Twenty-six community leaders and coalition members from the four North Carolina SALIC counties participated in SALIC Breast and Cervical Cancer Summit. The National Cancer Institute award was \$456,449 for SALIC's third year (1994-95).
- b. The North Carolina AgrAbility Partnership has been

functioning for the past two years. AgrAbility project staff worked with Extension personnel in three counties to reach out to disabled farmers, farm families and farmworkers with information and assistance in meeting special needs. Initial steps were taken to expand AgrAbility to fifteen counties in Eastern North Carolina. USDA funding for AgrAbility for year 2 (1995-96) was \$90,000.

- c. The Agricultural Safety and Health program (AHPS) received over \$400,000 over a three year period - 1991-1994 from the National Institute for Occupational Safety and Health to develop curricula for use in university classroom and for training Extension agents and agricultural workers in safe and healthy work practices. Materials were developed on hazards associated with farm machinery, hog and poultry production and handling large animals. Agents received training in these areas.
- d. The Community Health Advocacy Program (CHAP) began in 1991 continued to function throughout this four year period. Community health advisor programs either as (CHAP) or a similar program such as HealthWatch in Bladen County or the Rural Health Advocacy Program in Macon county, continue to prosper with several new programs coming on line in 1995. Gaston and Onslow counties continue to carry out particularly noteworthy CHAP programs. Ashe County has developed a Community Health Action Team (CHAT) specifically targeted to breast and cervical cancer control.

Other activities reported by counties under Health and Human Safety include 4-H health activities, child safety training for day care workers, community education programs on cardiovascular disease, cancer and other nutrition related diseases, pesticide application training, farm and household hazardous waste disposal and Agrimedecine related activities.

According to a state wide survey conducted in the summer of 1995 by Dr. James Mitchell, East Carolina University, The North Carolina Cooperative Extension Service provided more and more varied health education to older North

Carolinians than any other group except the Senior Citizen Centers. While Senior Citizen Centers provided health education on 11 topics, Extension cited 10 areas in which health education has been provided to older adults including nutrition, disease prevention, access to and use of health care and information on living wills. Health departments reported providing education in only four areas for this group.

**F. COORDINATOR AND TEAM MEMBERS:**

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## ACCOMPLISHMENT REPORT 1992-1995

### NC06- NORTH CAROLINA COMMUNITIES IN ECONOMIC TRANSITION

#### A. OBJECTIVES

1. Communities (counties) will analyze their economic base and implement strategic planning.
2. Rural citizens/leaders will increase leadership and problem solving skills, knowledge of public participatory processes and economic awareness.
3. Current and potential entrepreneurs will analyze their situation/prospects and make informed decisions about their current/potential operations.

#### B. NON-EXTENSION RESOURCES

- |   |         |
|---|---------|
| 1. Number of volunteers                         | 6,798   |
| 2. Total number of volunteer-days               | 18,378  |
| 3. Value of federal government funding (grants) | 22,000  |
| 4. Value of state government funding (grants)   | 40,500  |
| 5. Value of local government funding (grants)   | 195,885 |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of economic analyses started. 27
2. Number of citizens/emerging leaders who demonstrated improved leadership and problem solving skills. 7,527
3. Number of young adults and emerging leaders who demonstrated increased economic knowledge. 6549
4. Number of strategic plans which identified opportunities for diversification, deterrents to development and/or infrastructure improvements, started or revised. 229
5. Number of current and potential entrepreneurs who were assisted to analyze their enterprise; 12,461 and, who made adjustments to increase profitability. 851

6. Number of potential entrepreneurs who made informed decisions about a business start-up as a result of assistance; 548 and, estimate of investment in new business start-ups. \$116,066,230

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

#### **E. NARRATIVE AND IMPLICATIONS**

While many rural North Carolina communities continue to be affected by social and economic changes taking place at the state and national level, local effects vary widely. As the local citizenry experience these transitions they sense the need to take stock of what is happening and address their opportunities and limitations. Strategic planning is a collaborative method of doing this. Successes in strategic planning underscore the importance of a concerned citizenry that is capable of analyzing the local economic base and willing to act to take advantage of their opportunities. It also requires local leaders who are knowledgeable of and willing to use public participatory processes to address local concerns. Hence, strategic planning and leadership development continue to be effective thrusts in helping rural communities revitalize.

Although reported accomplishments in entrepreneurial education reflect a reduction in FTE's at the state and area levels of the organization over the past two years, the indicators point to the effectiveness of Extension's entrepreneurial programs. The greatest successes continue to occur when our personnel are available to new entrepreneurs over a period of time. Many businesses continue to fail within a three to five-year period because of inadequate skills and information. As rural areas continue to experience social and economic transitions and unemployment or underemployment persist, the need for entrepreneurial education will continue.

- F. COORDINATOR AND TEAM MEMBERS:**
- Simon Garber
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  - Janice Lloyd
  - Robert Usry
  - Stephen Lilley
  - John Richardson
  - Shirley Callaway
  - Patricia Peele
  - Marilyn Gray
  - Joseph Zublena

## ACCOMPLISHMENT REPORT 1992-1995

### NC07 - SUSTAINABLE AGRICULTURE

#### A. OBJECTIVES

#### B. NON-EXTENSION RESOURCES

- |    |  |              |
|----|--|--------------|
| 1. | number of volunteers                         | 1425         |
| 2. | total number of volunteer-days               | 5142         |
| 3. | value of federal government funding (grants) | \$122,00 .00 |
| 4. | value of state government funding (grants)   | \$62,250.00  |
| 5. | value of local government funding (grants)   | \$6,550.00   |
| 6. | value of private funding (grants)            | \$24,208.00  |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

Sustainable agriculture practices are defined to include

- a. new income sources
  - b. conservation tillage systems
  - c. IPM or IRM
  - d. totally organic systems
  - e. land receiving animal waste
  - f. biocontrol
  - g. cultural control of pests
  - h. wildlife management in commercial farming
  - i. soil, tissue, solution analyses
- 
1. The number of meetings, workshops and tours that dealt with sustainable agriculture practices was 751, total participation was 38,9425.
  2. The number of sustainable agriculture on-farm demonstrations was 524.
  3. Number of farmers that implemented sustainable agriculture



practices: (see above)

	<u>No. farmers</u>	<u>No. acres</u>	<u>No. animals</u>
a.	1055	24140	564,644
b.	2,775	144,602	53,090
c.	1,774	115,608	4,172
d.	346	9,120	320
e.	1,269	55,915	175,125
f.	914	15,096	905
g.	1,598	127,227	1,325
h.	217	60,000	0

4. Total number of acres of crop land using sustainable agriculture practices (see above)

	<u>No. acres</u>
a.	5,340
b.	611,541
c.	249,660
d.	252
e.	278,696
f.	170,347
g.	140,532
h.	47,411

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

#### **E. NARRATIVE AND IMPLICATIONS**

The Sustainable Agriculture Task Force, made up of faculty of the two land grant universities, federal and state agency staff, farmers and members NGO personnel has continued to provide leadership for sustainable agriculture activities. These activities include:

1. The development and submission of a state strategic plan for sustainable agriculture training in response to chapter 3 of the 1990 farm bill. This plan was developed and reviewed by a diverse group of individuals representing those mentioned above.
2. Two types of training were provided for extension faculty: a. in-depth training on bio-control methods held in Raleigh for 22

agents using a two day field and class room format, b. basic understanding of sustainable agriculture concepts held at Annual CES Conference in Raleigh for all agricultural agents (100+).

3. The third annual Sustainable Agriculture Forum was held in November in Raleigh and was attended by a broad range of farmers, agriculturalists and Agency and NGO staff. The purpose of the Forum is to bring together stakeholders in North Carolina's agriculture in a discussion of the key issues of agricultural sustainability.
4. CES faculty from both land grant universities attended the first NGO/Land Grant Summit on sustainable agriculture, held in March at the Avilla Retreat Center near Durham, NC. CES faculty from both institutions were instrumental in the planning and implementation of this meeting.
5. Seven collaborating organizations, including NCSU and NCA&TSU, have been awarded a \$993,000 grant from the W. K. Kellogg Foundation. This project called "Partners in Agriculture" is focusing work on sustainable agriculture in four community sites in rural North Carolina. Activities are beginning with community listening projects. This project is one 18 nationwide that are a part of The W. K. Kellogg Foundation's "Integrated Farming Systems Initiative".
6. The Center for Environmental Farming Systems (CEFS) located near Goldsboro, NC is a direct outgrowth of the Sustainable Agriculture Task Force. This farm is now being developed to address sustainable agriculture issues including production practices, environmental impacts and economic returns. Organic farming research is one of the key focus areas at CEFS since the land area needed for this type of research is currently not available elsewhere.

County efforts in sustainable agriculture have impacted in several ways Conservation tillage, filter strips and riparian zone protection are receiving emphasis. Cotton production in one county is estimated at 45% no-till as a direct result of county educational efforts. In another county NRCS and CES staff have helped a farmer more than double his peanut yields while at the same time providing excellent protection to erodible soil by using cover crops, crop rotation and strip tillage. In another county CES has help to provide a program that has converted over 2500 acres of marginal land to permanent pasture. With CES help small growers were able to pool resources and arrange for the sprigging of

hybrid bermuda grass. Soil fertility management has focused on soil sampling and efficient fertilizer use to avoid non point pollution of surface water. In one county CES educational programs have helped to reduce application of low analysis fertilizer by over 70% and increased soil samples submitted for analysis by 100%. Local farmers markets are stimulating growers to try new, alternate enterprises involving cut flowers, ornamentals as well as vegetables. In one county this has resulted in 3 new greenhouse operations and over \$130,000 in new income sources during past few years.

**F. COORDINATOR AND TEAM MEMBERS:**

J. Paul Mueller  
H. M. Linker  
L. G. Wilson  
M. H. Poore

## ACCOMPLISHMENT REPORT 1992-1995

### NC08 - WATER QUALITY AND WASTE MANAGEMENT

#### A. OBJECTIVES

1. Develop an awareness program for farmers, homeowners and local officials for understanding the importance of water quality protection.
2. Help Government officials analyze policy options for protecting water resources.
3. Conduct educational programs for state basinwide or total watershed planning and management programs.
4. Work with other agricultural agencies (NRCS, ASCS, Soil and Water Conservation District, etc.) in educating farmers on proper tillage and cultivation techniques, agricultural chemical use and animal waste management to minimize surface and ground water degradation.
5. Conduct educational programs on water conservation.
6. Conduct ground water nitrate and lead screening tests for drinking water across the state.
7. Increase youth's knowledge, awareness, and appreciation for water quality waste management and other environmental concepts.
8. Increase adult's knowledge, awareness and appreciation for water quality, waste management and other environmental concepts.
9. Help livestock and poultry producers develop sound animal waste management plans based on routine soil/waste analysis and appropriate land application.
10. Have more growers recycle plastic containers and utilize pesticide management practices that will reduce the chance of ground water and/or surface water contamination.
11. Get more farmers to adopt an integrated crop management plan.

12. Have homeowners utilize yard waste debris through backyard composting.
13. Offer information and demonstrations on composting and other alternatives to handle yard wastes utilizing Master Gardener/Master Composter pilot programs.
14. Have forest landowners implement forestry BMPs.
15. Reduce residential waste through source reduction and recycling by family members.

#### **B. NON-EXTENSION RESOURCES**

1.	number of volunteers	30,068
2.	total number of volunteer-days	19,743.25
3.	value of federal government funding(grants)	\$1,401,527
4.	value of state government funding (grants)	\$777,557
5.	value of local government funding (grants)	\$392,009
6.	value of private funding (grants)	\$368,725

#### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

##### Water Quality

1. Number of inquiries regarding drinking water quality 17,425.
2. Number of meetings held to discuss water quality policy 1302, total participation 52,841.
3. Number of farmers who started applying nitrogen at rates based on realistic yield expectations 7,357, acres impacted 764,011.
4. Number of farmers who installed new drainage control structures to reduce nitrate concentration 800, acres impacted 86,323
5. Number of farmers and forest landowners who implemented BMPs to reduce soil erosion and surface water contamination from

sediments and associated nutrients and pesticides 18,736, acres impacted 990,315.

6. Number of farmers who calibrated spreaders and irrigation systems to apply manure at optimum rates and application patterns 1,671, acres impacted 268,230.

#### Waste Management

1. Number of clientele initiating backyard composting 14,082.
2. Number of clientele reporting more environmentally responsible purchasing decisions 38,045.
3. Number of communities assisted in successfully implementing new solid waste management options 504.
4. Number of communities which successfully implemented new recycling programs 613.
5. Number of clientele reporting increased participation in recycling programs 300,267.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

In one County weekly radio features and news articles focused on:

1. Recycling
2. Composting
3. Enviroshopping and Water Quality,
4. Water Conservation, Water Quality, Reforestation, Energy Conservation, Vermicomposting and Industrial Waste Composting.

About 20 radio programs were broadcast on the two radio stations with a combined listening audience of 12,000 households, and 6 newspaper articles reached 7,000 households each.

A survey of 2,400 loggers attending the 1993 Carolina Logg' Demo indicated 16% would implement BMPs on their operations with 11% wanting more information. Reports from NC Forest Service rangers indicate compliance at better than 95%.

Over 2,000 families participated in a Christmas tree recycling program designed to keep discarded trees and greenery out of the county landfill. Approximately



60,000 pounds of trees were chipped up and used as mulch for landscape plantings at the County Park. This program, initiated by Extension personnel, is sponsored jointly by the County government, Skyline Telephone Cooperative, and the County Christmas Tree Association.

In another county 8,000 Christmas trees were recycled and the mulch was given to homeowners or used for a backyard composting demonstration.

After an Extension education and public participation program removed roadblocks to a county wide solid wastemanagement program, county wide recycling reached 75% participation and 20 commercial/industrial firms adopted recycling options which lead to 45% reduction in waste materials going to the landfill.

Approximately, 1242 students attended the Penn environmental educational program at BetsyJeff Penn 4H center.

In one County, 64 newspaper articles were published and 72 radio programs aired to an audience of 250,000 on protection of water quality by proper use and disposal of household waste, 48 Master Composters trained on all aspects of waste stream diversion and organic waste management, and 102 composting workshops were held by a Master Composter to inform 1240 homeowners about composting.

In the third annual County Recycling Contest sponsored by Extension over 1500 children participated in collecting over 300,000 cans which were recycled. Over 50 classes of children (approximately 26 children per class for a total of 1300 children) were instructed on waste reduction and recycling by Extension.

In 1993, a nine year study was initiated on nonpoint source pollution (NPS) in the Long Creek Watershed. The EPA has funded 1.1 million dollars to determine the effectiveness of best management practices in reducing NPS pollution. A local dairy, city municipalities and other landowners are cooperating with 17 agencies to make the project a success. County Extension is administering the project.

In one county 4Hers collected over 1000 pounds of recycled material. There were 450 youth adopting water quality and conservation practices. Four classrooms consisting of 100 youth learned how to compost at home. Fifty-six youth participated in an environmental field day workshop on water conservation in the home where they analyzed an average size family's daily consumption of water and identified ways to cut down water usage.

Significant gains were made in introducing a solid waste curriculum within the

county school system. Specialized curriculum and teaching materials developed for use in the schools includes, "The Living Soil", Landfill models, Water Flow Model, Pictorial Tour of the county's lined landfill and an exhibit of mainstream products made from recycled resources (many of which are made in North Carolina). Enviroshopping was included in the 8th grade curriculum. Four schools participated in backyard composting/ demonstrations projects on their campus. Twenty eight hundred 6th grade students increased their awareness of solid waste issues at a Conservation Field Day by participating in "Trash Bash," a trash trivia game, and an additional 1100 students participated in classroom settings. Vermiculture concepts and principles were taught to 1400 students grades K12 at 12 of 16 county schools. Fifteen classes conducted month long vermiculture demonstrations in the classroom.

Family members acquired knowledge about how to reduce the solid waste stream by recycling and prerecycling through seminars and exhibits, club programs, leader training, civic club church group programs, and congregate meal sites for senior adults, etc. Survey results: 100% increased knowledge about recycling and reducing solid waste; 80% reported that their awareness for "where to take recyclables" had increased; 80% reported they had adopted a new practice that contributes to prerecycling; and 40% had contacted a public official with concerns or opinions about solid waste.

In one county, a 4H curriculum was used to acquaint youth with water quality issues affecting the environment. 142 youth participated in activities involving the Rivers' Edge curriculum, 23 were involved in the program "Mystery of the Cast Off Caper", 28 were involved in an Ecology School enrichment program, and 84 were involved in environmental workshops using 4H materials. An additional 81 youth were involved in a program entitled "Where Does My Water Come From?" presented to 5th graders at one school. Additionally, 335 students participated in a program to discuss the importance of nutrient control in the protection of water quality. Vermicomposting was taught to 1335 K5, day care center students and 57 teachers. As a result of this project, the County Solid Waste and Recycling Department and the County Master Gardeners plan to develop an Environmental curriculum to include composting education.

The value of animal waste generated in one County continues to increase due to expansion of the broiler and swine industries. Present annual volume of animal waste is 20,000 tons of broiler litter; 10,000 tons of dairy manure; 18,000,000 gallons of dairy lagoon waste; and 30,000,000 gallons of swine lagoon waste. Macronutrient utilization from animal waste has increased > from 25% in 1992 to 55% in 1995, a net increase of 30% due to Extension education. Amounts of plant available nutrients and economic benefits of nutrient utilization are:

Plant Available Nutrients	Nitrogen	Potash	Phosphate
---------------------------	----------	--------	-----------

Total from Poultry Litter	844,744,731,609,704,672
Total from Swine Waste	144,824,194,880,257,520
Total from Dairy Waste	65,000,68,000,78,000
Total	1,054,568,994,489,1,040,192

Total of all Nutrients 3,089,249 pounds  
 Estimated Increase in Utilization (30%) = 926,775 pounds  
 Value of Increase in 1994/95 =  $926,790 * \$0.20 = \$185,358$   
 Total Value of Nutrients Utilized in 1994/95 = \$339,823

## E. NARRATIVE AND IMPLICATIONS

In one County over 30,000 participated in youth recycle day and twenty-four groups and seven individuals were recognized for their contribution to making the environment safer and cleaner. Another 3200 youth participated in educational activities such as 3R's (reduce, reuse, recycle) workshop, environmental field days and Rivers Edge program. A bagathon activity yielded over 2687 bags of recyclable material collected with 46 civic and business groups participating. Each of the 18 Extension Homemakers club received programs on various environmental issues and sponsored several magazine recycle days. Through these programs and activities the County has been able to recycle approximately 20% of their waste stream which not only allows them to meet state guidelines but extends the life of the county landfill.

Farmers and homeowners in one county turned in 5,942 pounds of pesticides at Pesticide Disposal Days held in the county. The majority of this would still be in storage or improperly disposed.

The "Earth Angel" costumed character made appearances, distributing materials and making presentations on Environmental stewardship including water quality and waste management to civic groups and in shopping and recreational facilities. Volunteers placed "Earth Angel" posters and shelf tags in four additional supermarkets since last year and distributed "Earth Angel" flyers to 70 employees in a supermarket where poster placement was prohibited.

Preserving the quality of the rivers and streams is a big concern of a western County. Therefore, the majority of Extension programs are developed to include environmentally conscious methodology. Extension staff assisted with an annual reservation wide trash cleanup, and promoted the use of a Recycling Center. During the Spring '95 cleanup, 77 mile of roadside and 2 miles of stream banks were cleaned with 278 bags of trash and 231 bags of recyclables being collected.

A Plastic Nursery Container Recycling Day resulted in 40,000 containers collected at 10 garden centers. They were turned over to a plastics recycling

company after several growers picked out what they wanted. These were then recycled into new pots.

The Cooperative Extension Service in one county worked with a 40 member solid waste task force to look at solid waste options and recycling. The committee was able to encourage the Board of Commissioners to spend \$12,200 for rental and disposal fees for recycling bins to be used by all county residents. It also was able to encourage the county to hold a pesticide cleanup day, whereby 16,000 pounds of hazardous materials were disposed of at a cost to the county of \$15,000.

A cooperative effort between the Extension Service and county government resulted in the establishment of a county yard waste composting facility. The facility has had a positive cash flow and demand has exceeded the supply of compost. Onfarm tests over 3 years have demonstrated the efficacy of compost in crop and ornamental plant production. Negotiations are underway to turn the composting operation over to a commercial entity.

In one county, Extension planned and conducted a limited Household Waste Collection Day. The county disposed of 1,500 gallons of paint, 800 gallons of oil, 148 gallons of antifreeze, 31 automobile batteries, 200 pounds of household batteries, a ton of cardboard and almost 7 tons of tires. More than 900 grateful residents hauled the troublesome stuff to a local high school.

One county was able to expose the North Carolina Cooperative Extension Service to a new clientele group by placing the Water Watch boards in the business offices of the local municipal units. As town people came in to pay their water bills, they were able to see inexpensive ways to reduce the volume and thus the cost of water in their homes. In a six month period, several thousand residents of the county were exposed to this information. Questions were generated at each site, and the municipal units were interested in having other information made available to this audience.

Extension has continued its mission in one county to screen drinking well water for nitrates in an effort to educate citizens about the potential risks of contamination from septic tanks, animal manure, fertilizer, etc. Nitrate contamination is also a red flag that other contaminants such as pesticides and herbicides may be entering their well water. In 1995 alone, Extension tested over 200 well samples for Nitrates. This forum was used to educate the public directly as well as through news media covering test dates.

**F. COORDINATOR AND TEAM MEMBERS**

Frank J. Humenik, Chair  
Kenneth R. Bateman  
Ted Bilderback  
Martha Burris

complaint after a pickup out when they wanted. There were three  
 Tom Carter  
 Jill Steffey  
 June Brotherton  
 Robert Evans  
 Gregory Jennings  
 Ed Maxa  
 Judy Mock  
 Kim Powell  
 P. Sterling Southern  
 Joe Zublena

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The county was able to express the North Carolina Cooperative Extension Service  
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COORDINATOR AND TEAM MEMBERS  
 Frank J. Hummer, Chair  
 Kenneth R. Hummer  
 Ted Hildebrand  
 Marilyn Harris

## ACCOMPLISHMENT REPORT 1992-1995

### NC09 - YOUTH AT RISK

#### A. OBJECTIVES

1. North Carolina Cooperative Extension Service (NCSU) and (N.C. A&T SU) will help communities in 75 North Carolina Counties establish school-age child care educational programs for ages 5-14 and encourage existing providers to adopt Extension curriculum through:
  - Training of school-age child care providers
  - Empowering individuals, families and communities to address family and youth issues through public policy education
  - Encouraging community resources to support school-age child care programs
  - Improving parenting and family support skills
  - Building networks, coalitions, and support groups to assist with school-age child care programs
2. The North Carolina Cooperative Extension Service (NCSU) and (N.C. A&T SU) will enhance the reading and science/technology literacy of youth through:
  - Improving basic science and literacy competencies
  - Communication and information skills
3. The North Carolina Cooperative Extension Service (NCSU) and (N.C. A&T SU) will obtain the commitment of other academic resources at the land-grant university and work with ten state-level agencies and their community counterparts to provide training and other educational components for the developmental needs of high-risk youth which will specifically address:
  - Career education
  - Parenting skills and family support
  - Peer education programs for high-risk youth
  - Physical and mental well-being of at-risk youth
  - Teen pregnancy
  - Referrals to appropriate community agencies
  - Develop support systems for at-risk youths



**B. NON-EXTENSION RESOURCES**

- |    |   |              |
|----|---|--------------|
| 1. | Number of volunteers:                         | 12,515       |
| 2. | Total number of volunteer-days:               | 33,977       |
| 3. | Value of federal government funding (grants): | \$ 1,289,378 |
| 4. | Value of state government funding (grants):   | \$ 2,259,856 |
| 5. | Value of local government funding (grants):   | \$ 141,817   |
| 6. | Value of private funding (grants):            | \$ 245,761   |

**C. TEMPLATED INDICATORS & ACCOMPLISHMENTS**

1. Number of adjudicated youths who reduced their involvement in the judicial system after participating in Extension sponsored program. 1893
2. Number of youth who improved school performances after participation in Extension sponsored program. 27,049
3. Number of youths who decreased their alcohol and other drug usage after participating in Extension sponsored program. 5610
4. Number of youths who gained knowledge of work patterns, training requirements, certification, potential safety and job availability and increased their employment opportunities. 25,338
5. Number of Communities needing School-Age ChildCare programs. 1,190
6. Number of children served by above programs. 64,078
7. Number of providers trained and practices adopted. 5,114
8. Number of persons in literacy programs showing improvement. 1,869
9. Number of programs to emphasize science/technology approaches. 1,301

10. Number of coalitions organized to address needs (1992 - 1995): 373

Describe purposes of coalitions :

During the past four years, the North Carolina Cooperative Extension has been effective in using coalitions. Coalitions were organized to bring together the expertise of appropriate youth serving agencies and groups to maximize scarce resources. Coalitions assessed needs of youth-at-risk audiences and prioritized the needs. Based on needs, coalition members worked together to design and implement educational and recreational programs to address the needs of preschool and school-age youths in at-risk environments. Coalitions were used to evaluate the programs and provide accountability to appropriate stakeholders. Coalitions were used to provide funding, help monitor programs, help complete grant applications, help establish before and after school programs, teach in after school programs, provide mentors, provide tutors, and to refer youths to other educational programs or support systems. Members of coalitions served in an advisory role and provided directions for the youth-at-risk programs. The overall purpose of the coalitions was to serve as a support network for youth-at-risk. This goal was accomplished by providing educational and recreational programs to help youths improve academic performance, develop life skills, improve their self-esteem, improve their decision-making skills, and gain knowledge in various subject matter areas. Specific programming areas addressed by coalitions were the following : child care training, health issues, substance abuse, parenting skills, literacy, AIDS, teenage pregnancy prevention, nutrition, science and technology, citizenship, leadership, career education. Several coalitions also provided educational programs for parents in topics such as family life issues, health and human services, resource management, parenting skills, and communication. Coalitions were used to develop Family Resource Centers, initiate family support and preservation activities, work with public housing families, help prevent youths from dropping out of school, and prevent juvenile delinquency.

11. Number of long-term coalitions to address complex issues (1992 - 1995): 200

Describe purposes of coalitions :

The long-term coalitions were used for many of the same purposes as the coalitions addressed above; however, the long-term coalitions developed holistic programs designed to address issues of families and their children. The primary goal of the long-term coalitions was to develop resources which would improve the quality of life for families. Many of the programs had parent components in addition to the youth-at-risk aspect. Coalitions were used to identify long-term

goals and reduce and prevent duplication of services. These coalitions provided long-term tracking and evaluation of educational programs provided to youth-at-risk audiences. Specific roles of coalition members included accessing needs, prioritizing needs and programs, funding, referral services, networking to maximize resources, tutors, advisors, teachers, mentors, expanding quality child care services, providing services for children with special needs and increasing availability of child care. Subject matter taught and programs addressed were identical to those listed in Number 10 above.

12. Number of joint agreements with other agencies (1992 - 1995):  
339

Describe purposes of agreements:

Joint agreements were used to ensure that all groups and agencies involved with the educational programs of the N.C. Cooperative Extension Service understood their roles and responsibilities. The agreements delineated everyone's commitment and contribution to the educational programs targeted to youth-at-risk. The agreements enabled Extension personnel to reach larger numbers of youths, provide better services, use the expertise of various agencies, have access to more suitable facilities, and have support for the administration and management of youth-at-risk programs. The agreements also provided financial support, labor, volunteers, other resources, and helped eliminate duplication of services to youths. The agreements helped identify needs of youths, the families and youths who should be targeted with educational programs, and provided a network to maximize services offered to families and youths.

Describe functions of community linkages :

Numerous functions were performed by the community linkages during the past four years. Groups worked together to plan, implement, and evaluate educational programs based on needs of at-risk youths and their families. Training of volunteers, teaching, curriculum planning, coordination of human and financial resources, referrals, recruitment, transportation, screening of participants, marketing, advisory, communication, selecting resources, developing child care and summer programs, serving as mentors and tutors and working with children with special needs were some of the functions of the community linkages. The linkages provided hands-on, educational programs to youth-at-risk and their parents. Subject matter taught covered a wide range of the land-grant university curricula areas including leadership, communication, foods, nutrition, health, and community issues. The primary function of community linkages was to deliver appropriate educational programs to parents and their children based on results of needs assessments. This approach enabled a multi- directional program to be

offered to youth-at-risk audiences.

13. Indicate any behavior changes, knowledge gained, or other impacts measured by surveys or other research you have conducted as response to grants, coursework, etc. (1992 - 1995) :

- Improved study habits, school grades, reduction in school absenteeism, increased quantity and quality of homework completed
- Reduced out-of-school and in-school suspensions
- Reduced behavior problems at home, in school, and with authority figures
- Reduces adjudicated youths' involvement with crime and the court system with elimination of involvement in some cases
- Reduced number of teenage pregnancies
- Delayed sexual activity by youths
- Increased knowledge among youths of benefits of postponing sexual involvement
- Improved: life skills, team work, decision-making, self-esteem, trust, citizenship, leadership, public speaking, first aid skills, coping skills, conflict resolution, knowledge of careers, fire safety knowledge, communication, interpersonal skills and money management.
- Increased knowledge in numerous 4-H and Cooperative Extension Service subject matter areas such as: recycling, forestry, wildlife, environment, conservation, sewing, public speaking, citizenship, community development and various agricultural projects.
- Improved parenting skills of parents with at-risk youths
- Improved teaching skills of volunteers (adults and youths)
- Increased knowledge among adults in child development and child care
- Increased levels of responsibility and dependability among youths
- Increased knowledge by parents in stress management, child development, community resources, and communication
- Increased participation of limited resource adults in teaching roles

#### **D. OTHER INDICATORS & ACCOMPLISHMENTS**

Following are additional accomplishments achieved by Extension agents:

- Extensive use of newsletters and mass media to inform public of Cooperative Extension programs for youth-at-risk audiences
- Used teenagers as teachers
- Trained child care providers

- Increased participation of child care workers in Cooperative Extension sponsored educational programs Served on numerous Task Forces, various Boards, and other decision-making groups
- Hired additional staff to support youth-at-risk programs
- Increased voluntary service from parents of youth-at-risk
- Mainstreamed at-risk youths into 4-H Youth Development program
- Provided programs to children with special needs
- Involved families in programs to teach them how to take care of new born babies
- Involved youth-at-risk in numerous summer programs
- Used school enrichment as a teaching tool
- Used "Learn to Earn" projects to teach youths how to earn and manage money
- Worked with collaborators to identify youth-at-risk needs and publicize information to public
- Numerous Extension Agents completed training offered in the Children, Youth, and Families At Risk Institute
- Provided programs to youths and families about how children can be safe when home alone
- Increased quality and quantity of child care programs
- Taught child care workers in areas of: preventing food-borne illnesses, reading labels, dealing with disasters, Red Cross Child Care Certification, choosing toys, and discipline

#### **E. NARRATIVE AND IMPLICATIONS**

During the past four years, 49 North Carolina counties have been involved with the youth-at-risk initiative. This initiative has involved total staff participation and has allowed the Cooperative Extension Service to expand its programming effort to new audiences.

The Youth-At-Risk Initiative was designed to develop support systems for youths who live in environments which may hinder or prevent them from becoming competent, coping, and contributing members of society. Effective youth-at-risk programs must be holistic in design, involve the expertise of various groups and agencies, and use the ecological model to encompass all factors which place youth at risk. Coalitions of agencies must identify the needs of youths and design programs to address the needs and build support systems for youths and families. The North Carolina Cooperative Extension Service has provided leadership in building coalitions and designing educational programs for youths in high risk environments.

Although youth at risk was a new programming area for the Cooperative

Extension Service, Extension agents and state specialists have been extremely successful in designing and implementing programs to support youths and families in at-risk environments. A primary reason for the success of Extension's efforts in youth-at-risk programming is the effective use of coalitions. During the past four years, more than 373 coalitions worked to address youth-at-risk issues. These groups were involved with needs assessments and helped Extension agents plan, implement, and evaluate programs for youth-at-risk. Coalition members were active as teachers, mentors, and role models for at-risk youths. Coalition members also identified financial and human resources; prioritized needs and programs; and provided accountability to stakeholders. Coalitions have helped maximize scarce resources and bring together the expertise needed for effective and efficient youth-at-risk programming. Approximately 200 long-term coalitions worked to monitor the long-range goals. More than 12,515 volunteers donated over 33,977 days to the Youth-At-Risk Initiative. Over \$1,289,378 of federal, \$2,259,856 of state, \$141,817 of local government, and \$245,761 of private dollars were used to support youth-at-risk.

School-age child care programs were also used to support at-risk youths and families during the past four years. Extension agents provided training for over 5,114 school-age child care workers. These workers provided care for nearly 64,078 youths. Youths in before and after school child care participated in many Extension sponsored educational programs, including 4-H, home economics, and agriculture.

The Cooperative Extension Service youth-at-risk programs have had a positive impact on youths. Over 1893 adjudicated youths have reduced their involvement in the judicial system. Nearly 27,049 youths improved their academic performance as a result of Extension programs. Improved study habits, increased school attendance, and reduction of out-of-school and in-school suspensions have also occurred. Nearly 5,610 youths decreased their alcohol and other drug usage after participating in Extension programs. There had been a reduction of behavior problems at home, school, and with authority figures. Many youths are postponing sexual involvement. There has also been a reduction in teenage pregnancy. Career training and preparation have been provided to over 25,338 youths. Many youths have improved their literacy skills as a result of youth-at-risk programs. Over 1,301 science and technology programs have been conducted. Nearly 1,900 youths improved their literacy skills as a result of Cooperative Extension programs.

In addition to these results, youths improved their life skills, self-esteem, and decision-making skills. Youths developed conflict resolution skills and improved their interpersonal skills.

Youth-at-risk are being mainstreamed into 4-H and are increasing their knowledge

in numerous 4-H subject matter areas. These youths are participating in summer day and residential camps, public speaking and fashion revue contests, county fairs, presentations, and various citizenship and leadership roles. Many have improved their communication skills with peers, parents, and other adults. Parenting classes have been provided to help parents be more effective at communicating with and relating to their children.

Cooperative Extension's work in youth-at-risk also helped develop many other successful programs for youth and families who live in at-risk environments. In 1994, Governor Hunt initiated the Support Our Students Program (SOS). The SOS program is an after school program which targets at-risk, middle school age youths. The 52 non-profit agencies in 52 counties which received these grants, 6 of them are 4-H programs, are being supported by State and County Extension personnel in the areas of training, technical assistance, and curriculum.

The Governor's Smart Start program, an early childhood initiative started in 1992-93, is also being supported by Extension agents. The program is in more than 36 counties and many Extension agents serve on Smart Start Advisory committees and steering groups.

Extension agents were also involved with the development of Family Resources Centers in numerous counties. During the development of the centers, the Department of Human Resources sought the support of county Extension agents to help plan, design, and implement programs to support the work of the Family Resource Centers. Resources of the Cooperative Extension Service serve an important role in the success of the Centers.

Extension agents have been very successful in building collaborative relationships with schools and other groups to improve the quality and availability of school-age care programs. Through Dependent Care, Block Grant, AmeriCorps, and Support Our Students funds, more than \$3.3 million have been used to help create safe and developmentally appropriate child care for children and youths in most of the North Carolina 100 counties. These have helped decrease many of the negative consequences associated with children being home alone (i.e. accidents, pregnancy, substance abuse, loneliness, depression, and over exposure to television).

Over the past four years, the Cooperative Extension Service has demonstrated its capacity to have a positive impact on families and youths who live in at-risk environments. The impact of the youth educational opportunities planned and conducted by Cooperative Extension has prevented many youths from dropping out of school, becoming pregnant, getting involved with substance abuse, and being incarcerated. These youths will become productive, contributing, and successful members of society. The impact of Extension's youth-at-risk programs



will benefit society for many years. However there are still many youths and families who live in at-risk environments and who need the support of the Cooperative Extension Service.

The term "Youth At Risk" and the efforts of youth work four years ago seemed to carry the implication that the Cooperative Extension Service could direct its work to this issue and solve the youth-at-risk problem. The fact is that dual working parents, single parents, poverty, and negative peer pressure will continue to place youth at risk of failing to reach their potential. Many youths do not have support systems to help them cope with risk factors (e.g., poor parenting, negative peer pressure, poverty, poor school performance, etc.) which they face. Research suggests that protective factors at various levels -- individual, family, peer group, school, and community -- must be in place to support youth-at-risk audiences. The global society of today is creating greater competition in the marketplace. Many youths are not prepared for the job market. School dropout, low academic achievement, teen pregnancy, drug abuse, child abuse, crime, violence, and other adverse behavior prevent youths from being competent, coping, and contributing members of society.

During the past four years Extension agents in 49 counties demonstrated a need for youth-at-risk programming. These agents have been successful in building coalitions to identify youth needs and designing programs to address these needs. The agents have secured funds to support youth-at-risk work. Agents have been effective in utilizing volunteers and other resources to build support systems for youth-at-risk audiences. Agents are having long-term impact on targeted audiences. Agents have developed holistic programs which involve all aspects of the youths' environments: parents, families, schools, peers, and community. Appropriate resource people are being used to ensure effectiveness and efficiency of programs delivered.

In summary, there continues to be a need for youth-at-risk programming. Extension agents have been successful in building coalitions, utilizing diverse volunteers, and securing funding to help establish support systems for youths. The Cooperative Extension Service is an important component in helping communities develop effective youth-at-risk programs. Therefore, there is a need for Cooperative Extension to continue providing leadership in helping design programs for youths who live in high-risk environments. However, these programs must be holistic and involve all aspects of a youth's environment (i.e. family, peer group, community, school, and work). The work of Cooperative Extension personnel has increased Extension's credibility among various groups and agencies. More and more groups are looking to Extension to provide leadership in youths and family programs. It is imperative that Cooperative Extension take the opportunity to provide leadership in this important societal issue. With Extension's leadership and support, programs can be designed to

help youths become competent, coping, and contributing members of society.

**F. COORDINATORS AND TEAM MEMBERS**

Dr. Eddie L. Locklear,  
Program Coordinator

Dr. Dalton Proctor,  
Administrative Liaison

Danny L. Butler

Dr. Clyde E. Chesney

Carolyn Davis

Dr. P. Carolyn Dunn

E. Carolyn High

Craven Hudson

Dr. Cynthia E. Johnson

Dr. Steve Lilley

Cathy M. Lowery

Dr. Shirley Rouse

Howard Scott

Joyce A. Watts

Mary C. Wiggins

Sandra E. Woodard

## **ACCOMPLISHMENT REPORT 1992-1995**

### **NC 10 - FARM BUSINESS MANAGEMENT**

#### **A. OBJECTIVES:**

1. Farmers will improve their appreciation for and ability to develop and use farm management tools such as budgets, records, and computers in farm decisions regarding alternative enterprises, investments, farm program participation, expansion or contraction, and other aspects of the business.
2. Farmers and lenders will become more aware of the need to improve farm business record keeping skills and to improve the understanding of the benefits of more complete business records in the management of their businesses.
3. Farmers and lenders will increase their understanding of and ability to develop integrated financial statements and to use such to evaluate and analyze business performance and credit worthiness.
4. Participation in the Farm Business Management System (FBMS) program will increase, and an increased number of participants will annually have complete farm analyses.
5. Income tax practitioners and farmers will increase their understanding of the income and estate tax laws and the legal and economic consequences resulting from various management decisions.
6. Employers will increase their awareness and improve their understanding of state and federal rules and regulations governing the recruiting, hiring, housing, and health of agricultural laborers in North Carolina as well as improve personnel management skills.
7. Farmers, agribusinessmen, and agency personnel will improve their awareness and understanding of the provisions and consequences of domestic food and agricultural policies, international trade policies, and environmental policies.

#### **B. NON-EXTENSION RESOURCES:**

1.	Number of volunteers	1,285
2.	Total number of volunteer days	2,075
3.	Value of federal govt. funding (grants)	\$59,174
4.	Value of state govt. funding (grants)	\$16,864
5.	Value of local govt. funding (grants)	\$ 1,750
6.	Value of private funding (grants)	\$47,033

#### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS:**

1. Number of employers of agricultural labor who improved their understanding of labor rules and regulations 12,850.
2. Number of farmers and tax preparers who improved their understanding of income tax laws and tax management 15,550.
3. Number of farmers, agribusiness and agency personnel who improved their understanding of domestic food and agricultural trade and environmental policies 14,437.
4. Number of farmers who improved their management decision-making skills (including production, marketing, retirement planning, etc.) 23,427.
5.
  - a. Number of new farmers who adopted FBMS 471.
  - b. Total number of farmers who participated in FBMS 829.
  - c. Number of new farmers who adopted some other "formalized" record system 2,318.
6. Number of lenders who improved their understanding of FBMS and integrated financial analysis 782.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

1. As a result of labor law and regulation workshops and labor management education, one county reports that 60% of the agricultural employers are keeping accurate and complete payroll records of their employees, and over 80% of the farmers in that county report that they have been able to recruit and retain adequate numbers of employees over the four-year period.
2. As the result of a labor law and regulations workshop in one county, farmers gained knowledge and understanding of the H2-A program. The following expansion in this county has resulted in:

	1989	1991	1995
Farmers Certified	4	52	61
Workers Recruited	9	220	246
Value of Labor (\$)	12,810	776,520	1,181,180

3. In another county in 1993, as a result of a labor law and regulations meeting, 52 farmers met the requirements to hire 237 H2-A workers. The estimated value of this labor assistance was \$888,548.
4. Sixty-five farmers report that they improved their understanding of the 1993 Farm Disaster Bill and its benefits. The better understanding of the disaster provisions potentially improved farmer income from the disaster assistance approximately \$50,000.00.
5. Forty-five people reported improving their understanding of farm leasing arrangements and, consequently, renegotiated more complete and equitable leasing and compensation arrangements.
6. Sixty-eight farmers gained knowledge and skills on how to utilize computer bulletin boards and computer satellite services for farm management tasks.
7. Forty-two agricultural lenders improved their understanding and acceptance of Commodity Futures and Options Contracts as farm risk management tools. Farmers report that as lenders improved their understanding, hedging has been more accepted by lenders, and profits in the business have, too.
8. As a result of educational efforts concerning the Crop Insurance Reform Act, 12,596 farmers were made aware of the requirements and provisions of that act and the potential consequences of failing to make timely decisions. 2,428 of the 12,596 attended 60 county meetings devoted solely to provisions of the act. The remaining number of farmers attended other educational activities at which the topic was on the agenda (discussed).
9. Over 100 people reported that the direct dollar value of the savings resulting from attending a series of workshops on estate planning was \$300,000 in inheritance and gift taxes.
10. As the result of financial analysis education in one county, three

farmers reported that they "accurately" arrived at investment decisions with an estimated value of \$2 million.

#### **E. NARRATIVE AND IMPLICATIONS:**

While the objectives stated in this four-year plan of work were met and far exceeded, the need and importance of improving the business management and decision making skills of North Carolina producers has never been greater. As the economic environment in which producers compete continues to become more complex, the need for improved skills to evaluate economic options increases.

As the agricultural industry expands, the impact on the environment becomes more critical and demands more attention. Production practices which were once deemed safe and acceptable are now being re-examined and their impact on the environment questioned. As new technologies are required, either by regulation or for efficiency reasons, economic analysis of the adoption decision is necessary. Many times, the ability to evaluate this interface between production decisions and the environmental impact (consequences) is not one that most farmers have. Additional and more specialized educational programs will be required to ensure a viable, sustainable production agriculture industry.

The numerical goals/indicators for six of the seven objectives as stated in the original plan of work were far exceeded. The original number of producers, lenders, tax preparers, and employers stated to be reached and whose understanding, abilities, and skills improved were exceeded by an average of 3-4 times. Specific illustrations of the success of this programming effort can be seen in Section D, "Other Indicators and Accomplishments", and in Section F,

#### **F. COORDINATOR AND TEAM MEMBERS:**

C. L. Moore, Coordinator  
W. D. Eickhoff  
A. W. Oltmans  
J. M. O'Sullivan  
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## ACCOMPLISHMENT REPORT 1992-1995

### NC11 - LIVESTOCK PRODUCTION, PROCESSING AND MARKETING

#### A. OBJECTIVES

1. Producers will establish Integrated Resource Management projects.
2. Producers will adopt herd health programs.
3. Producers will use feed testing and recommended nutrient requirements.
4. Beef producers will utilize intensive grazing.
5. Beef producers will develop alternative marketing plans.
6. Farms will renovate cattle handling facilities.
7. Genetic evaluation programs will be utilized on beef, dairy, and swine farms.
8. Beef, dairy and swine producers will learn breeding management skills.
9. Producers will improve the environment in swine buildings.
10. Horse owners will improve their management skills.
11. Producers will use animal drugs wisely to enhance food safety.
12. Dairy cows will have a somatic cell score of less than 4.
13. Dairy calf losses and calving age will decrease.
14. Dairy farmers will improve labor training and management skills.
15. Livestock producers will prevent excessive losses of manure and waste water into surface and ground waters and onto land.
16. Swine producers will keep adequate finance and production records and be knowledgeable about alternative marketing methods.
17. Dairy farms will understand government policy, be capable of evaluating alternative farming practices and be able to seek alternative businesses.
18. Small farmers will become aware of the economic potential of livestock production and develop correct management procedures.
19. Producers will learn Integrated Pest Management practices.
20. New processing systems for red meat will be developed.
21. Informational programs for nutritional labeling of red meat products will be available.
22. Beekeepers will learn how to deal with mites and Africanized bee problems and more beekeepers will enroll in the N.C. Master Beekeepers Program.



## B. NON-EXTENSION RESOURCES

1. number of volunteers 6,985
2. total number of volunteer-days 14,125
3. value of federal government funding (grants) \$ 16,909
4. value of state government funding (grants) \$ 53,661
5. value of local government funding (grants) \$ 89,921
6. value of private funding (grants) \$ 222,077

## C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

NOTE: The following templated responses are totals from reports submitted from counties. Because all counties did not report in all categories and because some of the information is estimated, these numbers may not totally reflect the activities and impact of the North Carolina Cooperative Extension Service in animal agriculture in 1991-1995. They do, however, illustrate the breadth of educational programs in animal agriculture.

1. The number of:
  - a. New beef producers 1,605, total head new production 32,475.
  - b. New swine growers 433, total head new production 1,590,604.
  - c. New dairy producers 22, total head new production 1,440.
  - d. New horse producers 1,440, total head new production 4,051.
  - e. New small ruminant producers 1,001, total head new production 14,689.
2. The number of new producers who implemented:
  - a. Intensive grazing management:  
beef producers 851, total head new production\* 28,454.  
dairy producers 73, total head new production\* 5,462.  
sheep/goat producers 305, total head new production\* 5,811.  
horse producers 333, total head new production\* 1,830.
  - b. Improved housing ventilation:  
dairy producers 96, total head new production\* 11,745.  
horse producers 131, total head new production\* 633.  
swine producers 256, total head new production\* 837,608.

- c. Artificial insemination:  
 beef producers 644, total head new production\* 15,376.  
 dairy producers 198, total head new production\* 23,698.  
 sheep/goat producers 36, total head new production\* 1487.  
 horse producers 62, total head new production\* 364.  
 swine producers 153, total head new production\* 235,027.
- d. Improved marketing strategies:  
 beef producers 2,225, total head new production\* 59,479.  
 dairy producers 201, total head new production\* 22,780.  
 sheep/goat producers 482, total head new production\* 9,053.  
 horse producers 289, total head new production\* 1,818.  
 swine producers 331, total head new production\* 3,110,371.
- e. Forage/feed testing:  
 beef producers 1,144, total head new production\* 31,343.  
 dairy producers 537, total head new production\* 41,421.  
 sheep/goat producers 129, total head new production\* 2,589.  
 horse producers 352, total head new production\* 1,718.  
 swine producers 245, total head new production\* 236,833.
- f. Ration formulation:  
 beef producers 966, total head new production\* 30,796.  
 dairy producers 430, total head new production\* 51,524.  
 sheep/goat producers 261, total head new production\* 3,717.  
 horse producers 448, total head new production\* 1,768.  
 swine producers 172, total head new production\* 1,044,688.

