

Agriculture: Still King of the Eastern North Carolina Economy?

by Mike McLaughlin and Katherine Dunn

Summary

If, as the marketing slogan goes, goodness grows in North Carolina, Eastern North Carolina must be the state's goodliest part. The region's 41 counties lay claim to the richest and most diverse agricultural economy in North Carolina. Of the 14.2 million acres that make up the 41-county eastern region of North Carolina, 3.1 million acres, or 22 percent, are harvested cropland. The crops that make up the most harvested acres in the state are soybeans, cotton, and corn. Several counties—such as Greene, Pasquotank, and Perquimans—are made up of more than 40 percent harvested cropland. While there has been a decrease in number of farms (35 of the 41 counties saw a decrease in the number of farms from 1997 to 2002, with a total loss of 2,594 farms in the East and a statewide loss of 5,190), the size of farms increased in all but nine of the East's counties over the five-year time period.

Statewide, from 1997 to 2002, farm acreage decreased four percent, from about 9.4 million acres to about 9.1 million acres. Even in the East, farm acreage decreased from 4.7 million acres to 4.5 million acres, or approximately 5 percent. These data are consistent with a long term trend toward fewer but larger farms. Over a 30-year period, from 1974 to 2004, the number of North Carolina farms decreased by 58 percent, while the size of the average farm increased by 57 percent.

The increase in average farm size has contributed to a high average value of farms in Eastern North Carolina, with values climbing to more than \$1 million in 14 of the 41 counties in 2002. The average value of a farm in the East as a region was \$871,827, compared to a statewide average of \$518,719. The region's average net income per farm of \$78,452 also was considerably higher than the statewide average of \$28,869. When combined with agribusiness—food, natural fiber, and forestry—agriculture is a major source of income for Eastern counties. According to calculations by North Carolina State University economist Michael Walden, the value-added manufacturing, wholesale, and retail incomes from agriculture and agribusiness provide more than half of the total income in 13 of the 41 Eastern counties.

However, when most people think of agriculture, they think of crops and livestock, and these commodities are the primary focus of this article. In 2003, North Carolina farms generated some \$7 billion in cash receipts from the marketing of crops and livestock. Of the 10 counties bringing in the most cash receipts, seven were in the East. In rank order, these counties are Sampson, Duplin, Wayne, Bladen, Johnston, Robeson, and Greene. Of the \$7 billion in cash receipts from that year, 60.1 percent was from livestock, dairy, and poultry products. Almost one quarter—\$1.5 billion or 22.2 percent—of the total cash receipts were from hog production alone. Three Eastern counties—Duplin, Sampson, and Bladen—rank first through third,

respectively, in producing hogs and pigs. North Carolina is the nation's second largest pork producer behind only Iowa, with nearly 10 million hogs. The state now has more hogs than people. About 40 percent of North Carolina's hogs are produced in Duplin and Sampson counties alone.

Thus, the argument that Eastern North Carolina rules the state's agricultural economy is a strong one, and there is a strong argument to be made that agriculture still rules the East. But the farm economy faces challenges on a number of fronts. The federal buyout of the tobacco support program changes the business arrangement for raising the region's most valuable crop. Livestock production faces issues around environmental regulation, waste management, and odor control. And, the debate rages about whether consolidation of ownership into larger and more valuable farms is a good thing or a bad thing for the farmer. Ultimately, global competition may render many of these questions moot. But for the present, farmers continue to find creative ways to do what they have done for centuries—scratch out a living from the rich Eastern North Carolina soil.

Farming in Eastern North Carolina is not what it used to be. The pillar of the eastern economy, the tobacco price support program, has been bought out by the federal government. Hog farmers grapple with issues around environmental regulation, odor control, and waste disposal. Contract farming controls both the hog house and the henhouse, and may control the future of tobacco as well. The number of farms has declined, while, with the exception of specialty farms, farm size continues to increase.

But make no mistake. Agriculture still rules the East. Ask Ed Emory, agricultural extension director for Duplin County. "Agriculture is the number one economic engine in Duplin County," says Emory. "About 90 percent of our tax base is directly related to agriculture."

Duplin County isn't really the breadbasket of the East, but you might call it the kitchen pantry. Indeed, a literal five-course meal could be prepared from the bounty that is harvested within the county. The menu could include lettuce for a salad, pork tenderloin or turkey and dressing for the meat,

nearly any fresh vegetable grown on the eastern seaboard, a fruit course of trendy sprite melon or traditional watermelons or cantaloupe, and blueberry cobbler or strawberry pie for dessert. All this could be washed down with a glass of scuppernong wine produced at the state's oldest winery.

As the marketing slogan goes, goodness grows in North Carolina, and much of what grows in North Carolina grows in Duplin County. Among individual commodities, the county leads the state in hog production. It ranks second in turkeys raised and in the production of corn and hay crops. In broader marketing categories, the county ranks second in the state in livestock, dairy, and poultry production, generating \$455 million in farm income from these commodities in 2003, and seventh in crop production, adding another \$74 million in farm income. In addition, Duplin boasts a top 10 ranking among North Carolina's 100 counties in production of blueberries, cucumbers, peppers, and strawberries. The county also boasts the state's oldest and one of its largest wineries, producing sweet table wine from the scuppernong grape. "Farmers in Duplin County have always done a good job of diversifying," says Emory. "They are early adapters of developments that have allowed them to stay in farming."

But for all the diversity of Duplin County agriculture, neighboring Sampson County produces even

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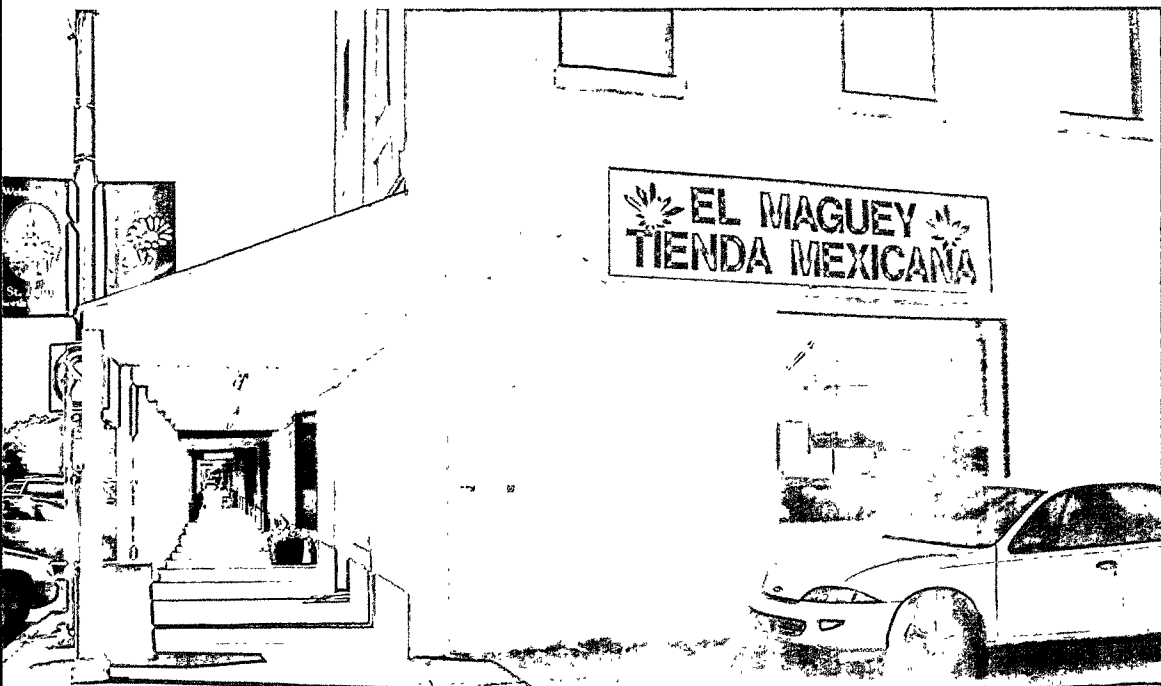
more farm income. With 27 percent of the county's land in crop production, Sampson produces \$583.3 million on the farm—the highest in the state (see Table 1, p. 43). "For us, agriculture has been good, and I think it will remain good for a long time," says George Upton, Sampson County agricultural extension chairman. Indeed, Farm Futures magazine singles out Sampson County as the most lucrative place to farm in the nation in its September 2005 edition, with Duplin County ranked a close second.¹ "We haven't had any layoffs," quips Upton. Farmers don't seek incentives, and they don't opt to move their operations overseas to cut costs. Hard luck and hard times may have hit some individual farmers, but farm values are up, and working farms still produce much of the cash flow in the eastern economy.