\*from existing and new producers

3. Producers that implemented integrated management systems:

- a. Number of producers that started or expanded grazing cattle on pasture fertilized with poultry or

- swine waste 3,500, estimated total impact  
\$ 1,902,071.
- b) Number of producers that started or expanded livestock IMP programs 446, estimated total impact \$ 845,667.
- c) Number of producers that started or expanded IRM program 475, estimated total impact \$ 683,567.
4. The number of producers that started:
- a. on-farm or central performance testing programs 321  
b. farm records/business analysis programs 429  
c. quality assurance programs 2,382  
d. small farm livestock enterprises 1,309
5. Enhanced people's knowledge: (citizens = non-farm citizens)
- a. Number of producers who increased knowledge of animal welfare issues 24,151.  
b. Number of producers who increased knowledge of environmental issues 17,870.  
c. Number of producers who increased knowledge of food safety issues 14,126.  
d. Number of citizens who increased knowledge of animal welfare issues 215,214.  
e. Number of citizens who increased knowledge of environmental issues 295,643.  
f. Number of citizens who increased knowledge of food safety issues 212,465.

#### D. OTHER INDICATORS AND ACCOMPLISHMENTS

1. Most Extension Agents with livestock responsibilities have significant efforts in 4-H animal science activities. These include recruiting and working with volunteers, assisting with projects, shows, quiz bowls, camps, and training judging teams. The North Carolina Dairy Youth Foundation was organized in 1994 and a total industry effort has generated over \$132,000 for long-term

support of dairy youth programs. The Eastern Carolina Livestock Showmanship Circuit is a cooperative effort in five host counties to increase youth participation in livestock projects. Participation in those and neighboring counties has increased from 249 in 1991 to 561 in 1994. This effort with over 125 percent increase was recognized by the National Association of County Agricultural Agents in their Search for Excellence program. The North Carolina 4-H horse program averages over 14,000 project activities annually ranking it first in the Southern Extension region and second nationally in program participation.

In addition, livestock and dairy agents and specialists often assist with various educational activities (animal agriculture, food safety, environmental issues, animal welfare) within local public school systems. Programs such as "Wake up to Agriculture" and "Farm Animal Days" have been conducted in several counties for reaching students in elementary schools. The combined efforts of agents, specialists, and volunteers help provide positive learning experiences for thousands of North Carolina youth. Extension agents in two counties assisted in development of two new multi-purpose livestock facilities.

2. Extension programs for beef cattle producers have been very active in the past four years. Growth in number of beef producers and number of cattle continued with most counties reporting increases. Beef cow numbers now are at a record high of over 501,000, an increase of 28.1 percent over 1991. Addition of beef cattle to swine and poultry units has been partially responsible for the increase, creating new challenges for Extension agents and specialists working with novice producers in integrated approaches to management. Cooperative efforts in several counties led to three regional "Greenhorn Cattle Management Workshops" that included a total of 14 classroom and on-farm training sessions for over 250 current and potential beef producers. More structured short course approaches to deliver educational programs have been used effectively in several counties across the state. Evaluations by producers of such short courses are consistently good to excellent. These efforts involve combinations of lecture and 'hands-on' experiences and include agents, specialists, other professionals, and producers themselves as instructors. Some counties have offered more advanced single topic short courses for producers completing a more general program.

Approximately 3,500 integrated systems using poultry litter or

swine lagoon wastes to fertilize pastures for beef cattle have been reported to have started or expanded during the past four years. Estimated economic impact for these systems is over \$1,900,000. This has had and will continue to have long-term impacts on beef production in North Carolina. Due to new regulations, agents and specialists have an active role along with other agencies to assist in development of nutrient management plans on farms producing livestock. Use of animal wastes to fertilize pastures for cattle is one option but objective evaluation and monitoring of individual farm situations will be needed to avoid accumulation of nutrients in soils and/or contamination of surface or ground water. Because cattle recycle many nutrients, there will be limitations for continued reliance upon forage/cattle enterprises to solve nutrient concerns of other animal industries. Innovative beef marketing programs including retained ownership (NC Feedout), special pre-conditioned cattle sales, direct sales from farms, and continued use of graded sales have resulted in real opportunities to: increase producer income, provide for healthier movement of cattle, provide feedback on performance, and to enhance the reputation and competitive position of North Carolina cattle. These marketing programs have provided a basis for continued efforts in integrated resource management and in meeting quality assurance goals. Agents reported that over 2,200 producers increased participation in marketing strategies leading to annual sales of about 60,000 cattle at average premiums of between \$15 to \$60 per head (net added value between \$900,000 and \$3,600,000 annually) over weekly livestock auction prices. These marketing efforts have demonstrated the importance of uniformity and availability of enough cattle at one location for truckload lots. Knowledge of alternative marketing opportunities will be critical as beef producers nationally face another cyclic buildup of cattle numbers and downward pressure on prices. Producers who offer better quality control in terms of genetics, health, and management practices should be able to continue to market cattle at a competitive advantage. Improved handling facilities on hundreds of farms and adoption of quality assurance practices by nearly 2,400 producers reflect the optimistic outlook in the North Carolina beef industry even with lower cattle prices. The livestock marketing efforts by Extension in one county led to local funding of over \$1,000,000 for a multi-purpose facility.

Increased use of intensive grazing management, forage testing, and ration formulation have helped producers focus on more efficient and lower cost feeding programs. For example, 23 producers in

one county saved an estimated \$51,750 by using forage test results to adjust rations. Mineral supplementation for grazing beef cattle and use of various by-products (cotton fiber, whole cottonseed, poultry litter) to lower feed costs have received emphasis in the past four years. Five extension agents and one state extension specialist worked with NCSU researchers, the Department of Environmental Health and Natural Resources and seven cotton textile mills to evaluate cotton fiber waste products for use as cattle feed and thereby decrease costs to mills for disposal in landfills. This has been quite successful with 6,593 tons of cotton fiber per year now being used as cattle feed. With a feed value of \$40 per ton and not having to pay \$30 per ton for landfill costs, the economic impact is \$461,510 per year. That figure is about 26 percent of the potential in North Carolina and about 10 percent of the national potential. Use of broiler litter for cattle feed is also gaining widespread interest in the state. One extension agent in a county with large numbers of both cattle and poultry estimates that beef producers in his county are saving over \$500,000 annually in feed costs by using broiler litter as a feed source.

Emphasis on pasture management has included use of different forage species for both warm and cool seasons as well as more effective use of pastures through lower-cost fencing and watering facility arrangements. Stream-bank protection by limiting cattle access has also been implemented on many farms. Four years ago, three counties in the North Carolina mountains had little high-tensile electric fence. Now there are over 120 miles of such fence with two dealers and five fence-building contractors providing service as a result of cooperative demonstrations initiated by Extension and NRCS.

Other forage programs included efforts to convert marginally productive row crop land to permanent pasture or hay land. Two counties in the Coastal Plain planted sprigs of bermudagrass on nearly 2,000 acres by use of a specially contracted custom sprigger. As a result, over four years, 192 producers saved \$132,226 in establishment costs and environmental benefits should result from conversion of the cropland. Several counties in the Piedmont region have been active in hay production and marketing with a large area field day (450 in attendance) the past four years and development of a hay directory applicable to producers in four states with a cumulative 4-year marketing value of \$1,365,000. Use of biological control of thistles in pastures and

studies using a mechanical walk-through fly trap have also been reported by agents working with grazing management.

Producers are learning more about tools of genetic progress including expected progeny differences (EPDs) and use of composite breeding. Plans to develop composite lines of beef cattle for specific uses are being implemented. In one county, increased use of sire EPDs among 34 herds contributed to increases of 27 pounds per calf, and total added value of \$19,507 for those producers. Several hundred producers have begun to use or expand use of artificial insemination to improve genetics in both commercial and purebred herds. A new (1994) publication on estrous cycle control to enhance adoption of controlled breeding seasons and use of artificial insemination has been widely distributed and duplicated by the popular press. Three central beef bull test stations and the new (three years) forage-fed bull test program in Sampson County continue to provide learning opportunities for producers as well as provide a source of improved breeding stock. These test stations also act to informally set standards for hundreds of bulls that are tested and sold privately. For example, bulls at test stations must pass a breeding soundness examination before being sold. This has led to more demand for soundness examinations from farmers to managers of private sales and as a routine management practice on many farms before each breeding season. Special breeding soundness days organized by Extension in cooperation with local veterinarians are routinely held in several counties with 15 to 20 percent of bulls found to have questionable fertility. The critical impact of breeding soundness examinations is illustrated by two producers in one county who did not test their bulls one year when 2 of 6 bulls owned were subfertile. The resulting smaller calf crop cost them over \$12,000 that year. The same county has increased the number of bulls examined by three-fold in four years with 139 examined in 1994.

3. Total milk production continues to be stable with a few new dairy producers, increased number of cows per herd, and higher production per cow offsetting dairies leaving the business. Herds on Dairy Herd Improvement records programs have increased production 324 pounds of milk per cow per year with some counties reporting up to 770 pounds per cow per year. About 640 producers currently have Grade A permits with about 30 producers of manufacturing grade milk. Because herds have increased in size, these family owned farm businesses often have multiple



family and/or hired workers. Therefore, fewer than 700 dairies directly support about 3,000 farm families. Milk production per cow (18,800) and percentage of cows on DHI programs (60 %) continue to keep North Carolina among the leaders for those measures in the eastern half of the country. With issues of waste management, more pressure from urban growth, and relatively low milk prices, forthcoming use of dairy extension programs aimed at strategic farm planning should be timely.

Early 1994 marked the beginning of sales of bovine somatotropin (bST) to dairy producers. Over the past four years, extension programs have provided producers with much research-based information on bST for their use in deciding how it might work in their individual herds. It is estimated that the product has been used on about 25 to 30% of the cows in North Carolina. One area dairy extension agent reported that 8 herds using bST were able to increase production by 6% and collective net returns by \$73,748. A panel discussion about bST use at the state dairy conference revealed some concerns about using it in cows that were not well fed or during periods of heat stress but milk responses were generally satisfactory otherwise.

As more producers purchase their own computers, availability of on-farm DHI production record programs such as PCDART and PCDHI are increasing producers' access and use of records for daily management. About 20% of the cows in North Carolina are recorded on these on-farm programs. Such record systems have been developed by the Dairy Records Processing Center at Raleigh with input from producers, extension, veterinarians, consultants, and DHI managers within the region. The possibility of tying financial records to production records to allow even more management options by dairy producers is being investigated regionally and nationally.

Aggressive efforts by agents, specialists, and consultants (often trained by extension) have led to routine use of forage testing and ration formulation in most herds. Use of various by-product and commodity feeds to lower costs of dairy rations has increased steadily in recent years. Increasing awareness of the potential for mycotoxins in various feedstuffs has helped producers avoid or minimize adverse effects. In one herd, production was increased by 21 pounds of milk per day per cow (increased herd milk value of \$60,000 per year) by adjusting the ration for nutrients and to minimize impact of mycotoxin-contaminated feedstuffs. Rations

are formulated by producers, agents, consultants, and specialists using various computer programs including the DART Ration program developed by extension specialists working cooperatively with DHIA. Agents report savings in feed costs, enhanced production, and increased milk sales directly associated with ration work with producers. Two area agents working in several counties reported increased use of forage testing and ration balancing was worth a total of about \$1,131,065 extra income to area producers. Three individual herds in those counties have increased up to 13 pounds of milk per cow per day after adjustments were made in rations resulting in gains in income of \$27,000 to \$50,000 per herd per year.

Several agents reported efforts to help producers meet requirements of the milk and dairy-beef quality assurance program in cooperation with state specialists and local veterinarians. Tighter standards on somatic cell counts in milk have led to cooperative efforts among specialists, agents, producers, veterinarians, milk sanitation inspectors, and milk cooperatives to ensure producers were following recommended milking and milk handling procedures. Because several dairies include workers who speak Spanish, some milking management schools have been conducted using interpreters. Work with problem herds in several northwestern counties has led to several herds reducing somatic cell counts below 500,000 (regulatory limit is 750,000 cells/mL) and resulted in an 8 percent increase in milk per cow (+ 5 pounds) for an estimated value of \$538,560.

Agents reported on continued efforts to get producers to use artificial insemination and improve reproductive efficiency. Nearly 200 herds increased use of artificial insemination affecting over 23,000 head including many replacement heifers. Improved estrous detection and AI techniques among 10 herds in one area was estimated to return over \$700,000 in gross margins. New publications on calf and heifer management have helped emphasize improved strategies for growing replacement heifers. For example, one 200-cow producer improved heifer management and was able to reduce age at first calving by four months while producing extra heifers for sale. Increased production (\$35,000) and sale of heifers (\$15,000) in that herd was valued at \$50,000.

A recent trend of interest in intensive grazing continues with 73 producers starting or expanding grazing programs in the past four years. Individual producers have reported significant savings in

feed costs while production responses have been variable. One producer received a \$9,500 grant from the Tennessee Valley Authority to improve his grazing management system and to implement other sustainable practices. A three-state Regional Center for Sustainable Dairy Farming was funded for three years beginning in April, 1994 to examine grazing-based dairy systems in contrast to confinement-fed dairy systems. Funding was obtained in 1995 to convert another state-owned herd to a grazing-based system to enable 'whole farm' monitoring of economic and environmental impacts.

Regulations on waste management and water quality will mean that most dairies will need to have waste management plans in place by December, 1997. Several producers may have difficulty meeting requirements given physical and economic constraints. Most dairy extension agents have begun to work with producers and other agency representatives to assist in development of nutrient management plans.

4. Horse owners and horse numbers continue to increase in most areas of the state. Agents report working locally with producers on general management, feeding, and management of pastures. Opportunities to lower feed costs with improved forage management received emphasis in the past four years. Six grazing management trials were conducted by one agent to determine weight changes and number of grazing days for continuously grazed compared to rotationally grazed horses. This information was made available to producers during a state two-way television series on hay and pasture management and also at the 1995 Equine Nutrition and Physiology Symposium.

Each year a series of several state-wide short courses and clinics are held. They have included short courses for Protection Officers, new horse owners, performance horses, breeding, nutrition, health, and foaling as well as riding clinics and judging certification clinics. These events include about 15 to 20 days of instruction each year and attract about 2,000 horse owners from as many as 19 states and two foreign countries. These educational programs are held in cooperation with the North Carolina Department of Agriculture, the North Carolina Horse Council, and other departments within NCSU. Additional instruction is provided at the county level through conferences on a variety of topics. participation over the past few years has ranged between about 5,500 to nearly 7,700 horse owners per year and over

30,000 contact hours.

Also, 1,932 horse owners were participants over two years in interactive television broadcasts (twelve 2-hour sessions) to up to seven areas of the state. These broadcasts covered lectures and discussion on basic nutrition, exercise physiology, behavior, body condition scoring, breeding, facility design, health, hay quality, pasture management, and basic horse training information. Feedback from evaluation forms indicated that over 90% of participants accepted the distance learning methodology and were willing to pay \$3.00 to \$9.00 per 2-hour broadcast. When savings in specialist time and travel were considered, the distance learning broadcasts were a cost-effective alternative delivery system. Many producers reported from a few hundred to several thousand dollars in potential increased earnings or savings as a result of information obtained during these broadcasts.

Under the leadership of the local Cooperative Extension Service, horse owners in one county with 6,500 horses valued at over \$8,500,000 addressed a concern of appropriate response to various equine emergencies including small or large-scale disasters. Producers united to form the Moore County Equine Emergency Response Unit in 1994. The group includes 86 volunteers that has conducted educational programs on equine emergencies for 196 citizens. Further recruitment and training of volunteers, training of EMS personnel on procedures for handling and restraining horses, and development of a written equine emergency response plan are among current activities.

5. Interest in small ruminants (particularly goats) has really grown in the past four years. Agents collectively reported that 1001 producers expanded herds by 14,689 additional animals. The newly formed Southeastern Meat Goat Association is becoming quite active in working with NCSU Cooperative Extension to promote field days and other educational activities. Members of that group were responsible for securing legislative funding for support of a faculty position in research and extension to work with the emerging goat industry. Consistent local supplies of goats, genetic selection criteria, and long-term market and processing stability have yet to be established. Producers are interested in goats for brush control, for complementary grazing of pastures with cattle, and for supplementary income potential. Genetics of meat goats may be improved through importation (1993) of embryos of the meaty South African Boer Goat. These

are being used in public (NCSU, NCDA) and commercial breeding programs in several areas of the state.

6. Swine production continues to expand and North Carolina has emerged as a national leader in size of industry (currently 2nd) and in development of integrated production systems. Swine production alone accounts for over one billion dollars in live hogs annually and total economic impact is estimated to be over 3.6 billion dollars.

Extension agents and specialists have worked closely with swine producers at all levels to address concerns of waste management, water quality, and odor control. Significant effort has been recorded in improving design of ventilation systems in swine buildings. This improves the rearing and working environment and has potential to help lower concerns about odor. The swine industry has been actively encouraged to improve waste management strategies and North Carolina producers have become leaders in development of forage-cattle systems to help use and recycle nutrients available from lagoons associated with intensive swine production facilities. The impact of such systems includes diversity of animal enterprises, the potential for more favorable nutrient and water management, and greater stability of animal industries in the state. Use of nutrients from both swine and poultry enterprises have resulted in agents reporting starting or expansion of systems integrated with other enterprises on 3,500 farms.

Swine on-farm performance testing programs have greatly benefitted by use of real-time ultrasonography to evaluate back-fat thickness and loin area. This technology allows for more rapid screening of potential breeding stock to produce leaner pork. Over 16,000 head of swine are enrolled in the Extension-sponsored performance testing program each year. Use of ultrasonography in genetic improvement programs among vertically integrated swine companies is also evident.

Agents and specialists have also reported increased use of feed testing and ration formulation while working with independent producers as well as with professional nutrition consultants. The annual Swine Nutrition Conference is well attended locally and is recognized nationally and internationally as an outstanding educational event. Improving nutrition of swine and other livestock species has potential for progress in reducing amounts of

some nutrients in manure that may potentially accumulate when manure is applied to various crops.

Healthy hog seminars continue to be popular and attract integrators (management and professional staff), contract growers, independent producers, and others in allied industries. An innovative system for collection of the small percentage of pigs that die at various ages was started in 1994 in two eastern North Carolina counties. Now that program is self supporting and over 80,000 pounds of mortality is collected each month for rendering (480 tons per year). This system has stringent biosecurity measures to prevent transfer of disease and is less costly and more environmentally sound than either incineration or burial. Another strategy being considered in other counties of the state is to use dead stock as part of an on-farm composting system.

Artificial insemination use is increasing rapidly with estimates of over 210,000 sows and gilts being artificially inseminated annually. This is about 35 percent of the North Carolina sow inventory and much above the estimated use of AI nationally (12 to 15%). Applied research studies conducted by NCSU on swine farms show promise for use of real-time ultrasonography for early diagnosis of pregnancy to improve breeding efficiency.

Recent price fluctuations mean that aggressive marketing and cost-control strategies are needed in order to stay competitive and agents reported that 331 producers of over 3,110,000 pigs had improved marketing programs in the past four years. Eastern Foods, Inc. was organized as buying/marketing cooperative of independent swine producers this past year in response to several Extension swine advisory committees expressing the need for such a network. Many counties in eastern North Carolina are represented in this group which has grown to include owners of over 53,000 sows. An office has been established, a manager hired, and members expect to save 5 to 10% on inputs and gain \$2.00/cwt in market premiums which would amount to an increase of approximately \$10,000,000 for the cooperative members. Interest in this concept is also spreading to producers in Virginia and South Carolina as well as to other parts of North Carolina. Independent swine producers in one county in the piedmont agreed to new grade and yield marketing terms and a \$0.25 per pig promotional program with packing plants in Pennsylvania and South Carolina. Independent swine producers in the northwestern area of the state also formed a marketing network aimed at

decreasing hauling time, assuring a stable market for hogs, and increasing net profit. Approximately \$2,000,000 worth of hogs are marketed each year through this network.

7. One thousand three hundred and nine (1,309) small, part-time and limited resource farmers became aware of the economic potential of livestock production and/or gained knowledge of correct management procedures pertaining to the production of feeder pigs, rabbits, sheep and meat goats. Thirty-Five (35) meetings and tours, involving specialists and agents, were conducted which centered around various production, management and marketing topics. Six hundred and twenty (620) specialists, agents, farmers, and interested individuals attended meetings statewide on the production and marketing of goats for meat. Seven hundred and eighty-one (781), 1,226, and 174 pieces of information, pertaining to rabbits, sheep and goats, and swine, respectively, were distributed to individuals seeking information on the production and marketing of these livestock enterprises.

Part-time, limited-resource producers are learning how to improve their economic situation by diversifying their farms through systematic adoption of new, innovative livestock enterprises, such as commercial rabbit production or the production of goats for meat. Small farmers have begun to understand the importance of enterprise selection and are making better use of available resources, existing markets, and new marketing strategies and technologies. For example, one farmer on 50 acres has increased swine production by 3 pigs per litter, improved herd genetics, and begun to market on graded feeder pig sales. He has also diversified by adding 3 acres of vegetables. All of these strategies have improved his family income.

**E. NARRATIVE AND IMPLICATIONS** (optional; include program accomplishments or impacts not described in Items C and D).

1. Animal enterprises (including poultry and aquaculture) now account for over half of gross farm income in North Carolina. This diversity in production has allowed for greater stability of agricultural income as other enterprises become less competitive. The swine industry has expanded most rapidly and is now second only to Iowa. Regulatory issues will likely slow the rate of growth of animal industries in the future. Environmental issues have resulted in development of memoranda of agreement between livestock integrators and county boards of commissioners in a few



counties. These agreements outline suggested setbacks and require written documentation that neighbors are informed when new swine or poultry facilities are proposed. Producers are also beginning to show a willingness to 'police their own' relative to animal waste issues. Individual producers have been sent letters when other producers have become concerned about suboptimal practices that leave a bad image for the total industry.

2. Formal compliance procedures are now being required for livestock producers to prevent water quality problems. These regulations will require inter-agency cooperation to see that registration, certification, and implementation of plans are accomplished approved waste management plan in place by December 31, 1997). Extension's role is to provide education, technical information, and to assist with plan development. Although this is not a direct regulatory role, there is concern among livestock and dairy agents about their specific responsibilities and about the impact on their other program efforts. Heavy rains in June, 1995 led to serious discharge problems from some waste storage lagoons and public pressure is mounting to ensure that environmental issues are addressed.
3. Creative Extension programs and technologies are still needed and will continue to play an important role in the transfer of knowledge and information about production and economic potential of livestock to small, part-time, and limited-resource farmers. Also, farmers starting new animal enterprises of all sizes will continue to provide challenging opportunities for educational programs.
4. During the past two years, Extension Agents have been challenged to provide non-competitive livestock-related learning opportunities for youth under the age of nine. This has generated much discussion and options for developing age-appropriate activities have been addressed by a committee of Extension personnel and animal industry leaders.
5. Greater sophistication of communication systems will provide further challenges and opportunities for program delivery. For example, interactive television, satellite down-links, videotaped program modules, and direct access of producers to electronic mail, internet, and the world-wide web were all used for program delivery in one or more livestock commodity groups in the past four years. These methods of program delivery will require evaluation of and probable changes in current staffing plans to

effectively serve animal industries. These systems have implications for shared programs across traditional boundaries (other universities, community colleges, and county, state, and national borders).

6. Other issues of public concern requiring continued program efforts include providing information to the general public on food safety, animal welfare, and contributions of animal agriculture to food production and the economy.

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Charles M. Stanislaw  
Donald P. Wesen (deceased 7-25-94)  
Lon W. Whitlow

## **ACCOMPLISHMENT REPORT 1992-1995**

### **NC12 - POULTRY PRODUCTION, PROCESSING AND MARKETING**

#### **A. OBJECTIVES**

One hundred persons considering contract poultry production will understand the concept and economic return of contract production.

At least 2,000 of the more than 4,000 contract growers of poultry will know how to keep enterprise records.

Seventy-five poultry producers and agricultural professionals will know how to find outlook information, how to interpret it, and how to use it in planning.

Hatchery personnel from ten poultry companies will learn factors affecting the fertility and hatchability of broiler and turkey hatching eggs.

Ten poultry companies' production managers and four nutritionists will learn and adopt information relating to feed formulations, improved pellet quality, efficacy of new feed additives, improved feed production time, and feed uniformity.

Five turkey companies will increase the use of restricted feeding of breeder turkeys and modern turkey semen storage programs.

Fifty poultry flock supervisors and production managers will increase their understanding of the mode of action and application of vaccines and pharmaceuticals.

Two hundred poultry production managers, flock supervisors and growers will increase their awareness of the importance and implementation procedures of biosecurity and will adopt practices that will decrease medication costs while maintaining equal bird performance.

One hundred poultry producers/service personnel will institute regular monitoring procedures for pests and ectoparasites, recognize problems prior to the pests and ectoparasites exceeding economic threshold, and institute appropriate control/management practices.

Ten poultry production managers, five nutritionists, and ten contract supervisors will learn nutrition and management programs that reduce poultry mortality.

Four hundred North Carolina poultry growers and industry personnel will become aware of environmentally sound and approved mortality pit construction criteria.

Two hundred North Carolina poultry growers will construct 200 mortality composting units.

One hundred people in the poultry industry will learn the potential of fermentation preservation of mortality as a precursor for extrusion or rendering.

One poultry company will adopt extrusion for recycling poultry mortality, hatchery offal, and/or processing by-products into feed ingredients.

Three hundred poultry growers, crop farmers, poultry company personnel will adopt economical BMP (Best Management Practices) related to manure containment, waste water treatment, by-products recycling, and land application systems which conserve natural resources and are environmentally sound.

Ten poultry companies will learn Salmonella control procedures and two integrated companies will adopt Salmonella control programs.

Ten poultry processors will learn labeling regulations and scientific nutrition information and provide consumers with up-to-date nutrition information on new label formats.

## **B. NON-EXTENSION RESOURCES**

- |    |  |          |
|----|--|----------|
| 1. | number of volunteers                         | 804      |
| 2. | total number of volunteer-days               | 723      |
| 3. | value of federal government funding (grants) | \$81,761 |
| 4. | value of state government funding (grants)   |          |
| 5. | value of local government funding (grants)   |          |
| 6. | value of private funding (grants)            | \$88,774 |

## **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1. The number of contract growers that gained knowledge of keeping enterprise records 1,569.
2. Number of growers assisted in building new houses 305.

3. The number of growers that adopted:
  - a. efficient lighting technology 563, number of houses 885.
  - b. efficient ventilation technology 758, number of houses 1,274.
  - c. labor saving technologies 602, number of houses 608.
4. The number of growers/service personnel that regularly monitored pests and ectoparasites 1,299.
5. The number of growers that implemented:
  - a. mortality composting technology 1,152, number of houses 3,253.
  - b. other methods of improved litter management 1,166, number of houses 2,256.
6. The number of growers that implemented Best Management Practices related to poultry manure and litter utilization 1,410, number of houses impacted 3,502.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

Twenty-nine people representing 11 different poultry companies participated in a "hands-on" workshop where they learned to develop a HACCP plan for their company aimed at reducing pathogens.

During the years 1992-95, 1,152 poultry growers have adopted mortality disposal methods that recycle the mortality by using mortality compost as plant fertilizer or farm pickup and rendering. With an average of 16,088 annual pounds of mortality per house, 26,167 tons of mortality are now being recycled that were being buried or placed in underground pits in the past. This accomplishment has been a collaborative effort with N. C. Department of Agriculture (regulatory), Soil Conservation Service (cost share), N. C. Cooperative Extension Service (basic design criteria, field demonstrations and other educational programs), and the poultry industry.

Over 100 people learned about the potential of lactic acid fermentation preservation of mortality and one large integrated turkey company is field testing the method.

Poultry houses that adopted energy saving lighting during the years 1992-1995

reached 885. A recent publication indicates that annual savings of \$535 per house can be expected by adopting this technology. This means that producers owning these houses saved an estimated \$473,475 during the years 92-95 in energy costs.

Four hatcheries in the state were disposing of 70 tons of hatchery offal in the county landfill per week at \$28 per ton or \$1,980 per week or over \$100,000 annually. Using technical information and other assistance from North Carolina Cooperative Extension Service, the material was composted saving that much material going into the landfill and creating a usable recycled product for crop fertilization and soil amendment. Newer technology utilizing the dehydrated liquid portion of the offal as pet food and extrusion of the solid portion as feed for poultry and livestock offers even more promise as a recycled product.

Hatchery personnel from 13 poultry companies learned information on hatching egg breakout, handling hatching eggs, the biology of the hatching and how to collect information from which to make management decisions.

Two thousand four hundred producers, integrator service personnel and extension agents participated in more than 31 educational events (conferences, workshops, and updates). Polling of 1% of the participants indicated that approximately 50% acquired a greater understanding of pest management practices for particular pests. Another 15% indicated they adjusted methods and timing of pesticide application to manage pest complexes.

Eight commercial egg processors participated in field trials to improve current cooling environment capabilities. Four commercial egg processors adopted and implemented new techniques to cool shell eggs more rapidly which helped them maintain their egg markets.

Six commercial egg processors participated in waste load monitoring field project. The results were provided to the individual processors and used as baselines for reducing waste loads and egg losses during processing. Calculations show that the processors have a potential of saving 23 cases from being broken if machines are adjusted properly. At a value of \$22.50 per case this could amount to as much as \$524.40 per day.

The effects of mycotoxins are estimated to cost animal producers \$37 million annually. Yet control efforts have been stymied by: 1. The lack of agreement on mycotoxin levels tolerated by animals and 2. expensive and ineffective detoxification methods. A comprehensive extension publication was developed in an effort to make sense of the mycotoxin situation and a simple, but effective method for detoxification and disposal of aflatoxin contaminated corn was developed and field tested. If these efforts reduce the effect of mycotoxins on animal productivity by 1%, it will save animal producers \$3.7 million annually.

A Hazard Analysis and Critical Control Points (HACCP) program outline for control of Salmonella in feed mills was developed, presented at several professional meetings and published in a leading trade journal. The outline, which provided background information on HACCP and Salmonella within the feed mill environment, provided feed manufacturers with a valuable initiation point for HACCP development. One poultry company adopted an adaptation on the plan developed and five other companies are presently evaluating the plan.

The Feed Quality Assurance Laboratory Workers (FQALW) educational effort has been conducted continuously since 1984 and has allowed members to network with each other, provided insight into the educational needs within each laboratory and has provided contacts for the dissemination of laboratory based information. The contacts within this organization were employed in 1994 to disseminate information regarding a potentially damaging residue situation in feed grade fat. As a result of these contacts, the situation was averted.

Feed manufacturers roundtables were developed which involved feed manufacturers who produce a combined total of well over 4 million tons of feed annually. Roundtables have provided feed manufacturers with a forum in which to express their concerns and share their expertise with fellow manufacturers. In addition, a survey of the equipment and tonnages produced by each mill have provided manufacturers with the means to quickly and easily obtain emergency parts and keep up with production needs.

Four state-wide nutrition conferences and eight county educational programs were conducted where nutritionists and poultry production managers learned how to improve feed formulation and nutrition programs to reduce poultry mortality and reduce nutrient wastes. Five turkey companies and two broiler companies adopted nutritional strategies to improve disease resistance and health. For example, most of the industry has increased Vitamin E supplementation in turkey starter feed as a result of our educational programs, resulting in a reduction of mortality by about one percentage point, which translates into about \$1 million greater income.

Twenty poultry and egg processors were provided nutritional labeling information through written and/or oral presentation. One presentation generated multiple written comment to FDA regarding proposed nutrition labeling regulations. Assistance with interpretation of regulations was provided to ten companies.

#### **E. NARRATIVE AND IMPLICATIONS**

Many of the program objectives have met or exceeded the stated four-year planning goals.



Adoption of BMP and improved technology in areas of utilization of poultry litter and manure at agronomic levels and environmentally sound mortality disposal methods have exceeded expectations. Continued educational programs in this area are needed so that the entire poultry industry utilizes environmentally sound and economically feasible practices of waste utilization.

North Carolina has water quality regulations in place for poultry and livestock producers that provide a proactive system to prevent water quality degradation from confined animal production units. Eighty Cooperative Extension personnel, 300 members of the Natural Resources Conservation Service and 30 agricultural consultants have completed certification training in nutrient management conducted by N.C. Cooperative Extension Service. These highly trained individuals will provide the nucleus of expertise to assist poultry producers with farm nutrient management plans and other nutrient management practices that will enable the industry to continue efficient, environmental friendly production.

Educational programs in enterprise budgets and other business management skills have successfully targeted poultry growers in the state. Programs in recordkeeping and decision making in regards to renegotiating loans have particularly assisted growers in improving income levels.

The integrated pest management (IPM) component consisted primarily of providing training and other educational assistance to industry personnel, county agents and poultry producers. Efforts have resulted in clientele instituting some form of site and pest specific action threshold supported by pest monitoring. Not only are improvements in pest management essential for optimum flock performance and production income, but they are increasingly important with respect to reductions of nuisance pests such as flies and darkling beetles. Educational programs during this planning period and continued efforts are expected to produce wide spread adoption and refinement of pest management technologies by the poultry industry.

**F. COORDINATOR AND TEAM MEMBERS:**

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S. M. Stringham

## ACCOMPLISHMENT REPORT 1992-1995

### NC13 - Aquaculture and Commercial Fisheries Production, Processing and Marketing

#### A. OBJECTIVES

Increase the knowledge level of Extension Agents, producers and potential producers in the appropriate aquaculture technology options for use in their region of NC. Expand the aquaculture industry in NC and increase its profitability. Reduce the real or perceived impact of commercial aquaculture activities on the environment in NC. Continue marketing and production economics workshops for aquaculture producers/potential producers, lenders and other interested individuals. Develop a Hazard Analysis Critical Control Point (HACCP) training program for the seafood processing industry, which can be used in North Carolina and nationally, to assist the industry in understanding HACCP. Assist State and regional fishery managers in rebuilding important commercial and recreational fish stocks by: improved valuation techniques applied to changes in commercial harvests, improved understanding of the economic effects of reallocating harvests from the commercial sector to the recreational sector (including improved understanding of size and timing of recreational benefits), and enhanced understanding of costs of water quality improvements from alternative techniques to reduce agricultural nutrient run-off.

#### B. NON-EXTENSION RESOURCES

1.	number of volunteers	341
2.	total number of volunteer-days	489
3.	value of federal government funding	\$568,656
4.	value of state government funding	\$554,322
5.	value of local government funding	0
6.	value of private funding	\$457,415

Total External Funding: \$1,580,393

#### Grants

AquaOptima, Inc., Trondheim, Norway. Evaluation of the EcoFish Tank System for the Production of Warmwater Finfish Utilizing Water Reuse Technology. \$24,000, In-Kind, \$35,000

Carolina Power and Light Company. A Demonstration and Evaluation of Heat Pump and Thermal Storage Technology for the Production of Finfish in Recirculating Aquaculture Tank Systems. \$30,800, In-Kind, \$12,200

Gen-AI, Inc., Memorandum of Understanding. The Demonstration of Finfish Production in Recirculating Systems. Phase II. \$7,500, In-Kind, \$8,500

Gen-AI, Inc., Memorandum of Understanding. The Demonstration of Finfish Production in Recirculating Systems. Phase III. In-Kind, \$2,000

Gen-AI, Inc. The Demonstration of Fishfish Production in Recirculating Systems. \$15,000, In-Kind \$17,000

Gen-AI, Inc.: The Demonstration of Finfish Production in Recirculating Aquaculture Systems in the Piedmont of North Carolina. \$15,000

National Fisheries Institute. HACCP Certification and Training, Travel Expenses. \$6,172.

National Coastal Resources Institute: Hybrid Striped bass Culture: Production, Demonstration and Reproduction. \$99,000

National Coastal Resources Institute: Commercial Scale Development of Production and Distribution of Intermediate Blue Crab Products. \$60,953

National Council for Agricultural Education. Development of a Prototype Recirculating System for use in Secondary Education. \$9,040

National Marine Fisheries Service. The South Atlantic and Gulf Snapper/Grouper Complex: Demand Estimation for Selected Individual Species and the Composite Species Complex. \$110,000

NCSU Fisheries & Wildlife Program. Bioeconomics of Fishery Harvest Allocation. \$1,200.

North Carolina Agricultural Foundation. Economic Analysis of Agricultural Nutrient Run-off Reduction. \$29,000

North Carolina Biotechnology Center: Application of Biotechnology to Aquaculture: Development of Integrated Systems for the Management of Fish Diseases Under Intensive Culture Conditions. \$37,690

North Carolina Department of Commerce. Aquaculture Energy Guidelines Development: Assimilation and Investigations of Energy Use of Aeration, Pumping and Other Processes in Fish Farming. \$20,000

North Carolina Department of Economic and Community Development, Energy Division. The Demonstration of Fishfish Production in Recirculating Aquaculture

Systems in the Piedmont of North Carolina. \$67,500

North Carolina Department of Commerce, Energy Division. The Demonstration of Finfish Production in Recirculating Aquaculture Systems in the Piedmont of North Carolina. Phase II. \$67,500

North Carolina Department of Commerce, Energy Division. The Demonstration of Finfish Production in Recirculating Aquaculture Systems in the Piedmont of North Carolina. Phase III. \$79,424

North Carolina Department of Economic and Community Development, Energy Division. The Demonstration of Coldwater Fish Production in Recirculating Aquaculture Systems. \$130,000

North Carolina Department of Economic and Community Development, Energy Division. The Demonstration of Coldwater Fish Production in Recirculating Aquaculture Systems, Phase II - Commercial Demonstration and Evaluation. \$73,708

North Carolina Crawfish Growers Association: Evaluation of Paddlewheel Aeration in Crawfish Ponds. \$600

North Carolina Rural Economic Development Center: Demonstration of a Wetland Nursery for Aquaculture Water Treatment. \$41,000

North Carolina Division of Emergency Management and North Carolina Division of Marine Fisheries: Workshops on Economics of Natural Resource Damage Assessment and Economics of Allocating Fishery Harvests Between Commercial and Recreational Fishermen. \$8,000

North Carolina Trout Growers Association. Coordination of Trout Production, Processing and Marketing. \$10,000

North Carolina Division of Marine Fisheries. Fisheries Economics Summit. \$4,500.

North Carolina Division of Emergency Management. The Economics of Natural Resource Damage Assessment. \$4,000.

North Carolina Biotechnology Center. Application of Biotechnology to Aquaculture: Development of Integrated Systems for the Management of Fish Diseases Under Intensive Culture Conditions. \$37,690

North Carolina Crawfish Growers Association, Evaluation of Paddlewheel

Aerator for Crawfish Production Ponds. \$650.

North Carolina Rural Economic Development Center. Water Renovation in Aquaculture Production Systems Utilizing Wetland Plant Nurseries. \$41,000

South Atlantic Fishery Management Council, Center for Marine Conservation, National Marine Fisheries Service, Branch Banking and Trust, Outer Continental Shelf Office, Office of Marine Affairs, NCSU Fisheries and Wildlife Program: Miscellaneous support for meetings, workshops, and conference participation. \$4,600

UNC Sea Grant. Controlled Reproduction and Reproductive Physiology of Striped Bass. \$65,853

UNC Sea Grant. The Bioeconomics of Fishery Harvest Allocation. \$4,800.

UNC Sea Grant. Improved Valuation of Fisheries Harvest: Application of the General Equilibrium Derived Demand. \$31,593.

UNC Sea Grant. Moisture Content of North Carolina Bay, Calico, and Sea Scallops at Harvest, Processing, and Retail. \$4,114.

UNC Sea Grant. Development of Marine Industries Harvesting & Processing Systems: Seafood Science & Technology Advisory Services. \$125,899.

UNC Sea Grant: Growth Potential of Runted Hybrid Striped Bass Fingerlings. \$5,000

UNC Sea Grant: Controlled Reproduction and Reproductive Physiology of Striped Bass. \$76,000

UNC Sea Grant: Improved Valuation of Fisheries Harvest: Application of the General Equilibrium Derived Demand. \$31,593

UNC Sea Grant: Bioeconomics of Commercial-Recreational Fishery Harvest Allocations. \$64,204

USDA Southern Regional Aquaculture Center. Characterization of Finfish and Shellfish Aquacultural Effluents. \$45,000

List of Outside Cooperating Organizations/Agencies:

In addition to the funding agencies listed above: NCSU Aquaculture Office; NCSU Division of Seafood Marketing; U.S. Food and Drug Administration;

NCDA Veterinary Diagnostic Laboratories; NCSU Veterinary College; NC Soil and Water Conservation Service; NC Crawfish Producers Association; NC Trout Growers Association; NC Division of Environmental Management; NC Wildlife Resources Commission; U.S. Fish & Wildlife Service; North Carolina Department of Education (Ag. Education); NC Division of Marine Fisheries; National Marine Fisheries Service; South Atlantic Fishery Management Council; Gulf of Mexico Fishery Management Council; Tennessee Valley Authority.

### C. **TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1. Number of individuals with increased knowledge or skills in aquaculture or commercial fisheries production, processing or marketing, 10,629.

#### Current Statistics

2. Mountain trout:
  - A. Number of commercial facilities, 152.
  - B. Economic value of aquaculture products produced, \$8,104,710.
  - C. Pounds produced, 5,223,305.
  - D. Number of cubic feet of raceways in production, 239,015.
3. Catfish:
  - A. Number of producers, 57.
  - B. Economic value of aquaculture products produced, \$3,360,000.
  - C. Pounds produced, 4,200,000.
  - D. Number of acres in production, 1,500.
4. Hybrid Striped Bass:
  - A. Number of producers, 17.
  - B. Economic value of aquaculture products produced, \$1,350,000.
  - C. Pounds produced, 530,000.
  - D. Number of acres in production, 250.
5. Crawfish:
  - A. Number of producers, 15.
  - B. economic value of aquaculture products produced, \$104,800 (value of crawfish products imported into NC and sold, about \$20,000).
  - C. Pounds produced, 52,400.
  - D. Number of acres in production 158.25.

6. Tilapia:
  - A. Number of producers, 2.
  - B. Economic value of aquaculture products produced, \$43,500.
  - C. Pounds produced 30,000.
  - D. Number of cubic feet of tank volume in production, 218,000.
7. Ornamentals:
  - A. Number of producers, 4.
  - B. Economic value of aquaculture products produced, \$850,000.
  - C. Pounds produced, na.
  - D. Number of acres in production, 105.
8. Gamefish fingerlings:
  - A. Number of producers 9.
  - B. Economic value of aquaculture products produced, \$49,000.
  - C. Pounds produced, 2,500.
  - D. Number of acres in production, 18.
9. Tubifex and Lumbriculus worms (byproduct of trout production):
  - A. Number of producers, 1.
  - B. Economic value of aquaculture products produced, \$62,675.
  - C. Pounds produced, 12,535.
  - D. Number of acres in production, 2.

**D. OTHER INDICATORS AND ACCOMPLISHMENTS:**

The recession of the early 1990's appears to be a thing of the past. During 1992-95, efforts of the extension aquaculture agents and specialists have focused on educating those business and agribusiness individuals and firms with interests in exploring aquaculture as a diversification activity, in addition to educating and assisting our existing aquaculturists. Since 1992, a number of new catfish and hybrid striped bass production sites are being developed. We believe that these new sites are a direct result of workshops and evening talks given by NCCES personnel. A major focus of our programming has also been to educate lending institution personnel. The primary "bottleneck" to the expansion of the aquaculture industry in general and the catfish industry in particular is the unavailability of loans from traditional sources for agribusiness. The NCCES has joined with personnel from the North Carolina Department of Agriculture to hold numerous workshops for bankers in North Carolina. NCCES has taken the lead



in presenting aquaculture information to NC residents. Since the first meeting in 1989, NCCES personnel have played a major role in the development and implementation of the annual North Carolina Aquaculture Development Conference. In addition to the help traditionally given to farmers within aquaculture, NCCES agents and specialists have had an impact on the education of high school students within NC. Efforts have focused on assisting Vo-Ag. Teachers throughout the state with the development of teaching laboratories, as well as the appropriate curricula for teaching the basic sciences through aquaculture.

#### Warmwater Aquaculture:

There are now 17 hybrid striped bass (HSB) farms in North Carolina. Five of the farms put their first crop in the water in 1994, and anticipate harvest to begin in 1995. The total acreage in production is now 290 acres, with farms ranging in size from 3 acres to 72 acres of water. North Carolina now has its second fingerling producer for HSB. Concern about yellow grubs have diminished a little in the past year, but a few farms had to destroy whole ponds of fingerlings that were infested with grubs. A mechanism was put in place this spring for producers to have fingerlings checked for grubs by a veterinarian. All fingerlings sold were checked and cleared, but farmers still need to continue to control snails, and thus grubs, through good management practices taught through NCCES.

Crawfish production practices in North Carolina continue to improve. Yields for several crawfish producers averaged over 700 lbs. per acre for the first time during the period of this project. Crawfish marketing has also been a major success for the North Carolina crawfish industry. At the beginning of this project, marketing was identified as an area of need by the crawfish industry. Producers were having trouble identifying markets for their retail sales. Personnel from the NCDA division of marketing and seafood marketing were contacted and worked together with NCCES agents to develop a marketing strategy. NCDA Farmer's Markets were identified as possible marketing sites that could benefit the industry by increasing the visibility and public awareness of their product. The following table of sales of the NC Crawfish Growers Association's Crawfish Promotional Boil at the Raleigh Farmer's Market outlines the success the industry has had in its marketing efforts. The same kind of success has also been seen at similar promotional boils at the farmer's market in Charlotte.

Year	lbs. Brought	lbs. Sold	Time to sell-out
1990	1,100	750	3.5 hours
1991	1,200	1,200	45 minutes
1992	2,200	2,200	90 minutes

1993	3,000	3,000	90 minutes
1994	4,100	4,100	7 hours (1)
1995	3,300	3,300	90 minutes (2)

- (1) A publicity controversy surrounding the boil was thought to be the cause of the less than frenzied sales than had occurred at the previous boils.
- (2) Prices were increased this year from \$2.00/lb for live preorders to \$2.50/lb., \$2.00/lb live non-preorder to \$3.00, and \$4.00/lb for cooked remained the same. The NCCGA has had such success in marketing with the boils in Raleigh, that the producers now have more demand than they can supply.

#### Water Reuse and Tilapia Production:

Conceived in 1989 and growing to fruition at the start of this work plan, the North Carolina Fish Barn has become a model site of recirculation aquaculture technology. From 1991 to 1994, the North Carolina Fish Barn project evaluated and demonstrated a myriad of available technologies for this type of fish culture. In the final year of phase II, we successfully cultured over 26,000 pounds of Tilapia fish. While results of this demonstration program showed NC residents that fish culture could be accomplished in typical barns, the labor required to do so did not fit well with diversification efforts on full-time and part-time farms. In 1994-95, Phase III of the Fish Barn project was implemented using a new tank technology from Norway. Combining the results of four years of technology development at the Fish Barn with this new tank technology has resulted in a state-of-the-art system that grows more fish per gallon, utilizes less utilities, and reduces labor to less than two hours per day. In 1995, the NCCES began assisting North Carolina farmers in the implementation of this new technology in on-farm demonstrations at commercial scale.

The National Council for Agricultural Education of Alexandria VA, provided a grant to the North Carolina Cooperative Extension Service Aquaculture Program to design and build a model aquaculture recirculating system (MARS) for high school lab use. The model system is located on the NCSU campus in Raleigh, adjacent to the Jane S. McKimmon Center. The system was designed to provide Science and Agri-science educators with the infrastructure to teach science to students through aquaculture in a laboratory setting.

During the week of September 10th, 1992, NCSU hosted an in-service training conference in Raleigh, introducing the Council's new aquaculture curriculum to 250 teachers, administrators, and extension professionals from all 50 states and all US trust territories. All of the teachers and extension personnel were

introduced to the MARS unit and provided with a detailed manual on its construction and operation. Since the training conference, MARS units have been constructed at numerous locations across the USA. Within North Carolina, Riverside HS in Durham, and a High School in the Charlotte area are building a MARS unit for use within their agri-science curriculum. The Council curriculum with recirculating aquaculture labs are being instituted in no less than 6 schools across the state.

#### Coldwater Aquaculture:

One focus of this project's efforts has been to increase profitability and efficiency of the coldwater aquaculture industry in North Carolina. Although markets for trout are very strong, the industry has shown a relatively slow annual growth rate of about 5%, and profit margins are extremely variable among farms. Though North Carolina's trout industry is over 30 years old, the industry remained fragmented and had no operating mechanism through which the production of trout could be aligned with the processing and marketing needs of the processors. Beginning in 1993, NCCES took the lead in developing a cooperative project with NCDA and the NC Trout Growers Association to establish a means of enhancing production/processing coordination. As a result of this project, two farms have entered into contract production, eight detailed production plans have been developed for trout farms on a site-specific basis, and many other trout farmers are anxious to implement this type of planning. As another result of this initiative, a position was created within NCDA to continue this work beyond the scope of the initial two year project. To deliver the programmatic message of the coldwater aquaculture project, extension personnel have used a variety of methods including workshops, farm tours, demonstration projects, direct contacts, and a regional newsletter to improve farm management and profitability. These efforts have produced concrete results. For example:

- A facility for the demonstration of highly intensive production of coldwater fish, the Trout Barn, was constructed in 1993, and has been the focus of workshops on this and other topics since that time. This type of culture system allows better production planning through more predictable, controlled production. One commercial trout hatchery has implemented this technology to nearly double fingerling production with their limited water supply. This farm is serving as a commercial demonstration cooperator with NCCES.

- Five waste management systems are now in various stages of completion and operation, utilizing hydroponics, composting, and sand-filtration technology. All are serving as demonstration farm sites for NCCES.

- Three on-farm demonstrations using comprehensive record-keeping systems are active.

- One demonstration site established to examine net-pen aquaculture in freshwater in 1994 has expanded to commercial scale in 1995, with anticipated new

production of trout approaching 100,000 pounds by 1996.

-Six Trout Aquaculture Newsletters per year are published with a circulation of 270. Articles are frequently picked up and published by several national aquaculture newsletters and magazines.

#### Seafood Processing:

On March 22, 1993, Dr. David Kessler, Commissioner of the U.S. Food and Drug Administration, announced that the FDA was moving forward with plans to mandate the inspection of seafood processing plants, based on Hazard Analysis Critical Control Point (HACCP) principles. When this will become reality is speculative, but the final rules will likely be released in 1996. Nonetheless, as a result of this mandate the seafood industry will require a significant level of educational assistance in the form of HACCP training. Toward this end, extension specialists in the Department of Food Science have taken the lead in developing such a training program. In 1993, six programs were conducted across the country for 125 seafood processors. Coordination for these programs was provided by the National Fisheries Institute, and extension personnel in various states (CA, RI, WI, VA, NC, LA, and FL) participated as trainers. In 1994, thirty seafood processing firms, represented by 40 individuals, attended workshops explaining the specifics of the U.S. Food and Drug Administration's proposed rule to establish procedures for the same processing and importing of fish and fishery products (Mandatory HACCP-based Inspection). As a consequence of these meetings, industry was able to formulate comments on the proposed rule and submit them to the FDA during the comment period this year. Additionally, one catfish processor was the third plant in the country to complete the necessary requirement to participate in the National Marine Fisheries Service (NMFS) voluntary HACCP inspection program. The NMFS program is very rigorous, and offers valuable marketing opportunities to companies willing and able to meet the requirements.

Work is continuing in developing the HACCP Training curriculum, with NCSU coordinating this effort with industry, academia, and regulatory contributors. The curriculum should be completed in early 1996 (soon after the FDA publishes the final mandatory seafood HACCP regulation). In addition to developing the actual training curriculum, NCSU has received funding to coordinate the development of model HACCP plans for trout, crawfish, and mussel processing.

Extension food science personnel conducted a demonstration project funded by National Coastal Resources Institute to illustrate the benefits of cryogenic preservation of crab products. Estimating the economic benefits of introducing cryogenic technologies into the blue crab processing industry is difficult. There are over 230 blue crab processing firms from Maryland to Texas, but only two companies were known to use cryogenics for freezing crabs or crab meat in 1990,

prior to the beginning of the NCRI demonstration project. There are now 12 processors employing cryogenics. As markets for high quality frozen crabs and crab meat continue to grow, so will the number of processors interested in using the technologies demonstrated in this project.

#### Commercial and Recreational Fisheries:

Progress was made this year on improved techniques for valuing economic effects of changes in commercial fishery harvests, and in improving our understanding of the economic consequences of reallocating fishery harvests away from the commercial sector to the recreational sector. Current work is focusing on improved modeling of the size and timing of economic benefits accruing to the recreational sector from such reallocations---an action for which managers have faced increasing pressures from organized recreational interests. We will apply an improved model of this management action to an NC fishery as a guide to improved economic analysis of such decisions. In addition, we continue to develop and apply an improved commercial fishery harvest demand function. This function was applied to the south Atlantic and Gulf of Mexico king mackerel fishery during 1993-94, and results delivered to the two regional councils. The Gulf Council is using the results in ongoing commercial-recreational allocation decisions. We also initiated work last year on applying the function to the South Atlantic and Gulf of Mexico snapper/grouper fishery. This work will be completed and extended to managers during 1995.

#### E. NARRATIVE AND IMPLICATIONS:

The North Carolina Cooperative Extension Service Aquaculture Agents and Specialists are making a difference across the state and the nation. Team members and extension agents working with aquaculture in North Carolina have also international attention for their contributions to Fisheries and Aquaculture. At least eight of them have been invited to provide assistance to foreign countries, including Russia, Japan, Saudi Arabia, Egypt, Canada, Mexico, Portugal, Macedonia, and others.

Expansion of the North Carolina aquaculture industry in the last half of the 1990's will be a direct result of technology developed by and transferred from the NCCES aquaculture program. As lenders become more aware of the economic growth potential in aquaculture, the expansion that we have seen begun in this decade will continue and accelerate in 1995 and 1996. With the 1994 addition of a new specialist at the Tidewater Research Station, a more focused effort is being made in improving production methods for North Carolina's catfish farmers and other warmwater farmers in that region.

The Fish Barn project's five years of work has finally come to fruition with



commercial ventures starting in 1995. In the coming years, we will see more aquaculturists in North Carolina and the United States using portions of or all of this technology to grow aquatic crops (fingerlings and food fish) in areas that were not possible without this new water reuse technology.

Extension support for coldwater aquaculture is addressing two critical needs of the industry; development of sound business and management plans, and implementation of effective waste management for producers and processors. These efforts, along with assistance in application of new culture technologies like those demonstrated in the Trout Barn, will provide opportunities for improved profitability, efficiency, and stability within the NC trout industry. The NC catfish industry continues to expand at a modest pace. Processors report increases of approximately 25-30% per year of processed fish, with NC serving as the focal point for adjacent states. Catfish from NC are currently being test marketed in Germany, and other export markets are being considered. NCCES plays a pivotal role in all aspects of development of this industry from facility design to water quality management, from fish health management to food safety and processing. The hybrid striped bass industry in North Carolina is doing well. A few of the smaller farms only produce fish every two years, so actual poundage is variable, but the industry is still growing; five new producers stocked their first crop in 1994 and two other new producers stocked their farms in 1995. Technology transfer by NCCES personnel has been critical to the growth of this industry, and will remain so.

North Carolina now has more demand for crawfish than the state can currently produce. Producers are no longer having to search out markets; they are now receiving more inquiries about their product than they can service. Research and extension efforts are now being focussed on how to increase yields and extend the harvest season to better accommodate the demand.

Within the seafood processing industry, the rapid movement toward HACCP-based inspections is creating a huge demand for training. Furthermore, it is not just industry which requires training, but state and federal inspectors as well. With this reality in mind, a Seafood HACCP Alliance was formed between industry, government agencies (state and federal), and academia. NCCES is an active participant in the Alliance. A major objective of the Alliance is to create a comprehensive HACCP Training Program that can be used to train both industry personnel and regulatory officials. Since NCCES has been a leader in developing HACCP training, it is coordinating all activities associated with curriculum development for the Alliance. This is extremely significant since FDA's proposed rules mandate training from an "FDA approved" program. Since the Alliance program is being developed in association with FDA (and will become FDA's program to train their own inspectors) it will become the model program by which FDA evaluates all others.

Commercial and recreational fisheries continue to be important economic components of the N.C. coastal economy. Both recent declines in important fish populations and the institutional framework with which North Carolina manages its marine fishery resources have received much attention in recent months in the N.C. press. Public support for improving our fish populations is growing, and changes in management regimes are likely. Economic consequences of these actions are increasingly recognized as important components of decision-making. NCCES has used various media to extend educational programs and applied research results to fishery managers and others interested in fishery issues, and these efforts will continue.

**F. Coordinator and Team Members:**

J. Rice, Program Coordinator

J. Easley

T. Losordo

S. Gabel

D. Ward

J. Hinshaw

B. Williamson

R. Hodson



## **ACCOMPLISHMENT REPORT 1992-1995**

### **NC14 - FIELD CROP PRODUCTION, PROCESSING AND MARKETING IN NORTH CAROLINA**

#### **A. OBJECTIVES**

1. Producers adopt a comprehensive approach to nutrient management, integrating the use of soil, tissue and manure testing, utilization of both organic and inorganic nutrients and effective placement and timing of nutrients.
2. Producers adopt a comprehensive approach to soil management, including the use of best management practices and crop/site selection.
3. Producers adopt an integrated approach to pest management to minimize production costs and negative environmental impacts.
4. Producers take a more comprehensive approach to developing and implementing marketing plans and adopting economically sound production practices.
5. Growers will adopt practices to produce high quality produce and to safeguard quality during harvesting and post-harvest processing.

#### **B. NON-EXTENSION RESOURCES**

##### **1. Outside Funding:**

Substantial funding from outside sources has been utilized in support of field crops programs at both the state and county level. Fifteen percent of the state's 100 counties report funding in excess of \$5,000 over the four year period. Private, county and state (non-extension) grants to county field-crops programs totaled over \$250,000. Campus based departments and programs received support in excess of \$1,250,000. Grants, contracts and gifts are supplied by many individual agribusinesses, agrichemical firms, commodity organizations, TVA, PIAP, NAPIAP, banks and lending agencies, marketing services, etc.

##### **2. Outside Organizations/Resource People/Volunteers:**

A wide variety of organizations and individuals provided support to Extension

programs. Many activities were conducted in cooperation with other agencies such as SCS, ASCS and the North Carolina Department of Agriculture. In addition, representatives of these agencies served as important resource people in support of our programs. The soil, manure, and tissue test labs and the nematode assay lab of NCDA were critical resources in meeting our objectives in nutrient and pest management. The cooperation of the electronic and print media at the local, state and national level was invaluable in allowing NCCES to disseminate information; in excess of one hundred media outlets were involved. In addition to providing financial support (above), agribusiness units, commodity groups and farm organizations cooperated in conducting a wide range of meetings, field days and demonstrations. Independent crop consultants and farmer cooperatives provided scouting and trap data to our pest survey and prediction program. Individual farmers provided resources and labor in the conduct of numerous on-farm tests and demonstrations and provided direction to our activities through the Advisory Leadership Program. Counties reported over 5000 volunteers providing over 11,000 person/days of service in support of this program area.

### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

Advances have been achieved in the adoption of recommended nutrient management practices and systems. County programs have reported increased use of organic nutrients coupled with manure and soil testing. In 1994, for example, field crop producers in Greene Co. used these tests to minimize costs and environmental impact reduced nutrient costs by over \$345,000. Bladen Co. reports corn growers adopting split fertilizer application reduced N and P application by 20%. Through much of the state, the use of animal waste for nutrients has significantly reduced nutrient costs for growers. The use of soil testing (indicator 2 in state POW) increased throughout the four year period. For the three year period 1989-91 an average of 127,936 soil tests were taken annually for six major crops/groups (corn, cotton, peanuts, small grains, soybeans and tobacco). Weighted for changes in acreage for these crops, this represents 0.031 samples per acre. In 1995, 153,168 samples were taken, representing 0.040 samples per acre. Thus, the use of soil testing has increased ca. 29% in comparison to the base-line period. Agents and specialists estimate that phosphorus application rates declined throughout the period (indicator 3). Base-line data for 1990 and 1991 (for NC) are available from the National Agricultural Statistics Service: corn - 56 lb/A; peanuts - 45 lb/A; soybeans - 37 lb/A. Data for 1993 have been published by the same agency: corn - 51 lb/A (9% reduction); soybeans - 34 lb/A (8% reduction); peanuts - not available. Data from state fertilizer tonnage reports indicate phosphorus use on tobacco of 61 lb/A for 1990-91 and 55 lb/A in 1995 (9.8% decrease). These data suggest that North Carolina's corn, tobacco and soybean farmers applied over 10 million fewer pounds of phosphorus in 1995 than would have been applied to the same acreage at 1990/91 rates. This contributed to increased profitability and decreased

nutrient load on the state's waters. Soil pH levels in tobacco (indicator 4) have increased with 29% of piedmont fields and 22% of coastal plain fields with pH levels less than 5.5 in 1994 (latest data available). In 1992 and 1993 these values averaged 49% and 32%.

Agent estimates indicate broad acceptance and use of soil management practices (indicator 5). A survey of 75 (of 100) counties indicate nearly 70% of farms utilizing at least two BMP's for soil management. These practices impact over 2.45 million acres of crop land. Moreover, farmers continued to implement new BMP's during 1995. No-till production of crops has been especially well accepted in corn and soybean production and its use is increasing in tobacco production.

Integrated pest management systems have been promoted by NCCES and adopted by many North Carolina field crop producers. A statewide survey of agents indicates that 49% of field crop growers have adopted a system of three or more IPM/ICM practices (indicator 6). Such systems impact over 2.35 million acres, reducing negative environmental impact and improving net profits for growers. Adoption of an IPM system is much higher in counties with a concentration of high-value crops such as cotton, tobacco and peanuts. Approximately one-third of reporting counties have reached the goal of 75% of farms utilizing a system of at least three IPM practices. Many other growers utilize at least one or two IPM practices.

As a result of Extension efforts, farmers are taking a more comprehensive approach to marketing their field crops. Surveys indicate that nearly 50% of soybean acreage was marketed using a conscious strategy rather than sold straight from the combine in 1994. This is up slightly from 46.7% in 1991. Assuming a price increase of \$0.10 per bushel, profits would have been increased by nearly \$80,000.

State and county programs directed to tobacco farmers emphasized the need to produce a high quality crop. Two areas were stressed, the reduction of MH residues which threaten the marketability of the crop and the harvesting and curing of mature to mellow tobacco grades. An average of 13.7% of tobacco marketed in the period 1989-91 exceeded 250 ppm MH residues (indicator 9) and 32.5% exceeded 150 ppm. These levels have declined significantly. For the two-year period 1994 and 1995, less than 11.1% of samples exceeded 250 ppm and less than 25.5% exceeded 150 ppm. An additional 76 million pounds of tobacco (over 7% of the two crops) was thus significantly more marketable on the world market. (In 1994, residues fell to a low of 8% exceeding 250 ppm and 23% exceeding 150 ppm. However, the extremely poor growing conditions of 1995 increased residues. Nonetheless, residues in excess of 150 ppm were lower than in the base-line years.) Significant progress was made in the production of

mature and mellow grades as well (indicator 10). In crop years 1990 and 1991, an average of 61.3% of N. C. flue-cured tobacco was graded mature to mellow. In the two-year period 1994-1995, 70% of the crop was so graded. Approximately 94 million pounds (nearly 9% of the two crops) was more salable sold at a significantly higher price. (In the good growing season of 1994, nearly 74% of the crop was graded mature or mellow.)

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

On-farm tests and demonstrations and a general educational effort have been used to promote Best Management Practices for soil and water management. One emphasis has been on the use of minimum-till and no-till systems. Grower adoption has been good. For example corn produced using conservation tillage increased to 20,000 acres (ca. 52% increase) in Iredell Co. and to 50% or more in Alamance, Henderson, and Lincoln Cos., Martin Co. through 1994 saw 9% of corn produced no-till with a production cost reduction of 25% and an increase in gross return of \$20 per acre. No-till production of burley tobacco has been promoted. Increasing adoption of this practice has allowed the continued production of this very valuable crop in an area of farms consisting almost entirely of highly erodible land. Statewide, soybean acreage produced through a no-till system was increased by 1994 to 38% (from 26% in 1991). As a result of the adoption of this and related practices, soil erosion is estimated to have been reduced by 1,925,000 tons from soybean acreage. The proportion of cotton acreage produced under a no-till system has also increased (eg. from 50 to 1000 acres in Pitt Co.

IPM as a means to reduce production inputs has been promoted through a variety of means. These include on-farm tests, demonstration IPM/ICM programs, scout training schools, meetings, workshops and publications. Pest detection and prediction systems were also made available. Estimates of 1994 savings in input costs and yield loss as a result of cotton scouting were \$415,000 in Scotland Co. A peanut leafspot advisory system was widely used throughout the peanut production area, with several major production areas reporting nearly 100% usage. The resulting reduction in fungicide use (1-3 applications) saved the peanut farmers of Northampton and Nash Counties, in the heart of the peanut producing area, in excess of \$2.5 million with no reductions in yield. This reduction also reduced environmental pressures and avoided disruption of natural control of another major pest, the spider mite. Cotton scouting, almost universal now, was estimated to have reduced pesticide use in Columbus and Craven Cos. by 30%. Duplin Co. growers have saved in excess of \$500 thousand over four years through reduced insecticide use. The impact of such reductions are magnified by the great growth of cotton acreage over the last four years. Scotland county estimates (based on late season damage surveys) that improved scouting and use of egg thresholds for *Heliothis* has reduced losses by over \$1.1 million

for the years 1992-94 compared to 1991.

Although much of the programming effort was directed to the major objectives outlined above, significant effort was also directed to other goals. Examples include: a) Educational events, publications, and demonstrations were directed to improving tobacco farmers ability to efficiently produce transplants in greenhouses. In 1995, 64% of tobacco seedlings used in North Carolina were produced in greenhouses (18% in 1990). As a result, crop uniformity (and quality) was increased, labor costs reduced \$25 per acre (\$4.3 million statewide), risks of transplant production failure reduced, and the use of methyl bromide for soil fumigation reduced by over 1.2 million pounds statewide. Improvements in greenhouse management have also reduced time needed to produce transplants in some cases. In Pitt Co. the average number of days to produce transplants has been reduced from 70 to 62 days. This is estimated to have saved \$70 thousand in heating fuel. Some farmers have also adopted tobacco transplant production as a new alternate enterprise. In Rockingham Co. alone, this enterprise added \$244 thousand in farm income. b) Growers continuing to use conventional tobacco plant beds have been instructed in clipping and undercutting to reduce labor costs. In Harnett Co., these practices saved ca. \$180 thousand in 1995 alone. c) Statewide programs were directed at increasing the percentage of soybean producers who consider water quality when making pesticide and fertilizer management decisions. The percentage of growers reporting that they do so rose from 40% in 1991 to 51% in 1994 (latest data available). Similarly, the percentage of soybean farmers who always fill their spray tanks at least 100 feet from any well rose from 58% to 67%. d) Programming in eastern and central North Carolina has encouraged farmers to consider carefully the economic return of corn production. As a result, many growers have moved from cotton to other more profitable crops. Much of this shift in acreage has been from corn (1.29 million acres in 1991, 800 thousand acres in 1995) to cotton (140 thousand acres in 1991, 780 thousand acres in 1995). Lenoir Co. farmers have realized an increase in net profit of almost \$2.5 million from this transition. Edgecombe Co. farmers are estimated to have increased profits by over \$2 million.

#### **E. NARRATIVE AND IMPLICATIONS**

NCCES field crop program is directed to increasing profitability and decreasing environmental impacts through:

Improved nutrient management

Improved soil management

Improved pest management

Aggressive marketing

Improved water management

Improved product quality

Major indicators of success:

29% increase in use of soil tests for nutrient management.

Increased use of high analysis fertilizer.

10 million pound reduction in phosphorus use in corn, soybean and tobacco production (excluding reductions due to reduced acreage)

70% of farms using at least 2 BMPs for soil management.

Increased use of conservation tillage. (Soybean acreage produced using no-till increased from 26% in 1991 to 38% in 1994.)

1,925,000 ton reduction in soil loss from soybean production in 1994.

49% of farms using a system of at least 3 IPM/ICM practices, impacting 2.35 million acres.

1.2 million pound annual reduction in methyl bromide use.

50% of soybeans aggressively marketed.

94 million pounds of tobacco (1994 and 1995 combined) more salable and profitable due to higher quality. Profits increased \$6 - 10 million.

Tobacco with excessive MH residues reduced from 32% to 25% of product.

Reduction of peanut fungicide sprays of 1-3 per year. Savings of \$2.5 million in two counties alone.

Reduction of \$4.3 million in labor costs for tobacco seedling production.

Shift from low- (no-) profit corn to more profitable crops

(primarily cotton) have increased farm profits over \$4.5 million in two counties alone.

Increased adoption of nutrient management systems, including the use of soil, tissue and manure testing; use of organic fertilizers; and improved placement and timing of application has reduced excessive use of nutrients. This in turn has reduced production costs and the negative impact of nutrients such as nitrogen and phosphorus on surface and ground water. In many cases, insect and disease pressures have also been reduced. Alternatively, crop vigor and net returns are increased when testing reveals nutrient deficiencies or toxicities. Further, the use of animal wastes as a carefully managed nutrient source has reduced the environmental impact of animal operations. Those indicators measured for 1992 through 1995 (as well as observations and estimates by agents) demonstrate significant improvements and the success of Extension programs. Nonetheless, continued improvement is needed. The adoption of soil management practices have an obvious positive impact on soil conservation and surface water quality (sediments are the state's most common pollutant). However, tools such as reduced tillage, increased rotation, etc. require the development and promotion of modified farm, crop and pest management systems. Much of this responsibility will fall on Extension and will require continued effort. While the data available indicate increased use of recommended soil management practices, it is clear that significant advances are possible and needed.

Widespread use of pest management systems protects (and in many cases increases) net profits while protecting workers and the environment from excessive pesticide use. It is clear from available data that many farmers use the tools of IPM to the benefit of their operations and to the state as a whole. It is also clear, nonetheless, that further acceptance of these tools and better integration of the tools in well thought-out systems is desirable. Increasing use of comprehensive marketing approaches adds stability to the economics of field crop production.

Increased quality of tobacco (and other commodities) adds value to the state's crop production and increases marketability in the face of growing foreign competition. Prices for ripe tobacco typically average six to ten cents per pound higher than those for unripe grades. Thus, the increased quality realized represents \$6 - 10 million increase in crop value for the state.

- F. COORDINATOR AND TEAM MEMBERS:** Southern, P.S.  
Bailey, J.E.  
Fountain, C.D.  
Lucas, L.T.  
Perry, K.B.  
Naderman, G.C.



Smith, W.D.  
Spears, J.F.  
York, A.C.

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Increased quality of tobacco (and other commodities) adds value to the state's crop production and increases marketability in the face of growing foreign competition. Prices for ripe tobacco typically average 15 to 20 cents per pound higher than those for unripe grades. Thus, the increased quality realized represents 25 - 30 million increase in crop value for the state.

COORDINATOR AND TEAM MEMBERS:  
Gardner, F.S.  
Bobby, L.B.  
Poulsen, C.D.  
Lynn, J.T.  
Perry, K.R.  
Nashman, G.C.

## ACCOMPLISHMENT REPORT 1992-1995

### NC 15 - COMMERCIAL HORTICULTURAL CROPS PRODUCTION, PROCESSING AND MARKETING

#### A. OBJECTIVES

1. For vegetables, fruit and ornamental growers to become more competitive by adopting more efficient, high intensity production practices and new technologies.
2. For horticultural crops growers to become more efficient by reducing losses from pests by adopting Best Management Practices to more carefully target pesticide applications, adopt biological control strategies, and protect water quality.
3. For growers to develop and implement a marketing plan.
4. For growers to adopt modern post-harvest handling procedures.

#### B. NON-EXTENSION RESOURCES

1. Number of volunteers . . . . . 7,364
2. Total number of volunteer days . . . . . 19,138
3. Value of Federal government funding (grants) . . . . 212,634
4. Value of state government funding (grants) . . . . 115,283
5. Value of local government funding (grants) . . . . 169,900
6. Value of private funding (grants). . . . . 1,027,309

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

##### Commercial Ornamental Extension Programs

Greenhouse and nursery crops production is big business in North Carolina. County agent farm income estimate (wholesale value) in 1991 was \$293.9 million (51% greenhouse crops) for the green industry. In 1994, this had grown to \$358.4 million (51.8% greenhouse crops), an increase of 21.9% in farm income from these crops in only four years, during a time when the overall economy was sluggish or in recovery. State totals for county agent estimates for the period were 10,570 acres in 1991; 10,842 acres in 1992; 11,506 acres in 1993; and 12,404 acres in 1994.

During the 1992 through 1995 extension program period a total of 489 training programs were conducted. Applied studies conducted at nursery, greenhouse or landscape sites to develop and implement best management practices and integrated pest management totaled 197. A total of 576 publications authored by Nursery, Greenhouse and Landscape Extension Faculty within the departments of Horticultural Science, Plant Pathology and Entomology were created. Extension programs focused on workplace safety, OSHA regulations, best management practices to reduce negative environmental impact as well as enhancing profitability and reacting to or anticipating rapid changes needed to adjust to a diversification of product offerings and market demands.

Nurserymen, plant collectors, garden center operators and employees have become more knowledgeable about plants, horticulture, and integrated pest management over the last 4 years. County agent training to become proficient in the identification of ornamental plants and general cultural practices for ornamental crops tested in the Certified Plant Professionals exam was emphasized. Special tutoring sessions were held for the test participants before each exam.

The number of professional landscape contractors increased each year during this period. A study manual was developed and review classes were given each year prior to the exam. The collection of plant materials also proved very helpful in preparing for the exam. The total number of Certified Professional Landscape contractors increased by an average of 30 per year for a total increase of 120 over the 4 year period.

During this time, numerous workshops, field days and seminars were held for the professional landscape industry. Publications included bulletins, information leaflets, slide sets, videos and study manuals were also prepared for this audience. Forty-five television programs were taped on landscaping, turf and gardening topics.

Measurable impact points:

During this 4-year period, 15% of the greenhouse acreage in N.C. adopted screening for insect exclusion as part of an integrated crop management system to reduce pesticide use. Almost 10% of the floriculture greenhouse acreage adopted flood floor/recirculation technology that eliminates runoff from greenhouses. Approximately 15% of the container nursery acreage in North Carolina now collect and recycle irrigation water, or have established permanent vegetative buffers to filter or trap irrigation runoff water.

The Certified Plant Professional project was begun in 1983 by the North Carolina Nurserymen's Association. It began with 11 professionals passing the test. In

1991 the number was 92. A collection of over 350 plants was established as a resource for exam preparation of extension agents and ornamentals industry clientele. A 3 week summer school extension course was offered and extensive educational resources developed. Every county agent enrolled in the course successfully completed the exam and was certified as Certified Plant Professional Trainers to teach the program on their county level. At least five courses have been offered by agents completing this extension course resulting in at least 75 clients completing the courses offered by agents. In August 1995, the total number of Certified Plant Professionals had grown to 714. This exceeds a 700% increase in Certified Plant Professionals. This is a direct result of educational programs developed and delivered by extension.

Program delivery methods in the ornamental area are changing rapidly. The North Carolina Commercial Flower Growers Association stopped having an annual state meeting in 1992 and joined with South Carolina and Georgia to form the Southeastern Flower Growers Association with a joint annual meeting in South Carolina. Alabama, Virginia and Florida growers have now joined this association. The number of North Carolina growers attending this meeting has increased from 25 in 1992 to 125 in 1995. These six states are now pooling limited resources to deliver high quality programs more efficiently. Increased grower attendance shows it is effective. Over the past two years, 4 one-half to full-day programs have been delivered to commercial greenhouse flower growers on interactive TV across the state of North Carolina with excellent attendance. All publications from Horticulture, Plant Pathology and Entomology for commercial ornamental growers are now available on the Internet for growers world wide. Pest occurrence and control recommendations are posted on electronic news weekly during the growing season.

## COMMERCIAL FRUIT EXTENSION PROGRAMS

### EDUCATIONAL EFFORTS

Major educational program efforts in the area of tree fruit and small fruit culture are now being conducted and evaluated on a regional basis in the southeast. Multi-state in-service training for county agents has been provided annually since 1989 as a cooperative effort between NC, SC, TN and GA. The result is a superior educational program utilizing expertise from a four state region. This training also promotes agent interaction and sharing of successful programs as well as increasing specialist efficiency in each state. Emphasis has also been placed on regional grower meetings such as the Southeastern Apple Growers Meeting which is a cooperative effort of the same region with over 500 in attendance. This type of high quality educational program results in greater grower attendance with a greater impact. North Carolina is the sole source of research based information on strawberry plasticulture for the entire mid-southern

region. The annual Southeastern Strawberry Expo is now attracting more than 300 growers, agents and industry members from 10 states.

#### PROGRAM THRUSTS

A major new technology thrust in apple production has been high density orchard systems. By using tree size-controlling rootstocks and new tree pruning techniques, orchards are being planted at 500+ trees/acre compared to 120 trees/acre in standard orchards. The higher density orchards produce high quality fruit early in the life of the orchard, are safer and easier for the labor, and have a greater efficiency in pesticide application. At present, there are approximately 400 acres planted in high density systems in North Carolina. The impact of this change in tree density has been to increase orchard yields from 500 bu/acre for a 12-16 year old conventional orchard to over 900 bu/acre in the 5-7 year period after planting for high density systems. The new varieties utilized in high density systems are returning 20-50% more to the grower because demand is much higher for the new cultivars than for standard cultivars such as golden and red delicious.

Orchard floor management changes are another area of fruit production that is being introduced in North Carolina. Management systems that promote tree growth and survival, promote beneficial insects and do not support pest populations are being evaluated in both apple and peach. In peach, evaluation of vegetative ground covers that do not harbor harmful nematodes, associated with peach tree short life (PTSL), is of primary concern.

At present, insecticide applications can be reduced with proper ground cover management. In addition, a new rootstock from Georgia and South Carolina, BY520-9, is being evaluated that is reported to be unaffected by PTSL. This creates the potential to replant dying peach orchards without soil fumigation. The impact is that growers utilizing this new rootstock should increase the life of an orchard 20 to 50% increasing orchard profitability. In apple, ground cover management systems that will reduce bee kill potential, not harbor pest populations, and support beneficials are being encouraged and demonstrated. Proper management of the ground cover can reduce pesticide use, minimize production costs, environmental contamination and therefore increases profitability and water quality.

The goal of integrated orchard management systems is to reduce pesticide use in North Carolina orchards by 50%. Growers are educated to apply pesticides on an as-needed-basis rather than a rigid calendar basis. More accurate timing of early season fungicides has reduced total fungicide usage by 50%. Through the use of weather-based disease prediction models, insect monitoring, foliar and tissue analysis for fertility requirements, and Best Management Practices (BMP's), growers are confidently adopting these technologies. By planting

disease resistant blueberry cultivars, several growers have reduced fungicide applications by 33%. Evaluating pesticides for minor use registration through the IR-4 program has also been a major focus to label new pesticides that are essential for fruit production in the southeast.

Programs have been provided on alternative crops to diversify farm income. Some alternative crops being utilized are pecans, pawpaws, persimmons, chestnuts, and nectarines. Programs aimed at pecan growers in the eastern part of the state have had attendance close to 100. New plantings of pecans are being established. Approximately 500 acres of pecans in North Carolina under 5 years in age. These plantings are being established with newer pest resistant cultivars to reduce pesticide use.

North Carolina is experiencing a revitalization of the strawberry industry due to the adoption of plasticulture technologies and the California cultivar Chandler. The production of strawberries on plastic has grown from 200 acres in 1991 to 1000 acres in 1995 with an estimated farmgate value of \$10 million.

#### Advances in Postharvest Handling of Fruits in North Carolina:

Systems have been developed to enable small to medium growers to properly cool their fruit crops. "Cool and Ship" is a low cost, portable, forced-air cooling system which provides affordable, pallet-size volume cooling capacity. Utilization of this and other forced-air cooling designs have reduced blueberry and strawberry post-harvest loss at least 30%. The thermal storage immersion hydrocooling system is cost effective for fruits which can tolerate exposure to water.

Publications contributing to the education of North Carolina fruit growers and shippers include those on the Postharvest Handling and Cooling of Apples, Strawberries and Blueberries, plus 10 others describing cooling and handling techniques. These, plus expert team consultations have resulted in improved overall quality maintenance of fruits, enhanced the quality image of North Carolina, and produced greater profits for our growers.

#### Commercial Vegetable Production

Tobacco growers are looking for alternatives. Vegetable production has filled this need for several growers. Onions were nonexistent as a crop in 1991. In 1995, nearly 300 acres were produced commercially. Broccoli acreage was minimal (<50 acres) in 1991, but in 1995 600 acres were produced. Other crops like lettuce are in their infancy and production systems are being developed such that they can expand in the years ahead. In 1994, nearly 100 acres of lettuce were planted for the fresh cut industry, offering value added products to



restaurants and supermarkets. There are a variety of different vegetables that have been expanded for niche markets since 1991. Some of them are luffa, small size vegetables, mini-melons, herbs, specialty peppers, gourds, pumpkins, botanicals such as golden seal, shiitake mushrooms and over 50 different oriental vegetables. Herb related businesses and the number of certified organic growers nearly doubled since 1991 (currently about 100 herb businesses and 22 certified organic growers). Luffa currently has 20 known commercial growers, up from 1 single grower in 1991. These new or expanded industries have coincided with the expansion of numerous local farmer markets and regional state markets.

Farmers grow nearly 90% of the varieties recommended in extension publications. This has provided growers with a better opportunity to produce higher yields and better quality crops. Since 1991, from 50 to 80% of the tomato acreage is planted in North Carolina developed tomato varieties as a result of integrating research and extension programs. Through the use of disease resistant pepper cultivars on 10% of the acreage, pesticide use has been reduced 50%. This technology is being combined with bacterial stain identification in the Plant Disease and Insect Clinic at NCSU and implemented from Florida to New York through a crop consultant. In addition, grower knowledge of disease problems such as fusarium wilt and fruit blotch on watermelons has increased. Near devastation occurred due to fruit blotch in some watermelon fields in 1994, however, none was noted in 1995 due to better quality seed and educational efforts.

The use of several improved cropping alternatives has resulted in increased production efficiency and revenues to the farmer, for both new and established vegetable growers. For example, in 1991, nearly 60% of the muskmelon acreage was grown on black plastic mulch, while in 1995, nearly 80% was grown on black plastic mulch. Instead of producing an average of 2000 fruit per acre using bare ground culture, an average of 8000 muskmelon fruit were produced using the intensive plasticulture management system. Drip irrigation is used in combination with plastic which further enhances yields and product quality. The potential of using drip irrigation with plastic is being more fully realized. In 1991, about 20% of the acreage used drip irrigation with plastic mulch, while in 1995, this increased to nearly 35%. Considering tomatoes statewide, nearly 60% of growers use plastic mulch with drip irrigation. This technology greatly increases irrigation efficiency and reduces total fertilizer use. Watermelon grown on plastic is increasing in acreage (presently 200 to 300 acres) and is in the early stage of adoption for this crop.

Other efficient production methods are being used. For example, use of precision seeding equipment has increased dramatically, from 20 to 30 units in 1992 to approximately 250 units in 1995. More uniform planting and less seed usage and costs are primary benefits of precision seeding. One major grower, raises over



4,000 acres of cucumber, switched his planting method to precision seeding for the entire operation. Precision seeding is used on approximately 18,750 acres of vegetable production. Another example of more efficient crop production is the increased use of high pressure sprayers from 10% in 1991 to 30% in 1995. Better insect and disease control has resulted leading to reduced fungicide applications, improved crop yields, and quality.

Pesticide reregistration in minor-use crops (e.g., vegetables) has been identified by growers and recognized by extension as an industry need. In 1992 and 1993, nearly 200 pesticide clearances were obtained for minor-use crops through the IR-4 program with the assistance from university research and extension personnel, the agri-chemical industry and the federal government. Specifically, North Carolina emergency registration packages for Devrinol and Command for weed control in sweetpotato were developed by extension personnel for 1991 and 1992, with a state local need registration approved for Command in 1993. Currently, one-half of the North Carolina sweetpotato acreage is treated with these herbicides.

Environmentally friendly practices such as no or limited till are being practiced. Farmers using this practice were nearly nonexistent in 1991 while nearly 5% currently use this practice and other growers are giving it consideration. There is an increased awareness by growers of the value of integrated pest management (IPM) as only 5% used IPM in 1991 while 25% now use IPM principles. Nearly 40% of the tomato industry have cut insecticide use by one-half with IPM by increasing spray application intervals. Currently, 96% of the tomato growers scout fields for weeds, diseases and/or insects. Less synthetic fertilizer is being used in the production of some crops as reduced rates have been recommended and adopted, and supplemental sources such as cover crops and poultry litter are being used on a small percentage of the acreage. For example nitrogen fertilizer use has been cut 30% on 20% of the sweetpotato acreage (7,000 acres) since 1991.

Advanced postharvest and cooling technology has been adopted by 10 to 20% of the vegetable industry. For example, nearly one-third of the sweetpotato packing houses currently use forced air curing, a technology not known or used by the industry in 1991. In addition, a few (3 or 4) packing facilities have installed computerized grading machines.

Educational programs have expanded to meet the needs of the vegetable industry. For example, festivals have been used to promote and educate the public with over 10,000 people attending the Spring Herb Day over 2 days. Special conference meetings such as The Ginseng Conference, International Herb Association, Organic Vegetable Growers School and The North Carolina Vegetable EXPO have been used to disseminate cutting edge information to the

vegetable industry. These meetings have drawn clientele both within the state of North Carolina and nationally, with attendance typically being composed of 20 to 30% from neighboring states. In-service training has focused on IPM, sustainable growing practices, postharvest technology, new crops and advanced growing technologies.

Overall, production of horticultural crops is increasing in North Carolina. Horticultural crops are labor and knowledge intensive. They are excellent options for farmers looking for alternative crops, farmers having small acreages and part-time farmers. Good marketing plans are essential and require early and imaginative planning. A good IPM program is also essential. The Cooperative Extension Service in North Carolina has very effective programs to extend research-based knowledge to horticultural crops growers to make their efforts successful.

**D. OTHER INDICATORS AND ACCOMPLISHMENTS**

**E. NARRATIVE AND IMPLICATIONS**

**F. COORDINATOR AND TEAM MEMBERS:**

Committee Co - Chairs  
Ronald K. Jones  
Katherine Perry

Committee Members  
Jonathan Schultheis  
Barclay Poling  
Ted Bilderback  
Mike Parker  
Ed Estes  
Ken Sorensen

## ACCOMPLISHMENT REPORT 1992-1995

### NC16 - URBAN HORTICULTURE, FORESTRY, AND PEST MANAGEMENT

#### A. OBJECTIVES

1. For home gardeners to become more knowledgeable about landscaping, insects, disease and weed management, gardening and turf related subjects.
2. For community associations, schools, state agencies and local beautification committees to become more knowledgeable concerning tree selection, care and management.
3. For homeowners and commercial pesticide applicators to improve the management of selected pests in urban and suburban environments while concomitantly reducing the use of pesticides.
4. For landscape contractors, designers and maintenance contractors to become more knowledgeable about horticulture and related subjects.
5. Master Gardener volunteers to become better disseminators of home horticulture information to the public.
6. Horticultural agents to improve the informational content of their training programs for Master Gardener volunteers.
7. Horticultural agents to increase their knowledge base skills for improved delivery of home horticulture information to the public.
8. For the general public and agents to become more knowledgeable about the red imported fire ant.
9. To improve the efficiency of pest control activities by county and municipal mosquito control workers.

#### B. NON-EXTENSION RESOURCES:

- |                                   |        |
|-----------------------------------|--------|
| 1. number of volunteers           | 4122   |
| 2. total number of volunteer-days | 18,020 |

- |    |  |           |
|----|--|-----------|
| 3. | value of federal government funding (grants) | \$45,800  |
| 4. | value of state government funding (grants)   | \$139,285 |
| 5. | value of local government funding (grants)   | \$ 4500   |
| 6. | value of private funding (grants)            | \$72,000  |

**C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS:**

1.
  - a. Number of new professional landscape contractor registrations 37.
  - b. Number of registered professional landscape contractors 1001.
2.
  - a. Number of requests for home horticulture information 521,904
  - b. Number of requests previous year 90,000.
3. Number landscape and home gardening meetings and workshops 7231, total participation 243,382.
4. Number of volunteers who increased their knowledge base 4921.
5. Number adopting recommended practices concerning environmental horticulture, professionals 15000, homeowners 308,000.
6. Number of individuals who participated in the Master Gardener training programs 3551.
7. Number of local governments and communities assisted with urban forestry management plans or practices 141.

**D. OTHER INDICATORS AND ACCOMPLISHMENTS:**

(Kim Powell) - The demand for urban horticulture information continues to grow. In 1992-94 major emphasis was given to the areas of water quality, waste management and pesticide use in the landscape. County agents in over 49 counties are pro-active in addressing these environmental issues. The number of urban clientele attending extension meetings, demonstrations and tours has increased by approximately 20% since 1991. Programs in landscaping, home vegetable gardening and care of fruit trees continues to be the most well attended programs.

Nurserymen, plant collectors, garden center operators and employees have become more knowledgeable about plants and horticulture over the last 5 years. The Certified Plant Professional project was begun in 1983 by the North Carolina

Nurserymen's Association. It began with 11 professionals passing the test. In 1991 the number was 92. There was an extensive effort made to train county agents and get them proficient in ornamental horticulture. There was a 3 week summer school session, a collection of over 350 plants established and extensive educational resources developed. Agents successfully completing the exam were certified to teach the program on their county level. Special tutoring sessions were held for the test participants before each exam. In August 1995, the total number of Certified Plant Professionals had grown to 714. This is over a 700% increase in plant professionals. This is a direct result of educational programs developed and delivered by extension horticulture.

The number of professional landscape contractors has increased each year during this period. A study manual was developed and review classes were given each year prior to the exam. The collection of plant materials also proved very helpful in passing the exam. The total number increased by an average of 30 per year for a total increase of 120 over the 4 year period.

During this time, numerous workshops, field days and seminars were held for the professional landscape industry. Publications included bulletins, information leaflets, slide sets, videos and study manuals. 45 television programs were taped for UNC-TV on landscaping, turf and gardening topics.

Meetings, seminars and fields days	109
Publications, popular articles	180
On farm tests, demonstrations	55

A major program, Backyard Composting, which began in 1992 continued in 1993. This project was funded by a grant from the Office of Waste Reduction. Emphasis was on developing brochures, posters, pamphlets, horticulture leaflets and slide sets. Fourteen counties had active demonstrations on backyard composting. We received additional funding and were able to add 28 additional demonstration sites.

(Steven Toth) - The National Pesticide Information Retrieval System (NPIRS) was used to provide Extension and research personnel with current information on pesticide products registered with the U.S.

Environmental Protection Agency and the North Carolina Department of Agriculture. A monthly pesticide newsletter, "Pesticide Broadcast", was published through the North Carolina Cooperative Extension Service.

The newsletter, which is sent to approximately 250 persons, contained information on pesticide registration, use and safety. Pesticide information was also distributed on a statewide Extension electronic news network. A presentation

on federal regulations affecting pesticide use on turf and ornamentals was delivered at the Turf and Ornamental Field Day in Raleigh on May 12, 1993 over 1100 professionals in attendance.

(Rick Brandenburg) - The improved use of IPM concepts in commercial turf management has been a significant accomplishment. This has been enhanced through the ability to monitor and predict insect outbreaks on a regional basis through local weather information. Additionally, the use of new application technology for turf insecticides has rapidly gained acceptance. These new technologies improve product efficacy, reduce environmental risk, and reduce application rates. Some of the initial studies conducted in the United States were done in North Carolina which has contributed to the fact that we are leaders in the use of this technology.

A 165-page pesticide reference manual was completed, published, and distributed to all 100 county offices. This reference manual serves as a resource for county agents responding to questions concerning pesticides, their safety, alternatives, etc. in the home and yard environment. This unbiased manual dealing with pesticide issues provides an enhanced data base for educating agents, homeowners, commercial operators, Master Gardeners, and other groups.

Numerous tests have been completed examining alternative management strategies for turfgrass pest management. The use of management strategies other than conventional pesticides is desirable in many locations. Several effective alternate management strategies have proven successful and have now been incorporated into the 1995 Agricultural Chemicals Handbook and other Extension publications for public dissemination and use.

Demonstrations of mole cricket management have been completed in Brunswick County. More than 300 people from Brunswick and surrounding counties have been exposed to the results of these demonstrations. Use of weather monitoring and pest forecasting equipment in this area is used to provide weekly pest updates during the summer months.

More than 20 popular press, trade journals, and extension articles have been written in each of the past three years educating agents and their clientele concerning turfgrass pest management issues. Most articles focus on efficient pesticide use to reduce the overall amount of pesticides used. This topic has also been disseminated through presentations to more than 4,000 people annually during each of the past three years.

(Charles Apperson) - A management strategy was developed for psychodid flies breeding in a reed canary grass waste water treatment site operated by Golden Poultry Company in Chatham County. The flies, breeding in the 120 acre

treatment site, were causing a considerable nuisance in the adjacent residential area. Consequently, the North Carolina Division of Environmental Management threatened to prohibit further application of waste water to the reed canary grass site if a fly management program was not immediately implemented. Curtailment of the application of waste effluent would have effectively shut down operation of the poultry processing plant. Plant management officials solicited assistance from entomology extension specialists. Field tests of commercial formulations of *Bacillus thuringiensis* (serotype H-14), applied using the in-line sprinkler irrigation system, were evaluated.

Publication AG 486 "Control of the red imported fire ant" was authored and printed. To date more than 15,000 copies have been distributed to the general public through county extension centers. A distance learning workshop was held. Forty-four agents from 12 counties in the coastal plains participated in the workshop at 6 distance learning centers. Five entomology extension faculty and an NCDA entomologist delivered presentations and answered questions on the red imported fire ant. Additional extension efforts include one television program in Cumberland County, and four county meetings in Hoke, Anson, Richmond and Wilson Counties. In the fall of 1995, an educational display was produced that is suitable for use in agriculture days and county fairs. The display has been used in Beaufort County and is scheduled for use in Duplin, Wayne and Tyrell Counties in Sept. and October.

A series of four spray workshops were held for mosquito control workers. The insecticide flow rates and droplet sizes of thirty five ultra low volume sprayers were evaluated. Workers received training in pesticide safety as well as best management practices for mosquito control. At these ULV workshops over the last five years, more than 125 spray machines have been evaluated, and recalibrated if necessary. Over 200 mosquito control technicians from 50 municipalities and counties have received training.

(Larry Bass) - The consumer horticulture program should continue to incorporate computer delivery of information via Wolf, Gopher, Almanac, Internet and World Wide Web (WWW) servers to agents in the counties. Additional Master Gardener volunteers will need to become knowledgeable on how to properly compost organic materials. Volunteers will continue to be needed in greater numbers at the county level to assist with the dissemination of consumer horticulture information to the public. The knowledge base of the volunteer will become more refined or specialized in certain areas - i.e. composting, computer transfer technology skills for the Internet and county computer system usage.

There were 1,019 volunteers participating in the Master Gardener program during 1995, (Four year summary equals 3,551 volunteers) from Alexander, Brunswick, Buncombe, Burke, Cabarrus, Caldwell, Carteret, Catawba, Chatham, Columbus,



Craven, Cumberland, Currituck, Dare, Durham, Forsyth, Gaston, Granville, Greene, Guilford, Harnett, Henderson, Iredell, Johnston, Lenoir, Lincoln, Macon, Mecklenburg, Moore, New Hanover, Onslow, Orange, Pender, Pitt, Randolph, Richmond, Rowan, Rutherford, Surry, Transylvania, Union, Vance, Wake, Wayne, and Wilson Counties. Six new counties (Anson, Davie, Halifax, Jackson, McDowell, Robeson and Scotland) were added to the program.