And, if agricultural dependence alone doesn't guarantee a healthy overall economy, it doesn't necessarily hurt to have farming in the mix. Indeed, measures of economic vitality show a mixed picture. One measure of a county's economic viability is whether its population remains stable or grows over time. Eastern North Carolina is a hotbed of agricultural production, with seven of the Top 10 counties in the state in generating cash receipts from farming located in the East. Of these seven, five had stable

or growing populations—Bladen, Duplin, Greene, Johnston, and Sampson. Only Robeson and Wayne lost population from 2000–2004.

However, another way of looking at economic vitality is how income is distributed. Here, the region's agricultural leaders fare less well. Five of the seven counties in the Top 10 ranked below the average median household income of \$32,274 for the 41 counties that comprise the East (see Table 1. Selected Demographic Characteristics of Eastern North Carolina, by County, in "Eastern North Carolina at Work," p. 9). Only Johnston County, increasingly a bedroom community for the Research Triangle area, and Wayne County, home of Seymour Johnson Air Force Base, exceeded the regional average.

And, unless one is the owner, employment on a working farm typically is not lucrative. Indeed, most farmworkers are employed on a seasonal basis at little more than minimum wage, and many are imported from Mexico on temporary work visas. For farms that use migrant workers, living and working conditions are perennial issues. Some 108,000 migrant and seasonal farmworkers worked in the North Carolina fields in 2003. A total of 1,538 migrant labor camps were inspected and certified



Karen Tan



by the N.C. Department of Labor in 2004, housing 18,247 workers. Living conditions in the camps are Spartan at best, and the department maintains a gold star program to encourage compliance with minimum standards. A total of 127 growers were recognized for operating exemplary housing programs in 2004, while growers at 79 sites were fined a total of \$88,597.50 for 193 violations of health and safety standards, according to the N.C. Department of Labor's 2004 annual report.

Regina Luginbuhl, the N.C. Department of Labor's agricultural safety and health bureau chief, says the primary safety and health issues are in the fields rather than in the camps. The problems include failure to comply with rules about pesticide applications, failure to provide water for workers or sufficient time to drink it, and heat-related illness. In the 2005 growing season, Luginbuhl says three agricultural workers died of heat stroke. Luginbuhl says growers also see operation of farm vehicles on North Carolina's rural roads as a primary safety issue.

Except for farm owners and their families, farms employ few year-round workers. While the East contains 64.3 percent of all agricultural jobs in North Carolina, employment in Eastern agriculture totals only 19,600 people—a mere 2.2 percent of all Eastern jobs (See "Eastern North Carolina at

Work: What Are the Region's Economic Engines?" pp. 10–14, for more). Moreover, agriculture pays poorly with a statewide average annual wage of \$24,313. In the East, the average annual agricultural wage falls below the statewide annual wage level in 29 counties, though some of these counties are urban ones with comparatively small agricultural sectors.

Regardless of the economics, farming's boosters argue that the industry is essential. Rann Carpenter, former chief executive officer of the N.C. Pork Council, relates a story told by the late Jim Graham, the legendary N.C. agriculture commissioner who served from 1964 through 2000. As Graham told it, a major ice storm got between food distributors and the local grocery stores, creating a near-crisis on the bread aisle and at the dairy case. "People were mad as hell because Food Lion didn't make enough bread and milk," Carpenter says with a chuckle. "People do not understand where bread and milk come from. Agribusiness is a major, major economic engine in this state. It's vitally important. Look at Eastern North Carolina, where people need jobs and are looking for jobs. I think it's something we need to protect."

But the farm community is being buffeted by changes—some of them unsettling. Throughout the past decade, there has been consolidation of smaller

farms into bigger farms, and dominance in the agriculture industry by hog and tobacco farms. In 2004, North Carolina continued to lead the nation in flue-cured tobacco production, providing 75.3 percent of total U.S. production, more than any other state, according to the N.C. Department of Agriculture and Consumer Services. And, the industry continues to adapt, having to “speed up to remain, and become even more successful,” says N.C. Agriculture Commissioner Steve Troxler, elected statewide in 2004.

The end of the federal tobacco program may shift the focus from tobacco to other agricultural commodities, but North Carolina continues to be a top producer in hogs, pigs, and turkeys, and is seeing growth in specialty crop farming. While the face of agriculture may be changing, two things remain certain: agriculture is still a key industry in the economy of Eastern North Carolina, and the agriculture industry statewide is still heavily reliant on its eastern region.

Of the 14.2 million acres that make up the 41-county eastern region of North Carolina, 3.1 million acres, or 22 percent, are harvested cropland (See Table 2, p. 45). Statewide, only about 13 percent of the land is harvested, so it’s clear that the East is farmed more intensely than the state generally. The crops that make up the most harvested acres in the state are soybeans, cotton, and corn. Several counties—such as Greene, Pasquotank, and Perquimans—are made up of more than 40 percent harvested cropland.² While there has been a decrease in number of farms (35 of the 41 eastern counties saw a decrease in the number of farms from 1997 to 2002, with a total loss of 2,594 farms in the East and a statewide loss of 5,190), the size of farms increased in all but nine of the East’s counties over the five-year time period (see Table 3, p. 46).³

While 63 percent of the state’s 53,500 farms produce income of less than \$10,000 a year, the remaining farms hold a majority of the wealth. Still, farmland across the state and in the region is decreasing overall. Statewide, from 1997 to 2002, farm acreage decreased four percent, from about 9.4 million acres to about 9.1 million acres. Even in the East, farm acreage decreased from 4.7 million acres to 4.5 million acres, or approximately 5 percent.⁴

“We see that more and more throughout Eastern North Carolina,” says Carpenter, the former Pork Council executive. “Land is going for other purposes, whether it’s residential development or highways. That all impacts the agricultural community.” A further issue is that newcomers gobbling up what was once prime farmland are not always familiar with

rural ways. This can lead to concerns about farm odors, slow moving farm equipment on increasingly crowded roads, and other farm/city issues. “There’s a natural conflict that evolves as a result of a lack of understanding about the agriculture community in general,” says Carpenter.