The volunteers donated over 47,604 hours to the Extension Service in 1995, (Four year summary equals 151,580 hours). Multiplying the hours donated by \$8.00 will yield a value of \$380,832.00 of volunteer service (Four year summary equals \$1,212,640.00).

#### Delivery Methods:

The delivery methods, summary of the jobs performed by the Master Gardener volunteers and the number of contacts in 1995 follows:

	1995 Number OF CONTACTS	Four Year Summary
1. Answered telephone	37,720	119,103
2. Insect & disease clinics	15,796	52,605
3. Spoke to civic groups	9,721	24,868
4. County demonstrations	116,774	136,061
5. Set up & manned display booths	34,297	204,463
6. Made home visits	1,274	2,651
7. Worked with 4-H'ers	6,637	19,083
8. Other activities	3,395	21,134
Total:	225,614	579,968

(Jim McGraw) - With the increased interest in urban and community forestry generated by America the Beautiful (ATB) and Small Business Administration (SBA) grants programs, the Cooperative Extension Service applied for and received ATB grants valued at over \$19,000 to establish a state-of-the-art urban forestry/horticultural reference library in each County Extension Center. In addition to providing Cooperative Extension Agents and Master Gardeners with a comprehensive source of technical tree and ornamental information to better serve their clientele, these libraries have also been available tree/appearance boards, arborists, foresters, nurserymen and landscapers, in both the public and private sectors, to enhance their planning, development and implementation of local urban and community tree planting and aftercare activities. Urban forestry and shade tree in-service training was provided to Agents, Master Gardeners, and Division of Forest Resources personnel encompassing over 40% of the counties. Shade tree workshops were also conducted for professional arborists and

landscapers in both the public and private sectors. Comprehensive assistance was provided to several municipalities regarding the evaluation of hazardous street trees and the protection of street trees including assisting the largest city in the state with planning and public education associated with an aerial spray operation to protect both public and private shade tree in a 1,600 acre urban residential area.

**E. NARRATIVE AND IMPLICATIONS:**

The landscape industry is better educated and informed about water quality, waste disposal, pesticide use and application, and plant selection because of efforts by extension specialists and agents. The number of registered landscape contractors and plant professionals has increased significantly as a direct result of our programs, classes and resource materials. Trees in urban areas have been planted as a result of "Keep America Beautiful" projects through the county agents. Citizens have become better informed about the control of several important insect pests, including the imported fire ant and mosquitos. Volunteers have been trained through the Master Gardener programs, and have made significant contributions back to the county extension centers. Home gardeners have adopted environmentally friendly gardening practices because of extension educational efforts.

Consumer horticulture issues will continue to dominate a great portion of Extension administration's management strategies in the near future. Issues will center on how to keep pace with the rapidly changing demands clientele is placing on the organizational structure. Financial resources will have to be creatively sought through outside funding sources to pay for the development of publication materials in all forms and cutting edge computer equipment. The marketing of environmentally safe information to a thirsty gardening public must remain in the forefront of our contact with the public. Resource materials must stress limited pesticide use and/or no pesticide use when possible. This has been addressed through a Master Gardener training manual and audio visual materials that cover the entire consumer horticulture gardening arena. Programs that teach homeowners how to compost yard waste rather than dumping it in landfills will continue to be emphasized. Strategies that incorporate computer delivery of how-to horticultural information to clientele's home computer will continue to be developed. What will be Extension's marketing plan to share the consumer horticulture information we are putting on the Internet for public access?

**F. COORDINATOR AND TEAM LEADERS:**

- M.A. Powell, Coordinator
- C. Apperson
- L. Bass
- R. McGraw

## **ACCOMPLISHMENT REPORT 1992-1995**

### **NC17 - NORTH CAROLINA FOREST RESOURCES, WILDLIFE PRODUCTION, PROCESSING AND MARKETING**

#### **A. OBJECTIVES**

1. To increase the timber income potential from private timberland while upgrading the state's forest resource base through improved reforestation, intermediate stand improvement and timber stand protection.
2. To improve compatible multiple use management of forest resources with continuing emphasis on income opportunities from wildlife, recreation, firewood, pine straw, mushrooms and timber.
3. To increase income to landowners through improved business management of timberland and marketing of forest products.
4. To increase the competitiveness and profitability of forest products manufacturers by facilitating adoption of improved utilization techniques, encouraging better management principles, increasing production efficiency and improving product quality.
5. To increase markets for North Carolina forest products by attracting new or expanding existing industries, improving marketing skills of managers and increasing exports.
6. To educate the consumer about new forest products entering the market place, their proper application and protection.
7. To improve the quality and reduce the time it takes to produce marketable Christmas trees by adopting cost effective technology in site preparation, nutrition, weed, insect and disease control, shaping and post-harvest handling.
8. To develop better Christmas tree merchandising methods to increase market share.
9. To increase the understanding of growers and the public on the environmental impact of pesticide use in Christmas tree production.

10. To increase landowner income by the use of wildlife through fee hunting and fishing.
11. To provide extension agents with annual training opportunities in wildlife damage control.
12. To obtain factual data on the distribution and severity of wildlife damage to address new problems and to gain support for necessary changes in public policy.

#### **B. NON-EXTENSION RESOURCES**

- |  |           |
|--|-----------|
| 1. Number of Volunteers                | 2,535     |
| 2. Total Number of Volunteer Days      | 5,145     |
| 3. Value of Federal Government Funding | \$130,000 |
| 4. Value of State Government Funding   | \$407,000 |
| 5. Value of Local Government Funding   | \$5,000   |
| 6. Value of Private Funding            | \$214,465 |

#### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

##### Forestry

1. Number of landowners who began to practice 5,780 good forestry management practices Acres impacted 998,235
2. Increased earnings generated by improved \$14,339,270 forest management and better application of marketing techniques
3. New forest management plans adopted 1,730 Acres impacted 219,240

##### Wood Products

1. Number of firms adopting new manufacturing 60 techniques such as quality control, thin kerf machines or computerized networks  
Money saved \$2,158,500
2. Number of jobs created with new or 135 expanded wood products manufacturing facilities

##### Christmas Trees

1. Number of growers who started soil and 1,670 plant tissue testing
2. Number of trees sold with a USDA grade #1 or better 3,403,150  
Total trees sold 6,969,170

## Wildlife

1. Increase in landowner income from \$606,160 wildlife activities
2. New acres leased for wildlife activities 62,465

## **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

1. A Master Forest Manager class was conducted four times during this long range plan with 102 graduates. The graduates of this class improved their average pre-test score from 51 to an average post-test score of 72. These individuals owned or controlled approximately 43,600 acres of timberland. Two were county naturalists who manage over 3,000 acres of county park land. These same individuals present educational programs to over 5,000 park visitors and day campers each year.
2. In 1992, The North Carolina Cooperative Extension Service produced a plastic pocket sized chart entitled A Comparison of Floor Joist Spans. This chart was designed for use by builders, engineers, building supply firms, architects and building code officials. The chart provided a quick and easy comparison of floor joist spans for different sizes, grades and species of structural lumber (Southern pine, hem-fir, western woods, and spruce-pine-fir). This popular pocket guide is now in its third printing with approximately 16,500 copies distributed statewide. In addition, the chart has been requested by 82 of the 100 North Carolina Building Inspection Offices. These offices have indicated the "charts are extremely useful and are most helpful to our builders in the local area."
3. Through meetings, demonstrations, field days and newsletters, sod suppression methods were taught to Christmas tree growers in one western North Carolina county. As a result of this program, 175 growers are using the practice on approximately 2,000 acres. This has reduced the amount of triazine used by 8,000 pounds per year.
4. Restocking of wild turkeys in an eastern North Carolina county has created a great deal of interest. A local chapter of the National Wild Turkey Federation was formed during the summer of 1994. This local chapter's first banquet was held in 1995 with 200 people in attendance. Over \$20,000 was generated at the banquet with \$14,000 of this amount earmarked for a wild turkey superfund.
5. The North Carolina Wildlife Resources Commission funded

"Economics of Filter Strip and Ditch Bank Management for Quail." A report "Economics of Field Border Systems" was presented to the Commission. The information in this report will help private landowners evaluate investing in wildlife habitat and water quality conservation practices. Investments in these practices are likely to increase the attractiveness of large parcels of private lands for recreationists, thus generating income for the landowners.

#### **E. NARRATIVE AND IMPLICATIONS**

Indicators show that efforts to improve good forestry management practices, to increase the competitiveness and profitability of the forest products industry, to improve the quality of Christmas trees, and to increase landowner income from wildlife activities have been very successful. Increased earnings generated by improved forest management and better applications of marketing techniques totaled approximately \$14,340,000. Acres impacted by Extension programming were approximately 1,280,000 or nearly 10 percent of the timberland owned by private non-industrial landowners. Money saved by firms adopting new manufacturing techniques was approximately \$2,158,500. In addition, 135 new jobs were created in the forest products manufacturing arena due to extension efforts. Over 50 percent of Christmas trees growers began to use soil and plant tissue testing to improve their Christmas tree quality. The number of trees sold with a USDA grade #1 or better was also approximately 50 percent. Finally, landowner income from wildlife activities increased about \$606,000.

Despite these successes the need for forest resources, wildlife production, processing and marketing has never been greater. The recent reduced flow of timber from the state's publicly owned forests has resulted in increased demand and consequently higher prices paid for timber located on privately owned timberland. Long-term opportunities now exist for timberland owners to receive investment returns from their timberland above those available to them from other opportunities.

The continued long-term expansion of the state's primary and secondary forest products industries not only depends on the national and international economy, but on the individual firms' abilities to compete by obtaining and efficiently using raw materials and utilizing existing and new technology. If the forest products industry is to maintain or increase its contribution to the economy of the state, the implementation of new technology, improved efficiency and productivity, emphasis on value-added manufacturing, and increased management sophistication is needed by the primary and secondary manufacturing forest products industry.

The increase in harvest levels on private lands and the decrease on public lands

has had a major impact on wildlife production. Ruffed grouse, quail, rabbit and deer populations have decreased significantly on public lands as the annual harvested amount of timber has decreased. This has resulted in a smaller number of young, regenerated timber stands. The opposite trend is occurring on private lands. Good timber management that provides diversity of uses in timber stands brings about increases in wildlife species. In addition, as the population of North Carolina increases, landowners are realizing greater returns from fishing and hunting leases. Opportunities exist for the landowner to develop their wildlife resources to a level attractive to potential lease holders.

Real prices for Christmas trees have remained unchanged or decreased over the past five years. Growers are beginning to experience less competition from lower grade and less desirable species. However, other regions are beginning to produce an increasing quantity of higher grade Fraser fir and other competitive species. North Carolina's growers must continue to utilize cost effective production methods that result in high grade trees with a minimum impact on the state's environment. Improved IPM techniques, low environmental impact weed control, an improved genetic base and other cultural techniques are needed to meet the competition from other regions and artificial substitutes.

F.

#### **COORDINATOR AND TEAM MEMBERS**

Larry G. Jahn, Chair

Peter T. Bromley

Earl L. Deal

Edwin J. Jones

Charles D. Safley

Jill R. Sidebottom

Robert D. Williamson



## ACCOMPLISHMENT REPORT 1992-1995

### NC18 - NORTH CAROLINA COMMUNITY AND RURAL DEVELOPMENT

#### A. OBJECTIVES

1. Rural Communities and existing/emerging entrepreneurs will undertake recreational and tourism development.
2. Homeowners, lending institutions and realtors will understand and undertake, where appropriate, proper maintenance of on-site waste water treatment and disposal facilities.
3. Municipalities and counties will plan and develop a comprehensive, integrated solid waste management program that will address recycling efforts at both the private and public levels.
4. The general public, farmers and consumers in particular, will understand the implications of soil and water contamination, and take the necessary steps to protect these resources.

#### B. NON-EXTENSION RESOURCES

- |   |         |
|---|---------|
| 1. Number of volunteers                         | 84,333  |
| 2. Total Number of volunteer-days               | 82,724  |
| 3. Value of federal government funding (grants) | 223,154 |
| 4. Value of state government funding (grants)   | 231,432 |
| 5. Value of local government funding (grants)   | 365,550 |
| 6. Value of private funding (grants)            | 508,747 |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of citizens/emerging leaders who demonstrated improved leadership and problem solving skills. 37,902
2. Number of young adults and emerging leaders who demonstrated increased economic knowledge. 14,653
3. Number of strategic plans/economic analyses which identified opportunities for diversification, deterrents to development and/or infrastructure improvements, started or revised. 637

4. Number of new current and potential entrepreneurs who were assisted to analyze their enterprise. 2,123
5. Number of potential entrepreneurs who made informed decisions about a business start-up as a result of extension assistance; 1,457
6. Number of communities who planned or initiated beautification projects. 1,493
7. Number of communities assisted with waste, water supply or waste-water management problems; 1,023 Total number of citizens impacted. 1,738,660

**D. OTHER INDICATIONS AND ACCOMPLISHMENTS**

**E. NARRATIVE AND IMPLICATIONS**

Although local community and rural development is affected by state and national social and economic trends, rural county economic performance, community infrastructure and community amenities vary widely. Ameliorative activities, such as economic development, strategic planning, solid waste management, water system development, continue to be addressed at the county and regional levels to take advantage of efficiencies of scale. At the same time quality of life concerns are better addressed at the community level. Extension will continue to support both types of efforts.

The many clean-up and beautification efforts attest to citizen awareness of their environmental surrounds. Many citizens also have become informed about the regulations governing the protection of our water resources and the management of wastes. Response to the state legislative mandate to reduce community solid waste streams by 25 percent through recycling has been very encouraging; many communities have met or are exceeding the challenge. While efforts to educate rural residents about the proper maintenance of on-site waste water treatment, to educate farmers concerning best management practices to control non-point source pollution of streams, and to promote the safe use and disposal of chemicals have been extensive, continued effort will be required.

- F. COORDINATOR AND TEAM MEMBERS:**
- Simon Garber
  - Mitchell Renkow
  - Janice Lloyd
  - Robert Usry
  - Stephen Lilley
  - John Richardson
  - Shirley Callaway

Patricia Peele  
Marilyn Gray  
Joseph Zublena

# THE ENVIRONMENT AND CONSERVATION OF NORTH CAROLINA'S NATURAL RESOURCES CORE PROGRAM

## A. OBJECTIVES

1. Landowners with more than 10 acres of landholdings will know about the Forest Stewardship Program.
2. Landowners with wetlands will learn about state and federal regulations regarding their conservation and environmental values of wetlands.
3. Landowners and sportsmen interested in wildlife will learn about appropriate forest and wildlife management practices to improve habitat and populations of protected species.
4. Landowners with endangered species will know the provisions of the Endangered Species Act and how to comply with the Act.
5. Youth and adults will become more aware of the importance of natural resources and appropriate management practices.
6. Elected and appointed officials in counties without land use plans will implement comprehensive land use planning policies and practices.
7. County government, business and citizens will attain new air quality standards in counties where new clean air standards are imposed.

## B. NON-EXTENSION RESOURCES

1. number of volunteers
2. total number of volunteer-days
3. value of federal government funding (grams)
4. value of state government funding (grams)
5. value of local government funding (grams)
6. value of private funding (grams)

442  
930  
16,510  
1,803  
830  
2,290

## ACCOMPLISHMENT REPORT 1992-1995

### NC19 - THE ENVIRONMENT AND CONSERVATION OF NORTH CAROLINA'S NATURAL RESOURCES - CORE PROGRAM

#### A. OBJECTIVES

1. Landowners with more than 10 acres of timberland will know about the Forest Stewardship Program.
2. Landowners with wetlands will learn about state and federal regulations regarding their conversion and environmental values of wetlands.
3. Landowners and sportsmen interested in wildlife will learn about appropriate forest and wildlife management practices to improve habitat and populations of preferred species.
4. Landowners with endangered species will know the provisions of the Endangered Species Act and how to comply with the Act.
5. Youth and adults will become more aware of the importance of natural resources and appropriate management practices.
6. Elected and appointed officials in counties without land use plans will implement comprehensive land use planning policies and practices.
7. County governments, businesses and citizens will meet new air quality standards in counties where new clean air restrictions are imposed.

#### B. NON-EXTENSION RESOURCES

1.	number of volunteers	445
2.	total number of volunteer-days	930
3.	value of federal government funding (grants)	16,610
4.	value of state government funding (grants)	1,800
5.	value of local government funding (grants)	850
6.	value of private funding (grants)	2,290

### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1. Number of new wildlife management plans developed 166, acres impacted 30,408 .
2. Number of new landowners leasing land for recreational purposes 87, value of these new leases \$9,039 .
3. Number of pond owners improving fish production and water quality 782, acres impacted 1,750.
4. Number of elected and appointed officials who increased their knowledge of forest management, wetlands, endangered species, or air quality issues 184 .
5. Number of new acres established in longleaf pine 11,940 and in Atlantic white cedar 0.

### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

In one county, ten volunteers received 30 hours each of training in forest ecology and forestry and subsequently donated 210 hours of volunteer time to the Cooperative Extension Service. They also achieved the titles of Master Ecologists. One volunteer developed a 42-page tree identification and use guide for schools and adult leaders. Fifty-four have been distributed so far.

Moore County has been a leader in reforestation in North Carolina. Approximately 11,500 acres have been reforested in the county. Approximately 4500 acres have been reforested into longleaf pine. Additionally, about 4,000 acres have been improved or managed for longleaf pine straw production. This has an income potential of \$1,062,500/year.

### **E. NARRATIVE AND IMPLICATIONS**

Macon County has conducted a community survey to determine the peoples' attitudes toward land use planning, farmland preservation, zoning, and watershed protection act. Implementation of the plan is underway and the county planning board is currently developing regulations based on high priority items. The future will clearly be shaped by the implementation of the watershed protection act and the planning department's implementation of rules and regulations as future local, state, and federal regulations are developed. Efforts are being made to coordinate the various regulations involving farmland preservation and watershed protection to enhance the value, visual appeal, and effectiveness of these regulations for the local citizens.

In Pamlico County, the Pamlico County Forestry Association serves as the primary mechanism for natural resources educational programs. Educational meetings held on wetlands regulations and the Albemarle-Pamlico Estuarine Study's Comprehensive Conservation Management Plan were attended by approximately 50 landowners. Extension facilitation of these meetings ensured the presentation of sound accurate information on how landowners were impacted by the plan.

**F. COORDINATOR AND TEAM MEMBERS:**

Edwin J. Jones  
 Peter T. Bromley  
 Claire-Marie Hannon  
 Charles Hammond  
 Tom Hoban  
 Robert Williamson  
 Sandra Zaslow

## ACCOMPLISHMENT REPORT 1992-1995

### NC20 - PESTICIDE APPLICATOR TRAINING

#### A. OBJECTIVES

The objectives of this program are to train and re-train (certify and recertify) commercial and private applicators, dealers and consultants in the safe and proper use of pesticides.

#### B. NON-EXTENSION RESOURCES

- |    |  |           |
|----|--|-----------|
| 1. | Number of volunteers                         | 220       |
| 2. | Total number of volunteer-days               | 201       |
| 3. | Value of federal government funding (grants) | \$188,583 |
| 4. | Value of state government funding (grants)   | \$ - 0 -  |
| 5. | Value of local government funding (grants)   | \$ - 0 -  |
| 6. | Value of private funding (grants)            | \$ - 0 -  |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of meetings held to certify and re-certify private pesticide applicators 895 and re-certify commercial applicators 515.
2. Number of commercial schools held 81.
3. Number of pesticide applicators (private and commercial) who improved 35,000.
  - a) disposal of pesticides/containers 21,000
  - b) storage and containment of pesticides/containers 28,000
  - c) equipment calibration and amount of pesticide applied 4,820
  - d) selection of the proper pesticide 32,000
  - e) adherence to regulations 38,250
  - f) pesticide use record-keeping 8,560



#### **D. OTHER INDICATORS/ACCOMPLISHMENTS**

1. 9,220 private pesticide applicators (farmers) were trained in 2 hour classes to conduct Worker Protection Standard training for their pesticide workers and handlers.
2. 84 county pesticide coordinators and 83 other solid waste personnel were trained to re-cycle pesticide containers in four 3 hour meetings.
3. 100 county pesticide coordinators were trained and regulatory updated to answer pesticide use questions and conduct pesticide education.

#### **E. NARRATIVE AND IMPLICATIONS**

North Carolina has 29,570 private pesticide applicators. During the four year period 8973 applicators were certified to use restricted use pesticides. Applicators can be certified by attending a 4 hour class with emphasis on new Federal Core manual. Five slide/tapes sets were prepared in North Carolina for this program. These lessons are (1) Pest Control/Labeling/Formulations, (2) Pesticides in the Environment, (3) Harmful Affects/Protective Clothing, (4) Handling/Missing/Applications and (5) Calibration/Transportation, Storage/Disposal. A sixth slide/tape sets covers Federal and N. C. Laws and Regulations. A second certification method involves filling in an Applying Pesticides Correctly Programmed Instruction Workbook and then meeting with the County Pesticide Coordinator for a 30 minute review and test. This manual is also used by applicators who fail to get re-certified and must pass a State Administered Test to get recertified. This manual was revised in 1994 and a chapter on the Worker Protection Standard was added.

Private pesticide applicators (farmers) must be re-certified every three years. Of the 29,570 applicators 25,560 were recertified during the 1992-95 period. Applicators are certified by attending a 2 hour class conducted by the County Pesticide Coordinator. In 1993-94, the program covered the Worker Protection Standard, Pesticide/Container Disposal, Farmer Recordkeeping, Preventing Ground/Surface Water Contamination, The Agricultural Health Study and Label Review. This is the fourth 3 year recertification cycle conducted for farmers. Every 3 years pertinent subjects and a current review of laws and regulations are covered. An Agricultural Healthy Study sponsored by the National Center Institute is being conducted in N. C. by SRA Survey Research Associates, Inc. in Durham, N.C. The farmers are reached during the recertification meetings where they fill out an initial survey and take comprehensive pesticide use forms home for the grower and spouse to complete. Follow ups to check on farmer health and possible relationships with pesticide used will continue.

North Carolina has 9,259 commercial pesticide applicators, public operators and consultants. It has 1007 restricted use pesticide dealers. Fifty-six two day schools were held across the State to train 5890 new applicators/dealers in 1992/95. One day was spend on core material Applying Pesticides Correctly and N. C. Federal Laws/Regulations and 1/2 day on the Specialty Subjects (Ornamental-Turf, Structural, etc.) On the second afternoon the N. C. Department of Agriculture offers tests in all commercial applicator categories. In N. C. we have persons licensed as follows: Aquatic 348, Public Health 246, Forest 451, Right of Way 766, Regulatory 71, Ag. Animal 142, Ag. Plant 1483, Ornamental/Turf 4305, Seed 34, Demonstration & Research 612, Wood Treatment 82, Aerial 92, Structural 1106 and Dealers 1007. In addition to the 14 two-day schools 22 one-day schools were held for specialty groups such as Electric Power Companies, Public School Employees, Vo. Ag. Teachers, University Workers and others.

During 1992-95, 2221 recertification classes were held for over 9,000 commercial applicators, public operators, consultants and dealers. These applicators/dealers/consultants need 3-20 hours of recertification hours per 5 year period depending on licensing specialty and number of specialties in which they are licensed. These sessions are typically 1-3 hours in length but some offer up to 6 hours of credit. They are held on county, commodity and state meeting levels. Over 70 slide tapes sets and 109 video's are available for this type of training and are used in 40% of the classes.

245 special two hour worker Protection Standard Meetings for 9,220 employers are held in our 100 counties. WPS supplies were delivered to 100 counties and the agents trained to help employers train their handlers and workers. Extension will not train workers/handlers directly nor issue EPA verification cards. Certain agencies/groups will issue these cards after meeting N. C. Department of Agriculture training, testing and recordkeeping requirements.

Other pesticide applicator training activities involved an attempt to establish a pesticide container recycling program statewide, an agromedicine program (with Julia Storm, M. B. Genter, others) protective clothing workshops (with Jennings and Mock), water quality programs (with Humenik) safety programs (with McLymore) A manual "Dancing with Danger" for Spanish speaking workers (with Steve Derthick) pest management programs (with M. Liner and Patty Pritchard) impact assessment programs (with S. Toth), Master Gardener programs with (L. Bass) and aerial applicator programs (with S. Southern).

**F. COORDINATOR AND TEAM MEMBERS:** John H. Wilson, Jr.

## ACCOMPLISHMENT REPORT 1992-1995

### NC21 - INTEGRATED PEST MANAGEMENT FOR ROW CROPS, HORTICULTURAL CROPS AND LIVESTOCK IN NORTH CAROLINA

#### A. OBJECTIVES

#### B. NON-EXTENSION RESOURCES

1.	number of volunteers	322
2.	total number of volunteer-days	1610
3.	value of federal government funding (grants)	\$71,600
4.	value of state government funding (grants)	\$15,000
5.	value of local government funding (grants)	0
6.	value of private funding (grants)	\$22,365

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of farmers who started or expanded scouting or using scouting services 4,382; new acres impacted 499,841.
2. Number of growers who started or expanded use of post emergence herbicides as a replacement for ppi or pre-applications 908; new acres impacted 135,581.
3. Amount of pesticides reduced due to scouting and using economic thresholds 84,359 lbs. (ai), savings due to reduced pesticide use \$6 million.
4. Number of scouting schools 96; total participation 661
5. Number of growers who participated in county IPM demonstration programs 322; acres involved 145,802.
6. Number of new farmers who started or expanded animal IPM programs 11; animals impacted 8,210.
7. Number of farmers who started or expanded using alternatives strategies(rotation, trap crops, etc.) other than pesticides to reduce pests 4,382, acres impacted 499,841.

**D. OTHER INDICATORS AND ACCOMPLISHMENTS**

**E. NARRATIVE AND IMPLICATIONS** (optional; include program accomplishments or impacts not described in Items C and D).

IPM activities were reported in 79 counties involving alfalfa, apples, Christmas trees, corn, cotton, I. potatoes, greenhouses, pastures, peanuts, small grains, soybeans, tobacco, turf, vegetables, beef, swine, and poultry. This effort has resulted in widespread adoption of IPM techniques by growers. Extension agent reports show that 24,327 growers farming 2.7 million acres are using 3 or more of the following IPM methods: 1) pesticide applications based upon scouting and thresholds, 2) pesticide applications based upon predictive models, 3) crop rotations used to hinder or destroy pest establishment and survival, 4) pest resistant varieties are used, 5) use of early maturing varieties to avoid pest problems. This represents 68% of the harvested row crop acres in NC. 4,382 growers tried new IPM methods on 499,841 acres. Horticultural crop IPM was practiced by 1,032 growers on 39,094 acres. 96 scouting schools were held with 3,500 grower participants. IPM on-farm demonstrations were conducted in cooperation with 322 growers on 145,000 acres.

A special animal IPM project with 25 poultry and 5 swine fieldmen affecting 12 million animals (turkeys, broilers, layers, hogs) was initiated. Another 200 industry fieldmen were trained in IPM affecting the pest management decisions of 20 integrators and over 1,000 producers impacting 180 million animals. A special project was initiated for roach control with a large swine integrator on 4 farms. Insecticide use was reduced from 1-2 applications/month to 1 application every 3 months by careful monitoring and targeted treatments.

This year it became evident that the interests of row crop growers affected IPM programs and will for years to come. First, growers are more interested in the cost of inputs. They see that crop prices will likely not change appreciably upward and yields are not going up enough to offset input costs. The price of pesticides is getting all growers attention. Secondly, they are more interested in biological control and pest biology/ecology. They see these areas as a way to gain a better understanding of pest problems and institute permanent solutions. IPM training is targeting this need.

Cotton acreage almost doubled this year (to 800,000) acres in response to higher crop prices. Much of this acreage was planted by new growers (500) with little or no experience in cotton pest management. Profits can quickly be eliminated by pest damage or the cost of poorly planned pest management. This is especially true for new growers as cotton pest management is complex with many difficult decisions. Many "experienced" growers have been growing cotton for less than 5 years. All of the cotton acreage is scouted so it is important that IPM information be readily available and current. 56 cotton scouting schools (661

attending) were held just before and during the season to give growers every opportunity to learn new pest monitoring methods. 1,857 growers attended winter cotton pest management training. Due to the high level of IPM implementation average insecticide treatments were down 0.8 applications this year due to lower than average bollworm pressure demonstrating that IPM programs can, and do, modify grower behavior resulting in pesticide use only when necessary. Insecticide reductions equals an average savings of \$4 million and 16,000 lbs/ai statewide. The IPM program established light traps in all counties with new growers to monitor insect levels and alert growers when more intensive scouting was needed. These light traps were added to a state-wide series of light traps (44 total) that serve as an insect early warning system for growers and consultants. Light trap catches are widely circulated via print and electronic methods. The bollworm egg threshold, developed by NCSU researchers, is now employed by all cotton growers saving \$20-25/acre (\$16 - 20 million statewide) in insect damage with no increase in insecticide costs. Cotton aphids were controlled during the season entirely by beneficial arthropods and a fungus disease due to the extension pest management emphasis on biological control. Notification through the computer bulletin board system and radio advising growers and consultants to the high efficacy of natural control led to widespread acceptance by growers. Avoiding insecticide treatments for aphids saved growers statewide an estimated \$550,000. Despite constant warnings from special interests to cotton growers of plant bug dangers, producers and consultants followed extension IPM recommendations to monitor square retention and sweep for plant bugs. Through this approach growers treated less than 1% of the acreage saving unnecessary treatments. Special attention in cotton was focused on post-directed weed treatments so growers can effectively control weeds after emergence depending less on preplant or preemergent treatments and proper fertilization to reduce plant attractiveness to insects.

Corn and soybean IPM efforts continue to increase grower returns. One county reports a \$1.1 million savings in corn and soybeans over a 3 year period as a result of growers adopting IPM practices. Tobacco IPM has increased the use of disease resistant varieties by almost 50% in some counties. A demonstration project in one county showed that a rye cover crop to suppress root-knot nematode was as effective as a conventional nematocide treatment increasing profits by \$938/acre. A shorter, simplified scouting guide was developed for burley tobacco and distributed to growers. Pasture weed IPM programs are focused on 2 biological control agents; goats and insects. Goats alone and mixed with beef/dairy cows control weeds in pastures and along fence rows. This program is especially targeted at multiflora rose and kudzu. Pasture grass in one test increased from 15% of vegetation to over 70% due to control of weedy species. This eliminates the need for herbicides and represents a permanent solution to a pest problem. Goat meat is increasing in popularity so growers can solve pest problems and market the control agent for a profit. In cooperation

with NCDA, a program to release thistle weevils has begun in 8 counties. This biological control program will not only reduce herbicide use, reducing input costs for producers, but will improve pastures. It also represents a permanent solution to a persistent pest problem.

Fraser fir Christmas tree IPM programs continue to expand to include new growers. Projects were developed in 5 new counties this year and now is covering all the major tree growing counties representing 83% of the state's production capacity. Because Christmas trees are grown at high elevations in the mountains there are special problems with how pesticides are used and which ones are selected. Due to the steep slopes and nearby moving surface waters the IPM program has addressed problems of soil erosion and off-site movement of pesticides. In the past growers used pre-emergent herbicides to control all vegetation under trees leading to soil erosion problems. The IPM program introduced the idea of using natural ground cover but making it non-competitive by using extremely low rates of post-emergence herbicides leaving plants less able to compete with trees but not dead. By Fall these plants have recovered but it is too late in the season for a problem to develop. One county, in only the second year of an IPM program, reports that 43% of their growers are using the ground cover suppression method of management. A grower survey in the largest Christmas tree producing county found that pesticide reductions averaged 35% and 77% of the growers were using the ground cover suppression method of weed management. Agent reports indicate that IPM is the model for tree production in that county. One of the first year IPM demonstration counties reports a 5% reduction in pesticide use and an increase in tree quality. Another first year county reports that in a grower survey conducted before and after the growing season, grower knowledge of IPM grew from a 2.5 at the beginning to 7.5 after the project (on a 10 point scale where 1 represents little knowledge). A Fraser Fir IPM guide was developed and distributed to 500 growers. IPM training was provided to 20 agents during annual conference and 16 participated in field instruction during the growing season. There is little doubt that this 5 year effort has had results. Growers are able to scout and evaluate their own pest problems and respond in an appropriate manner. This came at a time when growers were facing land use and watershed regulations. The IPM program helped growers improve their pest management, deal with new pests in an intelligent manner, and handle water and/or land use concerns.

Peanut leafspot forecasting is an important part of the IPM program because fungicides have traditionally been applied on a scheduled 2-week basis. The forecasting system gives growers the information needed to treat only when conditions are favorable for disease development. All peanut producing areas have implemented a leafspot forecasting system resulting in 80% of the growers using the system to time fungicide applications. Half the peanut producing counties have upgraded to computer based forecasting system which will enhance

accuracy and ease of use. Growers are contacted through a variety of ways from call-in messages to faxing results. This system saves peanut growers 1.5 - 2.5 treatments a year reducing the amount of pesticide applied by approximately 250,000 lbs. ai and \$2.5 million. One large peanut growing county reports that the advisory system saves growers \$2 million annually.

Private consultants provide IPM services for 1 million acres so maintaining close communication to exchange IPM information is important. Effective contact with private consultants is maintained with an Extension IPM computer based pest alert system and bulletin board. Through this system weekly pest updates by university extension specialists are posted. Consultants can post and read observations. To further insure close communications with consultants, an annual round table with NCSU faculty is held to provide a forum for idea interchange. The program is developed from consultant's suggestions. 22 consultant's attended this year's round table.

Intensive agent training in IPM continued this year. 8 agents participated in a 16 week IPM course that met 3 hours each week. This course covers both the principles and practice of IPM for field crops, horticultural crops, and urban environments. A 2 day biological control (insect and plant pathogens) training program offered during the growing season was attended by 26 agents. This instruction utilized both classroom and field components with agents making field collections and using lab facilities to identify beneficial insects. The purpose of this training was to insure that Extension agents can confidently identify beneficial insects and explain how natural control of plant pathogens can be enhanced. A beneficial insect training slide set has been developed for use by Extension agents in grower meetings.

New apple IPM methods are being adopted by growers. In the largest apple producing county routine insecticide sprays for codling moth are being replaced by treatments based upon pheromone trap catches. Almost 50% of the growers eliminated 2 insecticide treatments on 6,000 acres saving growers \$180,000. A special effort is underway to replace traditional miticide treatments on strawberries with predaceous mites. This project also includes nursery growers and greenhouse growers. Greenhouse IPM programs are targeting screening as a means to eliminate traditional hard to manage pests such as whiteflies. This is especially important since the number and effectiveness of insecticides for greenhouses is dwindling. A test of 30 screening materials claiming insect exclusion found that only 2 would actually provide adequate protection for whiteflies and thrips. Using the proper screening materials will save the greenhouse industry millions of dollars.

Turf IPM programs continue to increase the number and availability of decision aids for this commodity. Computer based environmental monitoring systems were installed at two golf courses to demonstrate insect pest prediction



capabilities. One golf course documented a \$250,000 savings due to enhanced pest management programs. All golf courses in the coastal region (where insect problems are most severe) have adopted at least part of the current IPM program.

Aquatic weed IPM demonstrations were established in ponds at 11 locations in 9 counties and at one large recreational lake. A combination of management methods (biological, cultural, herbicides) was used to suppress a variety of submerged, floating, and emergent aquatic weeds to reduce herbicide impacts.

**F. COORDINATOR AND TEAM MEMBERS:** Mike Linker

## ACCOMPLISHMENT REPORT 1992-1995

### NC22 - PESTICIDE IMPACT ASSESSMENT IN NORTH CAROLINA

#### A. OBJECTIVES

1. To provide the USDA's National Agricultural Pesticide Impact Assessment Program (NAPIAP) with accurate and timely data on the uses and benefits of pesticides in North Carolina.
2. For extension personnel in the state to be informed of regulatory actions affecting pesticide use in order to assist clientele with necessary changes in pest management.

#### B. NON-EXTENSION RESOURCES

- |    |  |           |
|----|--|-----------|
| 1. | number of volunteers                         | 0         |
| 2. | total number of volunteer-days               | 0         |
| 3. | value of federal government funding (grants) | \$118,704 |
| 4. | value of state government funding (grants)   | 0         |
| 5. | value of local government funding (grants)   | 0         |
| 6. | value of private funding (grants)            | 0         |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

- |    |  |    |
|----|--|----|
| 1. | number of cooperative relationships  | 2  |
| 2. | names of cooperators   |    |
|    | a. National Agricultural Pesticide Impact Assessment Program (USDA)                                      |    |
|    | b. Southern Extension and Research Activity - Information Exchange Group 1 (Pesticide Impact Assessment) |    |
| 3. | number of NAPIAP linkages  | 49 |

4. purposes of linkages:
  - a. Exchange of information on pesticide use/benefits, crop production statistics, and mailing lists: Eastern North Carolina Christmas Tree Growers Association National Agricultural Statistics Service (USDA) National Center for Food and Agricultural Policy Washington, D.C.) North Carolina Agricultural Statistics Service North Carolina Center for Public Policy Research North Carolina Christmas Tree Association North Carolina Department of Agriculture North Carolina Farm Bureau Federation North Carolina Potato Association North Carolina Sweetpotato Commission Pesticide Advisory Committee of North Carolina Pesticide Board Poultry Companies in North Carolina (27) Resources for the Future (Washington, D.C.)
  - b. Provide educational opportunities at annual meetings, field days, and departmental seminars: Department of Entomology, Clemson University Department of Entomology, North Carolina State University Entomological Society of America North Carolina Agricultural Chemicals Association North Carolina Cotton Promotion Association North Carolina Fresh Vegetable Growers' Association North Carolina Pickle Producers' Association North Carolina Sweetpotato Commission North Carolina Tomato Growers Association Southeastern Branch, Entomological Society of America
5. developed databases

Conducted mail surveys of 940 sweetpotato producers in 17 counties, 1,115 cotton producers in 18 counties, 281 tomato producers in 25 counties, approximately 3,000 poultry (i.e., broilers, broiler breeders, egg layers and turkeys) producers in 54 counties, 95 potato producers in 14 counties and 936 Christmas tree producers in 24 counties in North Carolina to determine pesticide use patterns on sweetpotatoes in 1991, cotton in 1992, tomatoes and poultry in 1993, and potatoes and Christmas trees in 1994. Data on the herbicides, insecticides, miticides, nematocides, fungicides, rodenticides, disinfectants, growth regulators, and/or nonchemical pest management practices used by sweetpotato,

cotton, tomato, poultry, potato and Christmas tree producers were collected and stored in a database along with pesticide use data for the 1988 peanut crop, 1989 potato and flue-cured tobacco crops, and 1990 apple and cucumber crops. Information in the database includes the chemical and nonchemical pest management alternatives used, percentage of acreage treated with the alternatives, application rates, number of applications, methods of application, costs of application, and yield and quality effects of alternatives. The database is used to respond to inquiries for pesticide use data from the USDA's NAPIAP and other organizations. The database also serves to document the acceptance and implementation of integrated pest management (IPM) by growers in North Carolina and to evaluate extension and research programs in the state.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

##### **1. Pesticide Benefit/Use Assessments**

Provided information to USDA's NAPIAP on the benefits and uses of methyl bromide on tobacco (plant beds), broccoli, cauliflower, apples, eggplant, melons, peppers, strawberries, tomatoes (plant beds and fields), forest tree transplants, ornamentals, stored tobacco and peanuts, and field corn in North Carolina. Extension specialists in the state participated in the NAPIAP five-state benefits assessment of methyl bromide, attending a regional meeting held in Columbia, South Carolina on April 28, 1992. The benefit/use information on methyl bromide submitted to the NAPIAP was included in a USDA publication on the economic effects of banning methyl bromide for soil fumigation.

##### **2. Pesticide Product Registration Information**

Provided extension and research personnel in North Carolina with current information on pesticide products registered with the U. S. Environmental Protection Agency and North Carolina Department of Agriculture via the National Pesticide Information Retrieval System (NPIRS). A total of 128 NPIRS searches were performed. Information retrieved was used by extension and research personnel to assist North Carolina growers with the management of pests.

##### **3. Information on Pesticide Issues and Programs**

Prepared and distributed a pesticide newsletter containing information on pesticide registration, use and safety. Twenty-seven issues of the newsletter were mailed to approximately 250 persons from 1992-1995. The newsletter was also distributed to state and county extension personnel on a statewide extension electronic news network and an undetermined audience on the internet (World Wide Web) from 1994-1995. Pesticide information, including notices from the USDA NAPIAP's Reregistration Notification Network, was distributed on the

statewide extension electronic news network. Fifty-nine articles were posted on the network from 1992-1995. A fact sheet describing pesticide-related extension and research programs in North Carolina was prepared and distributed to 100 county extension centers, extension specialists and researchers, North Carolina Department of Agriculture personnel, commodity groups and other interested persons. State and county extension personnel, growers, commodity groups, pesticide dealers, agricultural consultants and others were educated on pesticide issues and programs through newsletters, electronic news articles and fact sheets.

#### 4. Information on Pest Management Practices Used in North Carolina

Educational displays containing information on insecticide use on the 1990 apple crop, 1990 cucumber crop, 1991 sweetpotato crop and 1992 cotton crop in North Carolina and pest management practices used in the production of agricultural crops in North Carolina were presented at six professional meetings and approximately 20 state and county grower meetings from 1992-1995. Three extension bulletins containing pesticide use information collected through surveys of peanut, potato and cucumber growers in North Carolina, a fact sheet containing pesticide use information collected in the survey of cotton growers, and a fact sheet containing information on pest management practices in the production of agricultural crops in North Carolina collected through grower surveys were published and distributed to state and county extension personnel in North Carolina, USDA's NAPIAP, growers, commodity organizations and other interested persons. These educational displays, extension bulletins and fact sheets informed the NAPIAP, scientists, growers, commodity organizations and others on the use of pesticide and nonchemical pest management practices on North Carolina agricultural crops.

#### 5. Educational Publications for NAPIAP State Liaison Representatives

Thirteen publications relating to pesticide use and safety, pest management, and crop production were purchased and distributed to NAPIAP state liaison representatives in 50 states, 5 U. S. territories and the District of Columbia from 1994-1995. The publications provided the NAPIAP state liaison representatives with knowledge of these subjects.

#### 6. National Pesticide Impact Assessment Workshop

Developed, in cooperation with the USDA Extension Service and other USDA agencies, a National Pesticide Impact Assessment Workshop to train state NAPIAP personnel on the NAPIAP benefits assessment process and discuss the respective roles of federal and state NAPIAP personnel in the process. A total of 100 persons from 45 states, Guam, Puerto Rico and the District of Columbia received training at the workshop held on February 26-27, 1992 in Raleigh, North

Carolina. Proceedings of the workshop were published and distributed to workshop participants, state and federal NAPIAP personnel, and other interested persons.

#### 7. Evaluation of Pesticide Benefits Assessment Computer Model

Evaluated the Pesticide Benefits Assessment (PBA2) computer model for its potential use in NAPIAP pesticide benefits assessments. Pesticide benefit/use data for apples, cucumbers and peanuts were used to evaluate the model. This model will be used in future assessments of pesticide benefits by NAPIAP.

### E. NARRATIVE AND IMPLICATIONS

The judicious use of pesticides is necessary for competitive and sustainable agriculture in North Carolina. Benefit/use data for pesticides undergoing special review and/or pesticide reregistration by the U. S. Environmental Protection Agency must be provided by state extension specialists and researchers to USDA in a timely manner in order to maintain critical pesticide registrations. Statewide surveys of pesticide use on selected commodities are a means to supply more complete and accurate data to USDA. Mail surveys of 940 sweetpotato, 1,115 cotton, approximately 3,000 poultry, 95 potato and 936 Christmas tree producers were conducted from 1992-1995 and similar surveys will be conducted for additional commodities in the future. As a result of pesticide reregistration, over 32,000 registered pesticide products have been canceled since 1989 (for non-payment of maintenance fees by registrants) and many more products will likely be canceled in the future. Extension specialists and county agents need to be continually informed of the regulatory status of pesticide products used on agricultural crops and other sites in order to provide their clientele with accurate and timely information on pest management. This is accomplished by performing searches of computerized data bases (such as the NPIRS) and publication of newsletters and other educational materials. Finally, programs must be established to meet the future educational needs of farmers and other pesticide applicators resulting from emerging pesticide issues such as groundwater and endangered species protection, worker protection standards, and pesticide record keeping.

### F. COORDINATOR AND TEAM MEMBERS

Toth, S. J., Jr. (Program Coordinator)  
Bailey, J. E.  
Brandenburg, R. L.  
York, A. C.

## ACCOMPLISHMENT REPORT 1992-1995

### NC23 - FARM SAFETY

#### A. OBJECTIVES

Extension will promote farm safety awareness and adoption of safe farming practices.

Farm workers, rescue and medical personnel will increase knowledge of appropriate injury prevention and accident response.

100 farmers to adopt and carry out safe operating practices on their farms.

Make audiences aware of actual or potential impacts; help them adopt appropriate technologies, strategies, and policies to minimize chemical contamination of water resources.

Agricultural producers will reduce/prevent water degradation from plant nutrients, pesticides, and animal wastes.

Households will protect/improve quality of water sources.

Community decision makers will increase their capacity for analyzing solid waste management options, including comparative cost and benefits, giving meaningful attention to disempowered populations.

Community decision makers and consumers will be able to implement strategies that enhance marketing recycled materials.

Consumers will make purchasing decisions consistent with environmental responsibility including increased purchases of recycled materials.

Ten farmers adopting proper production practices to grow quality ornamentals or Christmas trees.

Fifteen farmers adopting proper weed control, disease control and fertility practices.

Fifty percent of pesticide applicators will adopt procedures for selection, use and care pesticide protective clothing.



Seventy-five percent of participants in food safety courses will gain knowledge and practice safe food handling and storage.

Farmers and their families will improve safety practices to reduce the number of farm-related injuries by fifty percent.

Drivers of all ages will remember safe and defensive driving skills in appropriate situations (especially on county roads).

Parent take necessary precautions to ensure the safety of their children through gaining appropriate knowledge.

Senior citizens will learn to prevent fires and falls to reduce the risk of injuries; will install smoke detectors and fire extinguishers.

"I Care" Hotline will be implemented in the school system.

Universal housing information will make homes more accessible, convenient and comfortable to all customers.

#### **B. NON-EXTENSION RESOURCES**

1.	number of volunteers	3,000
2.	total number of volunteer-days	250
3.	value of federal government funding (grants)	\$ 30,000
4.	value of state government funding (grants)	\$ 10,000
5.	value of local government funding (grants)	\$ 10,000
6.	value of private funding (grants)	\$ 10,000

#### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1. Number of requests for agricultural safety and health educational materials from agents, volunteers and health professionals 5,000.
2. Number of volunteers recruited and trained in agricultural health and safety measures 2,500.
3. Number of agricultural and landscape managers that adopted two or more power equipment safety measures 1,500.

4. Number of agricultural and landscape managers that adopted two or more safe pesticide handling practices 1,200.
5. Number of medical professionals increased knowledge in agricultural safety and health 500.

**D. OTHER INDICATORS AND ACCOMPLISHMENTS**

High School students were taught Farm Safety and trained in on-farm hazard identification and safety assessment.

Youth participated in Lawn Mower Safety programs.

Twenty-two youth were trained in two Babysitting workshops which centered around safety.

Participants increased knowledge of food safety and health concerns.

Participants used safe food processing methods.

Adults and youth have become more knowledgeable about how to improve health and prevent disease and injury.

Community leaders and members have participated in workshops, seminars or other educational opportunities on health and safety issues.

A video tape of local survivors of farm accidents was developed and used as part of the training on Farm Safety.

**E. NARRATIVE AND IMPLICATIONS** (optional; include program accomplishments or impacts not described in Items C and D).

**F. COORDINATOR AND TEAM MEMBERS:** Dr. Robert L. McLymore

## ACCOMPLISHMENT REPORT 1992-1995

### NC24 - SMALL AND LIMITED RESOURCE FARMERS

#### A. OBJECTIVES

- a. Twelve hundred small farmers will become familiar with the services provided by major USDA agencies.
- b. Six hundred small farmers will improve their managerial skills by developing and adopting a farm record keeping system.
- c. Fifteen hundred small farmers will become familiar with at least one alternative enterprise that could generate additional income.
- d. Five hundred small farmers will develop and adopt a marketing plan for their agricultural enterprises.
- e. Five hundred small farmers will identify and adopt Extension proven agricultural practices.
- f. Two hundred fifty small farmers will diversify their farming operation.
- g. Two hundred minority farmers will become familiar with ways of retaining their farm land.
- h. Ten specialists, fifty extension agents and twelve extension technicians will be trained to better identify, evaluate and work with small, limited resource farmers. They will also receive training on production of alternative commodities that may improve profitability of small farms.

#### B. NON-EXTENSION RESOURCES

1.	Number of volunteers	450
2.	Total number of volunteer-days	1962
3.	Value of federal government funding(grants)	\$ 156,200
4.	Value of state government funding (grants)	\$ 45,650
5.	Value of local funding (grants)	\$ 0
6.	Value of private funding (grants)	\$ 153,400

### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1. 657 small farmers became aware of USDA services for the first time resulting in \$632,641 in benefits.
2. 612 small farmers improved their managerial skills by developing and adopting a farm record keeping system.
3. 3972 small farmers became familiar with at least one alternative enterprise that could generate additional income.
4. 658 small farmers diversified their income stream by adding new enterprises that resulted in \$1,964,776 in additional gross income.
5. 665 small farmers adopted an improved marketing plan for their agricultural enterprises resulting in an additional \$1,374,450 in additional realized income.
6. 694 minority farmers who own 63,827 acres became familiar with ways of retaining their farm land.

### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

Six specialists, and 76 extension agents and technicians were trained better identify, evaluate and work with small, limited resource farmers, and to help small farmers develop a marketing plan for alternative commodities.

Fifty agents and technicians teamed with 50 small farmers to develop demonstrations under the "Ways to Grow Small Farms Institute" program.

### **E. NARRATIVE AND IMPLICATIONS**

The small farms program of NCCES is conducted through efforts of specialists, agents and technicians from both NCSU and NCA&TSU. Many activities of extension in North Carolina impact small farmers because over 80% of the farms in the state classify as small (gross farm income <\$50,000). Although most programs of NCCES serve small farmers, the indicators of success listed above indicate results of county and state level programs specifically targeted at the small farm audience. Such special county programs included educational activities focused on vegetable and flower production, catfish production, development of a rabbit breeders association, and small scale sheep and goat production.

Specially targeted programs administered by NCA&TSU include Small Farms

Week which included programs on alternative commodities for small farmers and minority land loss prevention. Organized small farm tours were also conducted that included tours of small farms that have used alternative enterprises to diversify and improve profitability. The "Farm Opportunities Program" targets small farmers for basic education in areas such as record keeping, soil fertility and alternative commodities.

The "Ways to Grow Small Farms Institute", funded in part by a grant from the Kellogg Foundation, was conducted for two years. The program involved the teaming of extension agents and technicians with small farmers to develop on-farm demonstrations of alternative commodity production systems. Twenty-five small farmers, each teamed with an extension agent or technician, were chosen for the program each year, and receive training on producing and marketing alternatives before entering production. The program was well received and there was great interest among extension personnel and small farmers involved. The chosen alternatives included beef cattle, meat goats, sheep, rabbits, aquaculture (catfish and trout), organic vegetables and ornamentals. The program was discontinued after two years, but the demonstration sites are still being used in conjunction with Small Farms Tours, and county educational programs. This program fostered a better working relationship among specialists from NCA&TSU who administer the program and provide technical information, specialists from NCSU who provide additional technical support and help with training sessions, and the agents, technicians and small farmers who participate in the program.

Projects have also been funded through NCSU to support applied research/demonstration activities concerning small and limited resource farmers. Projects funded from 1992 to 1995 included the development of a publication on sustainable and organic vegetable production for small farmers, using no-till farming practices to improve soil properties on small farms, educational programs for forage crop production and marketing, research and demonstration of the production of various horticultural crops including strawberries, ginseng, ornamentals, herbs, bedding plants and vegetables. Several projects have focused on the development of alternative markets for vegetable and ornamental crops, including the establishment of three new county and one regional farmers' markets. A project was conducted to develop alternative methods for reaching the small farms audience. Finally, a project that was funded to initiate feasibility studies on meat goat production led to the formation of the South Eastern Regional Meat Goat Association and the rapid development of a meat goat industry.

Educational programs targeted at small farmers over the last four years have led to improved stability on North Carolina's many small farms.

**F. COORDINATORS AND TEAM MEMBERS:** Program Coordinators:  
 Matthew H. Poore, NCSU  
 Dan Lyons, NCA&TSU

Other Team Members:  
 Jim Green, NCSU  
 Jeanine Davis, NCSU

## **ACCOMPLISHMENT REPORT 1992-1995**

### **NC25 - NORTH CAROLINA RENEWABLE RESOURCE EXTENSION ACT**

#### **A. OBJECTIVES**

1. Renewable resource producing enterprises will enhance their economic viability.
2. Renewable resource products will be more efficiently utilized.
3. Landowners/decision makers will be better able to act to protect and improve the environment on renewable resource lands through better information about the consequences of their actions.
4. Extension will provide continuing education to renewable resource professionals.
5. Public (including youth) will improve their understanding of renewable resource issues.

#### **B. NON-EXTENSION RESOURCES**

#### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

- 1a. Money saved or earned as a direct result of Extension FORESTLAND programs to enhance economic viability \$15,401,770
- 1b. Money saved or earned as a direct result of Extension FISH & WILDLIFE programs to enhance economic viability \$599,400
- 1c. Money saved or earned as a direct result of Extension ENVIRONMENT & PUBLIC POLICY programs to enhance economic viability \$8,000
- 2a. Money saved or earned as a direct result of Extension FORESTLAND programs to utilize resource products more efficiently \$2,680,000
- 2b. Money saved or earned as a direct result of Extension FISH & WILDLIFE programs to utilize resource products more efficiently



\$606,555

- 2c. Money saved or earned as a direct result of Extension OUTDOOR RECREATION programs to utilize resource products more efficiently \$279,785
- 2d. Money saved or earned as a direct result of Extension ENVIRONMENT & PUBLIC SAFETY programs to utilize resource products more efficiently \$20,000
- 3a. Number of acres protected but not enhanced or protected and also enhanced as a direct result of public policy educational programs concerning FORESTLAND 1,374,311
- 3b. Number of acres protected but not enhanced or protected and also enhanced as a direct result of public policy educational programs concerning FISH & WILDLIFE 240,216
- 3c. Number of acres protected but not enhanced or protected and also enhanced as a direct result of public policy educational programs concerning OUTDOOR RECREATION 9,036
- 3d. Number of acres protected but not enhanced or protected and also enhanced as a direct result of public policy educational programs concerning ENVIRONMENTAL & PUBLIC POLICY 348,000
- 4a. Number of contact hours of FORESTLAND training provided 6,750
- 4b. Number of contact hours of FISH & WILDLIFE training provided 2,250
- 4c. Number of contact hours of OUTDOOR RECREATION training provided 575
- 4d. Number of contact hours of ENVIRONMENT & PUBLIC POLICY training provided 6,300
- 5a. Number of people, including youth, adopting environmentally appropriate practices after participation in Extension FORESTLAND program 154,800
- 5b. Number of people, including youth, adopting environmentally appropriate practices after participation in Extension FISH &

WILDLIFE programs and the total number of such practices they adopt 27,105

- 5c. Number of people, including youth, adopting environmentally appropriate practices after participation in Extension OUTDOOR RECREATION programs and the total number of such practices they adopt 7,388
- 5d. Number of people, including youth, adopting environmentally appropriate practices after participation in Extension ENVIRONMENT & PUBLIC SAFETY programs and the total number of such practices they adopt 43,682

**D. OTHER INDICATORS AND ACCOMPLISHMENTS**

**E. NARRATIVE AND IMPLICATIONS**

Increased earnings of approximately \$16,915,510 resulted through better applications of timber products marketing techniques and increased hunting and fishing leases as a direct result of extension programs.

**Utilization**

Increased savings and earnings of approximately \$2,680,000 resulted through renewable resources being more efficiently utilized.

**Environmental Quality**

Public policy educational programs enhanced approximately 1,931,563 acres of timberland.

**Continuing Education**

Approximately 15,875 contact hours of continuing education for renewable resource professionals were provided.

**Environmental Education**

Approximately 232,975 people increased their understanding of environmentally appropriate practices after using extension materials or after participating in extension programs.

- F. COORDINATOR AND TEAM MEMBERS:** Larry G. Jahn, Chair  
Earl L. Deal  
Edwin J. Jones

## ACCOMPLISHMENT REPORT 1992-1995

### NC26 - YOUTH PROGRAM MANAGEMENT AND COMMUNITY GROUP SYSTEMS DEVELOPMENT

#### A. OBJECTIVES

Youth, volunteers, donors, and 4-H program professionals and paraprofessionals work together to establish and maintain the following needed elements:

1. 4-H clubs/units responsive to the needs of youth, families and communities.
2. 4-H Advisory Groups which seek to identify needs and implement focused local programs.
3. 4-H Foundations seeking resources in support of necessary marketing, staff development and curriculum/program needs.
4. Volunteer support systems responsive to the needs of the six categories of active 4-H volunteers.

#### B. NON-EXTENSION RESOURCES

- |    |                          |             |
|----|--------------------------|-------------|
| 1. | Volunteers               | 66,707      |
| 2. | Volunteer Days           | 213,869     |
| 3. | Federal Funding          | \$ 755,459  |
| 4. | State Funding            | \$1,631,916 |
| 5. | Local Government Funding | \$ 171,401  |
| 6. | Private Funding          | \$ 913,077  |

Total Funding \$3,491,853

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

- |    |                          |         |
|----|--------------------------|---------|
| 1. | Club members retained:   | 104,263 |
| 2. | New 4-H clubs organized: | 1,391   |
| 3. | Funding Received         |         |

Type

Amount

Contracts

\$ 146,918

Fee-for-Service	\$1,145,617
Gifts/Donations	\$ 801,091
United Way	\$1,138,806
Special Fundraisers	\$ 354,640
County 4-H Foundation	\$ 414,024
Government Support	\$ 508,552
Other Sources	\$ 214,782

Total	\$4,724,430
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4. Do you have a 4-H Development Fund/Foundation?

Yes - 73

No - 14

If Yes, was it developed this Year?

Yes - 2

No - 85

5. Number of new 4-H specialized committees.

386

**D. OTHER INDICATORS AND ACCOMPLISHMENTS**

**E. NARRATIVE AND IMPLICATIONS**

The data found in this accomplishment report confirms that youth, volunteers, donors and 4-H program professionals and paraprofessionals have been working together very successfully to establish and maintain the following elements critical to youth program management and community group systems development.

1. 4-H clubs/units responsive to the needs of youth, families and community have been established at significant levels. One thousand three-hundred ninety one new 4-H clubs were reported over the past four years. Club members in established units are also being retained at significant levels. This is the single best indicator of the quality of the 4-H club/unit maintenance effort. One hundred four thousand two hundred and sixty three 4-H club members were retained. This figure is the single best indicator of 4-H club/unit program excellence.
2. 4-H Advisory Groups which seek to identify needs and implement focused local programs are renewed. Three hundred eighty six new 4-H specialized committees were reported by the 87 counties.

This is a strong indication of expanding collaboration with the educational, economic, and governmental units valuable to community group systems development, maintenance and renewal.

3. 4-H Foundations are seeking and securing resources at significant levels in support of necessary and expanding marketing, staff development and curriculum/program needs.

Seventy three or 84% of the eighty seven reporting counties have active 4-H Foundations. Two of those Foundations/Development Funds were established this year.

A total of \$3,491,853 non-Extension Resources were reported from federal, state, and local funding sources. A very impressive total 4,724,430 funding received was reported. (See item C.2) Although the dollars reported in County 4-H Foundations is comparably low at \$414,024, their management function for monitoring and auditing other sources of funds is very impressive.

4. Volunteer support systems are in place at significant levels responsive to the needs of the six categories of active 4-H volunteers. Sixty six thousand seven hundred and seven volunteers were reported working a total of two hundred thirteen thousand eight hundred sixty nine volunteers days. This is a significant work force committed to accomplishing the 4-H mission. (For additional, specific indicators of the strength and significance of volunteer support systems see Accomplishment Report Control #27.)

**F. COORDINATOR AND TEAM MEMBERS:** T. McKinney  
M. Davis  
J. Groff  
S. Lilley  
M. Fanning

## ACCOMPLISHMENT REPORT 1992-1995

### NC27 - 4-H LEADERSHIP AND VOLUNTEER DEVELOPMENT

#### A. OBJECTIVES

1. For 600 master volunteers representing 50 new counties to develop specialized expertise and teaching skills.
2. For 80% of master volunteers to utilize their teambuilding expertise to satisfactorily involve 4-H Agents in planning and implementing contracts.
3. For 50 new counties to experience positive results involving teens in peer helping and teen volunteer roles.
4. For 35 new counties to organize county volunteer leader associations with help of the state association network.
5. For agents and master volunteers to develop skills needed to help leaders fulfill expectations of various job descriptions.
6. To develop a management system to respond to agency and institutional networking opportunities; ie. the National Community Service Act and Community Voices, NC A&T

#### B. NON-EXTENSION RESOURCES

Financial resources from the following donors have helped strengthen and expand the 4-H Volunteer Leadership Development Program at the state level. Support from the private sector for 4-H volunteer leadership development over the four years exceeded \$81,000. Another \$243,835 was reported from seventy counties. Other counties received grants from state and local government sources totalling more than \$160,000. A conservative estimate of the total financial resources supporting this program over the four year period is \$484,835.

1. The North Carolina State Grange - \$39,000
2. The North Carolina Farm Bureau - \$15,000
3. Philip Morris, Inc. - \$18,000
4. The N.C. 4-H Development Fund - \$7,500
5. The N.C. Community College System has been helpful by allowing use of their facilities free of charge for Master Volunteer

Training.

6. Farm Credit System - \$1,500
7. J.C. Penney Company - \$5,000
8. With 70% of the counties reporting volunteers were reported working 119,229 man days which computes to a dollar value of \$14,021,330. This figure comes from the \$14.60 value for volunteer time estimated by the Independent Sector and based on Department of Labor statistics.

#### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1.	Number of volunteers	29,508
2.	Total number of volunteer days	119,229
3.	Number of teens involved in teaching youth or in other peer helper roles	5,196
4.	Number of youth reached by teen/peer helpers	50,011
5.	Number of 4-H leaders trained	9,000
6.	Number of new volunteers recruited	7,293
7a.	Number adults taught by Master Volunteers	3,252
7b.	Number youth taught by Master Volunteers	7,789

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

1. Over the four years of this program, 10 new counties have become involved in the 4-H Master Volunteer program for a total of 75% of counties participating. In addition, four other states have sent delegates to the conference, some on a yearly basis.
2. Since 1992, 1,104 volunteers have received advanced training as 4-H Master Volunteers. The state conference has held fairly constant in attendance, while the number of regional training and participants has climbed annually. In 1992 there were two regional conferences held. In 1994-95, there were seven regional conference held. The regional conferences are totally staffed by volunteer instructors and planned by volunteer/agent teams. Another team of 4-H Master Volunteers coordinates with the State 4-H Office to secure the instructors and ensure quality training experiences at all sites.
3. In 1992, 37 counties reported have either a Teens Reaching Youth program or some form of peer helping program. In 1995, 69



counties reported teens involved in peer helping programs. This is an increase over the 4 years of 46%.

#### **E. NARRATIVE AND IMPLICATIONS**

The 4-H volunteer leadership development program has grown in strength and maturity over the 4 year period of 1992-1995. The Master Volunteer program has developed a volunteer management system that operates autonomously under the direction of the 4-H Specialist and a team of volunteer coordinators. Introduction of the TAXI curriculum has facilitated volunteers assuming more complex leadership roles involving agents as partners. The Volunteer 4-H Leaders Association has also benefitted from the volunteer management training being incorporated into ongoing Master Volunteer training. Another innovation has been the introduction of Continuous Quality Improvement strategies into the volunteer program. The total impact has been profound.

The number of master volunteers who have been trained over the four years has far surpassed the goal set in our objectives. Popularity of the regional master volunteer training format is the explanation of that. While we do not have complete records of how many master volunteers fulfill their contracts, the feedback from agents and indications from accomplishment reports is that it is significant.

Reporting impacts to the N.C. Grange, Philip Morris, Inc., and the N.C. Farm Bureau has continued to be a priority. New resources and strategies for networking 4-H with other parts of the Extension volunteer programs will be the key to success in the future.

#### **F. COORDINATOR AND TEAM MEMBERS:** Groff, J. Total 4-H Faculty

## ACCOMPLISHMENT REPORT 1992-1995

### NC 28 - KNOWLEDGE (SCIENTIFIC LITERACY) NEEDS OF YOUTH

#### A. OBJECTIVES

1. For 140,000 youth to increase their knowledge of biological, physical, and social sciences, as well as language arts skills through integrated, age appropriate curriculum.
2. For 96,000 youth to increase their understanding of economic, agricultural, environmental, career, nutritional, and cultural issues through hands-on learning.
3. For 18,000 youth to understand science related issues and develop effective decision-making skills.
4. For 15,000 teacher/leaders to learn techniques for teaching and otherwise supporting experiential science related curricula.

#### B. NON-EXTENSION RESOURCES

Number of volunteers	20,410
Total number of volunteer days	55,167
Value of Federal Government funding	\$ 20,123
Value of State Government funding	\$143,844
Value of Local Government funding	\$ 4,520
Value of Private funding	\$313,796

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

Number of youth 330,165 and leaders 20,410 participated in the following science programs and learned:

- Respect for living things and life cycles
- The interrelationships we as humans have with our environment
- The importance of the food and fiber system we enjoy
- Effective energy use and conservation measures
- Relative value and destructive capacity of various insects
- How biology, chemistry and physics apply to everyday life
- Importance of understanding biotechnology and its value
- Understanding of nutrition and textiles in space travel
- Appreciation for and understanding of the food pyramid

More than 7,200 teachers reported that their students had an improved perception of science. State average classroom size is 25. Therefore 180,000 young people have improved their perception of science during the past 4 years.

During the past four years more than 1,200 science clubs have been formed to serve an audience of over 23,000 elementary and middle school youth. Many of these clubs were led by teachers who had a positive 4-H school enrichment experience.

#### D. OTHER INDICATORS AND ACCOMPLISHMENTS

In addition to the obvious gains in subject matter competency it should be noted that gains were also made in the area of life skills competency. Those skills which were obviously elevated as a result of this core program were:

- Problem solving and decision-making
- Workforce preparedness
- Communicating and relating with others
- Acquiring, analyzing and using information
- Working with groups
- Managing resources

#### ACCOMPLISHMENT OF OBJECTIVES:

	Goal	92-95
Objective 1	140,000	194,768
Objective 2	96,000	132,894
Objective 3	18,000	22,382
Objective 4	15,000	20,734

\*Note Initial goals were  
 Objective 1 - 70,000  
 Objective 2 - 24,000  
 Objective 3 - 6,000  
 Objective 4 - 5,000

#### E. NARRATIVE AND IMPLICATIONS

The objectives of the Knowledge (Scientific Literacy) Needs of Youth initiative are:

- 140,000 youth will increase their knowledge of science
- 96,000 youth to increase their understanding of scientific issues through

hands-on learning

- 18,000 youth to develop effective decision making skills

- 15,000 volunteers to learn techniques for teaching science

During the past four years, 66 of the 101 reporting units chose to report under this initiative. It was reported that 350,044 youth had been involved with this program over the four years and that they were supported by 20,410 volunteers. In addition these units reported financial support of nearly \$500,000 and participation which exceeded each goal listed above by at least 30 percent.

The following bullets indicate the accomplishments of this initiative during the past four years:

- 7,200 teachers reported that their students had an improved perception of science. The average classroom contains 25 students which indicates that about 180,000 youth have benefitted from 4-H school enrichment programs in 66 counties

- 1,200 science clubs have been formed over the past four years reaching more than 23,000 elementary and middle school youth with hands-on science curricula

- Eighty-two percent of the 591 youth enrolled in River's Edge and Blue Sky Below My Feet showed an average increase of four percent on end of year tests
- In Mitchell County, seven science clubs and two geography clubs were formed in the middle schools. In addition, greenhouses to support the programs were built at each of the middle schools through 4-H initiated grants

- In Person County, 100% of the eight classrooms involved reported that science grades increased by at least one letter grade during the quarter in which embryology was taught.

- Over the past four years, 80 percent of the Randolph County Youth involved with school enrichment curricula followed through on assignments and were able to retain knowledge specific to third - fifth grade school enrichment through the seventh grade

- In Burke County 40 youth involved with the S.E.R.I.E.S. program, taught more than 2,000 younger youth. They also indicated that they had increased in their teaching ability and their understanding of the scientific method

**F. COORDINATOR AND TEAM MEMBERS:**

E. Maxa

G. Davis

E. Jones

R. Usry,

R. McKinnie

## ACCOMPLISHMENT REPORT 1992-1995

### NC29 - HUMAN DEVELOPMENT NEEDS OF YOUTH

#### A. OBJECTIVES

With the challenges facing North Carolina's young people today, the Cooperative Extension Service at both NCSU and NCA&T State University will work closely to provide for human development training to accomplish the following:

1. 10,000 adult volunteers will demonstrate a knowledge of the developmental stages of 6-19 year olds and will organize and operate units and learning experiences based upon age- and stage appropriateness.
2. 20,000 youth who participate in 4-H clubs, special interest groups and camps will develop competency skills through use of existing 4-H programs (When I'm in Charge, I've gotta Be Me, Family Strengths, Babysitting and Talking with TJ) that support human development needs.
3. 5,000 youth will develop coping and contributory skills through a pilot human development curricula.
4. 7,320 youth and their families will improve their self-image by participating in I've Gotta be Me, Discovery, When I'm in Charge, and other appropriate self-confidence activities.
5. 3,265 youth and volunteers will gain knowledge of government after participating in local, state, and national citizenship activities and for 15% of those participating to become active in local governmental issues.
6. 1,575 youth who participate in child development and parenting education programs will demonstrate the principles of child development, child care, mother-father roles, and relationships, and problems associated with parenting.
7. 12,220 youth who complete human development program will demonstrate increased social skills, communications skills, financial management, decision management, and/or goal setting abilities.
8. 500 master or certified volunteers will train 5,000 other volunteers to utilize the specific record-keeping, presentation, career, citizenship, parenting, money manager, and other human development curricula.

9. 2,500 4-H volunteers will demonstrate a knowledge of how to utilize Extension sponsored issue-oriented programs such as alcohol, drugs, teen parenting and sexuality.
10. 6,745 youth will demonstrate improved group communications and public speaking skills through participation in presentations, through special interest workshops, the Performing Arts Troupe, peer friends, and peer performers programs.
11. 6,615 youth will adopt increased job preparation skills after participating in Career Development Programs.
12. 20,000 youth will improve 4-H record keeping skills by completing 4-H projects and cumulative records.

#### **B. NON-EXTENSION RESOURCES**

Volunteers	23,637
Volunteer Hours	13,992 days (65,968 hours)
State Grants	\$38,810
Local Grants	\$48,237
Private Grants/Funds	\$213,239
Other Funding	\$58,606

Other groups or agencies involved: Career Task Forces, Police Departments, Chambers of Commerce, Health Departments, Mental Health Departments, School Systems, Civic Organizations, Business and Industry, Local Governments, Community Colleges, Local Scholarship Programs, Colleges and Universities in Participating Counties, UNC-Greensboro College of Human Environmental Sciences.

#### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

89,380 youth participated in county/state/national government education programs

4,383 young people participated in child care or babysitting programs

7751 children were cared for by those 4-H members participating in a child care or babysitting program

7182 young people gained public speaking skills (competitive presentations, speeches)

1471 news articles were written on an aspect of human development

35,445 persons participated in one or more workshops on human development. A total of 2279 workshops were conducted

20,609 youth gained public speaking skills in non-competitive methods; the presenting youth taught 613,790 additional people.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

ES-237 data showed that 1495 club units had a membership of 32,859 young people. Of those reported, 15,376 youth participated in personal development, child care, and family life learning experiences.

##### **Summary**

##### **Human Development Data**

Club Members - 32,859

Participants in Citizenship, International and Cultural Diversity Programs - 40741

Participants in Child Development -2625

Participants in Consumer Education and Decision- Making - 3223

Participants Gaining Oral Communications Skills - 4949

Participants Gaining Written Communications/Recordkeeping Skills - 4245

Participants Gaining Communications Skills Through the Arts Education Programs - 29,106

#### **E. NARRATIVE AND IMPLICATIONS**

During the last four years, an emphasis on training agents and volunteers on human development subject matter has resulted in a conscious shift toward development of life skills and subject matter knowledge through the 4-H program. Agents and volunteers are better prepared to articulate the life skill outcomes of 4-H and to utilize developmentally appropriate practices when working with young people. A deliberate effort to train against child development practices resulted in the Child Development Institute co-sponsored by the 4-H Youth Development Program and the Department of Child and Family Relations at the University of North Carolina - Greensboro. The Master Volunteer program has also contributed to competence among the volunteer staff in counties across North Carolina. At the center of the MV program has been the project, cumulative record, and presentation programs. Volunteers have been trained on the developmentally appropriate ways of utilizing written and oral communications strategies within their clubs before the young people participate in formal competition. Agents reported that 20,609 youth participated in non-competitive programs while 7,182 participated in formal competitions. These young people taught an additional 613,790 persons about the subject matter they had learned in 4-H programs. A task force reviewed and modified the project record and cumulative record programs for North



Carolina to make the age categories for competition more consistent across the age span of 4-H. In addition, young people have the opportunity to participate in a new competition where they submit resumes, applications to a judging panel and participate in interview judging to be selected to attend National 4-H Congress. Over 130 young people participated in the interview competition on the state level during the first two years. Twenty-seven counties indicated that they are organizing clubs around developmental groups of young people because of this major program. Thirty-seven counties reported that a major focus of this plan was to increase self-esteem of the participating young people through a comprehensive program where a caring adult mentors a young person in the context of the long-term unit. Family and societal issues are being met in 4-H families because of efforts to provide a healthy environment in which to interact with their youth. Seventy percent of the parents surveyed in one county indicated that their children exhibited skills learned from past workshops in clubs for an 18 month period. Another county collected evidence that parents expressed value in the 4-H program as a place to healthily interact with their teens. The creation of 4-H Middle School After School (SOS) and One-on-One programs has provided youth development agents with an additional audience in which to introduce age appropriate curriculum to the participants and to provide an environment in which young people can interface with a positive role model. The 4-H Youth Development program must continue to offer youth development training for volunteers and agents and must support the human development curriculum. Movement towards a curriculum model that allows specialists to design against the National 4-H Jurying Criteria will enhance the program's ability to enhance life skill and subject matter well into the 21st century.

**F. COORDINATOR & TEAM MEMBERS:**

Sharon Rowland  
Ceryl Willoughby  
Lynn Turner  
Ken Elzey  
Cynthia Johnson

## ACCOMPLISHMENT REPORT 1992-1995

### NC30 - SAFETY AND HEALTH NEEDS OF YOUTH Date: (10/1/95)

#### A. OBJECTIVES

1. 40,000 youth will develop positive health habits through an issued-based health project designed around age appropriateness, positive life-long practices and positive self-esteem.
2. 200 youth and 50 supporting adults will participate in the Chaps training and become active advocates in their communities.
3. 30,00 4-H'ers, volunteers, and youth will improve their safety practices that promote accident prevention.
4. 500 youth and volunteers will develop skills and demonstrate the success of delivering substance abuse curriculum.

#### B. NON-EXTENSION RESOURCES

##### Resources-

Volunteers	3,039
Volunteer Hours	4,258 Days (8 Hour Day)
State Government Grants	\$27,100
Local Government Funding	\$ 4,970
Private Funding	\$19,695

##### Cooperating Agencies

Adolescent Pregnancy Prevention Coalition of North Carolina

Local Businesses

School Systems

Forest Service

Soil Conservation

County Health Departments

Fire Departments

Emergency Management Department

Social workers

Peer Counselors

County/City Library

Police Departments

Community Based Alternative Program

County Commissioners  
 Media - Newspaper, Radio, TV-Commercial and Cable  
 SADD Chapters  
 Ministerial Association  
 Mental Health  
 Region Maternal Health Care Program  
 Hospitals  
 Court Judges  
 Housing Authority  
 County Fair Associations

**C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1. 217 Peer helpers completing 407 contracts and reaching 4338 youth.
2. 29 Try Act Teams completing their contracts and reaching 1686 youth.
3. No information was reported concerning Caution: Adults Under Construction.
4. 101 exhibits, screenings, and health fairs targeting youth health and safety needs of youth and reaching 64,045 observers.

**D. ADDITIONAL INDICATORS AND ACCOMPLISHMENTS**

Specific programs focusing on Health and Safety Needs of Youth:

Program	Participation
Foods and Nutrition-	4654
Lifestyle Management-	4979
Fire Safety-	3036
First Aid-	945
Vision-	459
Bike Safety-	1240

State Curriculum Participation (Projects and Learning Experiences)

	92	93	94	95	Total
Health	10,959	13,481	20,190	15814	
Physical Fitness	6,031	10,532	7,900	7025	
First Aid	4,065	3,918	4,245	3542	
Safety	19,434	19,245	17,191	6297	
Foods & Nutrition	19,115	23,010	18,993	7025	
Food Preservation	929	1,692	2,342	12919	
EFNEP	<u>7,241</u>	<u>6,051</u>	<u>10,497</u>	<u>23209</u>	

Total	67,814	77,929	81,358	75,831
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#### **E. NARRATIVE AND IMPLICATIONS**

Though much has been done in four years to address the safety and health needs of youth, there remains a great deal of work to be accomplished. A major need is a relevant Health curriculum. There has been a task force in the Southern Region that has worked diligently on securing funding for an issue-based curriculum. The need for such transcends our State and the resources needed to develop a comprehensive treatment are so great that we have put our energies toward the regional efforts. It is important for 4-H to utilize its expertise in youth development, its knowledge based curriculum developed by subject matter specialist, and community resources, to provide opportunities for youth to develop and clarify values that will prepare them to make positive decisions affecting their future.

Accomplishments that have been made in the last four years have been supported by existing curriculum and that designed for special purposes. As a results time to develop and pilot test has shortened the time to implement and evaluate program results. However, two major efforts, "Peers Empowering Peers" and the pregnant teen curriculum, "Hey What's Cooking" are reaching new audiences. Each of these two programs focus on supporting the young person to develop skills and increase their knowledge so as to make better informed and more positive decisions affecting both themselves and their families.

Many counties have been successful in raising the public's awareness of specific safety and health issues affecting young people and adults alike. Though impact assessment is difficult to measure through exhibits, fairs, and screening experiences, those that both observed and participated experienced a heightened realization/knowledge as to healthy living or hazard reduction. The preparation and management of such exhibits by the young people themselves is an experience that prepares them to handle specific situations and develop the confidence to share with others what they have learned.

Safety and health needs of youth will probably always be a concern. However, North Carolina 4-H is addressing the issues and posturing its program to better support the skill development and knowledge base of its youth, volunteer and family audiences.

#### **F. COORDINATOR AND TEAM MEMBERS:**

Ann Y. Frazier
Robert McLymore
Carolyn Dunn
Thearon McKinney

## ACCOMPLISHMENT REPORT 1992-1995

### NC31 - DEVELOPMENTALLY APPROPRIATE CARE AND EDUCATION OF SCHOOL AGE CHILDREN

#### A. OBJECTIVES

1. 5,000 children will gain knowledge in age appropriate subject matter
2. 1,500 youth will participate in developmentally appropriate programs offered through 4-H day camps and after school programs.
3. 500 child care directors, providers and leaders will provide developmentally appropriate care and education for children.
4. 20 agents and staff will demonstrate resource development skills, marketing strategies, curriculum design skills and other management skills necessary to provide developmentally appropriate care and education in day camps and before/after school 4-H programs.
5. Establish 30 new 4-H after school units in participating counties.

#### B. NON-EXTENSION RESOURCES

Total counties reporting: 37

- |    |  |                             |
|----|--|-----------------------------|
| 1. | Number of volunteers                         | 5,968                       |
| 2. | Volunteer days                               | 46,973                      |
| 3. | value of federal government funding (grants) | \$191,891.00                |
| 4. | value of state government funding (grants)   | \$282,382.00                |
| 5. | value of local government funding (grants)   | \$ 90,956.00                |
| 6. | value of private funding (grants)            | \$202,852.50                |
|    |  | \$768,081.50                |
| 7. | State level funding received (grants)        | <u>                    </u> |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of children served by child care programs established with extension involvement 22,491 (N=17)
2. Number of children served by child care programs using extension

curriculum 71,845 (N=37)

3. Number of existing provider staff receiving training from extension 6,792 (N=37)
4. Number of provider staff utilizing extension curriculum 4,112 (N=37)
5. Number of child care/after school units in your program; clubs 1,513, and special interest groups 255 (N=33)
6. Number of children participating in 4-H day camps 21,285 (N=29)
7. Number of child care facilities that have improved the quality of their program as a result of extension child care training and support 1,310 (N=33)

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

#### **E. NARRATIVE AND IMPLICATIONS**

The impact of the school age child care program can be illustrated by county and state accomplishments. This program is an excellent example of partnerships. At the county level, Extension Agents have formed partnerships with agencies such as local school systems, day care providers, YMCAs, and public recreation departments to improve the quality and quantity of child care. The 4-H Youth Development Department has formed partnerships with the Department of Human Resources, Child Care Division and the Cooperation for National and Community Service care. Since 1992, over \$1,660,800 have been received by the Department to support this program with much of funding going directly to support county programs.

#### **COUNTY ACCOMPLISHMENTS**

Since 1991, over 22,000 children residing in 43 counties have been served by child care programs established with extension involvement while 71,845 children have been served in centers using extension curriculum. Quality training for child care providers is an important aspect of this program. Over the last 4 years, 6,792 child care providers received training from Extension Agents. Curriculum included nutrition, first aid, discipline, age appropriate activities, planning, and developmental stages. Agents reported 1,310 facilities improved their child care services as result of their involvement with the Cooperative Extension Service. The improvement of child care is not limited to child care providers. 4-H agents received training in experimental education, discipline techniques and developmental stages to meet the needs of children. Training

for county level 4-H day camp staff were conducted in 1994 and 1995.

## STATE ACCOMPLISHMENTS

In 1992, the first Child Care and Development Block Grant was awarded by the Department of Human Resources to the Department in the amount of \$415,000. The purpose of the grant was to improve the infrastructure of school age child care. During 1992, 1,215 new slots for children were created. By 1995, a total of \$796,810 of block grant money had been awarded to 18 different counties with a total of 2,443 new slots for children created.

The 4-H Youth Development Department has also received Dependent Care Grants totaling \$381,000 from the Department of Human Resources to provide a program to address the issue of quality child care. This program has provided funding to hire additional county personnel to act as System Manager in selected counties. These individuals provided training and technical assistance to child care providers on a variety of subjects related to school-age care. System Managers also coordinated and managed school-age care advisory groups, developed curriculum and were a resource to school-age care providers.

In addition to the Department Care Grants, in 1994 the Department was awarded a grant of \$62,500 from the Department of Human Resources to provide training and technical assistance for the SOS (Save Our Students) initiative. Training included conducting four regional conferences and five regional trainings, in addition to coordination of a special track for middle school programs at the 1995 N.C. School Age Care Conference. The 4-H coordinator also provided assistance in proposal writing, curriculum support, training personnel and volunteers, resources information, staffing issues and collaboration.

The newest school-age child care program administered by the Department was the Support Our Students AmeriCorps Demonstration Project. In 1994, the Department received \$396,491 from the Corporation for National and Community Service to place 40 AmeriCorps Members in after school programs to improve the quality of child care. An additional \$25,000 was received to hire 20 AmeriCorps Members to be placed in the middle school SOS Program in 5 of 8 counties. Through the AmeriCorps program 8 counties received subgrants totaling \$115,558.

In summary, the efforts to increase the quality and quantity of child care in North Carolina have been successful. Over 2,400 children were placed in newly created child care slots in the last 4 years. Through the System Managers program and the AmeriCorp Project, child care providers and after school sites are receiving training, technical assistance and direct assistance in an effort to improve the quality care children in the facilities are receiving. The attached county success stories serve to illustrate the difference we made in child care services through out North Carolina.



**F. COORDINATORS AND TEAM MEMBERS:** Goode, C.  
Locklear, E.  
Johnson, C.  
Scott, H.

## ACCOMPLISHMENT REPORT 1992-1995

### NC32 - SPECIAL NEEDS POPULATION FOUR H PROGRAMMING

#### A. OBJECTIVES

1. For 12,274 youth from special need populations to increase their self-esteem, family communication skills, parenting skills, nutrition skills, decision-making skills, and other life skills through involvement in educational experiential activities and support groups.
2. Fifteen coalitions (15) will be established with organizations, agencies, and groups to increase the opportunities of 4-H for special needs population.
3. For 12,274 special needs youth to participate in innovative programs as a result of funds obtained through special grants to enhance their leadership and life skills.
4. For 192 current 4-H units to increase their awareness, understanding, and knowledge of youth with special needs through increased involvement in 4-H experiential activities.

#### B. NON-EXTENSION RESOURCES

1.	Number of volunteers	1,584
2.	Total number of volunteer-days	4,775
3.	Value of Federal government funding (grants)	\$ 500
4.	Value of state government funding (grants)	\$ 226,213
5.	Value of local government funding (grants)	\$ 10,857
6.	Value of private funding (grants)	\$ 84,985

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

Eighteen thousand six hundred sixty five (18,665) youth from special need populations increased their self-esteem, family communications skills, parenting skills, nutrition skills, decision-making skills, and other life skills through involvement in educational experiential activities and support groups. One thousand one hundred twenty nine (1,129) teen parents gained knowledge in child growth and development and care, stress management, parenting skills, effective parenting techniques, and self-esteem.

Six thousand three hundred fifty six (6,356) EFNEP youth improved their diet and nutrition skills through special interest programs, after school programs, and summer mini-day camps.

Youth have learned about the effects of too much salt, fat, and sugar in their diets. One well received and practiced activity to reduce fat sources, included using tofu from soybeans and using tofu in recipes to replace higher fat protein sources. Additionally, youth groups have toured local grocery stores to learn how to be better consumers and select foods low in salt, fat, and sugar.

One thousand three hundred thirteen (1,313) impaired youth increased knowledge, self-esteem, and socialization & communication skills. There were demonstrated increased skills and changes in behavior as a result of participation in retreats, a special olympics program, camps, and programs conducted at school. Leadership and daily living skills, canoeing, sealife identification, community camping skills, and health and nutrition skills were acquired. One visually impaired individual actually drove a boat and commented "this was the experience of my life...thank you, thank you!!"

Two thousand four hundred thirty four (2,434) adjudicated youth increased their knowledge, self-esteem, social skills, school performance, and involvement in extra-curricular activities. There was a decrease in discipline problems through participation in wilderness camps and other specially designed county programs. Additionally, adjudicated youth gained knowledge of work patterns, increased their home/community safety, future careers outlook, and broaden their knowledge about employment opportunities. Other youth experienced little or no involvement with the judicial court system 6 months after participation with the structured activities.

Through the Partners in Learning program, two thousand six hundred forty three (2,643) youth participated in Cloverbud camps, and community based programs. Youth improved their eye care information base, explored environmental issues, water quality education, learned proper etiquette, acquired leadership skills, enhanced their self-esteem, increased their awareness of energy conservation, improved telephone manners, and participated in science programs.

Four thousand seven hundred ninety (4,790) youth residing in Diverse (public) housing gained better decision making skills, exhibited an increase in positive behavior, and developed a positive attitude toward themselves. Additionally, youth improved their group dynamics skills, participated in career experiential programs, improved skills in nutrition, modified health practices, and were introduced to sexual abstinence curriculum. Youth also were involved in experiential activities opportunities that included practicing household and fire safety, increasing money management skills including learning to balance a checkbook, and learning about city/county government operations.

Twenty (20) counties designing learning experiences for Special Needs Youth established Coalitions over the last four years in order to design and provide more relevant and meaningful programs for youth. Coalitions formed involved an average of three other organizations with staff from the Cooperative Extension providing some leadership. Such agencies as the Housing Authority, Martin County Fire Department, department of social

services, sheriffs, and Juvenile Court counselors were involved in collaborating and serving on various special committees to design programs for special needs populations.

Fund Development through grants was completed by twenty nine (29) counties designing programs and experiential learning activities for special needs populations. Twelve thousand seventy six (12,076) special needs youth participated in innovative programs as a result of \$389,554 obtained through special grants to enhance their leadership and life skills.

Approximately two hundred eleven (211) current 4-H units involving three thousand one seventy six (3,176) youth have increased their Awareness, Understanding, and Knowledge of youth with special needs through involvement in 4-H experiential activities.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

#### **E. NARRATIVE AND IMPLICATIONS**

Designing programs for special needs populations has been a successful experience. County staffs are planning to continue innovative programming for this audience. County programming has illustrated that special needs youth can benefit from traditional 4-H activities. Programs and learning experiences are providing positive reactions among special needs youth and their families as they realize schools, communities, and 4-H are interested in their well being.

#### **KEYWORDS:**

EFNEP

Partners In Learning

Adjudicated

Teen Parents

Diverse/Public Housing

Impaired/Disabled

#### **F. COORDINATOR & TEAM MEMBERS:**

Rouse, Shirley--Coordinator

Dixon, Stan

Frazier, Ann

Hearne, Dorothy

Sutton, Sheila

## ACCOMPLISHMENT REPORT 1992-1995

### NC33 - ENVIRONMENTAL STEWARDSHIP

#### A. OBJECTIVES

1. 440 agents and volunteer leaders will acquire the information necessary to train other teachers and volunteers in the delivery of environmental curriculums.
2. 150 teachers will demonstrate the skill to design environmental curriculum for integration with their existing academic program.
3. 25,000 youth will increase their awareness and understanding of environmental issues through participation in the school enrichment environmental education programs at Penn, Sertoma and Millstone.
4. Provide support to subject matter specialists and agency personnel in providing and evaluating relevant learning experiences.
5. 100 teachers and agents will learn how to design and support after school environmental science clubs.
6. 13,500 youth will exhibit increased understanding of environmental concepts through participation in environmental and electric education classes at summer camp.
7. Develop networks for collaborative programming between private and public agencies, environmentally concerned businesses and industries and local and state 4-H programming efforts.

#### B. NON-EXTENSION RESOURCES

- |    |  |             |
|----|--|-------------|
| 1. | number of volunteers                         | 9,454       |
| 2. | total number of volunteer days               | 17,963      |
| 3. | value of federal government funding (grants) | \$ 10,980   |
| 4. | value of state government funding (grants)   | \$2,765,295 |
| 5. | value of local government funding (grants)   | \$ 2,000    |
| 6. | value of private funding (grants)            | \$385,193   |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of participants and volunteers involved in the following programs in the 34 reporting counties over four years:

	Participants	Volunteers	Counties
River s Edge	15,263	601	20
Mystery of the Cast Off Capers/			

Waste Management	16,219	509	19
Project Learning Tree/Wild	14,447	978	16
Energy Conservation	24,750	730	13
Community Action Projects	13,688	580	10

Other Programs with more than 500 participants:

County Youth Fair	950	65	1
Environmental Field Day	13,941	392	14
Soil Conservation/Water Quality	1,166	27	3
Project Earth Angel	2,707	96	1
CATCH Clinic	4,984	354	5
Adopt A Highway	482	63	4
Fontana Natural Resource Conf.	930		1
4-H Discovery	1,548	911	1
Ag. Appreciation Day	855	48	2
Environmental Essay	1,025	32	1
Heritage Days	1,013	21	1
Big Sweep	250	46	2
Arbor Day Celebration	524	37	2
Recycling	759	41	2
County Environmental Program	2,200	115	1
National EPA Program for			
Native Americans	420	20	1

Other environmental programs listed included: Solar Science; Consumerism; Stream Watch; Composting Fair; Composting Training; Gardening; Livestock/Horse; Ripples; birdhouses; seafood project; gyotaku; SERIES; Environmental Education Camp; Forestry Stewardship Plan; Wildlife Habitat Judging; Nature Trail Development; Hiking Etiquette; Forestry Contest; Marine Education; Storm Drain Stenciling; International Environment; Rainforest Education; Vermiculture; Hunter Safety; Forestry; Entomology; Summer Fun and environmental day camps; Woodsy Owl Program; Environmental/Earth week celebrations; Natural Resources Retreat and Poster Contest.

Participation in these additional programs totalled 5,069 with 622 volunteers.

Grand Totals:	125,940	7,242	34
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2. Indicate any behavior changes, knowledge gained or other impacts measured by surveys or other research you have conducted as response to grants, coursework, etc.
  - a. A pilot study was conducted to test knowledge gained in Aquatic Systems classes, affective disposition, and process skill gains of participants in the residential environmental education program at the Penn 4-H Center.

Results of the study indicated significant increases in the students level of aquatic systems knowledge and a significant increase in students process skill abilities. No significant change was seen in the students affective disposition.

- b. Eighty-two percent of the 591 youth enrolled in Rivers Edge and Blue Sky Below My Feet showed an average increase of 4% on end of the year tests.
- c. Over the past four years, 80% of the Randolph county youth involved in school enrichment curricula including River s Edge followed through on assignments and were able to retain knowledge specific to third - fifth grade school enrichment through the seventh grade.
- d. In Beaufort County, Over 9,480 youth and 499 volunteers have actively demonstrated an appreciation for the environment in 92-95. Over 4,598 youth and 80 adults have increased their knowledge in the area of environmental education through 4-H school enrichment activities.
- e. The use of the Cherokee Recycling Center has increased significantly since the closing of the Tribal landfill. More and more residents are looking at alternatives to the traditional garbage can. Backyard composting is becoming more common and almost every home is participating in some type of recycling program (Cherokee Reservation).
- f. In Burke County, 1,162 bags of plastic recyclables have been collected by 4-H members for a bag-a-thon program.
- g. On the Cherokee Reservation, 369 volunteers from 19 local organizations donated 1,476 volunteer hours through participation in the Spring 95 Reservation-wide Clean-up. As a result, 278 bags of trash and 231 bags of recyclables were collected from 77 miles of roadside and 2 miles of streambank during the 2 day event.
- h. In Columbus county, few students initially reported that their families were recycling. Following participation in Stewardship programs, 10% of youth reported recycling some of the items. 4-H club also reported participation in the Adopt A Highway Program.
- i. Through Extension coordination in Wayne County volunteers collected 500 pounds of trash from waterways throughout the county during the Big Sweep program. Through involving over 600 participants in various environmental stewardship projects, CES personnel and volunteers have improved wildlife habitat and cleaned up several miles of stream area.
- j. The Rutherford County recycling center reported that youth involvement in recycling has had an impact on the county's recycling centers. The school system has appointed a Recycling Coordinator. This in-school recycling has helped conserve energy.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

(OTHER INFORMATION NOT INCLUDED IN THE TEMPLATED INFORMATION PROVIDED IN SECTION C)



1. Training Sessions for agents and Master Volunteers - 510 participants

a. The following Training sessions were provided:

- River s Edge training for agents in training volunteers - 27 agents
- Mystery of the Cast Off Capers training for agents in training volunteers - 75 agents and volunteers in 50 counties
- Designing Environmental Education Programs Training for agents to work with volunteers - 45 agents
- Summer Camp Programming Training - 90 agents
- Energy Cycle educational programs training - 30 agents
- Environmental Stewardship Master Volunteers - 24 Volunteers
- Wildlife Science and Management Master Volunteers - 30 Volunteers
- Advanced Project Wild Training - 23 Volunteers
- Carolina Anglers Teach Children How CATCH program leadership training - 20 Volunteers
- National and Regional Leaders Forums in Environmental Stewardship - 4 volunteers
- 4-H Spaces Ecology curriculum training - 32 Agents and Volunteers
- Project Learning Tree for After School Settings Training -2 Agents
- Environmental Education Leadership in Camp - 60 paraprofessionals
- Environmental Education in Outdoor Settings - 48 paraprofessionals

2. Teachers demonstrating the skills to design environmental curriculum - 429

a. As a part of the environmental education program at Penn, 224 teachers were trained to design environmental education programs for their classes and integrate them into their curriculum. They were then required to provide classes both as a part of the residential experience for their students at the 4-H Center and as pre and post experiences for their classes.

b. 205 teachers from six counties were trained in Project Learning Tree and River s Edge in the 1991-92 program year (data not available for other years).

c. During the four year period in Buncombe county, workshops and hands on training were offered to teachers, teen and adult 4-H Club Leaders, families, afterschool site workers and coordinators and the general public in the following areas:

1. River s Edge - 6 sessions
2. Mystery of the Cast Off Capers - 12 sessions
3. Project Learning Tree/Wild - 6 sessions
4. Energy Conservation - 15 sessions
5. Soil Conservation/Water Quality - 6 sessions
6. Recycling - 24 sessions
7. Hiking and Etiquette - 3 sessions

A total of 206 adults were trained or helped disseminate information to 5,694 in the listed subject matter areas.

d. In Durham County, 254 teachers and volunteer leaders were trained to lead Project Learning Tree activities with youth. As a result of the work with teachers, nature trails were designed and established at three elementary schools and one middle school. Nature trails were also designed and established at one elementary school in Randolph county. These trails provide outdoor classroom areas which make the activities come alive for the students. Hundreds of students learn about natural systems first hand because of the trails. These trails provide outdoor classroom areas which make the activities come alive for the students. Hundreds of students learn about natural systems first hand because of the trails. Requests for more Project Learning Tree Training continue to come in as more educators and concerned volunteers hear about the good work of the five schools and talk with Extension trained volunteers.

e. Additional examples of teachers designing and integrating experiences in their classrooms as a result of Extension support include:

- In Buncombe county each class in one school studied various forms of energy for one month. At the conclusion, participants developed energy related projects displayed at an Energy Fair. The fair was attended by students, parents and the public. Sixth grade students at a school in Henderson County completed their sequence of energy related programs by hosting an energy fair with projects for the rest of their school.