The trend toward fewer and larger farms is long-term, as demonstrated by N.C. Department of Agriculture statistics over a 30-year period. In 1974, North Carolina had 124,000 farms with an average size of 110 acres. By 1984, the number of farms had dropped to 79,000, but the average farm size had increased to 139 acres. The trend toward fewer and larger farms continued into 2004, when the number of farms had fallen to 52,000 but average farm size had grown to 173 acres. Total farm acreage dropped during this period, from 13.6 million acres in 1974 to 9 million acres in 2004.

Lu-Ann Coe, former executive vice president of the North Carolina Agribusiness Council, is among those who see danger in the trend toward fewer farms and less acreage devoted to agriculture. “The state

**Table 1. Top Ten
North Carolina Counties in
Farm Cash Receipts, 2003**

County	Cash Receipts (Thousands)**
1. Sampson*	\$ 583,257
2. Duplin*	570,204
3. Union	291,508
4. Wayne*	257,921
5. Wilkes	232,733
6. Bladen*	229,804
7. Johnston*	215,090
8. Randolph	189,828
9. Robeson*	177,138
10. Greene*	143,132
N.C. Total	\$7,008,427

* Denotes Eastern counties

** Includes government payments

Source: N.C. Department of Agriculture and Consumer Services

is losing an estimated 2,000 farms per year," writes Coe in a guest editorial in *The Charlotte Observer*. "Since 1985, we have lost over half our farms. In many rural areas, the standard reply to, 'What do you do for a living?' used to be, 'I work the land.' Where will consumers get their food and fiber when there is no one left 'working the land?'"⁵

The increase in average farm size has contributed to a high average value of farms in Eastern North Carolina, with values climbing to more than \$1 million in 14 of the 41 counties in 2002 (see Table 4, p. 49). The average value of a farm in the East as a region was \$871,827, compared to a statewide average of \$518,719. The region's average net income per farm of \$78,452 also was considerably higher than the statewide average per farm of \$28,869.⁶ Upton, the Sampson County agricultural extension chair, speculates that this is because there are more part-time farmers in the Piedmont and in Western North Carolina—people who make their primary living at another job. In addition, larger farms with more lucrative contracts may drive up the overall net income figure. "We don't have any real way of getting at net" [income] for the individual farmer, says Upton. Still, says Upton, "Farming is a much better occupation than a lot of people think. I don't mean everybody's getting rich, but they're making a living."

When combined with agribusiness—food, natural fiber, and forestry—agriculture is a major source of income for eastern counties. According to calculations by North Carolina State University economist

Michael Walden, the value-added manufacturing, wholesale, and retail incomes from agriculture and agribusiness provide more than half the total income in 13 eastern counties.⁷

In 2003, North Carolina farms generated some \$7 billion in cash receipts. Of the 10 counties bringing in the most cash receipts, seven were in the East. In rank order, these seven are Sampson, Duplin, Wayne, Bladen, Johnston, Robeson, and Greene (see Table 1, p. 43). Of total cash receipts from that year, 60.1 percent was from livestock, dairy, and poultry products. Almost one quarter—\$1.5 billion or 22.2 percent—of the total cash receipts was from hog production alone. Three Eastern counties—Duplin, Sampson, and Bladen—rank first through third, respectively, in producing hogs and pigs (see Table 5, p. 50). North Carolina is the nation's second largest pork producer with nearly 10 million hogs, behind only Iowa. The state now has more hogs than people. Duplin and Sampson counties alone produce about 40 percent of the hogs in North Carolina (See Table 5, p. 50).⁸ There has been a moratorium since 1997 on the establishment of farms with more than 250 hogs,⁹ prompted in part by concerns about water quality and the management of animal waste. North Carolina experienced 46 spills from animal waste management systems in 1998, which is one reason for increased environmental regulations.¹⁰ Still, experts agree that hog production has remained stable, and that this has not hurt the industry, as the industry can only grow as much as demand allows.

"In the 1940s and early 1950s, a tenant son would likely have considered farming himself. In the 1960s, however, he could hardly think of doing so. Young men raised on farms, their fathers and grandfathers tenants and their mothers and grandmothers the daughters of tenants, now looked to the Army or the pickle plant for their living, to the plywood company or the feed mill. They drove trucks, either locally or up and down the eastern seaboard. They tried to get on at one of the sewing plants or chicken-processing plants. They worked on the roads for the state or pumped gas or stacked groceries at the local wholesaler's. Some drove everyday back and forth to Kinston or Goldsboro or Clinton where they may have found a slightly better-paying job, at DuPont or General Electric maybe, or Lundy's. Their sons and daughters, would have as little feeling for the land as if it had never been a part of their heritage."

—LINDA FLOWERS

THROWN AWAY: FAILURES OF PROGRESS
IN EASTERN NORTH CAROLINA

Table 2. Harvested Cropland in Eastern North Carolina, 2004

County	Harvested Cropland (Acres)	Total Area of County (Acres)	% of County That Is Harvested Cropland
1. Beaufort	145,000	529,670	27%
2. Bertie	88,000	447,514	20%
3. Bladen	73,000	560,013	13%
4. Brunswick	20,000	547,136	4%
5. Camden	53,000	154,048	34%
6. Carteret	49,000	340,077	14%
7. Chowan	40,000	110,490	36%
8. Columbus	112,000	599,578	19%
9. Craven	56,000	445,152	13%
10. Cumberland	51,000	418,003	12%
11. Currituck	28,000	167,494	17%
12. Dare	2,000	244,269	1%
13. Duplin	155,000	523,411	30%
14. Edgecombe	110,000	323,238	34%
15. Gates	42,000	218,003	19%
16. Greene	69,000	169,888	41%
17. Halifax	105,000	464,282	23%
18. Harnett	60,000	380,826	16%
19. Hertford	47,500	226,349	21%
20. Hoke	35,000	250,400	14%
21. Hyde	73,000	392,211	19%
22. Johnston	114,000	506,867	22%
23. Jones	50,000	302,912	17%
24. Lenoir	93,000	255,917	36%
25. Martin	77,000	296,058	26%
26. Nash	78,000	345,805	23%
27. New Hanover	1,500	127,322	1%
28. Northampton	90,500	343,130	26%
29. Onslow	38,000	490,797	8%
30. Pamlico	39,000	215,648	18%
31. Pasquotank	83,000	145,210	57%
32. Pender	38,500	557,261	7%
33. Perquimans	70,000	158,202	44%
34. Pitt	127,000	417,037	30%
35. Robeson	205,000	607,296	34%
36. Sampson	185,000	605,133	31%
37. Scotland	28,000	204,262	14%
38. Tyrrell	69,000	249,555	28%
39. Washington	80,000	222,618	36%
40. Wayne	132,000	353,664	37%
41. Wilson	82,000	237,498	35%
Eastern N.C. Total	3,094,000	14,154,244	Average: 22%
Statewide Total	4,268,000	33,600,000	Average: 13%

Source: N.C. Department of Agriculture and Consumer Services

**Table 3. Trends in Size of Farms in Eastern North Carolina Counties,
1997 and 2002**

County	Number of Farms		Average Farm Size (Acres)	
	2002	1997	2002	1997
1. Beaufort	395	429	430	362
2. Bertie	330	423	366	432
3. Bladen	551	637	264	204
4. Brunswick	271	261	152	148
5. Camden	70	87	(Data unavailable)	
6. Carteret	128	121	467	500
7. Chowan	173	175	346	301
8. Columbus	828	1,015	193	170
9. Craven	275	321	287	267
10. Cumberland	478	539	189	197
11. Currituck	82	100	424	400
12. Dare	8	11	(Data unavailable)	
13. Duplin	1,190	1,368	197	176
14. Edgecombe	281	351	582	491
15. Gates	129	174	496	392
16. Greene	271	331	361	313
17. Halifax	380	398	512	469
18. Harnett	730	740	157	159
19. Hertford	136	183	587	418
20. Hoke	201	200	315	347
21. Hyde	144	110	716	872
22. Johnston	1,144	1,420	170	153
23. Jones	154	172	494	424
24. Lenoir	428	495	284	308
25. Martin	305	427	363	272
26. Nash	478	541	335	328
27. New Hanover	77	75	(Data unavailable)	
28. Northampton	328	404	459	410
29. Onslow	404	438	158	148
30. Pamlico	68	80	770	635
31. Pasquotank	157	203	633	432
32. Pender	296	333	212	210
33. Perquimans	193	223	489	350
34. Pitt	448	525	415	367
35. Robeson	873	1,211	328	240
36. Sampson	1,178	1,299	253	209

Table 3, continued

County	Number of Farms		Average Farm Size (Acres)	
	2002	1997	2002	1997
37. Scotland	159	145	367	369
38. Tyrrell	91	92	809	604
39. Washington	193	236	593	457
40. Wayne	722	941	237	247
41. Wilson	315	433	364	299
Eastern Total	15,062	17,667	389	344
N.C. Total	53,930	59,120	168	160
	# Farms		Farm Size	
Net Gain (Loss) in Eastern NC:	(-2,594)		+45 acres	
Net Gain (Loss) Statewide:	(-5,190)		+8 acres	

Source: 2002 Census of Agriculture County Data, U.S.D.A. National Agriculture Statistics Service

Hog Production in North Carolina: Contract Farming

As the second largest hog farming state in the nation, the hog industry in North Carolina has experienced exponential growth since the 1990s. The state's hog population grew from 2.6 million

in 1988 to more than 8 million in 1997 and has since increased to nearly 10 million. Hog farming initially was attractive to farmers because of the system that stored hog waste in lagoons, then sprayed the lagoon substance as manure onto crops, creating an ability to sell hogs and grow crops on the same farm. With environmental concerns brought on by odor and flooding, hog waste lagoons since have fallen from favor, and the search is on for new and better ways to deal with livestock waste.

Nevertheless, the industry has continued to grow, if at a more subdued pace. Similar to trends throughout the agriculture industry, hog farms have been decreasing in numbers yet increasing in size. In 1986, there were 15,000 hog farms in the state, but by the year 2000, the number of hog farms had decreased to 3,600.¹¹ If the number of farms has decreased four-fold, the total number of hogs on those farms has *increased* by a similar proportion, from 2.4 million head in 1986 to 9.6 million in 2000. A telling statistic is that some 13,000 hog farms had less than 100 hogs and pigs in 1986, while by 2000, operations with more than 1,000 hogs controlled nearly 99 percent of the industry.

One reason for growth in the hog industry is the rise of contract farming, where corporations enter into contracts with farmers to raise hogs for market at a set price. A well-negotiated contract guarantees that the farmer can cover production costs, removing some

Collards

... Collards and the ham grease they drop

In a pot come back as we enter

The house with porch and a pumpkin.

This steam holds all we remember.

Sweet potatoes clot in a bin,

Common flesh beneath this skin

Like collards. Grainy-sweet, kin.

—JAMES APPLEWHITE,
SELECTED POEMS

of the uncertainty from a very uncertain field. Typically, says Sampson County agricultural extension director George Upton, a contract would require the farmer to provide a building and agree to raise a given number of hogs. The company would provide the animals, the feed, medication, and a staff person to check on the animals at least once a week. While companies typically do not hold farmer's responsible if the hog dies while in the farmer's care, they also do not pay for the meat. This is significant because mechanical failure of a hog house ventilation system or poor management can lead to the death of large numbers of hogs in a short period of time. "If you do a better job, you make more money," says Upton. "Death loss hurts your income, so it's best to keep them alive and healthy."

The hog industry in North Carolina is dominated by two corporations, Smithfield Foods, Inc. and Premium Standard Farms. Both hold contracts

"Now that you've won the sweepstakes," the news reporter asked the lucky farmer, "what are you going to do with all that money?"