- Sixty (60) students in Transylvania County took part in a poster contest after completing six classroom programs on energy and the environment.

- In Greene county 150 fifth graders increased their awareness of recyclable products through a recycled art project. Art works were displayed at Earth Day Celebration and viewed by county citizens.

- Environmental Field Days were a major focus of the four year plan for Surry County. Two local schools planned their own programs with the assistance of the Extension Service. Nearly 600 youth were reached through this program. Volunteers gave leadership to activities to make science and environmental programs more hands on for youth. Planning with the Natural Resources youth committee has resulted in plans for a Youth Environmental Internship program for High School Students to begin in the Fall of 1995. Some 14 students have applied to take part in this week long program.

- Beaufort County reports that County, City and private educators are seeking 4-H Environmental curriculum. The teacher work day inservice training schedule is booked so far ahead, teachers are willing to be trained on their own time in order to have access to 4-H curriculum. This is the result of piloting the programs with key teachers who then communicate with other teachers. This area is in such strong demand that futuristic thinking implies additional staffing (program assistant for 4-H

Environmental Education).

- In Rutherford County, Seven teachers were trained to utilize River's Edge curriculum. An Earth Day program for 4th grade students was initiated by Extension.

3. Participation in school enrichment environmental education programs at Penn, Sertoma, and Millstone 4-H Centers - 17,399 youth and 1,250 teachers administrators and parents.

a. Environmental education programs at the 4-H Centers were offered for 28 weeks each year. The program involved 7,403 youth and 599 adults in residential programs generating 96,024 hours of contact with the curriculum. An additional 9,996 youth and 651 adults participated in day programs resulting in 63,882 hours of contact with the curriculum. A total of 70 different schools from 23 counties took part in the programs over the four years. The programs involved an average of 25 different collaborators from other agencies as visiting instructors. A program staff was maintained at Betsy-Jeff Penn 4-H Educational Center for all four years which operated satellite programs at two additional Centers. A program Staff was maintained at Sertoma 4-H Center for one spring season as a pilot but was discontinued due to the need for a more complete infrastructure at the facility to support the program. The decision to discontinue the program at Sertoma contributed to the shortfall in reaching the numbers projected for this program. Betsy-Jeff Penn 4-H Educational Center has operated at capacity for the last three years of the reporting period. Teachers indicate a high level of satisfaction with effectiveness of classes teaching the identified environmental concepts averaging a rating of 4 on a 5 point scale. Some of the concept learned by the students participating in the program were:

- the relationship between impacts on the watershed, water quality and the survival of organisms in aquatic systems;
- how elements within the environment go through cycles;
- how individual choices impact the quality of the environment;
- the characteristics of and the relationship between predators and prey;
- where soil come from and the impacts of erosion; and
- the relationship between organisms and their habitat.

b. During the four year period a collaboration of agencies, businesses, and University departments was formed to site, design and construct a state of the art 4-H Environmental Education Center to focus on wetland and estuarine environments in the eastern part of the state. A site has been purchased and the facility is in the process of being designed. More than 3 million dollars has been raised towards the construction of this new facility designed to expand the environmental education outreach of Extension.

4. Providing support to subject matter specialists and agency personnel

- a. 4-H Youth Development Specialist served on the statewide Big Sweep Education committee resulting in the collaborative design of the Splish Splash curriculum, now available through a number of agencies statewide. In addition support was provided for an interagency distance learning (MCNC) training session on environmental concepts and curriculum reaching 125 teachers.
- b. 4-H Youth Development Specialists as a member of the Big Sweep Board coordinated involvement of 4-Hers in the annual Big Sweep trash clean up resulting in an average of 1,000 4-H participants in the event each year, the largest group participation in the program.
- c. 4-H Youth Development Specialists have served on the interdepartmental curriculum design teams for environmental specialty camps involving individuals from the following departments and agencies: Zoology; Parks, Recreation and Tourism; Forestry; Biological and Agricultural Engineering; Sea Grant; State Aquariums; U.S. Forest Service; American Meteorological Society; Maritime Museum; Hadnott Creek Farms; Wildlife Resources Commission; Federal Fisheries; and power company representatives. Support and team work between Departments and agencies resulting in maintaining a capacity audience for Fur Fish and Game Camp, nearly doubling the participation in Sci-Tech Adventures camp and a jump from 23 to 194 participants in Marine Science Specialty Camps.
- d. Three training sessions on Designing Residential Environmental Education programs were provided to Specialists and agents from other states involving 67 individuals.
- e. 4-H Youth Development Specialists have served on an interdepartmental Team to design electric energy education curriculum for all Junior camp participants involving Subject Matter Specialists in Biological and Agricultural Engineering and the Power Companies in North Carolina and resulting in two hours of specialized curriculum for 13,838 youth.
- f. 4-H Youth Development Specialists gave leadership to a design team to develop a curriculum and provide physical resources for the Energy Cycle through the Alternative Energy Corporation. As a result, the equipment and curriculum for the Energy Cycle program are available in every district and are being heavily utilized.
- g. Youth Development Specialist Support has been provided to the State Office of Environmental Education in the design of the State Plan for Environmental Education and development of an Environmental Educations Centers Association.
- h. Betsy-Jeff Penn 4-H Educational Center has served for the four years as a site for the Wildlife Resources Commission CATCH (fishing and Aquatics curriculum) program, providing instructors and program support resources in collaboration with the commission and community fishing

groups; reaching 2,935 youth and 120 adults. In addition, counties have reported providing CATCH programs that have reached 2,049 youth and 169 adults.

- i. 4-H Youth Development Specialists have served on the Board and in the membership of the Environmental Educators of North Carolina to support the development of networks for environmental education in the state.
- j. An advanced Project Wild Workshop was carried out in collaboration with the Wildlife Resources Commission and UNC Sea Grant.

5. Teachers and agents learning to design and support after school environmental education clubs:

- a. During the past four years 1,200 science clubs have been formed to serve an audience of over 23,000 elementary and middle school youth. The majority of these clubs include environmental science as the primary or as a significant portion of their focus.
- b. In Mitchell County, seven science clubs and two geography clubs were formed in the Middle schools. In addition greenhouses to support the programs were built at each of the middle schools through 4-H initiated grants.

6. Participation in energy and environmental science classes at camp - 13,838 participants for 106,926 hours of contact with the curriculum.

- a. Programs for all county junior camps and cloverbud camps during the four year period were designed to include a minimum of 6 hours of environmental education and involved 12,227 participants with 73,362 hours of contact time. Some of the concepts campers learned were:
  - relationship between organisms and their habitat;
  - similarities and differences between different organisms;
  - how elements are recycled by the environment and within our communities;
  - appreciation for and understanding of the food pyramid;
  - respect for living things and life cycles;
  - how energy is transmitted through the environment; and
  - effective energy use and conservation measures.
- b. A variety of intensive specialty camps were offered focussing on environmental topics and issues and involving 1,611 participants in 34,140 hours of educational programs. More specifically the following programs were offered each of the 4 years: Marine Science - 500 participants; Fur Fish and Game - 438 participants; and Sci-Tech Adventures - 456 participants. The following programs were offered once during the four year period: Shooting Sports - 33 participants; Environmental Adventures - 124 participants; and Adventure Camp - 60 participants.

7. Developing networks for collaborative programming



- a. A collaboration has been formed for the development of programs, facilities and resources for the new Eastern Center in conjunction with the Save Our Sounds Project involving Fish and Wildlife Agency (Pecosin Lake Wildlife Refuge); Conservation Fund; Nature Conservancy; Department of Environmental Resources; Power Companies; State Parks, County Government Official, and Extension Personnel in the Eastern part of the State. This collaboration has resulted in over 3 million dollars in funding for the project and significant progress in defining the facilities to support the program (currently under design contract to an architect).
  - b. All of the counties reporting indicated high levels of success in working collaboratively with other community organizations. Some examples include:
    - Through 4-H/Extension programs in Greene County 868 youth have been exposed to environmental stewardship. Students have increased their knowledge of recycling and the waste stream by participation in Environmental Field Days coordinated through collaboration with the Forest Service, Natural Resource Service, school system and the local government.
    - 4-H Camp Wannagoma is a collaborative effort between 8 agencies and others are requesting to join the network. Teens who were environmental day camp participants 5-6 years ago are requesting to be junior leaders and staff at current Wannagoma Day Camps. 4-H Camp Wannagoma Day Camp leads approximately 110 youth through 25 different activities for 17.5 contact hours annually. During the 92-95 period over 440 youth participate. In Beaufort County, the environmental education network which plans and operates the 4-H summer day camp program. Camp Wannagoma have independently written grants to support the program plans. In addition the program will be listed in the State Parks and Recreation program guide.
    - instructors who say Please invite me back next year.
    - 340 high school students on the Cherokee Indian Reservation participated in a joint energy program between Southface Energy Institute and Extension's Project Connect.
    - 750 youth in the Western Counties participated in an energy education program presented in collaboration with the Boy Scouts at the Boy Scout Expo.
    - Extension Staff provided leadership to the week long 4-H resource development Conference at Fontana Dam, North Carolina. Youth from seven states attended this educational conference showcasing our region's natural resources.
8. Other Statewide participation data:
- a. The ES 237 data over the last five years reflect significant growth in the

number of environmental education learning experiences provided. The number of learning experiences provided grew by 39% between 1990 (73,507) and 1993 (120,369) and then fell 14% between 1993 and 1994 (103,505). 1995 figures are not yet available and may not be comparable due to a new reporting system. Throughout the reporting period, environmental education had the second highest number of learning experiences provided when compared to other 4-H curriculum areas (agriculture being the highest).

b. Successful program examples from the counties:

- Burke County reported: 81 Arbor Day ceremonies were held by 4-H Clubs; 15 4-H clubs added road or streams for clean up projects and 14 after school programs participated in Big Sweep activities for 3 years; 702 youth entered the Catawba River Awareness poster contest held over three years; two 4-H clubs managed recycling sites and 8 clubs sponsor on going recycling projects for their community; and 250 youth from Caldwell, Burke, Catawba, and Alexander Counties learned about energy through various activities presented at an Earth Day event in Burke County.
- In Henderson County, 421 students were presented school enrichment programs focussed on Energy and the environment while 250 youth took part in energy related activities at Farm City Day. 83 students participated with projects at an Energy Fair for their school. An additional 123 youth attended Day Camp programs on energy.
- Jackson County organized and established a training program for 4-H youth in the area of Forestry Education. This program utilizes the incentive to train for the National 4-H Forestry Invitational as a motivator for youth. This program prepares young people, ages 10-18, to participate in local, state, and national competitions in forestry. Four counties have participated in this program over the four year plan. Serving as a pilot county for the program, Jackson county has attended one district, one state and two national forestry invitationals.
- In Pasquotank county, 100 different youth learned about environmental science at after school setting. In addition three community 4-H clubs have done recycling education programs and implemented them in their homes.
- 298 family members participated in a regional annual Natural Resources Retreat involving 12 counties over the four year period.
- In Jones County 70 4-Hers completed 4-H project records in the areas of energy conservation, wildlife, forestry and meteorology.
- In Surry county a major focus was utilizing the Sarah Shopping Bag program to reach youth with the message of being an environmentally smart shopper. Programs have been conducted in grocery stores, environmental field days, and week long ecology day camps. Youth were encouraged to begin recycling at home and to look for items that have reduced packaging and can be recycled. Approximately 500 youth have

been reached with this program.

## **E. NARRATIVE AND IMPLICATIONS**

1. During the past four years, 34 of the 101 reporting units chose to report under this initiative. It was reported that 125,940 youth had been involved with the program over the four years and that they were supported by 9,454 volunteers. In addition these units and the state program reported financial support of nearly \$3,200,000. All but one of the goals of the four year plan were reached:

- 510 agents and volunteers participated in training sessions designed to provide agents and volunteers acquire information necessary to train other teachers and volunteers in the delivery of environmental curriculum (goal: 440 agents and volunteers).
- 429 teachers demonstrated the skill to design environmental curriculum for integration with their existing academic program (goal: 150 teachers).
- 17,399 youth and 1,250 teachers, administrators and parents increased their awareness and understanding of environmental issues through participation in the school enrichment environmental education programs at Penn, Sertoma and Millstone (goal: 25,000 youth).
- Subject Matter Specialist and agencies were provide with support for providing and evaluating relevant learning experiences resulting in the development of the Energy Cycle curriculum and Splish Splash, increases in participation in intensive environmental specialty camps, training opportunities for volunteers and professionals and quality learning experiences for youth.
- Teachers and agents designed and supported 1,200 after school science clubs focussing on environmental science.
- 13,838 youth exhibited increased understanding of environmental concepts through participation in environmental and electric education classes at summer camp.
- Networks for collaborative programming between private and public agencies, environmentally concerned businesses and industries and local and state 4-H programming efforts resulting in the design of a state of the art residential environmental education center; quality day camp and field day programs; increased understanding of energy dynamics; and a seven state conference for youth on Natural Resources.
- Environmental Education remained the second largest program are in the state based on number of learning experiences provided, growing from 73,507 to 120,369 and then falling to 103,505.

2. Implications

- a. The Environmental Stewardship program continues to be in very high demand in North Carolina, with counties utilizing both Extension curriculum and variety of curriculums provided by other agencies to meet their educational goals. Continued effort is needed to maintain print dollars for the development and distribution of current curriculum. As a



result of the intensive demand for energy education materials, the energy cycle program was introduced in the third year of the reporting period and a new energy education curriculum has been designed and will be issued in the spring of 1996.

- b. Collaborative efforts in environmental education have born excellent results on a statewide basis and in a number of counties, proving the value of bringing the resources of a variety of agencies to bare on meeting a communities needs for environmental education. Such efforts should continue to be encouraged and supported as a means of expanding the resource base.
- c. Most community action projects were focussed on litter reduction, and community recycling. Expansion of community action opportunities as a part of the environmental education is needed. Additional incentives in this area should be developed.
- d. Intensive environmental education specialty camps grew in number of participants as a result of quality curriculum and expanded marketing. The school enrichment Environmental Education Program at Penn is operating at full capacity proving the marketability and validity of the center based approach to curriculum delivery. Development of a state of the art environmental education center in the eastern part of the state is well underway and will allow for expansion of this delivery mode. Other 4-H Centers are exploring their ability to deliver environmental stewardship curriculum both during and beyond the summer season.
- e. Very little qualitative data was generated during the reporting period to identify outcomes. Formats for gathering outcome data need to be developed.

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## ACCOMPLISHMENT REPORT 1992-1995

### NC34 - FAMILY DEVELOPMENT

#### A. OBJECTIVES

The problems facing families in North Carolina are interconnected and complex, and require innovative, multi-disciplinary solutions. The staffs at North Carolina State University and N.C. A&T State University focused their efforts on providing information to help families develop their capacity to enhance the growth and development of children and to strengthen families. Target programming includes child care, parent education, family strengths, aging, and family legal issues. The objectives to reach these goals were:

- \* Volunteers, paraprofessionals and professionals will be trained to deliver programs in family development (e.g., Master Parents, Volunteer Information Provider).
- \* Participants will gain knowledge and skills related to the well-being of children inclusive of personal safety, self-care and survival skills, self confidence, personal growth and development, and the prevention of child and substance abuse.
- \* Parents and youth will acquire the knowledge and skills associated with effective parenting.
- \* Parents and youth will understand and use effective family coping skills.
- \* Parents, youth and child care staff will gain knowledge and skills in child growth and development, age-appropriate activities, family-community-school relations, parenting and the selection of quality care.
- \* Child care workers will adopt recommended practices for class-room management, scheduling, and curriculum development in order to increase their overall professional competency.
- \* Family members will increase their knowledge and adopt recommended practices to improve stress management, conflict management, interpersonal relationships, self-esteem, decision making, communication and supportive skills.
- \* Adults and youth will increase knowledge and skills in marriage preparation and enrichment.

- \* Family members will gain information on the process of aging and skills needed to deal with the changes and problems associated with dependency, elder care and multi-generational households.

- \* Parents and adults will acquire information about their legal responsibilities to and for their children, spouses and other family members.

Objectives for 1890 staff were:

- \* Limited resource parents will increase their knowledge and skills in effective parenting, child growth and development and building family strengths.

- \* Limited resource senior citizens will gain knowledge needed to strengthen their independence and share that knowledge through volunteer activities.

#### **B. NON-EXTENSION RESOURCES**

1.	Number of volunteers	27,731
2.	Total number of volunteer days	37,362
3.	Value of federal government funding (grants)	\$19,435.
4.	Value of state government funding (grants)	\$1,085,018.
5.	Value of local government funding (grants)	\$98,154.
6.	Value of private funding (grants)	\$568,657.

#### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1. 76,540 parents in parenting programs and number adopting practices.
2. 37,193 youth in parenting programs and number adopting practices.
3. 41,258 in parent-youth programs and number reporting improved relations.
4. 52,744 in family coping programs and number reporting improved practices.
5. 51,058 in financial management programs and number reporting improved practices.
6. 36,860 volunteers in parenting, family and youth programs.
7. 22,128 child care providers certified and 30,960 participating in training and reporting improved practices.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

\* The North Carolina Children, Youth and Families at Risk Institute, funded by a CSREES grant, provided comprehensive training in working with at-risk clientele to 33 Extension field faculty and 7 non-Extension collaborators. The Institute addressed multiple risk factors of families along with emphasis on preventive factors which help reduce the impact of any present risk factors. In addition, 6 Targeted Community Projects received funding to strengthen the communities' efforts to increase resilience of and reduce the risk factors affecting families.

\* Sixteen counties in North Carolina received funding to establish Family Resource Centers. Extension Family and Consumer Educators in those counties either directed the establishment of the centers or were heavily involved in their establishment. The Family and Consumer Sciences Department hired two Extension Assistants to facilitate the educational component of the Family Resource Centers, i.e., provide training, disseminate research-based information, provide technical support and resource referrals, and serve as a link to other public and private organizations. One Family Resource Center was established because a group of participants who had taken a Master Parents Extension class decided to organize and work towards the establishment of a family resource center for their rural community. These participants provided volunteer time and labor to remodel a facility so it could be their community's resource center.

\* The Cooperative Extension Service has been identified as a necessary partner in several county agencies and organizations, e.g. Smart Start, Day Care Associations, Alzheimer's Support Groups, Headstart, Community Service Councils, churches, public schools, J.O.B.S., Public Housing Authority, Department of Social Services, and mental health services. In one case, these networking efforts resulted in the formation of parenting classes for pregnant teens and teens with young children.

\* 561 youth and adults in one county increased their knowledge and developed skills in building a positive self-image and ways to reduce their stress levels. The family members practiced (via class) four ways to reduce stress (exercise techniques) and 5 ways to increase their self-esteem.

\* One Extension Family and Consumer Educator mails a quarterly newsletter, Building a Family, to 2,100 families in her county. Seven hundred families in another county receive a quarterly newsletter entitled, Focus on the Family.

\* Two Extension agents served on a Regional Smart Start committee which obtained a \$1.5 million grant to establish a program for pre-school children in Region "A". Four agents served on the Region "A" Family Support and Preservation Committee which was successful in securing an \$800,000 grant for the region to begin Family Resource Centers and fund other family enhancement programs and services.

\* During one year, 27 child care providers participated in Sesame Street PEP and certified training. Thirty-three child care providers were certified in food

safety/sanitation techniques to assure child safety.

- \* Sixty-seven pregnant teenagers participated in a Pregnant and Parenting Teen Project which was funded through the EFNEP Program. Seven healthy babies were delivered during the 94-95 reporting period.

- \* A Terrific Kid program was conducted in 12 public schools, recognizing 6097 Terrific Kids and 606 Terrific Teachers.

- \* 1,440 families received a "New Parents Packet" containing family development, health, and nutrition information provided by Cooperative Extension.

- \* Volunteer facilitators continue to work with focus groups in communities to plan Smart Start activities and community vision.

- \* Eldercare programming continues to be beneficial in helping families cope with the responsibilities of caring for older family members and the effect these responsibilities have on marriages and relationships with children.

- \* 1,966 families with children in kindergarten through 2nd grade receive the Families and Children monthly newsletter which contains information on parenting and child development.

- \* Over 683 persons in one county received Extension educational information on family legal issues through estate planning workshops and health fairs.

- \* 271 children in fourth and fifth grade learned skills in Self-care at Home.

- \* Over 1,000 youth and adults increased their knowledge and skills of drug prevention through drug awareness programs.

- \* Random surveys indicated that approximately 90 percent of child care providers and parents had adopted recommended childrearing practices.

- \* During one year over 1,463 Senior Health Insurance Information Program (SHIIP) volunteers were trained to assist elderly Medicare and Medicaid recipients and others with paperwork and entitlement issues. In 23 North Carolina counties, an Extension Family and Consumer Educator serves as a coordinator of volunteer activity.

- \* Seventy percent of 250 senior citizens from Western NC Services for the Blind, nutrition sites, church and civic groups increased their knowledge of how to reduce the risk of chronic disease and consume a healthy diet from the food guide pyramid in one county.

\* 281 older adults increased knowledge and demonstrated skills in health care management and adjusting to aging.

## **E. NARRATIVE AND IMPLICATIONS**

\* Families continue to experience stress overload in a world of mind-boggling change. Dysfunctional behaviors and relationships are evidenced by domestic abuse, illiteracy, teenage pregnancies, divorce, addictions, and criminality. Such dysfunctionality affects society as a whole, and may be partially attributed to the absence of elemental nurturing techniques in the stressed family structure.

\* Increased networking efforts by Family and Consumer Educators have proven beneficial in terms of funding, as well as the planning and implementation of programs. Continued networking will be needed in the future for providing services and educational opportunities for children and families.

\* Helping individuals develop parenting skills is still a major focus of the Family and Consumer Sciences department in Extension. Extension agents and specialists are making a profound difference on children's lives by providing outstanding programs and in-service training for day care providers, pregnant teens, and adults and youth. Family support groups and coalitions/networks are being formed among government agencies, civic and religious groups to help deliver diverse programs to clientele. Trends across the state reflect the continual intense need for parenting skills training, and training programs for child day care providers.

\* Because North Carolina's aging population is rapidly increasing, there is a continual need for programming both for care-givers of the elderly and the well elderly. The Eldercare program is still being implemented in a great many counties. Coalitions with Councils on Aging is an important partnership which most of our Family and Consumer Educators continue to foster.

\* Interaction with families at risk and limited resource families shows that Extension professionals must be "at the table" on discussions and decision-making related to welfare reform measures and their implications for families. Advocates for families, and family diversity, are uniquely positioned to represent the cultural and sociological realities of "welfare families" to our various publics, as well as to legislators and funding agencies.

\* Literally thousands of individuals and families benefit each year from the educational, collaborating, and referral work done by Extension professionals. New technologies are making possible more rapid access to researched-based information, and the delivering of that material to clientele. Mass media strategies enable thousands more to access needed information disseminated by Extension.

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## **ACCOMPLISHMENT REPORT 1992-1995**

### **NC35 - FAMILY ECONOMICS**

#### **Core Program Final Report for 1991-95**

##### **A. OBJECTIVES**

Individuals of all ages and families of all types will improve their understanding of personal finance, including money management, credit control and financial planning practices, to improve their financial situation throughout the life cycle.

Parents and youth will set and achieve financial goals.

Individuals and families will gain knowledge for making informed decisions about options for producing and extending income.

Individuals of all ages and families of all types will gain knowledge necessary to become effective decision makers and resource managers, and will adopt practices which extend purchasing power and increase consumer satisfaction (with special emphasis on health care/insurance, transportation, the environment, and consumer fraud.)

Elderly, limited-resource and young families will gain knowledge of housing options, alternatives and lending programs for affordable housing.

Individuals and families will adopt practices to improve housing by repairing, remodeling, or upgrading to meet the family's needs throughout the life cycle.

Interagency network members will cooperate with CES in program planning and delivery to help older adults and families.

Individuals and families will gain awareness of and begin planning for the probability of becoming family caregivers and the possibility of personal dependency.

Family caregivers will improve their use of community resources and other measures to reduce stress.

Individuals and families will acquire information about legal, financial and other considerations for their current and prospective personal and business situations, including the importance of selecting and using appropriate professional services and other resources.

## **B. NON-EXTENSION RESOURCES**

Based on reports from 84 counties

1.	Number of volunteers	13,090
2.	Total number of volunteer-days	20,418
3.	Value of federal government funding (grants)	\$ 12,400
4.	Value of state government funding (grants)	\$164,829
5.	Value of local government funding (grants)	\$ 19,470
6.	Value of private funding (grants)	\$205,181
	plus cash and in-kind funding at state level	
	(ES/USDA & NCCES \$ for HCRIE and HCFA \$ from NCDol)	

## **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

4-year aggregate

1. Number of youth, adults and families who gain knowledge of money management, credit control and record keeping practices 56,742
2. Number of adults and families who will acquire information about the need for coordinating legal, financial and health care decision making for possibility of personal dependency 57,491
3. Number of individuals and families who will acquire information about estate planning and retirement planning 21,763
4. Number of individuals and families who will adopt practices to improve their housing by repairing, remodeling, or upgrading so that the house meets family needs throughout the lifecycle 29,367
5. Number of youth, adults and families who will gain understanding of their marketplace rights and responsibilities in the selection, use and care of consumer goods and services 47,946
6. Number of individuals and families who will develop and use skills to increase or extend income 43,035
7. Number of current and potential entrepreneurs who will acquire information on the successful operation of a small business 5,726
8. Number of members of local aging networks who are cooperating more effectively in providing information for older adults and their families as a result of Extension Agent leadership in eldercare programs 465

## **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

The following program indicators and accomplishments are supposed to be reported as being additional to Section C accomplishments. However, data reported on some of the programs cited can be assumed to be incorporated into the data reported by agents in other counties in Section C. Thus, reports in this section may reflect program accomplishments but do NOT provide overview data of a specific program, such as the Women's Financial Information Program or Elder Care programming. Reports are grouped by keywords from the plan-of-work in the sequence of the templated indicators in Section C.

### **1. FINANCIAL MANAGEMENT**

30 counties reported ADDITIONAL indicators/accomplishments. Many of these reports seemed to be for the past year only, rather than a cumulative record.

11 counties cited money management and other life skills educational activities for targeted clientele, (reached directly by agents or by agent-trained professionals or volunteers) in low income/low reading level/special needs programs such as Head Start parents, Housing Authority, Habitat for Humanity, JOBS, JTPA, youth groups, day care centers, displaced homemakers, handicapped shelters or worksites, mental health clientele, pre-release correctional center inmates.

2 counties reported participation in network response to company layoffs with budgeting, credit, survival skills.

15 counties reported offering money management programs for adults in the general public, with practice adoption data from 7 counties on debt reduction and savings resulting from use of a spending plan.

6 counties reported money management programming for youth.

2 counties reported organizing a coalition and offering the Women's Financial Information Program for the first time.

7 counties cited special programs on advanced financial management issues, such as saving/investing for higher education, home buying, retirement, contact with investment clubs.

3 counties cited reaching very large audiences with multiple use of the new Medicare Myths program for pre-retirement audiences.

2 counties cited special trained volunteer programs on personal/family tax concerns.

2 counties reported CES leadership and facilitation of a local successful effort to provide a CCCS service (Rowan and Rockingham Counties).

1 county reported organizing a local group of professionals for the national videoconference on credit education and cited follow-up activities.

1 county reported responding to bank requests for money management education (in addition to CRA-driven requests for Home Buyer Education programs).

Durham (quarterly), Forsyth (monthly) and Surry (monthly) reported sending a dedicated money management newsletter, and Surry reported significant positive impact through a follow-up survey of 20% of 247.

## 2. ELDER CARE AND HEALTH CARE REFORM

21 counties reported additional indicators/accomplishments. Many of these reports seemed to be for the past year only, rather than a cumulative record.

15 counties in Northeastern North Carolina continued to disseminate the local and regional aging services directories developed in year-one of the Regional Elder Care Project. They conducted a regional symposium on Health Promotion Resources for Older Adults to launch the final year of a 3-year KBR-funded project that trains Volunteer Information Providers to locate family caregivers of the dependent elderly and provide them with information about local aging services. As of December 1994, trained volunteers had reached over 1,300 family caregivers and 2,500 other senior citizens and 2,700 copies of the local directories had been distributed to volunteers, agencies and businesses. A regional directory is available on computer in every county, with aging coalition commitment to update it at least twice a year. Agents in the 15 counties organized the third annual regional symposium on Health Promotion Resources for Older Adults, bringing together core volunteers, both health and aging professionals, and key personnel in ECU's Center on Aging, Geriatric Center and Allied Health programs.

3 additional counties reported organization of local VIP programs.

7 counties reported activities with the SHIIP program sponsored by the N.C. Department of Insurance. (Extension Agents serve as County Coordinators of SHIIP Volunteers in 28 counties.)

3 additional counties reported organizing and conducting Training Family Caregivers workshop/home study programs and 3 additional caregiver support groups were formed.

Halifax and Northampton Counties reported on the 5th annual Roanoke Valley Aging Conference.

68,400 publications dealing with Elder Care, Advanced Medical Directives and other aspects of Estate Planning were requested and distributed, with special programming interest in two new publications: Preparing For and Responding to an Elder Care Crisis and Medicaid Eligibility for Nursing Home Care.

10 counties reported holding fairs, workshops and worksite programs to increase awareness of the sources of information about elder care/health promotion resources.

6 counties reported on Health Care Reform Issue Education activities reaching 1,932 citizens.

4 counties reported strengthened/expanded interagency cooperation on aging/health promotion issues.

3. ESTATE PLANNING AND RETIREMENT PLANNING (legal issues)

11 counties reported additional indicators/accomplishments addressing legal concerns reaching 1,047 persons. Many of these reports seemed to be for the past year only, rather than a cumulative record.

7 counties reported comprehensive estate planning programs.

2 counties reported programming on advance medical directives and other legal aspects of dependency.

1 county reported programming for Habitat families on legal issues.

1 county reported programming on legal issues for the elderly.

4. AFFORDABLE HOUSING

16 counties reported additional indicators/accomplishments. Many of these reports seemed to be for the past year only, rather than a cumulative record.

6 counties conducted new multi-session home buying workshops.

Edgecombe County reported reaching 74 clientele through budgeting for home buying workshops, with 76% of the 25 surveyed making actual improvements in their financial situation.

Buncombe HEEA helped found a non-profit Affordable Housing Coalition which now runs the county home buying programs.

Buncombe and Wilson Counties reported networking to form a Family Self-Sufficiency program (HUD funding), designed to improve the economic status of residents and help them move toward self improvement and affordable housing purchases.

3 counties reported working with Habitat families through individual money management consultations.

Forsyth County reported 36 families purchased homes successfully following individual money management counseling.

7 counties reported other educational programming on housing affordability: furnishing selection care & repair; home repairs; energy improvements; buying a mobile home; building & remodeling a house; adaptive housing.

#### 5. CONSUMER EDUCATION/PROTECTION

16 counties reported additional indicators/accomplishments. Many of these reports seemed to be for the past year only, rather than a cumulative record.

Buncombe County reported organizing a Financial Fitness network that carries out specific activities during National Consumers Week.

Durham and Person Counties reported special programming on consumer fraud, reaching 556.

Davidson County reported major outreach to 180 limited resource audiences on selection, care, maintenance of household items and apparel to conserve income.

Onslow County cited chore providers as a new audience for consumer education programming.

3 counties reported reaching 140 teens with the Buying Your First Car program, with 10 youth in Edgecombe County enrolling subsequently in an Auto Mechanics class to learn how to reduce costs through preventive maintenance, and a senior citizen in the community donated a used car to that class when she learned of the impact of the BYFC program.

2 counties reported additional consumer education programs for youth audiences.

5 counties reported programming activities on consumerism and other specific

consumer topics: food buying, mail regulations, clothing selection.

Vance County reported \$220,000 income extended as a result of improved consumer buymanship and through clothing construction, repair and renovation.

5 counties reported significant, regularly scheduled outreach on consumer topics via mass media (radio, TV, news articles, newsletters).

## 6. RESOURCE MANAGEMENT

23 counties reported additional indicators/accomplishments. Many of these reports seemed to be for the past year only, rather than a cumulative record.

8 counties reported on Economic Development for Women program activities involving 743 women, and 1 county reported on the multi-county DREAM program (an outgrowth of EDW) that helped both women and youth reach personal and economic goals.

6 counties reported working with JOBS program clients on a variety of life skills topics.

3 counties reported working with other job/housing crisis organizations with life skills information and referral to other sources of information and assistance.

2 counties reports programming on home safety and poisons.

2 counties reported programming on natural disaster preparedness.

## 7. INCOME PRODUCTION

18 counties reported additional indicators/accomplishments. Many of these reports seemed to be for the past year only, rather than a cumulative record.

5 counties cited various small business program activities to help people increase income.

3 counties reported the organization of a 9-county Entrepreneur- ship and Heritage Crafts Committee and two other counties reported organization of marketing groups: a cooperative in Washington and a Farmers'/ Craftsmen Tailgate Market in Cherokee.

11 counties reported recruiting/working with volunteers to deliver skills development activities for adults and youth to empower clientele to increase and/or extend income. 3 counties reported that 35 volunteers worked with 361



adults and youth.

4 counties reported receipt of \$79,740 from home-based businesses.

#### **E. NARRATIVE AND IMPLICATIONS**

Executive-type summary of major results and implications

##### **FOR CONTINUING THE PROGRAM**

Agents in 86 counties reported direct contact with 262,070 clientele and significantly greater numbers via: networking with other professionals; training and coordinating the outreach of knowledgeable volunteers; and mass media.

##### **FINANCIAL MANAGEMENT - Basic Money Management-Financial Planning**

56,742 adults and youth gained knowledge of recommended money management, credit control, record keeping, and saving and investment practices during 1991-95, 142% of the 4-year projection of 40,000.

Agents continue to articulate the need for education on basic money management/credit control for limited resource audiences as well as emphasis on accepting personal responsibility for future financial security. These two needs were selected as the highest priority objectives for the Family and Consumer Economics 1996-99 State Major Program.

Agents received and many organized the successful use of two externally-produced curricula available without charge: AARP's Women's Financial Information Program and the National Endowment for Financial Education's High School Financial Planning Program (recommended to DPI as school enrichment curriculum). The new spreadsheet program (CCASHFLO) for analysis of Current Cash Flow was developed with Extension Economist Geoff Benson and training for testing offered twice. It is currently being published with the last of the drought-relief funds. The multi-media Medicare Myths program was developed for pre-retirement audiences (with NCDol) to reduce the serious financial problems caused by misinformation about Medicare. A narrowly focused publication on the Medicare and other health insurance decisions that must be made at age 65 was developed for agent use in conjunction with a major campaign by the Department of Insurance to reach people nearing their 65th birthday with essential information.

However, the need for a more comprehensive interdisciplinary program of agent training and appropriate resources for use in a variety of settings can not be met with current staffing. A&T's FRM Specialist Claudette Smith has agreed to provide statewide assistance in programming for limited resource audiences. However, additional state staff is still needed to coordinate and strengthen agent programming for each stage of financial management education. (Extension Economists provide excellent narrowly

focused materials and assist with agent training, but only Bob Usry participates in the critical and time consuming tasks of program planning, evaluation and reporting.) Providing a dedicated money management newsletter for agents to use as is or with local revisions would be a high priority, as reported in Durham, Surry and Forsyth Counties.

Basic money management is the foundation for all Financial Management programs, and is an essential component of numerous other Extension programs (e.g., Farm Family Financial Management, Affordable Housing, Elder Care, Health & Human Safety, Families in Crisis, Economic Development for Women, Master Parenting, and Consumer Decision Making for Youth). Close cooperation with A&T and networking with multiple agencies and organizations is essential to reach high priority target audiences.

And comprehensive financial planning skills must be taught to younger audiences whose future financial security will depend increasingly on whether they accept responsibility for informed saving and investing from a very early age. The need for additional money management centers and state staff to support them would strengthen urban programming, and area specialized agents are needed for long-targeted rural areas.

When this foundation of support is secured, the Master Money Management Volunteer program can be revised, and trained volunteers can greatly strengthen program impact.

An integral component of new program materials must be an efficient process and effective tools for measuring actual behavioral change as a result of NCCES Financial Management programming.

#### ELDER CARE - Financial/Legal/Health Care Planning.

57,491 adults and families gained knowledge during 1991-95 about elder care decision making, 115% of the 4-year projection of 50,000 -- reflecting the self-sustaining, ongoing expansion of elder care programming by Extension.

Agents and members of their local aging networks. North Carolina is far ahead of most states in addressing the elder care information needs of aging and older adults and caregivers, with maintenance-level programs continuing on 1) elder care awareness, 2) planning ahead for elder care decisions, 3) volunteer information provider programs and 4) training family caregiver programs. The new Adult Development/Aging position is giving much-needed support to the many agents trying to help families communicate about and make more effective elder care decisions, and will provide programming support for the majority of aging and older adults who are not dependent.

Networking among agencies to organize and conduct elder care programs has of course benefitted family caregivers, who report reduction of stress as a result of the information and emotional support they have received. But the programming requirement of interagency program sponsorship has also given more visibility to Extension and has

improved cooperation among the local aging service providers. They now understand each other's programs better and in many counties meet regularly to maintain better coordination among agencies. Sixteen agents in between 1991-95 reported working with 465 members of their local aging networks, and many other agents reported such contacts without quantifying them. Extension involvement in interagency aging activities has been of value in many counties as they struggle to make the transition to the new way to fund county aging services through the Home and Community Care Block Grant. Of special note is Halifax County, where CES houses a county-funded coordinator of aging services who monitors county use of \$403,000 in HCCBG funds. Halifax & Northampton provide leadership for the annual Roanoke Valley Aging Conference, and the Unifour Counties organized an Older Families Forum and received requests that it become an annual event. The KBR-funded NE Regional Elder Care Project is an exemplary program in which \$10,000 per year (a 3-year grant) has permitted the poorest region of the state to motivate professionals and volunteers to reach family caregivers with directories of both aging and health services and provide emotional support to the people carrying out this major family responsibility.

Leadership and support from the new Adult Development/Aging specialist will strengthen these ongoing programs, with special emphasis on the needs of family caregiver support groups that have been organized as a result of the Training Family Caregivers program.

Medicare Myths training for pre-retirement audiences was delivered in September 1994 and March 1995 to reduce/avoid some of the financial and emotional problems of older adults whose planning is based on misinformation. This packaged program has reached tens of thousands of pre-retirees, providing visibility to Extension's interrelated financial management, elder care, estate planning and retirement planning programs. A continuation-grant from HCFA provided September 1995 agent training on the specific Medicare/Medigap/Employer Group Health Plan decisions to be made upon reaching age 65, and Extension Agents will coordinate the provision of this important information with SHIIP staff and volunteer counselors.

#### HEALTH CARE REFORM ISSUES EDUCATION

Family Economics issues are integrated into Goal 2 of the Decisions for Health national initiative. Both consumer and citizen decision making are part of the NCCES response to the challenge to conduct Health Care Reform Issues Education (HCRIE) in cooperation with the Health and Human Safety Initiative. HCRIE was not included in the template for the 1991-95 plan of work, but 6 agents reported reaching 1,932 people in person and the FRM agent in every county received 400 copies of the ES newspaper on Health Care Reform Choices and Decisions.

Agents from 20 counties comprised the "cadre" for the HCRIE project. They received special training as follows:

- National videoconference on HCRIE as part of day-long training with Garland/Lloyd

- N.C. Governor's Consensus Conference on HCR plus special session with Garland/Lloyd
- Issue Facilitation training at November conference with Garber, Danielson and Smutko plus session with Garland/Lloyd
- Year-long special mailings and e-mail

The cadre reported on extensive contacts with Extension Homemakers, the general public, and specially formed study groups, as well as extensive use of training materials in mass media. The activities of North Carolina's Health Planning Commission (renamed in 1995 the Health Reform Commission) will contribute to ongoing issues education.

EH Liaison Agents were presented a brief overview of the Health Care Reform Issues Education materials developed by ES/USDA, and developed two leader lessons to help members understand the issues involved in health care reform and the major categories of reform proposals. All counties received at least 400 copies of the ES/USDA special newspaper for distribution to EH and others.

158 persons attended the 1994 northeast regional forum on Health Care Reform for Older Adults, with presentations by the area's Congressional Representative, state senator, health researcher from Duke, NCCES health care reform issues education team, and an outstanding panel of regional representatives of six different perspectives on health care reform.

A scripted slide show was developed for the NorthEast regional elder care 1995 regional forum on Health Promotion Resources for Older Adults that was extremely effective in telling new audiences of Extension's field research and programming in elder care, nutrition for older adults and rural health. A revised slide set has been prepared for statewide use by agents in telling Extension's story.

Continued efforts by state staff are necessary to improve coordination in the planning and reporting of AGING, ELDER CARE, HEALTH PROMOTION and MAINTAINING INDEPENDENCE programs. The decision to add an Adult Development/Aging Specialist to provide leadership to this interdisciplinary effort is applauded. Even with the creation of the Aging with Gusto! state major program, there will be related activity in other SMPs (Family and Consumer Economics, Health and Human Safety, and Nutrition and Wellness). Agent activity in these areas makes a significant contribution to individuals and communities, but is often not captured due to lack of coordination in the planning and reporting systems.

#### ESTATE PLANNING and RETIREMENT PLANNING

21,763 individuals and families acquired information about estate planning and retirement planning during 1991-95, 44% of the 4-year projection of 50,000.

The MCNC system was used to deliver agent training on Retirement Planning for Business Owners and Their Employees and on Planning for Disability and Dependency. Four new publications on retirement planning for business owners were presented in December, along with an extensive agent guide for organizing and delivering programs for local audiences. A new publication on Medicaid Eligibility for Nursing Home Care was included in the training for business owners and others on planning for disability and dependency, and has been revised promptly as warranted.

Estate Planning programs continue to be requested by agents and are organized locally or with presentations by the legal specialist. Interest in Advance Medical Directives remains high.

The slowly expanding adoption of the time-consuming Women's Financial Information Program is producing a number of new Extension clientele with strong commitment to personal responsibility for obtaining the interrelated legal, financial planning and health care/insurance information needed for future financial security. Training of the region directors of the N.C. Council for Women is helping NCCES reach additional counties with the WFIP program.

Cooperation with PREPARE, N.C.'s Office of State Personnel's pre-retirement program, continues to be mutually beneficial, and NCCES is cooperating in the enhancement of PREPARE's materials for use with UNC-EPA and SPA employees.

In order for retirement planning to receive the emphasis and support requested for the 1996-99 plan of work, additional state-level programming expertise must be provided in higher level financial management for families and family businesses.

#### IMPROVED HOUSING/AFFORDABLE HOUSING.

29,367 individuals and families adopted practices during 1991-95 to improve housing (through repairing, remodeling or upgrading) to meet family needs through the lifecycle -- 84% of the 35,000 projection for the entire four years.

Agent training on Affordable Housing in May 1994 and March 1995 covered a variety of topics and introduced numerous resources, including 15 new publications in the "A Home of Your Own" series as adapted from Glenda Herman's inter-state agreement with Tennessee.

The need for a locally-designed Affordable Housing programs will continue to increase, with requests coming from consumers, lenders and others. Consumers need all sorts of help with this most-expensive of all categories of consumer expenditure. And tougher enforcement of the national Community Reinvestment Act requires mortgage and consumer credit lenders to document their educational efforts to help consumers qualify for credit. Funding for Extension educational programming is available for agent



programming from local lenders.

A major commitment to Affordable Housing programming was made by ES/USDA through support for a national video-conference in December 1993, and a national professional development conference of FRM and Housing faculty in March 1994. The N.C. delegation included one FRM and one Housing specialist and four agents with active home buyer education programs (Nash, Pitt, Rowan and Wake). Wake County, for example, has reached 2,560 prospective home buyers since its first workshop in 1990.

#### CONSUMER EDUCATION/EXPENSE REDUCTION and CONSUMER PROTECTION.

47,946 adult and young consumers gained knowledge of their marketplace rights and responsibilities in the selection, use and care of consumer goods and services during 1991-95, 192% of the 25,000 4-year projection. Most of these programs were generated by agents, with assistance from an FRM specialist primarily on credit, elder care, health care, transportation, and consumer fraud, plus assistance from other specialists on decision making about other consumer products and services.

Buying Your First Car and its CARCOSTS software were presented in agent training in 1993 and 1995. When funds are secured, this program will be revised, published and made available to DPI for the School Enrichment curriculum.

"Consumer Fraud" was the theme of the 1993 National Consumers Week for which agents were sent new materials. The theme of October 1994 National Consumers Week was "Know Your Consumer Rights." The NCCES Consumer Rights and Responsibilities publication was revised and sent to agents along with other resources for NCW.

When additional staff for Financial Management for Families and Businesses is secured, the specialist for consumer decision making can devote the time necessary to prepare planned programming resources on consumer fraud and consumer credit. Major surveys in the past three years of high school, college and adult audiences reveal abysmal inadequacies in consumer knowledge and document the need for interorganizational commitment, such as the "Partnership for Consumer Education" that Extension assisted the Attorney General's Consumer Protection Division in organizing. A video and handbook on Consumer Fraud were developed with Partnership funds and are being provided to every Extension Center.

Several counties cited the importance of including selection and care of clothing and house furnishings as a critical way to EXTEND income. The current data-gathering process does not encourage the collection of data on extending income, even though this is a critical juxtaposition of consumer decision making on time and financial management. Nor is there a standardized way for agents who choose to collect such data

on their own to do so in a way that provides reasonable figures that can be aggregated. Serious thought should be given to Extension's goals in regard to consumer decision making about income extension/production. Problems with how some agents marketed, conducted and reported these programs in the past should not cause the potential value of such programs to be discarded altogether.

#### RESOURCE MANAGEMENT/INCOME PRODUCTION

43,035 individuals and families developed and used skills to increase or extend income during 1991-95, 518% of the 4-year projection of 8,300. Complete numbers of volunteers involved are not available.

5,726 current and potential entrepreneurs received information on the legal and business management aspects of running a small business programming assistance, 31% of the 4-year projection of 18,500 entrepreneurs.