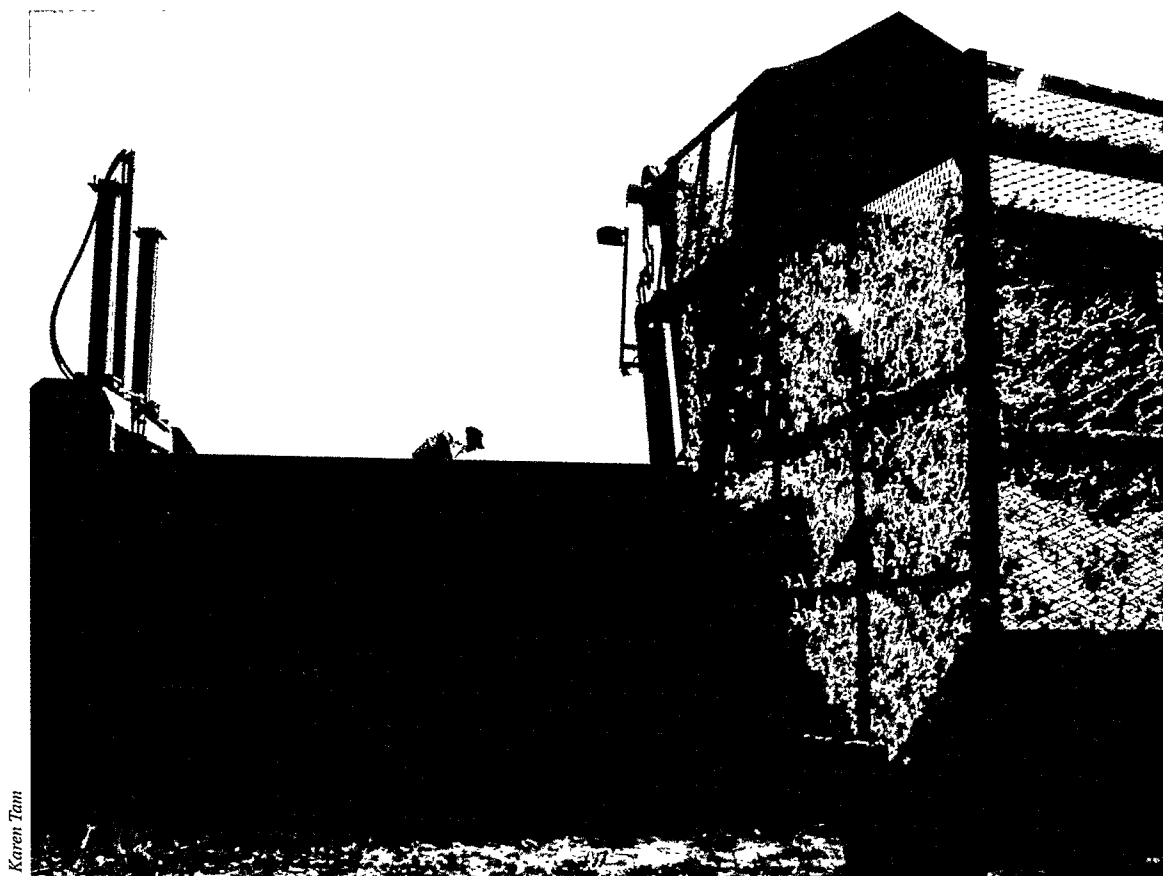
"Well, I reckon," drawled the farmer, "I'll just keep on a-farmin' 'til it's all gone."

—ANONYMOUS

nies controlled 32 percent of the market, hog farms in North Carolina were only starting to attract the interest of large corporations. Just 13 years later, in 1998, the top four pork-producing companies controlled 62 percent of the market. In 2003, five companies controlled 70 percent of the market. Smithfield controlled 26 percent alone and is estimated to own 1,478 hog farms in North Carolina.¹² A moratorium on the expansion or construction of corporate farms, which was put in place in 1997, has leveled off the industry's expansion. Now, county commissioners have zoning authority over hog farms raising more than 5,000 hogs. Research on suitable

with hog farmers in North Carolina. Smithfield constructed the world's largest meat processing plant in Bladen County in 1992, at the beginning of the huge growth in hog production.

Large hog farm consolidation is not unique to North Carolina. In 1985, when the top four pork-producing compa-



Karen Tann

**Table 4. Average Net Income, Average Value, and Average
Production Expenses of Farms in Eastern North Carolina, 2002**

County	Net Income (Avg.)	Value (Avg.)	Production Expenses (Avg.)
1. Beaufort	\$ 41,395	\$ 825,417	\$ 157,644
2. Bertie	43,637	877,015	223,333
3. Bladen	103,423	806,777	365,858
4. Brunswick	22,344	448,040	111,186
5. Camden	39,304	1,634,453	261,704
6. Carteret	13,454	985,552	110,267
7. Chowan	40,189	830,343	178,144
8. Columbus	29,612	447,861	108,133
9. Craven	44,175	621,114	141,753
10. Cumberland	16,995	433,526	110,045
11. Currituck	30,378	1,324,800	96,375
12. Dare	(Data unavailable)	1,098,170	117,544
13. Duplin	103,805	564,942	503,222
14. Edgecombe	53,401	1,188,753	311,184
15. Gates	57,843	937,669	204,680
16. Greene	103,197	1,047,812	497,543
17. Halifax	39,494	886,263	145,508
18. Harnett	28,444	579,018	121,279
19. Hertford	370,839	1,162,572	363,156
20. Hoke	33,622	867,176	197,915
21. Hyde	40,525	1,264,802	208,840
22. Johnston	22,663	599,437	108,902
23. Jones	77,281	1,136,331	529,741
24. Lenoir	61,808	942,742	282,162
25. Martin	1,121	781,589	145,145
26. Nash	50,667	888,020	187,909
27. New Hanover	1,039	449,401	53,584
28. Northampton	25,678	858,573	177,626
29. Onslow	51,231	427,198	183,880
30. Pamlico	(Data unavailable)	1,503,045	208,176
31. Pasquotank	33,946	1,260,846	197,581
32. Pender	83,930	669,994	262,440
33. Perquimans	33,872	1,106,437	183,236
34. Pitt	48,264	1,004,236	245,965
35. Robeson	35,882	629,801	186,970
36. Sampson	107,818	784,995	468,225
37. Scotland	69,631	825,124	227,685
38. Tyrrell	38,122	1,380,993	295,184
39. Washington	41,834	1,124,786	211,838
40. Wayne	108,959	722,503	338,241
41. Wilson	91,188	951,772	178,586
Eastern N.C. Average	\$ 78,452	\$ 871,827	\$224,595
N.C. Average	\$ 28,869	\$ 518,719	\$104,672

Source: N.C. Department of Agriculture and Consumer Services

Table 5. Leading N.C. Counties in Livestock Production, 2004

Livestock	Top Three Counties	# of Animals
Hogs and Pigs	Duplin*	2,250,000
	Sampson*	2,110,000
	Bladen*	860,000
Cattle	Iredell	45,500
	Randolph	39,500
	Chatham	33,500
Beef Cows	Randolph	17,200
	Chatham	16,700
	Wilkes	15,900
Milk Cows	Iredell	11,000
	Randolph	3,700
	Alleghany	3,200
Broilers Produced	Wilkes	91,000,000
	Union	84,400,000
	Randolph	48,000,000
Turkeys Raised	Sampson*	10,200,000
	Duplin*	9,400,000
	Wayne*	4,000,000
Chickens	Nash*	2,300,000
	Alexander	1,690,000
	Iredell	1,640,000

* Denotes Eastern counties

Source: N.C. Department of Agriculture and Consumer Services

environment-friendly alternatives to the lagoon system is being conducted at N.C. State University, and this research is being financed by both Smithfield Foods and Premium Standard Farms.

More than 70 percent of hog farms in North Carolina are contract farms, making this sector of the industry very consolidated in ownership.¹³ According to the U.S. Department of Agriculture, an industrial-scale farm is 5,000 hogs or more, and North Carolina has more industrial-scale farms than any other state.¹⁴ Large corporations such as Smithfield own sows themselves, have contracts with other farmers to raise more sows, and have direct contracts with most of the other hog packers.

Like most corporations in the industry, Smithfield is vertically integrated, meaning it has control over almost every aspect of the production chain, from raw materials, to production, distribution, and marketing. While it does not own the farms, it provides the animals and feed to farmers who raise the hogs to market under a contract.

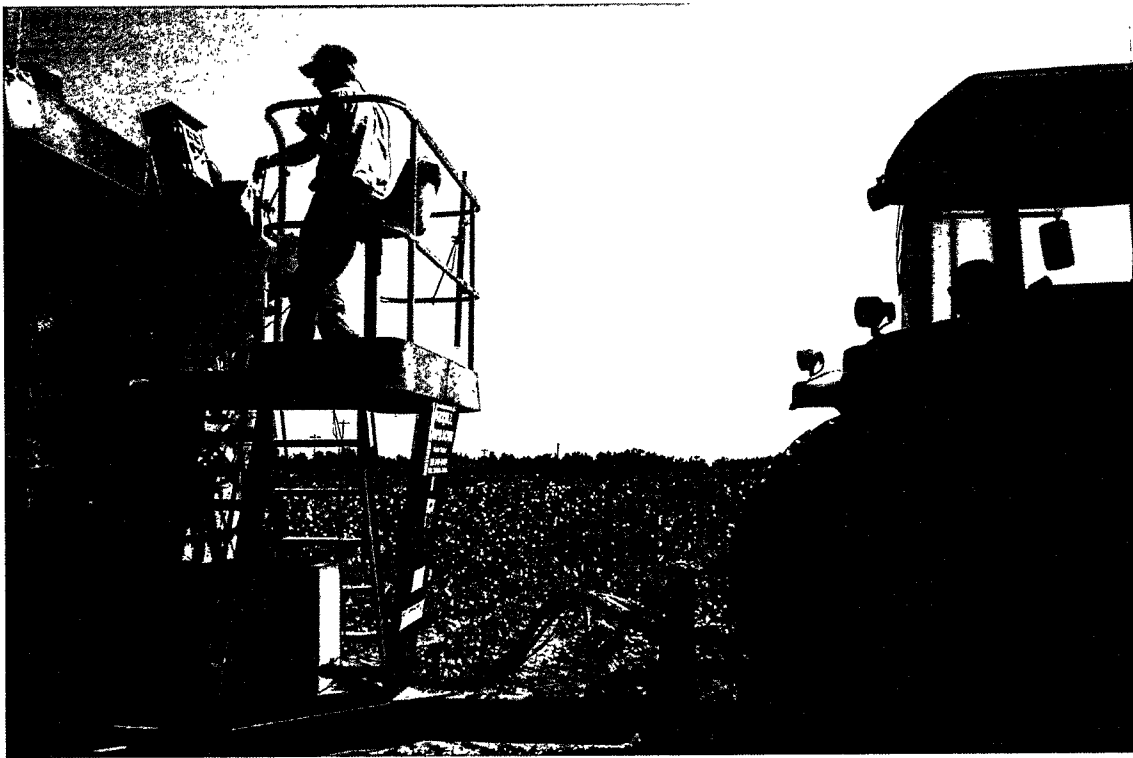
This control is a source of controversy in the industry. One view is that too much control in the corporations makes farmers financially more vulnerable than would otherwise be the case. As farmers under contract with Smithfield finance their own infrastructure, they are often forced to take out loans, and those loans often come from the corporation. Also, farmers in this industry are vulnerable in that they are very dependent on market timing because hogs are market-ready for only a brief period of time, giving the corporations even more leverage.¹⁵

The alternative view is that consolidation within the industry actually lessens risks for individual farmers. Tommy Stevens, interim chief executive officer of the North Carolina Pork Council, says that this consolidation within the industry "takes the burden off of farmers, who are provided with the animals that they raise on their own farms," and this makes the industry more stable. "The industry has also enabled the farmers to stay on the farm," says Stevens. "Many farmers have switched over from crops because hog production is so stable."

"In 1940, 33.6 percent of North Carolina's total number of employees were in agriculture (the majority in the eastern part of the state), but by 1979 this figure had plummeted to 3.6 percent. In 1959, there had been 43,000 farms with sales between 2,500 and 5,000 dollars; by 1969, there were fewer than 19,000. (In the same decade, farms with sales between 40,000 and 100,000 dollars increased fourfold.)"

—LINDA FLOWERS

THROWN AWAY: FAILURES OF PROGRESS
IN EASTERN NORTH CAROLINA



Karen Tan

Duplin County Agricultural Extension Director Ed Emory says that contract farms in both the hog and turkey industries in the county work well for the farmers and the corporations. Such arrangements are not unique to North Carolina. In fact, the trend toward contract farming is national and even international in scope. However, North Carolina clearly is a leader in this kind of arrangement. "I know many Midwesterners we've had here don't understand contract farming, but it's put stability here," Sampson County Agricultural Extension Director George Upton tells *Farm Futures* magazine. "We have enough livestock under contract that we can venture out and try new things."¹⁶ Ultimately, says Upton, virtually every commodity raised on the farm will be grown under contract.

Contract farming, in Emory's words, is "good both ways." Contracts provide a steady source of income for farmers who may not find such stability in field crops, and corporations do not have to maintain the farms yet have a reliable source of animals for slaughter at a predictable price. What is taken away from the farmer is the ability to sell his animals to the highest bidder. That can work for profit or loss depending on the market at the time the animals are sold for slaughter.

Many of the contract farmers are families who have been producing hogs for generations, says Julie Woodson of the N.C. Pork Council. The \$8 billion industry includes approximately 46,000 farmers across the state, says Woodson. But with the number of actual hog farms falling from 15,000 to some 3,600 in less than 15 years, the trend points clearly toward fewer and larger farms.

Poultry Production: Far More Than Chicken Feed

North Carolina also is a lead producer in poultry, and all of the top three turkey producers in the state, in rank order by county, are eastern: Sampson, Duplin, and Wayne. Indeed, the move toward contract farming originally started in poultry as early as the 1960s. "It's a way to get more dollars from the land without taking on all of the risk," says Emory. Using a small amount of land for a poultry house with the chicks provided by the poultry processor allowed the farmer to almost guarantee himself a certain level of income to hedge against the uncertainties of crop production caused by weather and price fluctuation. "Our farmers see contract farming as a good thing because it allows them to stay on their own farms," says Emory.

"...As the skilled craftsman, a farmer is proud of what he's made; the sheer looks of it count for much with him, as much almost, though on another level, as the money he will get from it.

Farmers commonly refer to a good crop, as to an animal they admire, as "pretty;" a sorry one they scorn as something that's "plumb thrown away." The sense here is economic, ultimately; yet appreciation is, also, aesthetic and unself-conscious; sensuous. I know of no other people who as matter-of-factly respond to beauty, whose intuition that the physical world is sometimes capable of sustaining them is more natural and honest."

—LINDA FLOWERS

THROWN AWAY: FAILURES OF PROGRESS
IN EASTERN NORTH CAROLINA

Turkey production overall was down in 2003, though cash receipts from livestock, dairy, and poultry were up primarily due to production of hogs and broiler chickens. Turkey producers, however, are optimistic about the Central American Free Trade Agreement, or CAFTA. North Carolina exports to the countries covered by the agreement—Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, and Nicaragua—grew by \$678 million between 2001 and 2004. The 2,400 employees of Carolina Turkeys in Mt. Olive produce more than 550 million pounds of turkey annually, and have not found a strong U.S. market for their product.¹⁷ Instead, most of the meat is exported, some of it going to Costa Rica, but with a previously thin profit due to Costa Rica's 40 percent tariff. While the overall economic impact of CAFTA may not be significant, small farmers throughout the state have hopes of a boost from the agreement.