The need for supplemental income (especially for limited resource audiences) continues to be very great for large numbers of urban, rural non-farm and farm families, with agents reporting both financial and emotional benefit from programs that help families make better informed decisions about producing income from employment and self-employment. Some agents still need guidance in: how to provide educational programs that have such potential for economic benefit in a way that uses agent and volunteer time efficiently; how to market such programs appropriately; and how to gather reliable data for reporting the benefits realized by families and the community.

The relationship between resource management, skill development and financial management should be better coordinated and strengthened for such programming requests as Family Resource Centers, Pre Work First, Head Start and Smart Start, Habitat for Humanity families, and other special needs audiences.

Chatham reported success in getting minority representation on its Small Business Council and Harnett continues to support the Minority Economic Development Association that mentors new and prospective entrepreneurs. Agents in the lower Piedmont continue to offer small business seminars, and Nash County reported success with a local small business program. Nine counties in the far West organized the Entrepreneurship and Heritage Skills Committee, and local activities to date have been well attended and evaluated and very useful.

State support for small business programs remains inadequate to meet the needs of agents and current/prospective small business owners due to the loss of 2 FTEs at the state or area level to support small business management and marketing programs. Carteret County, for example cites requests for education on small business opportunities for retirees, and this can be expected to increase as North Carolina has the fifth highest in-migration rate among the states -- the number of retirees coming to North Carolina



from other states. The 1993 report of the CALS/CRD Task Force highlighted the need for further research and extension programs to help rural citizens in particular meet their needs for increased income, and to support community programs for business retention and expansion. The report specifically asked for reallocation of funds to restore and add both state and area positions in Extension Home Economics (now Family and Consumer Sciences) and Agricultural and Resource Economics to address this need. DARE has already done so.

Bladen County's summation: "Major emphases were on financial management, budgeting, consumer buying, public policy, and improved job opportunities to help families to become economically stable. There is still a need to continue to work in these areas even though much progress has been shown. Networking with other agencies and getting good support has helped to improve the lives of many Bladen County families."

**F. COORDINATOR AND TEAM MEMBERS:**

Glenda M. Herman  
(retired January 1995)  
Carol A. Schwab  
Jacquelyn McClelland  
Judieth E. Mock  
Michael L. Walden  
Janice Holm Lloyd,  
Program Coordinator

## ACCOMPLISHMENT REPORT 1992-1995

### NC36 - HUMAN ENVIRONMENT AND HEALTH IN NORTH CAROLINA

#### A. OBJECTIVES

1. Consumers and communities will make environmentally-sensitive decisions related to residential waste management.
2. Households will protect, improve and conserve the residential water supply.
3. Households and housing providers will improve indoor air quality in homes to promote a healthier living environment.
4. Households and housing providers will increase energy efficiency and conservation in residences and communities.
5. Families, individuals and housing/service providers will improve living environments to promote independent living.
6. Families and individuals will protect or improve their health status.

#### B. NON-EXTENSION RESOURCES

- |   |          |
|---|----------|
| 1. Number of volunteers                         | 7,301    |
| 2. Total number of volunteer days               | 10,251   |
| 3. Value of federal government funding (grants) | \$ 7,340 |
| 4. Value of state government funding (grants)   | \$ 0     |
| 5. Value of local government funding (grants)   | \$ 760   |
| 6. Value of private funding (grants)            | \$17,030 |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

116,551 families, adults and youth adopted one or more recommended waste management practices for the home or community.

23,105 households adopted one or more recommended residential water conservation or water quality measures.

17,952 households and housing providers adopted one or more recommended practices to conserve energy or improve energy efficiency in their homes and communities.

7,486 families, individuals and housing providers gained knowledge about independent living strategies, including lifestyle housing design and adaptation.

29,920 families, adults and youth gained knowledge of personal environmental health and safety practices.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

##### **WASTE MANAGEMENT**

Waste management programs conducted in 40 counties have focused on source reduction, recycling and toxicity reduction.

One county reported that it has moved from being a "non-recycling" county in 1991 to having 12 successful recycling centers in the county in 1995.

Another county indicated that the weight figures for household waste at the county landfill have been reduced consistently over the past 3 years -- from 2,967 tons in 1993 to 1,851 tons in 1995, a 62% reduction.

Over 20 county Extension staffs have participated in multi-agency county task forces or advisory groups on waste management-environmental issues. Twelve counties assisted with: quantifying waste stream reduction via diversion of materials from the landfill, collection programs for special recyclable materials, in-house waste reduction programs, and school recycling projects.

Fourteen counties participated in Master Waste Manager programs, using 150 trained volunteers to conduct more than 4,000 hours of community education and outreach in North Carolina. Master Waste Managers have conducted attitudinal surveys for local governments, served at recycling collection sites, assisted in reducing contamination of recyclable materials, conducted programs in schools, and worked with schools to establish on-site recycling and composting facilities. One county has adapted a second phase of the program as "Waste Manager Kid-et" using youth volunteers.

In another county, the Extension staff has been requested by the county commissioners to implement a comprehensive environmental education plan for the county as a result of a successful Master Waste Manager program. Volunteers in this county have also prepared a slide program on local waste issues, assisted with an Earth Wise Day Camp for youth, and worked to reduce contamination of recyclable materials.

In other waste programs across the state, 20 environmental days, camps or fairs focused on waste management issues. One county sponsored an "Earth Angel"

Family Environmental Retreat. Nineteen families who participated received practical information on environmentally-responsible shopping, recycling and composting activities they could conduct together as family activities.

Extension Homemakers have multiplied the educational efforts of Extension professionals in all the 40 counties who reported program accomplishments in waste management. At least five counties credit Extension Homemakers with initiating some of the first recycling programs through such activities as helping get recycling bins in county locations and at several schools.

Thirty-five counties have conducted programs on reducing the hazards from hazardous household products. These programs have emphasized proper use, storage and disposal as well as safe substitutes. Exhibits at Health and Environmental Fairs or Field Days in eight counties reached 4,777 people.

In three other counties 150 people reported reducing toxicity by reducing the number of household hazardous products in the home or by practicing preventive maintenance.

One county has coordinated a Household Hazardous Waste Task Force, secured external funding and trained volunteers to assist with activities and educational programs. Extension has played a key role in providing more than 30,000 county residents with information about household hazardous waste through the local media and with exhibits at special events. A youth character, Hazardous Harry, has been developed and is being displayed throughout the county. The local civic group has underwritten the cost for an Extension educational brochure to accompany the display.

At least 10 county Extension staffs have helped county waste management divisions organize household hazardous waste collection days. Extension Homemakers in one county helped check in over 300 of the households who participated in the county's first collection day program.

#### WATER QUALITY

During the past four years major focus has been residential water quality education and screening programs for lead/nitrates and their health effects, especially on young children. Field faculty and volunteers in 50 counties have been trained to screen water samples. Since May of 1994, 1,230 lead and 1,129 nitrate samples have been screened with over 1,400 participants. Three percent of samples screened for nitrates and 10% for lead had elevated readings. These clientele were referred to the local health departments or certified private laboratories for additional testing. Some homeowners with private wells have had to drill new wells as a result of the screening program. Those with elevated lead

levels have learned to flush pipes before consuming the water or have plumbing updated or replaced.

Eighty counties sponsored various educational activities via: fair demonstrations, Earth Day exhibits, environmental field days for fourth and fifth graders. National Drinking Water Week displays and promotions, civic programs, television segments and mass media releases. Forty thousand youth received bookmarks and 15,000 placemats were distributed to restaurants sharing water facts and conservation tips. Both received very positive feedback and proved to be very effective means to create awareness. Conservation field days co-sponsored by Extension and other agencies introduced youth and community members to drinking water supplies and water quality issues. Programs have been presented in low income housing projects and to Habitat for Humanity and Community Block Grant recipients on low cost water savers. Five thousand "Quality Drinking Water" publications have been distributed. The Blue Thumb Quality Drinking Water packets were distributed to the 100 counties annually and the activities conducted in schools and communities reached over 100,000.

## ENERGY

During the years 1992-1995, county cooperative Extension agents reached over 84,000 homeowners, builders, youth, educators and other interested persons with energy education programs. County agents conducted 135 neighborhood energy workshops reaching almost 2,000 residents. Workshops were designed to help participants to reduce air infiltration in their homes. Sixty-four small businesses have been introduced to energy-efficient lighting and weatherization technologies.

Five counties have trained 44 school teachers in the use of the "Energy, Technology, and Science" curriculum. This curriculum is a result of a joint effort between the North Carolina Cooperative Extension Service and the North Carolina Solar Center with funding provided by the Western North Carolina Community Foundation and the Alternative Energy Corporation.

The first green building conference was held focusing on efficient, sustainable, and healthy homes. One hundred and twenty-six individuals, 30 volunteers, and 10 exhibitors participated in the event. Sponsors of the conference included the North Carolina Cooperative Extension Service, the NC Solar Center, Alternative Energy Corporation, and the NC Solar Energy Association.

Newspaper articles on compact fluorescent lighting, reducing summer cooling costs, landscaping for energy efficiency, and energy conservation and use were distributed statewide through Extension's electronic newsgroups and through local and regional newspapers.

Project Connect, a funded energy program in five Western North Carolina counties, has helped nearly 20,000 North Carolinians make home energy audits, weatherize their homes, and learn how to build new homes that are energy efficient. Nearly 50 percent of participants surveyed at intervals following Project Connect energy programs had made one or more energy improvements to their home or business since the program.

#### DEPENDENT LIVING

During the years 1992-1995, 33 counties reported conducting programs on independent living and lifecycle housing. More than 16,497 senior citizens, housing providers, caregivers, and others attended seminars and programs on adapting housing for accessibility and developing skills to maintain independence. Five hundred families attended seminars concerning the use of reverse mortgages. Counties used a variety of teaching methods to reach larger audiences with accessible housing information. One county aired a television program focusing on independent living strategies. Another developed a specialized newsletter on adaptable housing for distribution among homebound older adults. In one county, a cooperative effort between the North Carolina Cooperative Extension Service and the local senior citizen center resulted in the distribution of smoke alarms and fire extinguishers to "Meals on Wheels" recipients. Many county agents have been actively involved in cooperative ventures with county organizations, agencies, and other individuals to provide information on adaptable and accessible housing. As a result, county agents have been asked to serve in leadership roles on aging related councils and committees.

#### ENVIRONMENTAL HEALTH AND SAFETY

During the years 1992-1995, the North Carolina Cooperative Extension Service has conducted the state radon education program through funding by the US EPA and the State Radiation Protection Division. More than 44,484 North Carolina households learned about radon health risks, tested their homes for radon, or adopted measures to reduce radon levels in their homes. North Carolina Cooperative Extension agents assisted public school officials in five counties with testing for radon in schools. Extension worked with 8 local government units to test homes for radon.

More than 200 homebuilders and county building inspectors received training on radon resistant new construction. Over 362 N. C. Real Estate professionals have been reached through workshops and a continuing education course. Twelve workshops and programs involved 450 youth in assessing radon and health issues. A state-wide radon newsletter was sent quarterly to approximately 1,000 local government officials, public health professionals, and Extension Agents.



During the past 2 years, 13 counties where insufficient radon testing had been implemented participated in additional testing, with 130 homes completing testing. Eighteen counties known to have elevated indoor radon levels participated in additional testing with 236 homes completing testing. Sixty-seven professionals representing NCCES, environmental health agencies, and N. C. school systems have participated in In-Service seminars, "Radon Update."

Over 10,000 individuals including private and commercial pesticide applicators, and farm families gained knowledge in selection, handling and laundering of pesticide soiled clothing, with an estimated 6,500 making practice changes. In several counties, this topic has become a part of the pesticide recertification program.

Thirty-five counties have conducted programs on health and safety practices and a healthy home environment. Emphases have included indoor air quality, chemical safety, accidental injuries and poisonings, and hazardous household waste. During the last 2 years, in 7 counties over 4,000 people have gained knowledge about lead poisoning, the hazards and how to reduce exposure of young children.

#### **E. NARRATIVE AND IMPLICATIONS**

Special wastes are an emerging problem in North Carolina's waste stream. Extension education can be effective in reducing and disposing of special waste safely. Environmental regulations continue to have an impact on local governments and citizens. Education of consumers is still a cost-effective solution for reducing volume and type of waste going into landfills. Extension can also provide leadership for citizen education to reduce contamination of recyclable materials. Educated volunteers continue to provide leadership for educational efforts in the community, as well as public policy education. Collaborative efforts with other local agencies continue to be an effective outreach strategy. Waste reduction, including enviro-shopping and source reduction, is an emerging area where CES can be a leader. Environmental equity continues to emerge as a community waste issue.

Residential water quality issues are still a primary concern for North Carolina residents. In a recent EPA report, research indicated that 9% of private wells are contaminated with nitrates. Therefore, screenings for contaminants such as lead and nitrates, will continue to be offered in the counties. Screenings and educational outreach efforts have made a significant impact creating awareness of contaminants and their health implications and promoting conservation techniques which result in economic savings. Emphasis will continue on quality and protection of sources of our increasingly "limited" water supplies. The program will promote opportunities for collaborations and foster relationships with health departments, county and city governments. It allows Extension to showcase its expertise in the area of residential water quality.



As utilities focus on demand-side management, consumer education in the areas of energy use, management and conservation is critical. North Carolinians are seeking accurate information about best management practices to reduce air leakage and increase energy efficiency while maintaining a healthy indoor environment. Information about alternative energy and new energy technologies must also be available to consumers to ensure that North Carolina ranks 5th in the nation as a retirement destination for older adults. Only seven other states have a faster growing older population. As this population continues to expand, so will their needs. For these citizens, the capacity to function and thrive independently will be critical to ensure productive, satisfying lives. Education emphasizing careful planning, accessible design criteria, and housing options can enhance and extend the capacity for independent living.

Environmental health issues are of growing interest to the general public, and to target audiences. Lead in homes and in drinking water is a potentially serious health threat to North Carolina children. For an increasing number of citizens, indoor air quality is a concern. With the enactment of the US EPA's new Worker Protection Standard, there is a critical need for education related to selection, use and care of personal protective equipment when using agricultural chemicals. Target audiences include the 35,350 private pesticide applicators across the state as well as farm operators, and agricultural workers. Radon is a serious indoor air pollutant and continues to pose a health risk. It is especially important to focus radon education and testing in the high risk areas of the state. Target audiences include homeowners, builders, realtors, inspectors, schools and government agencies.

- F. COORDINATOR AND TEAM MEMBERS:**
- Judy Mock, Chair
  - Sarah Kirby
  - Barbara Garland
  - Janice H. Lloyd
  - Mary Wiggins
  - Wilma Hammett

## ACCOMPLISHMENT REPORT 1992-1995

### NC37 - NUTRITION, FOOD SAFETY AND HEALTH CORE PROGRAM FOR NORTH CAROLINIANS

#### A. OBJECTIVES

General Diet, Nutrition and Health

1. Adults participating in nutrition, diet and health programs will improve their knowledge, skills, attitudes, and behavior for nutritionally sound diets and healthy lifestyles.
2. Adults participating in diet and weight control programs will improve their knowledge, skills, attitudes and behavior for safely managing their weight.
3. Participants in maternal and child health programs will improve their knowledge, skills, attitudes, and behavior for proper nutrition and health for children and women of childbearing age.

#### B. NON-EXTENSION RESOURCES (based on reports)

1.	Number of volunteers	15,644
2.	Total number of volunteers-days	22,784
3.	Value of federal government funding (grants)	\$279,215.00
4.	Value of state government funding (grants)	\$324,651.00
5.	Value of local government funding (grants)	\$ 13,145.00
6.	Value of private funding (grants)	\$ 89,380.00

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of citizens participating in nutrition, diet and health programs who increased their knowledge of how to promote health and reduce the risk of chronic diseases by selecting, preparing and consuming foods according to the National Dietary Guidelines: 441,673
2. Number of individuals with dietary risk factors who will make a positive change to reduce and manage their risk: 124,146
3. Number of families that gain knowledge to help them provide a healthier diet for their children and teach their children healthy diet and lifestyle habits: 102,467
4. Number of participants in maternal nutrition programs who gained knowledge and

skills that will lead to good food habits associated with a healthy pregnancy: 20,759

5. Number who gained knowledge of safe food handling practices and other practices that protect the safety of the food supply. 135,006

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

A variety of programs and workshops on nutrition, health and food safety topics were conducted in all 101 extension offices in North Carolina. Programming focused on diet and cardiovascular disease, nutrition for infant and preschoolers, nutrition integration into elementary school curriculums, chronic disease risk reduction (hypertension, osteoporosis, diabetes, obesity, cancer atherosclerosis), maternal and infant nutrition, and nutrition for special needs (immunocompromized individuals), handicaps (visually impaired, physical and mental), pregnant teens. Health promotion programming was conducted at health fairs, health screenings, through food selection tours in grocery stores, food preparation demonstrations, classes and series of classes, and media (newspapers, tv, radio and newsletters).

Extension professionals were involved in providing training and inservice education credits for other health professionals in their communities. Extension professionals networked with other agencies to present programs at the yearly American Heart Association's "Heart Fest," Commodity Foods Distribution Programs, Heart At Work workshops, Eating for Healthy Tomorrows workshops, worksite wellness programs, Food Banks, Food Stamp's Family Nutrition Program, Senior Meals nutrition education program, Meals on Wheels programs, WIC programs, Youth Day Camps and the Prison System.

Following are some reported accomplishments.

Noonliting weight management series were conducted in (x) counties between 1992 and 1995 with more than (xxx) participants. The Noonliting I program is for 15 weeks and the Noonliting II program is 12 weeks. The majority of the programs are conducted at employee worksites during the lunch hour. Sessions are taught by extension agents or by health professionals in the worksite who are trained to conduct the program. Counties report accomplishments such as:

- (a) 26 programs conducted with 547 participants, average weight loss of 10 pounds, 72% of 547 achieved their weight loss goal, 52% achieved their exercise goal;
- (b) 78% of 90 Noonliters had elevated blood pressures with 40 (57%) of the 70 decreasing blood pressure to within normal readings at the end of the program;
- (c) 81% of enrollees completed the program, 64% met their weight loss goal;

- (d) 85% of 208 participants walked at least three 30 minutes walks per week;
- (e) 56 participants eliminated need for blood pressure medication;
- (f) programs conducted in 7 industries, 746 participants, 75% walked at least three times a week;
- (g) cooperated with industry worksite wellness programs to train 26 volunteers to conduct Noonliting for 591 participants;
- (h) 51% of 144 participants lost at a rate of 1/2 pound or more per week;
- (i) 217 industry workers participated with 12 volunteering to help conduct the program;
- (j) 613 people participated in Noonliting with followup data of 60% now weighing regularly, 53% exercising on a regular basis and 66% making food behavior changes to reduce energy intake; and
- (k) 35 of 81 Noonliting graduates reached their goals of losing 10+ pounds; 43 lowered blood cholesterol levels; 40 decreased blood pressures to within normal levels.

Food and Nutrition Inservice Education programs for other agencies and health professional were presented by extension agents. Examples of their participation in training of other professionals include:

- (a) 796 continuing education credits awarded to 70 child care workers on nutrition, food safety and child development;
- (b) 97 day care workers trained in nutrition for the young child;
- (c) 30 home care providers of blind and handicapped adults participated in food and nutrition classes focused on their clientele's needs;
- (d) 8 health care workers completed nutrition training and were eligible for employment as health care workers;
- (e) 19 of 20 participants in Food Service Managers Food Safety certification program certified;
- (f) 15 Hospice employees trained in diet management for the terminally ill;
- (g) 12 day care centers serving 690 children made commitment to serve lower fat

meals;

- (h) 67 adult providers in day care, occupational health and Head Start received training in healthy diets for their clientele;
- (i) 100 day care centers and homes receive quarterly newsletter on nutrition and health;
- (j) provided inservice training on integrating nutrition in the classroom for 65 elementary school teachers;
- (k) 135 day care providers trained in nutrition and food safety;
- (l) conducted food safety training for 20 occasional quantity food preparers;
- (m) 35 school lunch employees trained in food safety;
- (o) 33 employees of nursing homes, senior meal sites and home-bound care givers trained in food safety;
- (p) 36 child care workers and 18 supervisors received Food Safety certification;
- (q) average knowledge pre-test score on food safety in day care 68 with average post-test score of 96;
- (r) 80% of 137 day care workers increased knowledge in food safety;
- (s) 376 day care providers received training in food safety;
- (t) 152 teachers trained to integrate nutrition into state's standard course of study;
- (u) taught 6-week course on basic nutrition for aerobic instructors and personnel trainers;
- (v) 75 school lunch personnel attended one of three 12 class sessions on providing school lunch meals that meet the Dietary Guidelines;
- (w) 130 teacher assistants participated in workshop for nutrition for preschooler to 3rd graders;
- (x) 28 day care owners and staff received 20 continuing education credits in food and nutrition.

Targeted and Special Needs Audiences received nutrition and food safety program

through direct work with the audience and by training employees who work with special needs audiences:

- (a) 347 pregnant women received Maternity Packets from OBGYN's offices;
- (b) 35 disadvantage youth learned about nutrition from extension at the Boy's Club;
- (c) 6 adults in literacy program taught how to manage limited food dollars;
- (d) 20 mentally disadvantage adults learned healthy diet planning;
- (e) created a new EFNEP program in a county with three program assistants and part-time clerical support through Smart Start funding;
- (f) 12 visually impaired adults taught diet management;
- (g) worked with Habitat for Humanity to provide nutrition education for participants;
- (h) 55 JOBS participants participated in healthy diets for young children programs;
- (i) reached 156 prisoners with nutrition and wellness program;
- (j) 110 youth taught at Youth At Risk Day Camp about healthy diet;
- (k) 20 vendors at Farmers' Market taught about food safety;
- (l) 398 families reached with Newborn Infant Packet containing infant nutrition information;
- (m) 49 mentally handicapped individuals reached in nutrition class;
- (n) 41 high risk women received free mammograms through collaboration with health department and NC Extension Homemakers Association;
- (o) 80 attenders at a "Diabetes--Your Health and Nutrition" workshop reached with one adult referred to physician for immediate care for a foot problem (due to quick action, the ulcerated toe was saved) and a diabetes support group forming to meet weekly as a result of programming efforts;
- (p) worked with convalescent center participants on modified fat diets resulted in adoption of new low-fat options in center's food service;
- (q) third, fourth and fifth graders in nine schools (873) learned about a healthy diet from extension agent and hospital education director;

- (r) 365 families with 554 young children participated in the learn-at-home nutrition program, HomePlate;
- (s) taught 11 classes in high schools on teen related health and nutrition concerns including eating disorders and sports nutrition;
- (t) residents in a Mental Health Group Home participated in "Eat for Health" workshops to help them prepare for living on an individual basis;
- (u) conducted 20 hypertension prevention programs for African-American Church groups;
- (v) provided a four-part program on children's nutrition with emphasis on feeding relationship between parent and child for 28 families;
- (w) a Cancer Awareness Program for African American women was presented through informal small meetings organized by 'hostesses' trained by extension. A health professional met with each group. 100 women were reached.

Nutrition and Wellness for the Elderly population is a major focus in food, nutrition and food safety programming. North Carolina is experiencing an increase in its elderly population that is more than twice the national average. Because the elderly run a disproportionate risk for malnutrition, drug and dietary supplement misuse, as well as poor overall health, the challenge for CES is great. Agents have responded to the needs of this group by working with them at congregate meal sites, senior centers, through the Extension Homemakers Association, through general public meetings and at homes and convalescent centers. Offerings have included numerous health screenings, educational programs and individual consultations. Many agents, in response to the National Nutrition Screening Initiative, have formed local coalitions to screen and monitor the nutritional status of seniors. As a result many seniors have been evaluated and activities have been set in motion to improve their health. Examples of county accomplishments include:

- 40 seniors have participated in a series of wellness and health promotion programs conducted at a local senior center. As a result of one program which emphasized diet and disease prevention, a participant asked for assistance in seeking medical advice concerning existing disease symptoms. It was discovered that she had breast cancer and required immediate surgery.
- One county agent, as a result of forming a county coalition and conducting the Level 1 Screen of the National Nutrition Screening Initiative, found two cases of elder abuse which were reported to and taken care of by the Department of Social Services, as a member of the coalition. She also



identified numerous cases of elderly participants who were at high nutrition risk. They are currently working on correcting the problems.

- 8 home health class participants received intensive training in basic nutrition, especially as it relates to patient care and older adults. Upon completion of this course, class members will be eligible for employment as health care workers.
- As a result of Extension's collaboration with the American Association of Retired Persons (AARP), the American Heart Association, North Carolina Department of Human Resources (NCDHR), and NC Department of Environment, Health and Natural Resources (NCDEHNR), a joint workshop entitled "Nutrition, Health and the Elderly" was held. During which time CES was given and trained in using 52 "Eating For Healthy Tomorrows" modules/programs for targeting older minority audiences for prevention of cardiovascular diseases. Since that time 47 workshops have been held with minority audiences across the state in cooperation with local AARP and AHA representatives, churches, area agencies on aging, senior centers, and council on aging centers.
- Six segments were taped for a local cable TV show, "Senior Seminars" on the Dietary Guidelines. 15,500 families with 3.2 viewers each have cable.
- Programs for "weekend family caregivers" provided information on "Could You Be Losing Nutrients?" and the "Checkbook for Drug Safety" and reached 97 people who care for elderly relatives.
- Quarterly nutrition education lessons based on "Making the Last Half the Best Half" reached 265 senior citizens.

Innovative Delivery Techniques were used to reach the diverse audience and the audiences not reached with traditional programming delivery methods.

### HOMEPLATE

HomePlate is a nutrition education program for parents and children 5-8 that was funded by the Institute of Nutrition and developed cooperatively with the School of Medicine at ECU. The program consists of a 26 minute video, activities for children, newsletter for parents and kitchen activities for parents and children.

HomePlate was developed using data from over 600 NC families that were surveyed about their interest in food and nutrition topics and preferred program delivery techniques. HomePlate was piloted in 10 NC counties to assess the effectiveness of

distributing the materials through the mail as opposed to traditional programming efforts. Follow up evaluation (n=99) data indicated that the families receiving HomePlate in the mail liked the dissemination method and benefited from the materials.

Fifty four percent of parents surveyed indicated that their family had changed their eating habits after using the HomePlate materials. By using alternate delivery strategies we were able to reach many families that had not used Cooperative Extension in the past (62% of parents surveyed had never used NCCES). HomePlate has been expanded to 40 counties with over 5,000 kits distributed to interested families. Funds have been secured from the Agriculture Foundation to develop HomePlate II.

### EATING RIGHT FOR YOU AND YOUR BABY

Funds from the Kellogg Foundation through a contract from East Carolina University School of Medicine were used to develop a full color brochure and audio tape on nutrition for pregnant teens. The materials were developed using focus groups of pregnant and parenting teens and emphasize the importance of good nutrition and proper weight gain during pregnancy. The materials were tested with a group of teens in the high risk clinic at ECU. Evaluation of the materials indicate that teens respond well to having materials presented in a variety of methods and that the audio tape was well received. The materials are being used across the state by the EFNEP program and by agents working with pregnant teens.

### BLACK CHURCHES UNITED FOR BETTER HEALTH

Extension collaborated with NC Department of Environment, Health and Natural Resources, UNC-CH, NC Department of Agriculture and Duke University in developing and receiving 4-year funding (approximately \$164,000.00 to Extension) for a diet and cancer initiative, targeted to African-Americans, called "5-A-Day For Better Health" from the National Cancer Institute. The Black Churches United for Better Health project promotes fruit and vegetable consumption among African-Americans for cancer prevention. African-Americans have higher rates of cancer mortality compared to whites. The project is a multilevel intervention using lay health advisors and other leaders in rural black churches to promote eating at least 5 servings of fruits and vegetables a day to prevent cancers. The project, in its third year of funding (the intervention year) and reaching over 3700 African Americans, has successfully involved the local CES agents in 5 counties in a working relationship with their local health department counterparts. The design of the interventions have been targeted to the participants using the results of the baseline survey and focus group testing of the members of the churches. The interventions have been offered to the 25 churches in the form of a menu to choose from based on individual church needs and interests. Interventions include ways to increase the availability of fruits and vegetables such as holding food preservation classes, gardening classes, and food preparation demonstration classes. Three ALMANAC GARDENER segments have been taped involving church

members either growing fruits and vegetables or preparing them in healthy dishes.

### HEALTHY EATING FOR LIFE PROGRAM (HELP)

The mature adult is at increased risk for malnutrition. Many of the chronic diseases and infections that affect them are profoundly influenced by their nutritional status, yet there are few adequately tested educational models for achieving improved nutrition in this vulnerable population. Programs teaching the Food Guide Pyramid and emphasizing food rather than nutrients are particularly sparse.

Nutrition information alone is not a very effective tool for assisting behavior change. Psycho-social factors, health beliefs and learning styles are all vital considerations when contemplating behavior change. A few research articles suggest that self-efficacy, social support, perceived vulnerability to disease and the probable benefits as compared with the "costs" of change are important. Also many people are reluctant to eat unfamiliar foods. Group meetings and tasting new foods can be an important part of the change process.

The Healthy Eating For Life Program (HELP) has been developed to address these concerns and has been piloted in 3 states (Ohio, Kansas, and NC). Extension received funding from USDA and the NC Institute of Nutrition to pursue the development and piloting of this nutrition education program based on food and the Food Guide Pyramid for senior citizens. The program was a collaborative effort among 4 states (NC, Ohio, Kansas, and Missouri) involving the CES Food and Nutrition Specialists and a Nutritionist at St. Louis University.

Following focus group interviews, the topics were chosen and the program was designed to be taught in group sessions (Option 1) or to be used as learn at home lessons (Option 2). The pilot (n= 118) showed that the program significantly affects the way people eat; that people will try new foods if offered at a group taste testing session; and also gave us insight into the learning styles of this audience. Based on the success of the pilot, the following developments have occurred:

- a) the learn at home method (option 2) was funded to be piloted through the Meals-On-Wheels program across North Carolina and that pilot is currently underway;
- b) seven African American Churches in Orange county are piloting HELP through their congregations as a collaborative effort; and
- c) the Extension agents have been trained in using the program in their counties and are being encouraged to do so both from Extension and from the NC Department of Human Resources, Division of Aging.

### NC FAMILY NUTRITION PROGRAM, OUT FOR LUNCH

Extension received a grant from the Food Stamp Branch of the Division of Social Services to conduct the Food Stamps Family Nutrition Program in North Carolina. The program was designed to remove participation barriers of child care and transportation needs. An 'Out For Lunch' program was developed and is being piloted in 1995 with expansion to approximately 20 counties in 1996. The program target mothers/care givers of children aged 3-5.

Out For Lunch meets weekly for four weeks in four-hour sessions. Adults participate in a hands-on workshop while the 3-5 year olds are in a separate workshop.

Child care is provided for children under 3 years. In summer months youth aged 6-12 participate in a workshop that is conducted in cooperation with the extension Youth program.

### SAFE FOOD--HEALTHY CHILDREN

A USDA Food Safety and Quality grant was obtained to develop a distance education program for day care personnel. Georgia and North Carolina food safety specialists adapted materials from two previously developed food safety curriculums. A four-credit hour satellite workshop was developed and aired in North Carolina and Georgia. Knowledge scores of participants increased an average of 16 points on a 100 point scale.

Participants were asked to identify a food safety behavior that they needed to change. Two months following the workshop 95% of the respondents indicated they followed the correct behavior "most of the time." In evaluating the program and format 88% indicated this was their first video conference attendance, 98% rated the program as overall beneficial, 95% found both the satellite portion of the program and the on-site workshop activities beneficial, 94% indicated they would attend a similar video conference if offered in the future and 88% indicated the program mix of distance and local presentations is as good as or better than conferences where all presentations are local. One participant volunteered that this was the "best training in her 20 years of attending trainings."

### MASS MEDIA

Agents and specialists are involved in a wide range of mass media modes of disseminating food and nutrition information. An audience of 30,000 to 50,000 households views the extension produced Almanac and Backyard gardening television program each week for the 12 weeks that it is aired each year. Food and nutrition segments are a regular part of each of the 12 programs. One agent wrote and recorded 145 different weekly nutrition messages for a radio series aired 5-7 times daily in a urban county. An agent has a weekly newspaper column "The Recipe Doctor" where readers

are taught how to modify recipes for health. As a 'team nutritionist' on one station's TV Health Team an agent who replaced the full-time health reporter participated in 62 health reports. Access to cable TV allows one agent to present 3 programs on nutrition and health. News articles (285) on food, nutrition and food safety reached 42,000 households weekly with an average of 24 column inches or a total of 4992 column inches in an urban county.

## **E. NARRATIVE AND IMPLICATIONS**

Even though North Carolina seems to be a land of plenty, many of its residents are not eating wisely. This is not necessarily because they haven't enough to eat or that a variety of food is not available but because they eat too much of some foods and too little of others, according to surveys.

North Carolina's age-adjusted death rate is higher than the nation's and more than half (56%) of the deaths of North Carolinians can be related to diet and nutritional status. In fact, North Carolina is distinguished amongst the states as being one of the highest in cardiovascular disease (CVD) mortality rates (in the top 10 in the country), one of the states composing the "Stroke Belt," and ranking eleventh nationally in both estimated incidence of cancers (26,000 new cases per year) and mortality from cancers (13,108 deaths per year).

Deaths from heart disease, cancers, cerebrovascular disease and diabetes mellitus have been shown to be prevented or significantly delayed by changes in diet and lifestyles. However, in the last available statewide statistics (1991 age-adjusted data) over 58,827 North Carolinians died from these diseases in one year.

Because of these overwhelming statistics and the relationship to diet and lifestyle, people are increasingly interested in wellness and nutrition. The demand for food, nutrition, and health-related programs in North Carolina is growing daily; this is especially true of programs that educate consumers about heart disease prevention, diabetes management, weight control and cancer prevention. Dietary habits are improving, albeit slowly, and the rising trend of deaths attributable to these chronic diseases is flattening somewhat in response to these dietary changes. However, many consumers are confused by their own lack of information and the ever changing marketplace. There is a need for continued efforts in food and health lifestyle management.

While proper nutrition is critical to the good health of all Americans, older adults are at disproportionate risk for a number of reasons; difficulties in eating or swallowing, low income, adverse drug-nutrient interactions, alcohol abuse, depression, reduced appetite, functional disabilities, impaired taste and smell and others. In fact, over 85% of older adults suffer from chronic diseases that could benefit from dietary intervention. Because of this and the fact that North Carolina's population of age 65 and older adults is increasing at such a high rate, the 1993 Spring Inservice Training was focused on the diet



and health of the elderly. This effort was in collaboration with the NC Departments of Environment, Health and Natural Resources (Divisions of Adult Health Promotion and Dental Health), NC Department of Human Resources (Division of Aging) and the American Association of Retired Persons (AARP). Over 350 professionals (including CES Home Economists) attended and networked during this workshop. One of the foci of the program was implementing the National Nutrition Screening Initiative. It has been documented that nutrition screening saves time, money, and lives. Since that training counties have set up local coalitions to initiate this effort. Results of the first screening of over 10,500 elderly across North Carolina indicated that 69% are at moderate or high nutritional risk. Follow-up work has included Extension publications (such as Take Your Pills Wisely, Could You Be Losing Nutrients?, Your Checkbook For Drug Safety) and programs (such as HELP and the Stroke Alert workshop). Programming in the areas of diet and chronic disease, drug-nutrient interactions, healthy lifestyles, and cost-wise selection of foods are making a positive impact on the lives of the elderly and their families.

A good indicator of maternal and child health in North Carolina is the number of babies who die before their first birthday or the infant mortality rate. North Carolina's infant mortality rate has improved in the past few years but is still very high with 9.9 babies per 1000 live births dying in the first year of life. The strongest risk factor for infant mortality is low birth weight or weight below 5.5 lbs. North Carolina's percentage of babies born with low birth weight has not greatly improved over the last 15 years and is currently 8.4%. As we reach the limits of technology to save even smaller and smaller infants, the need for proper nutrition and prenatal care to further decrease the infant mortality rate becomes paramount. Maternal and child programs are designed to address the risk factors of infant mortality. Agents are involved in programming in the areas of prenatal care, teenage pregnancy, infant feeding and parent education.

\*\*Refer to the 1995 summary 4-Year Accomplishment Reports of EFNEP, NCCES State Initiative in Health and Human Safety on the national initiative, Food Safety and Quality in North Carolina programming for the specific effort in each of these areas.

**F. CORDINATOR AND TEAM MEMBERS:**

Jackie McClelland  
Carolyn Lackey  
Carolyn Dunn  
Shirley Usry  
Ann Frazier  
Barbara Garland  
Wilda Wade  
Ngairé van Eck

## ACCOMPLISHMENT REPORT 1992-1995

### NC38 - VOLUNTEER DEVELOPMENT AND MANAGEMENT

#### A. OBJECTIVES

Two thousand (2,000) volunteers will be certified as graduates of Master Volunteer Programs (Master Food Preserver, Master Parenting, Master Money Manager, Master Yarn Skills, Master Recycler).

Five thousand (5,000) volunteers will demonstrate support of home economics programs through resource development valued at one and one-half million dollars (\$1,500,000).

Two thousand (2,000) persons will join a Family Community Leadership Association to foster and promote public policy education in North Carolina.

Nineteen thousand (19,000) North Carolina Extension Homemakers will change basic philosophy of programs of work traditional areas to areas that are issue oriented.

Home Economics volunteers in each of the one hundred counties (100) will implement partnerships, networks and/or alliances with a minimum of 10 other agencies, groups, organizations, associations, etc.

#### B. NON-EXTENSION RESOURCES

Number of Volunteers	47,789
Total Number of Volunteer-Days	80,850
Value of Federal Government Funding (Grants)	\$ 2,400
Value of State Government Funding (Grants)	\$ 43,250
Value of Local Government Funding (Grants)	\$ 17,866
Value of Private Funding (Grants)	\$103,695

#### C. INDICATORS OF SUCCESS AND ACCOMPLISHMENTS

5,192 Graduates in Master and Other Volunteer Programs

\$597,504.00 Resource Development Funds Received



26,973 Membership in Home Economics Volunteer Programs

14,000 NCEHA Membership Participating in Issue Oriented Programs

3,253 Partnerships, Network and/or Alliances with Other Agencies, Groups, Organizations, Associations, Etc.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

##### **Documented Accomplishments of Volunteers**

Family Issues

Children and Television

Complying with National Television Act of 1990

Promote L.O.V.E. campaign, "Let Our Violence End"

Supervised Television Viewing

Personal and Family Safety

Promote personal and family safety

Self care skills taught to Latch Key Children

Promote Poison Prevention Control

Local day care educational training on child safety and protection

Family Communication

Promote and enhance effective verbal and nonverbal communication

Teen Suicide Prevention

Provide preventative education for high risk adolescents in areas of drug and suicide prevention

##### **Program Accomplishments**

502,677 Personal Contacts

128,024 Volunteer Hours

\$640,120 Volunteer Dollar Value

5,020.150 Media Contacts

##### **Global Issues**

###### **Family Literacy**

Develop "Storybook or Storytelling Aprons"

Book donations to Girls Haven

Book donations to newborn babies

Volunteering in schools and public libraries

Reading to children in community

###### **International**

Pennies for Friendship - Given to support projects in areas of world in dire need

Use of "Trunk of International Costumes"

Promote activities sponsored for ACWW

## Cultural

Develop awareness of different ethnic and cultural backgrounds through theater and art groups  
Encourage reading and listening to music

### Program Accomplishments

160,500 Personal Contacts  
500,000 Volunteer Hours  
\$2,500,000 Volunteer Dollar Value  
2,000,000 Media Contacts

## Environmental Issues

Recycling to reduce contamination  
Installation of water saving devices  
Community Beautification projects  
Adopt-A-Highway  
Arbor Day  
"Earth Angel" project - bringing a better, cleaner environment by a multi-faceted education program to students and adults.  
One county reached 27,000 shoppers.

### Program Accomplishments

334,421 Personal Contacts  
199,780 Volunteer Hours  
\$998,900 Volunteer Dollar Value  
1,761,674 Media Contacts

## Special Projects

### Health Care

Encourage long-range health care planning  
Organ donor program  
Living Wills  
Day Care Centers  
Care-giver programs

### Cultural Enrichment

Preservation of North Carolina heritage skills  
Encourage Genealogy studies  
Promoted cultural events and activities participation

### Dollars for Education

Provide educational scholarships or loans for youth and adults  
Interest from McKimmon and Lowe Educational Funds accounts accumulated during the year pays for scholarships

### Program Accomplishments

315,141 Personal Contacts  
131,530 Volunteer Hours  
\$675,650 Volunteer Dollar Value

2,828,188 Media Contacts

The Family Community Leadership training in North Carolina continues to make a difference in our communities by effective participation in resolving public issues. Fifty-seven (57) Extension Homemakers received recognition and credit citing:

2,118,062 Personal Contacts

65,550 Volunteer Hours

\$327,750 Volunteer Dollar Value

192,736 Miles Driven

#### **E. NARRATIVE AND IMPLICATIONS**

Volunteers working toward successfully improving the quality of family life are essential to the local community and the Cooperative Extension Service. This program offers volunteers an opportunity to improve their leadership skills and their ability to analyze issues and understand political processes in order to achieve desired goals. It continues to flourish in North Carolina.

Volunteers networking with other agencies and groups must continue to maximize efforts in these times of hard economics and high demand. Volunteers are continually being trained to leadership roles in organizations as well as for specific tasks. More emphasis is being given the role that needs to be played in the public arena in regards to public policy and public policy education.

#### **F. COORDINATOR AND TEAM MEMBERS:** Linda McCutcheon Judy Mock

## **ACCOMPLISHMENT REPORT 1992-1995**

### **NC40 - EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM**

#### **A. OBJECTIVES**

Three thousand seven hundred and fifty (3,750) EFNEP families will acquire the knowledge, skills, attitudes and changed behavior for nutritionally sound diets and to contribute to their personal development.

Ten thousand (10,000) 4-H EFNEP youth will acquire the knowledge, skills, attitudes and changed behavior necessary for nutritionally sound diets and to contribute to their personal development.

The EFNEP state program will increase interagency cooperation.

Pregnant and parenting teenagers will increase knowledge of maternal/infant nutrition, resulting in improved maternal and infant health.

To increase numbers of WIC mothers establishing lactation (beyond two weeks post-partum: baseline-75%) and duration of breast-feeding past two months post-partum: (baseline-17%).

#### **B. NON-EXTENSION RESOURCES**

Total of \$807,500 in additional funds. This includes \$430,000 in federal grants mostly from ES/WIC Nutrition Education Initiative funds; \$338,000 in state grants (Health Dept. and Smart Start funds); and \$39,500 from local and private contributions.

Non-Extension agencies providing training, support and/or referrals: Local agencies (Health Dept., WIC program, Social Services-AFDC, DSS/JOBS programs, Governor's Smart Start Program, Schools, Technical Community Colleges, Division of Child Nutrition, Head Start) N.C. Food Bank, Habitat for Humanity, Parks & Recreation programs; Private sector (banks, agribusiness, local business, medical community) Advisory Councils/Committees, Law Enforcement, Churches, Civic groups, United Way, Women's shelters, Women's correctional centers, Day Care sites, Boys and Girls clubs, After-school programs, Mass media, Le Leche League, homeless shelters, Housing authorities, Youth Foster Homes, Florence Critendon Homes; graduated program participants. Volunteers assist in teaching the ERIB2 curriculum.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

##### **Interagency Cooperation**

Evidence of increased agency cooperation during the four-year period is clear. The numbers and percent of enrollments of WIC participants in EFNEP rose from 3883 (63%) in FY:92 to 5853 (68%) in FY:95; percent enrollment in the Food Stamp program remained above 50% throughout the four year period when total enrollment increased. Enrollment of WIC participants increased considerably because of ES/WIC grant-funded projects, such as the breastfeeding support program in nine counties, and the pregnant teen program with its expansion throughout the state.

During the same period, EFNEP staff increased their teaching efforts with groups, largely with preformed groups referred from other agencies. Percent of EFNEP participants being taught in groups rose from 56% in FY:92 to 72% in FY:95. (Note: These numbers excluded 1832 breastfeeding participants in FY:95, who were all taught on an individual basis).

In two large urban counties, EFNEP staff were teaching WIC clients on a fulltime basis, using a modification of the ERIB curriculum, and using a computerized program to reconcile the two reporting systems. It was found that agencies were more responsive to offering the ERIB curriculum when the curriculum proposal had been tailored to their interests, needs and scheduling constraints. By tailoring the curricula, more on-site teaching opportunities have occurred, thus allowing EFNEP to reach more participants with fewer EFNEP funds. Such innovative programs as well as night group meetings have become a necessary delivery mode as more low-income homemakers are employed outside the home.

By the end of FY:95, ten paraprofessional positions for carrying out EFNEP programs in four counties were funded through Smart Start, a state initiative which provided funds to coalitions at the community level. This would not have happened without EFNEP being an important part of the community partnerships.

##### **Dietary Improvement**

Of 13,810 homemakers who graduated from EFNEP during the four-year period, 11324 (82%) improved their diets to include at least one serving of foods from each food group (38% increase from program entry). Three thousand five hundred and ninety homemakers (26%) achieved recommended food servings in all food groups, an increase of 23% from program entry.

##### **Breastfeeding Support Programs**

Breastmilk provides infants with optimal nutrition for healthy growth and development, in addition to protection from infection and allergic reactions.

Breastfeeding is the preferred method of feeding infants.

Beginning in 1992, a pilot program in breastfeeding support to WIC mothers was carried out in Wake Co. Funded by WIC, a specially trained EFNEP paraprofessional carried out in-home breastfeeding support with WIC clients. Analysis of data indicated that greater numbers of women established lactation and were still breastfeeding at 2 weeks postpartum than with a control group. Breastfeeding duration also increased significantly among those who received EFNEP support.

By FY:95, the breastfeeding support program had expanded to eight additional counties, a mixture of urban and rural sites. Seven were established through federal ES/WIC grants and one through the state Smart Start program. In four years, over 4300 WIC clients had received breastfeeding support from EFNEP staff in nine counties.

Results showed that numbers of WIC clients choosing to breastfeed had increased, and that a significantly greater number and percent were still breastfeeding at two weeks, six weeks and eight weeks postpartum when compared with baseline WIC records. These effects were independent of urban or rural status. Similar results were reported in Michigan where the Wake Co. model was carried out with ES/WIC project funds.

In addition to improved infant health, benefits of the program included cost savings from reduced distribution of infant formula to WIC clients while breastfeeding.

#### Pregnant Teen Program

An ES/WIC grant has addressed the need of support to pregnant teens in achieving positive pregnancy outcome. An experiential curriculum emphasizing nutrition and peer support involves the teens in interactive learning. The curriculum was piloted tested, edited and printed during the initial year. Delivered in school groups and individually to homebound teens, the project is being evaluated for nutrition knowledge and preparation skills. The ultimate outcome is the birth of babies who exceed the minimum desired birth weight.

Data indicates 90% of the live births exceeded the minimum weight with a mean birth weight of 7 lbs. 6 ounces. Presently 97% of the enrolled teens are WIC recipients at graduation.

The pre/post curriculum survey indicates that the biggest improvement made by the participants is in diet knowledge, followed by knowledge of other prenatal practices. Of the possible 18 lessons, the pregnant teens participated in an average of 12.3. Analysis of the 24-hour food recall showed improvement in the

minimum food consumption pattern, but only a slight increase in achievement of the recommended pattern.

The pregnant teen program has experienced success with counties other than the pilot with more than 3,000 pregnant teens being reached through EFNEP in the 4-year period, FY:1992-95. One of the project objectives in the 1994-95 proposal was the training of all EFNEP program assistants against the curriculum "Hey What's Cooking". Since the completion of the training, over 1,000 pregnant teens have been involved. Funding for additional program assistants to target pregnant teens in several counties was secured through a State program "Smart Start".

Northampton County offered "Hey What's Cooking" in two high schools and one middle school. All twelve teens who enrolled delivered healthy babies. The middle school counselor felt that her two students who participated in the program made more progress and a better adjustment to the situation than the student who refused.