Tobacco Men

*Late fall finishes the season for marketing;
Auctioneers babble to growers and buyers.
Pickups convoy on half-flat tires, tobacco
Piled in burlap sheets, like heaped-up
bedding
When sharecropper families move on in
November.*

—JAMES APPLEWHITE,
SELECTED POEMS

Crop Production: Life After the Tobacco Buyout?

While livestock, dairy, and poultry are the larger segment of the agriculture industry in the state and the region, crop production is not to be overlooked. Eastern counties are the top producers in the state of tobacco, cotton, soybeans, corn, peanuts, wheat, oats, potatoes, hay, and sorghum (see Table 6, p. 53). And, North Carolina ranks first in the nation for production of tobacco and sweet potatoes, producing 75.3 percent of flue-cured tobacco and 42 percent of sweet potatoes (see Table 8, p. 59). In 2003, the value of the cotton crop in the state was \$322 million, the third largest value ever, and production was up in several key crop commodities, including soybeans, sweet potatoes, and corn.¹⁸ Corn producers also see potential in CAFTA, under which export duties on fresh corn would immediately be eliminated, except to Nicaragua and the Dominican Republic, where such duties are expected to be eliminated in the next five to 15 years.¹⁹

The state also increased its production of blueberries in 2003 to 22.5 million pounds, representing a 45 percent increase over its 2002 crop. North Carolina exports much of its blueberry production. The Economic Research Service's "Fruit and Tree Nuts Outlook" for 2005 reported that berry crops were in strong demand in 2003 and 2004, which has boosted the value of most berry crops with overall growth from \$449 million in 1980 to \$1.5 billion in 2000 and \$2.2 billion in 2004. While berry crops account for a small share of fruit and tree nut production, their value accounts for 15 percent of cash receipts.²⁰ The U.S. Highbush Blueberry Council, among others, cites an increase in awareness of the health benefits of

blueberries, rich in antioxidants and an excellent source of Vitamin C, potassium, and dietary fiber, as a reason for the growth in production.

Tobacco Production: Will the Golden Leaf Retain Its Luster?

While sweet potatoes and fruit and nut crops have become a steady source of income for farmers in the state, one historically stable source of income for North Carolina farmers has become less stable: tobacco. The Rural Prosperity Task Force, in a February 2000 report, called the range of issues confronting tobacco “a challenge approaching the proportion of the boll weevil that began wiping out cotton crops in North Carolina in the 1920s. Since 1997, when farmers sold more than \$1.2 billion in tobacco, income from the crop has plummeted due to declining quotas, decreased consumption, and international competition. This year, farmers will face the lowest quotas in history; estimates are for tobacco sales of about \$640 million.”²¹ Tobacco receipts increased slightly to \$652 million for North Carolina farmers in 2004, but Congress has since elected to eliminate the 70-year-old quota system that controlled how much tobacco could be grown and who could grow it. The 2005 crop year marks the end of federal restrictions on tobacco production and price supports. The tobacco buyout is funded at \$10.1 billion, \$9.6 billion of which will be paid nationally to growers and allotment holders—those who owned the right to grow a proportional share of the total amount of tobacco approved for production each year—over the course of 10 years. Quotas are tied to the land through allotments based on growing patterns that date back to the 1930s.²² Farmers who did not own an allotment could buy or lease the right to grow tobacco from those who did. Thus, there are growers and there are quota holders, both of whom are to be compensated in the buyout program. Growers who do not own a quota will be compensated for their share of production in the 2002, 2003, and 2004 marketing years. About 40 percent of the \$9.6 billion will go to some 76,000 North Carolina farmers and quota holders, and recipients may take their payment in lump sum or in 10 annual installments.

The effect of the buyout on the industry statewide is a constant source of speculation. Experts such as Craig Hayes, deputy director of the Division of Agricultural Statistics in the N.C. Department of Agriculture and Consumer Services, are in a “wait-and-see” mode, as the first government payments were mailed in the fall of 2005. The buyout is funded

**Table 6. Leading
N.C. Counties in Crop
Production, 2004**

	Top Three Counties	Crop Production
Tobacco (lbs.)	Pitt*	18,949,000
	Johnston*	17,755,000
	Robeson*	16,925,000
Cotton (480 lb. bales)	Northampton*	110,300
	Halifax*	105,600
	Edgecombe*	79,400
Soybeans (bu.)	Robeson*	3,200,000
	Beaufort*	2,225,000
	Sampson*	2,120,000
Corn (bu.)	Beaufort*	6,005,000
	Duplin*	5,635,000
	Robeson*	5,015,000
Peanuts (lbs.)	Martin*	45,100,000
	Bertie*	43,000,000
	Edgecombe*	39,000,000
Wheat (bu.)	Robeson*	1,808,000
	Union	1,747,000
	Beaufort*	1,544,000
Barley (bu.)	Yadkin	120,000
	Rowan	108,000
	Surry	88,000
Oats (bu.)	Beaufort*	120,000
	Johnston*	102,000
	Robeson*	96,000
Sweet potatoes (cwt.)	Nash*	1,274,000
	Sampson*	980,000
	Johnston*	913,000
Irish potatoes (cwt.)	Camden*	679,000
	Pasquotank*	616,000
	Tyrrell*	428,000
Hay (tons)	Duplin*	79,000
	Wilkes/Sampson*	74,000
	Iredell	61,000
Sorghum (bu.)	Pasquotank*	127,500
	Hyde*	52,000
	Chowan*	50,200

* Denotes Eastern counties

lbs.=pounds

bu.=bushel baskets

cwt.=100 pound unit

Source: N.C. Department of
Agriculture and Consumer Services

by quarterly assessments on tobacco product manufacturers and importers based on their product's share of sales in the U.S. market.²³

Some experts believe the huge injection of funds from the buyout payments will boost the economies of the eastern counties. John Bishop, an economics professor at East Carolina University in the heart of flue-cured tobacco country, isn't so certain. "It will be closer to a wash than people think," Bishop says.²⁴ Pitt County, the state's top tobacco production county, is estimated to receive about \$220 million, but Bishop believes dropping land values and a drop in tobacco revenue from lower crop prices will cancel out the payments. All in all, Bishop says the impact of the payments on the local eastern economies will be determined by the whether the buyout dollars are spent as normal income or are invested. Invested income would have much less of an effect locally.

Experts predict many tobacco farmers will stop growing tobacco as the federally guaranteed price support program ends—especially those farmers close to retirement age or those with smaller farms.

*Farming is mighty easy when your
plow is a pencil and you're a thou-
sand miles away from the cornfield.*

—PRESIDENT DWIGHT D. EISENHOWER

The average age of tobacco farmers is 55, so retirement could be a strong lure for those who reap substantial financial gain from the buyout.²⁵ Brian Long, a spokesperson for N.C. Agriculture Commissioner Steve

Troxler, says the aging farmer is of huge concern to the commissioner. "It's something that the commissioner talks about often when he speaks to groups," says Long. "The average age is going up, which means fewer and fewer young people are going into farming." The problem is most acute in tobacco with the infusion of buyout money, but Long says the problem is larger and the answer is to encourage more young people to enter or stay in the profession. "How do you do it? You've got to show them it's a viable career."