Forsyth County gained entry and monetary support of two schools and a home for unwed mothers. Of the babies delivered none have been below the minimum desired weight.

Robeson County took the program into one junior high school. The success of the one program has resulted in plans made to reach more schools in 95-96 and the school system will supply the materials for the hands-on curriculum.

\*Expended FTE's

	Prof	Para	Vol	No. Diff. People
1992	8	73.0	13.6	2147
1993	8	76.0	12.0	1821
1994	8	78.3	9.1	1763
1995	9	88.0	11.5	1910

## E. NARRATIVE AND IMPLICATIONS

The EFNEP program has reached over 24,000 adults and 26,000 youth during the four years ending in FY:95.

While most of them were reached through traditional EFNEP program efforts with individuals and small groups, increased opportunities arose to teach preformed groups referred by cooperating agencies. Percent of adult participants being worked with in groups rose from 56% in FY:92 to 72% in FY:95. Some of the less traditional adult groups reached were in community shelters and correctional centers. Youth were taught in Alternative school programs,



After-school Programs, Youth Foster Homes, Boys and Girls Clubs, as well as in community groups.

Evaluation data indicated that adult and youth participants during FY:92-Fy:95 achieved knowledge, skills and dietary improvements similar to those of past years. This indicates that increased teaching in groups has not compromised program results.

Grant funding for cooperative projects has allowed EFNEP to grow in several new directions. Through the ES/WIC initiative, Wake Co. Dept. of Health and Smart Start funds, nine counties have participated in breastfeeding support projects. In four years, over 4300 WIC clients in both urban and rural settings had received in-home breastfeeding support through EFNEP. Results showed increased numbers of mothers choosing to breastfeed, and significant increase in breastfeeding duration. Similar results were reported in Michigan where the North Carolina breastfeeding support model was implemented through the ES/WIC initiative.

ES/WIC grant funds also supported a special program for pregnant teenagers allowing for development of a curriculum ("Hey, What's Cookin'") which emphasizes experiential learning and skills development. After field testing and evaluation of the curriculum, it was introduced in training to all EFNEP staff early in FY:95. Since then, over 1000 were enrolled, bringing the four-year total to more than 3000 pregnant teenagers being worked with in EFNEP.

Future funding for EFNEP is of critical concern. While some growth of the special projects (breastfeeding and pregnant teen programs) is possible through state Smart Start funds, maintaining the current level of EFNEP will be possible only by leveraging additional local support. Efforts are underway to achieve this goal.

**F. COORDINATORS AND TEAM MEMBERS**

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RECEIVED INCOME  
AND FAMILIES

# OBJECTIVES

1. NC A & T State University Cooperative Extension Program will train 100 staff and 300 volunteers to effect behavioral change with limited resource adults and youth through coordinated programs involving two or more subject areas.
2. NC A & T State Cooperative Extension Program will maintain, maintain and enhance linkage with 70 agencies and others in support of CES programs for limited-resource adults and youth.
3. Extension program will improve basic life skills.

# NON-EXTENSION RESOURCES

1.	Number of volunteers	683
2.	Total number of volunteer-days	2,018.2
3.	Value of federal government funding (grants)	\$1,200,000.00
4.	Value of state government funding (grants)	\$45,000.00
5.	Value of local government funding (grants)	\$104,000.00
6.	Value of private funding (grants)	\$4,000.00

# TEMPERED INDICATORS AND ACCOMPLISHMENTS

1. Number of limited resource individuals improving basic life skills 4,443
2. Number of interagency programs conducted for limited resource audience 4,141
3. Number of CES staff trained 159 and number implementing programs 40
4. Number of volunteers trained 313 and number implementing programs 413

## ACCOMPLISHMENT REPORT 1992-1995

### NC41 - LIMITED RESOURCE/LOW INCOME INDIVIDUALS AND FAMILIES

#### A. OBJECTIVES

1. NC A & T State University Cooperative Extension Program will train 100 staff and 300 volunteers to effect behavioral change with limited resource adults and youth through coordinated programs involving two or more subject areas.
2. NC A & T State Cooperative Extension Program will establish, maintain and enhance linkages with 20 agencies and others in support of CES programs for limited-resource adults and youth.
3. Eighteen thousand (18,000) limited resource participants in Extension programs will improve basic life skills.

#### B. NON-EXTENSION RESOURCES

- |   |              |
|---|--------------|
| 1. Number of volunteers                         | 689          |
| 2. Total number of volunteer-days               | 5,018.5      |
| 3. Value of federal government funding (grants) | \$150,000.00 |
| 4. Value of state government funding (grants)   | \$ 49,000.00 |
| 5. Value of local government funding (grants)   | \$104,000.00 |
| 6. Value of private funding (grants)            | \$ 4,000.00  |

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of limited resource individuals improving basic life skills. 4,442
2. Number of interagency programs conducted for limited resource audiences. 4,141
3. Number of CES staff trained 159 and number implementing programs. 40
4. Number of volunteers trained 515 and number implementing programs. 415

5. Number of programs involving two or more program areas implemented. 55
6. Number of community coalitions established. 6
7. Number of CES referrals to other agencies. 1,748
8. Dollars from outside Extension. \$84,922.00
9. Dollar value from outside Extension. \$6,680.00
10. Dollar value of in-kind resources. \$300.00
11. Number of limited resource persons in programs. 7,449
12. Number who adopted practices. 6,832

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

Individuals and Families in North Carolina with limited resources are still confronted with many adverse conditions, however, some signs of their capacity to utilize and manage their limited resources better is evident. The number of paid staff and volunteers providing assistance to this clientele has increased significantly indicating that we are becoming more sensitive to the needs of this audience. Volunteers spent an average of three days providing direct assistance to the limited resource community. An increase in programs that provide leadership and decision making skills are enabling limited resource individuals to take action, and make their communities a better place to live.

#### **E. NARRATIVE AND IMPLICATIONS**

Throughout North Carolina the gap between the limited resource audience and the more affluent part of the population shows no signs of narrowing. One fourth of the counties in North Carolina experienced growth in their standard of living. Rural areas are experiencing many more problems which are often associated with dense populated areas. Reallocation of resources to assist the limited resource individual and family indicates greater need to collaborate with other agencies and organizations. There is a need to go take a more holistic approach to the issues confronting limited resource individuals and families.

#### **F. COORDINATOR AND TEAM MEMBERS:**

Sheilda B. Sutton  
Thelma J. Feaster  
Daniel M. Lyons

## ACCOMPLISHMENT REPORT 1992-1995

### NC42 - CONSERVATION AND FORESTRY TITLES OF THE 1990 FARM BILL

#### A. OBJECTIVES

Landowners and managers will understand the Conservation Titles of the 1985 and 1990 Farm Bills.

Farm owners/operators will successfully implement conservation plans and practices.

Landowners and managers will understand the Forestry Title of the 1990 Farm Bill.

Landowners/managers will successfully implement forestry practices.

#### B. NON-EXTENSION RESOURCES

1.	number of volunteers	43
2.	total number of volunteer-days	74
3.	value of federal government funding (grants)	\$380
4.	value of state government funding	0
5.	value of local government funding	0
6.	value of private funding	0

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of persons knowledgeable about Conservation Title of Bill  
\_27004\_.
2. Number of conservation practices installed \_9777\_.
3. Describe practices:  
Waterways, strip cropping, transplanting, field borders, subsurface irrigation with water structures, conservation tillage, sequential and continuous no-till, diversions, terraces, sediment ponds, cross-slope farming, fencing, critical area

treatment, spring development, filter strips, ponds

4. Describe case studies of conservation title of bill.

Five farmer cooperators have made continuous no-till demonstration fields available for bulk density sampling.

Generally consists of a rotation on gently sloping land; i.e., row crop followed by small grain/fescue. More sloping land may require diversions, terraces or strip-cropping. Grassed waterways are used for erosion control and row drainage.

5. Number of persons knowledgeable about Forestry Title of bill \_7675\_.

6. Number of practices installed \_1817\_.

7. Describe practices:

Timber management, thinning; stream-side filter strips; recreational trails; wildlife plantings; tree planting (longleaf and Atlantic white cedar); prescribed burning

8. Describe case studies:

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

North Carolina was a pilot state for the wetlands reserve program. In the initial sign-up 4,800 acres were included. In subsequent sign-ups, 2,176 were described as eligible or intended to participate.

In Urban Forestry, workshops and meetings were held to train master gardeners, arborists and other professionals. Over 500 people were reached. Assistance was provided to 25 communities or organizations about hazard trees, tree ordinances, planning and renovation. During 1995 educational materials were developed for use by agents and others in the identification and management of urban trees and trees and plants of the maritime and coastal forests. These will be of great use for landowners, particularly homeowners and communities desiring to manage for the urban forest.

#### **E. NARRATIVE AND IMPLICATIONS**

The components of the Conservation and Forestry Titles of the Farm Bill continue to be an aspect of Extension programming. Many of the provisions are included in a variety of specific program areas, such as Stewardship, forest management, farm management, waste management and water quality. Those areas where CES personnel can have an impact and cooperatively work with other state and federal agencies will be emphasized.

The wetlands reserve program has not been as favorably received as first anticipated. The low number of eligible bids indicates that it may not be an effective means of restoring and conserving wetlands in North Carolina.

**F. COORDINATOR AND TEAM MEMBERS:** Edwin J. Jones  
Peter T. Bromley  
Claire-Marie Hannon  
Charles Hammond  
Tom Hoban  
Robert Williamson  
Sandra Zaslow



## ACCOMPLISHMENT REPORT 1992-1995

### NC43 - PARENTING AND FAMILY YOUTH PROGRAMS

#### A. OBJECTIVES

Strengthening the role of parents is necessary in order to combat family problems in order to North Carolina. Many families are having difficulties in their parenting role. Adults and youth lack a clear understanding of what it means to be a mother or father. In addition, schools and day care centers are assuming parenting responsibilities once reserved for families and churches.

Increasing numbers of dysfunctional families are seen in the increase in substance abuse, child abuse and neglect, family violence, childhood and adolescent depression, runaways, early teen sexual acting out, and civil disobedience. Homeless families and abandoned children are increasing. Drug addicted babies and HIV positive affected babies are becoming the fastest growing segment of border babies in the state.

Working parents often have difficulty finding quality, affordable and accessible child care.

In 1990 one in five North Carolinians lived in poverty. Besides the plight of children and the elderly, North Carolina is experiencing a feminization of poverty with 58 percent of poor households headed by women. A disturbing trend in NC is the growth in the number of people who work full-time and still live in poverty, some 200,000. The disparity between the rich and poor populations in NC is the greatest since 1950. There is also a widening economic gap between urban and rural counties with rural counties having a greater percentage of their citizens in poverty.

The problems facing families in North Carolina are complex and interrelated. Extension is focusing its resources on assisting families to develop their capacity to enhance the growth and development of children and to strengthen families. Target programs include parent education, family strengths and support, financial management and parent-youth relations.

Specific objectives designed to address these issues are:

1. Parents and youth will acquire and use the knowledge and skills associated with effective parenting.

2. Parents and youth will improve parent-youth relations.
3. Parents and youth will understand and use effective family coping strategies.
4. Parents and youth will set and achieve financial goals.

## **B. NON-EXTENSION RESOURCES**

### **Outside Funding:**

Contributions for Kiwanis International, Department of Human Resources, Health Department, Alcoholic and Drug Prevention Coalition, Extension Homemakers, local chapters of Kiwanis, and local businesses.

### **Outside Organizations/Resource People/Volunteers:**

The following groups contributed resources to parenting and family-youth programs: Department of Social Services, Mental Health, Health Department, Community/Technical Colleges, PTA/PTO, Extension Homemakers Association, local businesses, churches, AARP, NC Child Advocacy, banks, HUD, recreation centers, hospitals, Register of Deeds, United Way, Family Council of North Carolina, American Red Cross, Project LINK, local youth agencies, Drug Action Committees, Headstart, American Home Economics Association, local Boards of Education, Children's Television Workshop, local libraries, Girls, Inc., Association of Couples for Marriage Enrichment, Guardian Ad Litem, Lumbee Regional Development Association, League of Women Voters, RSVP, and local media.

1. Number of volunteers 940
2. Total number of volunteer days 1,272
3. Value of federal government funding (grants) \$ 5,000.
4. Value of state government funding (grants) -0-
5. Value of local government funding (grants) \$ 3,250.
6. Value of private funding (grants) \$13,642.

## **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

1. Number of parents participating in parenting programs was 45,241.

2. Number of parents and/or youth participating in parent/youth programs was 27,981.
3. Number of parents and/or youth participating in family coping programs was 28,492.
4. Number of parents and/or youth participating in financial management programs was 34,538.

**D. OTHER INDICATORS AND ACCOMPLISHMENTS**

**E. NARRATIVE AND IMPLICATIONS**

Various programming techniques and delivery systems were used in providing Extension clientele with successful parent and family/youth educational opportunities.

Parents in North Carolina continue to struggle to rear their children in a safe and comfortable environment in a culture that is becoming increasingly dangerous for youth. Much work is still needed to deal with some prominent social ills, such as teenage pregnancy, child abuse and neglect, child care, and family instability.

Continued networking efforts with local agencies such as Headstart and Community Service Council have resulted in the formation of classes for pregnant teens and teens with young children.

In one county, over 200 family members were given training on parenting, communication, resource management, and leadership at a one-day Family Focus which targeted young families. Extension Homemakers set up special exhibits including teen pregnancy, teen suicide, literacy, nutrition, global issues, and recycling.

Several county Extension professionals provided leadership to their respective county's participation in the governor's Smart Start initiative. Collaborative efforts in this program have resulted in spin-off groups such as Partnership for Children.

Other interagency collaborations, as well as volunteer involvement, helped to deliver a variety of programs to diverse individuals and families. Innovative ways to impact more and diverse clientele remain continual challenges for Extension.

**F. COORDINATOR AND TEAM MEMBERS:** Wayne Matthews  
Sharon Rowland

Jan Lloyd

Number of parents and youth participating in family coping programs was 27,081

Number of parents and youth participating in family coping programs was 28,492

Number of parents and youth participating in financial management programs was 14,128

## OTHER INDICATORS AND ACCOMPLISHMENTS

### NARRATIVE AND IMPLICATIONS

Various programming techniques and delivery systems were used to provide Extension clients with necessary parent and family youth education opportunities.

Parents in North Carolina continue to struggle to raise their children in a safe and supportive environment in a culture that is becoming increasingly dangerous for youth. Much work is still needed to deal with some prominent social ills such as teenage pregnancy, child abuse and neglect, child care, and family instability.

Continued networking efforts with local agencies such as Headstart and Community Service Councils have resulted in the formation of teams for program team and team with young children.

In one county, over 100 family members were given training on parenting, communication, resource management, and leadership as a one-day Family Focus which targeted young families. Extension Homemakers set up special exhibits including teen pregnancy, teen suicide, literacy, nutrition, alcohol abuse, and recycling.

Several county Extension professionals provided leadership to their respective county's participation in the Governor's Smart Start Initiative. Collaborative efforts in this program have resulted in spin-off groups such as Partnership for Children.

Other interagency collaborations, as well as volunteer involvement, helped to deliver a variety of programs to diverse individuals and families. Innovative ways to impact more and diverse clients remain continual challenges for Extension.

COORDINATOR AND TEAM MEMBERS:  
Wayne Matthews  
Sharon Rowland

## **ACCOMPLISHMENT REPORT 1992-1995**

### **NC44 - MULTICULTURAL DIVERSITY**

#### **A. OBJECTIVES**

1. Extension will achieve multi-cultural diversity within the organization and with its clientele.
2. Extension will sustain multi-cultural diversity training within the organization and with its clients.

#### **B. NON-EXTENSION RESOURCES**

#### **C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS**

#### **D. OTHER INDICATORS, ACCOMPLISHMENTS AND SUCCESS STORIES**

Diversity programming and reaching out to diverse audiences exists in many programs across the state.

Diversity has been sustained in numerous programs across the state.

Examples follow:

##### **Community Voices**

In the Community Voices program which is active in 14 North Carolina counties, primarily black participants became leaders committed to improving their community. In Columbus County, a group of Community Voices graduates applied what they learned about public policy and were able to get a traffic signal installed at a dangerous intersection. In a central city neighborhood in Charlotte, a group of senior citizens completed Community Voices and decided to get involved with bridging the inter-generational gap by launching a program called "Rocking and Ready" at a local day care center. In Swain County an old drugstore was revived when a Community Voices group stepped in and redirected its future into a community center. The Community Voices program has been sustained in many communities across the state since the participants have found their voice in their community.

##### **Families in Crisis**

Over 2,000 North Carolina women from 36 counties and the Cherokee Reservation

participated in the Economic Development for Women project. The purpose of the program was to improve the economic sufficiency of families from all types of diverse family structures. As a result of the program: 32 adults completed high school or received GED's; 112 youth completed high school or its equivalent; 68 enrolled in training programs, and 73 enrolled in college. Additionally, 106 made decisions about starting or changing jobs. Ninety individuals were able to get off welfare. As they learned more about leadership development, 245 took more initiative in leadership roles. Many small strides were made by the individuals in the program including improvement of self-esteem, improved self-confidence, better time management, greater appreciation for each other, and better insight into understanding themselves and others. (See the Families in Crisis - NC03 report for other details and the templated indicators.)

#### Basic Money Management Success Story

A single mother in a Head Start parent meeting attended a session on "Budgeting: Managing for a Better You." At the close of the session, mothers could sign up if they wanted individual help, and this mother did. She attended many educational meetings offered, and began to volunteer to help with the Head Start activities. An opportunity for part-time employment was offered to her and she accepted. Seeing that this mom wanted to help herself and her children, I invited her to participate in a multi-county Economic Development for Women project, "Investing in Yourself." At first she was very hesitant about leaving home, leaving her children and all the other unknowns for an overnight out-of-town trip. After much persuasion she did go and it was extremely helpful for her and her family. She came back, changed the way she dressed, prepared more nutritious meals for her family, learned to set goals for herself and her family. She said the seminar really made a difference in her life. She said, "I now think more positively about myself...I try to teach my children good values." It must have had effects that others could see because she is now a full-time employee with Head Start, has taken two Child Care Credential classes from the local community college and has gotten married. She said, "I want to set a good example for my children and make them proud of me!"

More than 10,000 families have been served through worksite programs, Chapter 13 bankruptcy classes, home study courses, consultations, and other activities. Worksite programs have reached more than 3,000 working families.

Hispanics are being served in our programs across the state, especially in contacts that relate to health and nutrition issues, child care, housing problems, and family financial issues. This is an emerging audience for us and data are compiled using other descriptors such as limited-resource audiences rather than highlighting Hispanics as a group receiving specialized programming.

#### Housing

## Personal Budgeting/Home Buying

Nine "Personal Budgeting/Home Buying" workshops were conducted in Edgecombe County, North Carolina with the Tarboro Housing Development Association, Old Town Realty, Edgecombe County Planning Department, and Nations Bank. Each series involved 12 hours of training with 182 participants.

Credit reports and training materials were provided by Nations Bank. Twenty-five low-income families who have participated in the training have purchased homes for a total value of \$1,350,000.

Sixty-four participants are continuing to keep monthly detailed reports of their spending and five are in contact with the Extension Agent for specialized, individualized information. The success stories from previous classes are motivating others to improve their financial situation. The waiting list holds names of individuals who are interested in future classes.

## Eviction Prevention

Five hundred forty-four limited-income family members who were in danger of eviction due to poor safety conditions or unacceptable home maintenance practices received training from 20 leaders, and were successful in being able to remain in their public housing units instead of becoming homeless. The impact of this crisis management program assisted the participants in meeting the requirements of their lease agreements, and taught them useful skills in order to maintain a clean, safe, and healthy home environment.

## Youth-at-Risk

During the past four years, 49 North Carolina counties have been involved with the youth-at-risk initiative. This initiative has involved total staff participation and has allowed the Cooperative Extension Service to expand its programming effort to new audiences. The Youth-at-Risk Initiative was designed to develop support systems for youths who live in environments which may hinder or prevent them from becoming competent, coping, and contributing members of society.

The Cooperative Extension Service youth-at-risk programs have had a positive impact on youths. Over 1893 adjudicated youths have reduced their involvement in the judicial system. Nearly 27,049 youths improved their academic performance as a result of Extension programs. Improved study habits, increased school attendance, and reduction of out-of-school and in-school suspensions have also occurred. Nearly 5,610 youths decreased their alcohol and other drug usage after participating in Extension programs. Nearly 1,900 youths improved their literacy skills as a result of Cooperative Extension programs.



Examples of county success stories:

#### **Davie County**

In Davie County, a school counselor nominated a by-racial child whose parents had limited income for a 4-H camp experience. The counselor believed that the family did not encourage "William" in activities because of his racial background, and as a result he often seemed lonely and withdrawn. William has attended 4-H Camp for the past three years and his school counselor credits his camp experiences as being a large part in the turn-around in his personality by proving to both him and his family that he can be accepted for who he is.

#### **Alleghany County**

Extension agents in Alleghany County coordinated the Twenty-Fourth Annual Special Opportunity Camp (SOC), a week-long residential camp for 28 economically or socially disadvantaged youth that is run by volunteers. These children learned the basic tools to fit in to society and develop into the leaders of tomorrow. Special Opportunity Camp was developed to meet the needs of the less fortunate and help them to become useful members of, and not a menace to society.

#### **Halifax County**

By cooperating with the Services for the Blind, the Halifax County Extension Service sponsored a two-day summer camp which paired a visually impaired person with a 4-H volunteer. The purpose of the camp was to improve communication and understand obstacles visually impaired individuals face and how rich their lives can be by exposing each group to the other. This program, in its seventh year, improved aspects of intergenerational communication with approximately 50 participants.

Home schooling groups are another diverse audience we reach in North Carolina. In Buncombe County in Western, North Carolina, seven home-school 4-H clubs involving 125 youth and 35 adults have been formed.

See the EFNEP report for accomplishments of EFNEP youth who improved their diet and nutrition skills through special interest programs, after school programs, and summer mini-day camps.

### **E. NARRATIVE AND IMPLICATIONS**

The North Carolina Cooperative Extension Service as a total organization is committed to and is currently working toward achieving and sustaining multicultural diversity within its programs, operations, personnel and audiences.

During FY94 the state Diversity Task Force renewed its efforts to provide stronger leadership and response to programming for diversity. The Task Force reviewed goals and identified training needs. The Task Force conducted four trainings reaching approximately 50% of the counties. Additionally, all the county teams in Children, Youth and Families Institute received training on pertinent diversity issues.

Designing programs for special needs populations has been a successful experience. County staffs continued innovative programming for this audience. County programming has illustrated that special needs youth can benefit from traditional 4-H activities. Programs and learning experiences provided positive reactions among special needs youth and their families as they realized school, communities, and 4-H are interested in their well being.

In addition, 101 county directors and 22 department extension leaders participated in leadership institutes. They took the Human Patterns Assessment which determined work styles and characteristics in working with people. This tool has helped county directors, specialists and administration better understand the overall attitudes and patterns of each other's work style. As a group they have a greater sensitivity to individual differences and Extension Administration is demonstrating greater appreciation of the differences and similarities of the group.

North Carolina submitted applications to the National Diversity Award program in FY 94 and 95. The Economic Development Program for Women - Project DREAM was recognized as programming for diversity, and the Halifax County Extension Program.

As Extension has expanded its partnership with other agencies and organizations, the diversity of our audiences has increased our outreach to form unique collaborations. In the Youth-at-Risk program, approximately 200 long-term coalitions worked to address long-term goals. More than 12,515 volunteers donated over 33,977 days to the initiative. Over \$1,289,378 federal; \$2,259,856 state; \$141,817 local government, and \$245,761 private dollars were used to support youth-at-risk programming.

As the organization places greater emphasis on diversity programming and recognition of outstanding efforts, additional success stories will surface. One of the strengths of programming in North Carolina is a positive environment supporting programming for diverse audiences.

**F. COORDINATOR AND TEAM MEMBERS:** Marilyn Corbin  
Clyde Chesney  
Russell King  
Judy Mock

Eddie Locklear  
Thelma Feaster  
Richard Liles  
Bernadette Watts

During FY92, the County Task Force renewed its efforts to provide support and assistance to programming for diversity. The Task Force reviewed and approved the County Diversity Plan. The Task Force conducted four training sessions for staff, 50% of the county. Additionally, all the county staff in Columbus, Youth and Families Institute received training on program diversity issues.

Existing programs for special needs populations has been a successful experience. County staff conducted extensive programming for this audience. County programming has identified that special needs youth can benefit from traditional & H activities. Programs and learning experiences provided positive activities among special needs youth and their families as they navigated school, community, and & H life in their own way.

In addition, 101 county directors and 13 department directors actively participated in leadership training. They took the Human Relations Assessment which determined work styles and characteristics in working with people. This tool has helped county directors, specialists and administrators better understand the overall attitudes and patterns of each other's work style. As a group they have a greater sensitivity to individual differences and inclusion. Administration is demonstrating greater appreciation of the differences and similarities of the group.

North Carolina submitted applications to the National Diversity Award program in FY 04 and 05. The Economic Development Program for Women - Project DREAM was recognized as programming for diversity, and the Halifax County Extension Program.

As Extension has expanded its partnership with other agencies and organizations, the diversity of our audience has increased our outreach to farm and ranch populations. In the Youth-at-Risk program, approximately 300 long-term residents worked to achieve long-term goals. More than 13,712 volunteers donated over 33,077 hours to the initiative. Over \$1,200,778 federal, \$2,120,856 state, \$141,517 local government, and \$254,781 private dollars were used to support youth-at-risk programming.

As the organization places greater emphasis on diversity programming and recognition of outstanding efforts, additional success stories will surface. One of the strengths of programming in North Carolina is a positive environment supporting programming for diverse audiences.

#### COORDINATOR AND TEAM MEMBERS:

Marjorie Griffin  
Cathy Chisney  
Kathleen King  
Judy Moore

## ACCOMPLISHMENT REPORT 1992-1995

### NC45 - VOLUNTEER DEVELOPMENT AND MANAGEMENT

#### A. OBJECTIVES

1. Volunteerism  
Volunteers, resource persons, officers and chairpersons of Extension-related programs and organizations gain skill for performing middle management functions in the Extension organization or program they serve.
2. Leadership  
Volunteers, resource persons, officers and chairpersons of Extension-related programs and organizations gain specific leadership competencies.

#### B. NON-EXTENSION RESOURCES

Number of Volunteers 47,789

Total Number of Volunteer-Days 80,850

Value of Federal Government Funding (Grants) \$2,400

Value of State Government Funding (Grants) \$43,250

Value of Local Government Funding (Grants) \$17,866

Value of Private Funding (Grants) \$103,695

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

Number of volunteers who organized programs, events or activities was 273.

Number of chairpersons who organized programs, events or activities was 204.

Number of volunteers who trained other volunteers or resource persons was 256.

Number of resource persons who trained other volunteers or resource persons was 54.

Number of officers who trained other volunteers or resource persons was 141.

Number of volunteers who supervised other volunteers, resource persons, etc. was 314.

Number of officers who supervised other volunteers, resource persons, etc. was 131.

Number of volunteers who used delegating skills (e.g., defining work, organizing roles, giving authority) learned as a result of volunteer/officer training was 2,585.

Number of officers who used delegating skills (e.g., defining work, organizing roles, giving authority) learned as a result of volunteer/officer training was 145.

Number of chairpersons who used delegating skills (e.g., defining work, organizing roles, giving authority) learned as a result of volunteer/officer training was 415.

Number of volunteers who used group organization skills (e.g., recruiting, building teams, articulating needs and interest) learned as a result of volunteer/officer training was 1,542.

Number of resource persons who used group organization skills (e.g., recruiting, building teams, articulating needs and interest) learned as a result of volunteer/officer training was 250.

Number of officers who used group organization skills (e.g., recruiting, building teams, articulating needs and interest) learned as a result of volunteer/officer training was 1,331.

Number of chairpersons who used group organization skills (e.g., recruiting, building teams, articulating needs and interest) learned as a result of volunteer/officer training was 561.

Number of volunteers who used conflict resolution skills (e.g., strategies for identifying points of similarity and difference, priority setting, communication skills, techniques for bridging differences) learned as a result of volunteer/officer training was 842.

Number of resource persons who used conflict resolution skills (e.g., strategies for identifying points of similarity and difference, priority setting, communication skills, techniques for bridging differences) learned as a result of volunteer/officer training was 341.

Number of officers who used conflict resolution skills (e.g., strategies for identifying points of similarity and difference, priority setting, communication skills, techniques for bridging differences) learned as a result of volunteer/officer training was 96.

Number of chairpersons who used conflict resolution skills (e.g., strategies for identifying points of similarity and difference, priority setting, communication skills, techniques for bridging differences) learned as a result of volunteer/officer training was 253.

Number of volunteers who were involved in public policy decision making (e.g., influencing policy makers and other influential, teaching or learning the content of issues) as a result of volunteer/officer training was 1,846.

Number of resource persons who were involved in public policy decision making (e.g., influencing policy makers and other influential, teaching or learning the content of issues) as a result of volunteer/officer training was 217.

Number of officers who were involved in public policy decision making (e.g., influencing policy makers and other influential, teaching or learning the content of issues) as a result of volunteer/officer training was 2,010.

Number of chairpersons who were involved in public policy decision making (e.g., influencing policy makers and other influential, teaching or learning the content of issues) as a result of volunteer/officer training was 483.

#### **D. OTHER INDICATORS AND ACCOMPLISHMENTS**

##### **Family Issues**

##### **Children and Television**

- Complying with National Television Act of 1990
- Promote L.O.V.E. campaign, "Let Our Violence End
- Supervised Television Viewing
- Personal and Family Safety
- Promote personal and family safety
- Self care skills taught to Latch Key Children
- Promote Poison Prevention Control
- Local day care educational training on child safety and protection
- Family Communication
- Promote and enhance effective verbal and nonverbal communication
- Teen Suicide Prevention
- Provide preventative education for high risk adolescents in areas of drug and suicide prevention

Program Accomplishments

502,677 Personal Contacts  
128,024 Volunteer Hours  
\$640,120 Volunteer Dollar Value  
5,020.150 Media Contacts

Global Issues

Family Literacy

Develop "Storybook or Storytelling Aprons"

Book donations to Girls Haven

Book donations to newborn babies

Volunteering in schools and public libraries

Reading to children in community

International

Pennies for Friendship - Given to support projects in areas of world in dire need

Use of "Trunk of International Costumes"

Promote activities sponsored for ACWW

Cultural

Develop awareness of different ethnic and cultural backgrounds through theater and art groups

Encourage reading and listening to music

Program Accomplishments

160,500 Personal Contacts  
500,000 Volunteer Hours  
\$2,500,000 Volunteer Dollar Value  
2,000,000 Media Contacts

Environmental Issues

Recycling to reduce contamination

Installation of water saving devices

Community Beautification projects

Adopt-A-Highway

Arbor Day

"Earth Angel" project - bringing a better, cleaner environment by a multi-faceted education program to students and adults.

One county reached 27,000 shoppers.

Program Accomplishments

334,421 Personal Contacts  
199,780 Volunteer Hours  
\$998,900 Volunteer Dollar Value  
1,761,674 Media Contacts



## Special Projects

### Health Care

- Encourage long-range health care planning
- Organ donor program
- Living Wills
- Day Care Centers
- Care-giver programs

### Cultural Enrichment

- Preservation of North Carolina heritage skills
- Encourage Genealogy studies
- Promoted cultural events and activities participation
- Dollars for Education
- Provide educational scholarships or loans for youth and adults
- Interest from McKimmon and Lowe Educational Funds accounts accumulated during the year pays for scholarships

### Program Accomplishments

- 315,141 Personal Contacts
- 131,530 Volunteer Hours
- \$675,650 Volunteer Dollar Value
- 2,828,188 Media Contacts

The Family Community Leadership training in North Carolina continues to make a difference in our communities by effective participation in resolving public issues. Fifty-seven (57) Extension Homemakers received recognition and credit citing:

- 2,118,062 Personal Contacts
- 65,550 Volunteer Hours
- \$327,750 Volunteer Dollar Value
- 192,736 Miles Driven

## **E. NARRATIVE AND IMPLICATIONS**

Volunteers working toward successfully improving the quality of family life are essential to the local community and the Cooperative Extension Service. This program offers volunteers an opportunity to improve their leadership skills and their ability to analyze issues and understand political processes in order to achieve desired goals. It continues to flourish in North Carolina.

Volunteers networking with other agencies and groups must continue to maximize efforts in these times of hard economics and high demand. Volunteers are continually being trained to leadership roles in organizations as well as for specific tasks. More emphasis is being given the role that needs to be played in the public arena in regards to public policy and public policy education.

**F. COORDINATOR AND TEAM MEMBERS: Linda McCutcheon**

The Family Community Leadership Training in North Carolina continues to make a difference in our communities by effective participation in resolving public issues. Fifty-seven (57) Extension Homemakers received recognition and credit for:

1,418,081 Personal Contacts  
63,330 Volunteer Hours  
\$327,750 Volunteer Dollar Value  
102,736 Miles Driven

**NARRATIVE AND IMPLICATIONS**

Volunteers working towards successfully improving the quality of family life are essential to the local community and the Community Extension Service. This program offers volunteers an opportunity to improve their leadership skills and their ability to analyze issues and understand political processes in order to achieve desired goals. It continues to flourish in North Carolina.

Volunteers networking with other agencies and groups must continue to remain active in these times of hard economic and high demand. Volunteers are continually being trained to leadership roles in organizations as well as for specific tasks. More emphasis is being given the role that needs to be played in the public arena in regards to public policy and public policy education.

## ACCOMPLISHMENT REPORT 1992-1995

### NC46 - ENVIRONMENTAL EDUCATION

#### A. OBJECTIVES

The North Carolina Cooperative Extension Service will conduct environmental education programs designed to create environmental awareness and enhance the development of an environmental ethic for adults and youth.

The North Carolina Cooperative Extension Service will serve as a catalyst to develop and deliver research-based environmental educational programs targeted to help private citizens solve environmental problems.

#### B. NON-EXTENSION RESOURCES

- |    |  |           |
|----|--|-----------|
| 1. | number of volunteers                         | 235       |
| 2. | total number of volunteer-days               | 195       |
| 3. | value of federal government funding (grants) | \$ _____  |
| 4. | value of state government funding (grants)   | \$ _____  |
| 5. | value of local government funding (grants)   | \$ _____  |
| 6. | value of private funding (grants)            | \$ 13,500 |

#### C. TEMPLATE INDICATORS AND ACCOMPLISHMENTS

1. Indicate whether strategic plan is developed.  
YES. The Tribe at the Cherokee Indian Reservation has developed a strategic plan
2. Describe programs and materials disseminated.
  - 5 newspaper articles reaching 20,000 citizens.
  - Trickle irrigation for efficient water management and yard waste composting.
  - Composting
  - Water Quality protection
  - Septage Management
  - Land Application of Bi=ADresiduals

- Gypsy Moth eradication
- Recycling
- Reservation clean-up
- Recycling for the children
- Collaborative work with Forest Service Smoky Mtn. National Park, ASCS, NRCS, wildlife officers and lay leader on endangered species programs

3. Number of persons with increased awareness of public policy issues related to environmental education. 397,857
4. Number of persons with increased participation in public policy issues. 442,105
5. Number adopting practices. 1,323,355
6. Number of practices adopted. 52,748

**D. OTHER INDICATORS AND ACCOMPLISHMENTS**

10 TV shows - viewing audience of 184,000

See reports NC 02, 08, 11, 12, 13, 14, 15, 16, 17, 18,19,20, 21, 23, 25, 33, and 36

**E. NARRATIVE AND IMPLICATIONS**

(optional; include program accomplishments or impacts not described in Items C and D).

Almost 400,000 individuals and families increased their awareness of public policy issues related to environmental action and 442,000 increased their participation in public policy. Major issues addressed include drinking water quality, nonpoint source pollution, residential and municipal solid waste management, animal waste management, outdoor air quality, radon and indoor air quality, and natural resource management. Targeted programs included limited resource citizens, the Cherokee Indian Reservation, schools and many local communities and municipalities. Emphasis has been placed on public issues education and conflict resolution through agent training and the use of interdisciplinary teams to address specific conflicts.

Networking has occurred with state and federal agencies, schools, non-governmental organizations and the private sector. Volunteers have played a key role in the delivery of programs, particularly to youth audiences.

**F. COORDINATOR AND TEAM MEMBERS: Joe Zublena**

## ACCOMPLISHMENT REPORT 1992-1995

### NC47 - PLIGHT OF YOUNG CHILDREN

#### A. OBJECTIVES

Extension, limited resource families, agencies (public and private) child care providers, local organizations, and volunteers will collaborate to:

- identify gaps in programs and services for limited resource families with young children
- design and implement collaborative solutions
- assess their impact upon limited resource families and the community at large

#### B. NON-EXTENSION RESOURCES

1.	number of volunteers	125
2.	total number of volunteer-days	500
3.	value of federal government funding (grants)	\$ _____
4.	value of state government funding (grants)	\$250,000
5.	value of local government funding (grants)	\$ 75,000
6.	value of private funding (grants)	\$ _____

#### C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS

1. Number of community groups that you have worked with to design or implement plans to reach limited resource families with young children 385.
2. How many parents have you or your volunteers reached? 9107
3. How many children (0-5 years) have you or your volunteers reached? 9791
4. How many service providers have you worked with that work with children 0-5 years old and/or their limited resource families? 4794

#### D. OTHER INDICATORS AND ACCOMPLISHMENTS

#### E. NARRATIVE AND IMPLICATIONS

(optional; include program accomplishments or impacts not described in Items C and D).

The North Carolina Cooperative Extension Service continues to work to improve the lives of its youngest citizens. Agents in many counties are leaders in securing and implementing Smart Start programs. Agents also work with Headstart and WIC clients in the areas of parent education and nutrition. Agents continue to train volunteers in the Master Parents and Grandparents curriculum Quality child care is an issue being addressed in many ways by the NCCES. Agents continue to be leaders in the state in training day care workers in food safety, meal planning, nutrition, and child development. Agents in many counties help day care owners form child care associations. These associations serve to help smaller organizations maximize resources by sharing training materials, videos, books, etc. Agents have also collaborated with agencies such as AFDC, WIC JOBS, civic groups and others to reach parents with children 0-5 with needed information on nutrition, immunization, and money management. Several counties have successful programs that reach out to teen parents to help them stay in school and become better parents.

C. TEMPLATED INDICATORS AND ACCOMPLISHMENTS	
1.	Number of community groups that you have worked with to design an implementation plan to reach limited resource families with young children 3&5.
2.	How many parents have you or your volunteers reached? 9107
3.	How many children (0-5 years) have you or your volunteers reached? 9291
4.	How many private providers have you worked with that work with children 0-5 years old and/or have limited resource families? 4104
D. OTHER INDICATORS AND ACCOMPLISHMENTS	
E. NARRATIVE AND IMPLICATIONS	

## Civil Rights Report - Summary for 1992-95 Plan of Work

### CR01 - Civil Rights Training

#### A. Objectives

##### Overall:

All employees of the North Carolina Cooperative Extension Service are expected to be aware of and comply with Civil Rights legislation.

All employees of the North Carolina Cooperative Extension Service are to understand the human aspects of Civil Rights.

##### Specific:

1. All employees are expected to be knowledgeable of the principles and laws of our nation regarding Civil Rights.
2. All employees are expected to be knowledgeable of Civil Rights policies and sensitive to equity issues.
3. All employees are expected to assess the quantity and quality of educational programs delivered to minority individuals by comparing benefits delivered to non-minority individuals.

#### B. Indicators of Success and Accomplishments

The period of 1992 through 1995 was extremely busy in the area of Civil Rights training. Most of 1992 was spent planning for an in-depth Civil Rights training that was launched at the November 1992 State-wide conference. A comprehensive Affirmative Action plan was written as a key resource to this training. In 1992 all county staff received a full day of Civil Rights training. This training included a broader view of diversity in addition to the standard Affirmative Action principles. In 1993 one day of in-depth diversity training for all faculty was provided at the annual state-wide conference. The training on diversity has been expanded and now includes sensitivity to the disabled as well as an extensive list of other aspects of diversity (education, culture, religion, etc.).

The approach since the comprehensive training has been to keep the topics refreshed. New faculty attend orientation training in which Civil Rights and related Affirmative Action issues are introduced and explained. Monthly administrative video briefings have been used to remind all employees. Because of related travel expenses, video will most likely be used more frequently in the next Plan of Work.



### C. Implications

The training opportunities provided critical knowledge and skills to facilitate the continuing commitment to Civil Rights. The training was well received and the overwhelming realization by the state teams was that the county faculty truly wanted to do what was right as opposed to simply meeting minimum legal expectations.

The summary data reflect an overall progress in minority representation. As a result, the training efforts are considered to have been successful.

## Civil Rights Report - Summary for 1992-95 Plan of Work

### CR02 - Public Notification

#### A. Objectives

##### Overall:

That all people who can benefit from Extension educational programs be aware of their availability.

##### Specific:

1. Every county be accountable for a public notification plan.
2. Make organizations which request Extension assistance aware of Extension position on non-discrimination.
3. Adopt and utilize on all printed material a common non-discrimination statement.

#### B. Indicators of Success and Accomplishments

This four year period has been very successful in the area of public notification. Every county is made accountable through annual reporting; there is a specific form to report public notification efforts. All printed material now has a prominently displayed non-discrimination statement. All counties were provided the "And Justice For All" posters for display.

For the first couple of years into the plan, each effort was tallied (i.e. how many counties used newspapers). In every category we found that more than a third of the 100 counties focused public notification efforts beyond minimum requirements. County reports indicate the frequent use of mass media, personal contacts with minority leaders, posters placed at grocery stores and other high volume businesses, announcements on school intercom systems, networking with other agencies to market our programs, and providing information to migrant workers' crew leaders for dissemination.

The organization began a 1-800 phone line that individuals can call anonymously with any complaint. There have been no civil rights related complaints on this line.

#### C. Implications

This was the first plan of work cycle following the now famous, 19 year old Bazemore case; this case dealt with charges of salary inequities of employees. The organization has shown great effort in ensuring that public notification standards are not only met but surpassed.

## Civil Rights Report - Summary for 1992-1995 Plan of Work

### CR03-On-Site Civil Rights Compliance Review

#### A. Objectives

##### Overall:

Achieve parity of participation for all clientele served by County Extension offices.

##### Specific:

1. All counties to determine their present level of participation of various groups and set numerical goals for reaching underserved/underrepresented groups.
2. All counties not in compliance to show progress toward compliance within the 4-year period.

#### B. Indicators of Success and Accomplishments

North Carolina has 100 counties and 1 Cherokee Nation Reservation. Comprehensive Program Reviews/Reports are scheduled on a biennial cycle so that 50 are done each year. During the Plan of Work, several strategies were enacted to accomplish the stated goals. A "check-off" form was designed for the review team to utilize in examining Civil Rights data in the county. The performance appraisal process and related documentation was revised to include an assessment of Civil Rights programming efforts. This actually is a component of on-site review and is done with every employee annually by the District Director/County Director team. The annual reports from all counties include data on public notification, program delivery, all reasonable efforts; and club membership summaries. These are forwarded to the District Directors and Personnel Director (Affirmative Action Officer) who in turn can review and provide individual feedback and strategies on a regular basis. The purpose here was intended for Civil Rights strategies to be recognized as a daily part of one's responsibilities as opposed to an annual event.

#### C. Implications

The Civil Rights/Affirmative Action Officer retired last year. The Federal Early-Out Retirement options also allowed three of the seven district directors to retire during the past four year cycle. The overall responsibilities of Civil Rights/Affirmative Action were reassigned to the Personnel Director. The new District Directors and the Personnel Director have been working to ensure that the necessary attention continues to be devoted to these efforts. The bottom line result is a good basis on which to build the next plan of work.

## Civil Rights Report - Summary for 1992-1995 Plan of Work

### CR04 - Equal Employment Opportunity

#### A. Objectives

1. Increase the number of minorities and females in agriculture and administrative positions.
2. Continue to ensure salaries are unaffected by race/sex.
3. Increase the cultural diversity of employees.

#### B. Indicators of Success and Accomplishments

Specific tasks associated with the objectives and related activity during the past year are as follows:

1. Enlist the help of all current employees to locate and recruit minorities.

This four year period was very busy in terms of recruiting. Video briefings were used to encourage current faculty to assist in recruiting minorities. A new recruiting brochure was developed to enhance the image of the organization as a career choice. Agents were given the opportunity to accompany recruiters as their schedule permitted.

2. Continue intern programs which are aimed at creating an interest in employment with Extension.

The intern program generally had three minority students each summer who were studying agriculturally related disciplines. The internship served to make the graduates more marketable and all interns were able to find better paying jobs elsewhere. As a result of funding concerns, it is unclear whether this program will receive funding in the future.

3. Aggressively recruit at traditionally black and female institutions in the southern region.

Our goal is to ensure that at least 1/3 of all recruiting efforts are done at colleges traditionally focused towards females and minorities. This goal has been met annually. We focus on traveling to institutions either within North Carolina or mostly within a contiguous state. (Institutions include: NC Central, Virginia State, Meredith College, Tennessee State, NC A&T, Fort Valley College, Tuskegee, and Pembroke State University.) Position vacancy announcements are sent to all 1890

Institutions. We also revised and reprinted placement notebooks and distributed to college placement offices.

4. Train within for progression to leadership positions.

The organization has done well in promoting minorities and females to the position of County and District Director. Currently, 19 (20%) of the 93 county directors are female, 11 (12%) are black and 2 are American Indian. The seven member district team has three white females and two black males.

5. Monitor employment procedures to ensure that qualified minorities are given equal opportunity to available positions throughout the organization.

Standardized University employment procedures remain in place; no changes.

C. Implications

The table below outlines faculty and staff population for county operations. Overall there was little statistical change during the four year period in race. We began the period with 21% black employment in EPA (faculty) positions; we ended the period with 20% representation. The general state-wide black population is 22% so we are very proud of our continuing balance in representation.

**EPA EMPLOYEES**  
**RACE BY GENDER**

	Sept. 30, 1991			Sept. 30, 1995			Change		
	<u>M</u>	<u>F</u>	<u>Total</u>	<u>M</u>	<u>F</u>	<u>Total</u>	<u>M</u>	<u>F</u>	<u>Total</u>
Black	30	104	134	27	104	131	-3	0	-3
White	260	249	509	241	271	512	-19	+22	+3
Other	1	8	9	0	12	12	-1	+4	+3

**Gender Only**

Males	291			268					-23
Females		361			387				+26

**SPA EMPLOYEES**  
**RACE BY GENDER**

	Sept. 30, 1991			Sept. 30, 1995			Change		
	<u>M</u>	<u>F</u>	<u>Total</u>	<u>M</u>	<u>F</u>	<u>Total</u>	<u>M</u>	<u>F</u>	<u>Total</u>
Black	0	39	39	0	33	33	0	-6	-6
White	0	186	186	0	196	196	0	+10	+10
Other	0	0	0	0	2	2	0	+2	+2

**Gender Only**

Males	0			0					0
Females		225			231				+6

## Civil Rights Report - Summary for 1992-95 Plan of Work

### CR05 - Program Delivery

#### A. Objectives

1. Provide the same level of educational service to all people of the state without regard to race, sex, age, disability, color, national origin, or religion.
2. Advisory system members reflect all groups in the state with regard to race, age, sex, disability, color, national origin, or religion.

#### B. Indicators of Success and Accomplishments

As part of the Plan of Work, all counties developed a program delivery plan. Progress was projected in minority representation on the county Advisory Leadership System and Extension group participation. Counties completed community mapping data for reporting and comparison of group enrollments. Focused efforts included parallel examples of Public Notification such as personal contacts in addition to program delivery efforts such as relocating program offering locations and times, recruiting club leaders from minority communities, and specialized efforts on topics such as composting and pesticide education.

The large majority of counties reached parity of representation on their Advisory Leadership Councils during this four years.

#### C. Implications

After the completion of the mapping, agents could see the impact of some of their program delivery efforts in the past. There was an overall heightened sensitivity to program delivery efforts.