Emory says it's too soon to write off the golden leaf. "It still is the most profitable field crop that we have," says Emory. "Our farmers are still growing a lot of it on contract," he says. "Tobacco is going to be in transition for about three years to see who is going to be able to grow it profitably based on that contract."



Karen Tam

**Table 7. Cash Receipts for Livestock and Crops
in North Carolina's Eastern Counties, 2004**

Type of Production	Top Three Counties	Dollars
Livestock, Dairy, and Poultry	Sampson*	\$462,936,000
	Duplin*	\$454,928,000
	Union	\$226,389,000
Crops	Johnston*	\$125,936,000
	Henderson	\$121,515,000
	Mecklenburg	\$104,067,000

*Denotes Eastern counties

Eastern County	Type of Production	Dollars	Rank Among 100 N.C. Counties
1. Beaufort	Livestock, Dairy, and Poultry	\$15,916,000	47
	Crops	\$47,523,000	17
2. Bertie	Livestock, Dairy, and Poultry	\$40,895,000	21
	Crops	\$38,699,000	23
3. Bladen	Livestock, Dairy, and Poultry	\$171,250,000	6
	Crops	\$53,093,000	15
4. Brunswick	Livestock, Dairy, and Poultry	\$12,172,000	54
	Crops	\$19,516,000	48
5. Camden	Livestock, Dairy, and Poultry	\$856,000	90
	Crops	\$18,041,000	54
6. Carteret	Livestock, Dairy, and Poultry	\$207,000	99
	Crops	\$11,565,000	73
7. Chowan	Livestock, Dairy, and Poultry	\$9,877,000	62
	Crops	\$25,484,000	35
8. Columbus	Livestock, Dairy, and Poultry	\$50,592,000	25
	Crops	\$59,501,000	12
9. Craven	Livestock, Dairy, and Poultry	\$17,132,000	43
	Crops	\$24,675,000	37
10. Cumberland	Livestock, Dairy, and Poultry	\$38,863,000	33
	Crops	\$20,766,000	45
11. Currituck	Livestock, Dairy, and Poultry	\$1,542,000	86
	Crops	\$11,986,000	70
12. Dare	Livestock, Dairy, and Poultry	\$40,000	100
	Crops	\$92,000	100
13. Duplin	Livestock, Dairy, and Poultry	\$449,824,000	1
	Crops	\$68,714,000	8
14. Edgecombe	Livestock, Dairy, and Poultry	\$37,673,000	32
	Crops	\$58,504,000	13
15. Gates	Livestock, Dairy, and Poultry	\$14,706,000	49
	Crops	\$17,818,000	55
16. Greene	Livestock, Dairy, and Poultry	\$102,387,000	10
	Crops	\$35,129,000	27

—continues

Table 7, continued

Eastern County	Type of Production	Dollars	State Rank
17. Halifax	Livestock, Dairy, and Poultry	\$23,271,000	37
	Crops	\$46,671,000	18
18. Harnett	Livestock, Dairy, and Poultry	\$72,013,000	15
	Crops	\$45,638,000	20
19. Hertford	Livestock, Dairy, and Poultry	\$27,638,000	35
	Crops	\$20,294,000	47
20. Hoke	Livestock, Dairy, and Poultry	\$19,607,000	40
	Crops	\$14,250,000	63
21. Hyde	Livestock, Dairy, and Poultry	\$746,000	92
	Crops	\$25,002,000	36
22. Johnston	Livestock, Dairy, and Poultry	\$71,403,000	16
	Crops	\$134,722,000	1
23. Jones	Livestock, Dairy, and Poultry	\$51,230,000	24
	Crops	\$19,303,000	49
24. Lenoir	Livestock, Dairy, and Poultry	\$73,179,000	14
	Crops	\$54,411,000	14
25. Martin	Livestock, Dairy, and Poultry	\$12,080,000	56
	Crops	\$44,396,000	22
26. Nash	Livestock, Dairy, and Poultry	\$54,088,000	22
	Crops	\$64,984,000	10
27. New Hanover	Livestock, Dairy, and Poultry	\$257,000	98
	Crops	\$7,109,000	83
28. Northampton	Livestock, Dairy, and Poultry	\$42,243,000	29
	Crops	\$34,463,000	28
29. Onslow	Livestock, Dairy, and Poultry	\$53,407,000	23
	Crops	\$17,092,000	57

These tobacco farmers entered into contracts before the buyout, and will continue to grow tobacco while receiving buyout payouts, says Emory. Farmers are taking a risk in continuing production in the uncertain environment, but as Emory puts it, "Farmers take a risk every day." Tobacco has been a very profitable crop on a per-acre basis for Duplin County. While tobacco farms make up only one percent of cropland, they make up 50 to 60 percent of income from field crops for the county. Therefore, it will be a hard crop to replace in counties such as Duplin where it is such a large percentage of the field crop income.

Extension director Upton, of Sampson County, says tobacco production barely dipped with the end of the federal tobacco program. In 2005, only 200

fewer acres of tobacco were grown in the county than in 2004, the last year of the tobacco program. That's about a 4 percent drop for a county that has more than 5,000 acres in production. Tobacco contracts typically promise that the grower will provide a given amount of graded tobacco at a preset price. Unlike contracts with hog farmers who raise company-owned pigs, the risk of crop loss lies with the farmer, Upton says.

Eliminating quotas will help reduce the costs of production for farmers who no longer have to buy or lease the right to grow tobacco, thus leading to lower market prices. Changes in global tobacco production could decrease prices in the U.S., but result in an increase in production in Eastern North Carolina.²⁶ North Carolina tobacco currently sells for less than

Table 7, continued

Eastern County	Type of Production	Dollars	State Rank
30. Pamlico	Livestock, Dairy, and Poultry	\$771,000	91
	Crops	\$13,113,000	64
31. Pasquotank	Livestock, Dairy, and Poultry	\$688,000	93
	Crops	\$35,633,000	26
32. Pender	Livestock, Dairy, and Poultry	\$61,048,000	20
	Crops	\$27,393,000	32
33. Perquimans	Livestock, Dairy, and Poultry	\$16,577,000	45
	Crops	\$22,247,000	41
34. Pitt	Livestock, Dairy, and Poultry	\$47,050,000	27
	Crops	\$65,066,000	9
35. Robeson	Livestock, Dairy, and Poultry	\$104,764,000	8
	Crops	\$73,869,000	7
36. Sampson	Livestock, Dairy, and Poultry	\$468,172,000	2
	Crops	\$98,069,000	4
37. Scotland	Livestock, Dairy, and Poultry	\$39,568,000	30
	Crops	\$9,991,000	77
38. Tyrrell	Livestock, Dairy, and Poultry	\$4,580,000	75
	Crops	\$18,350,000	51
39. Washington	Livestock, Dairy, and Poultry	\$19,994,000	39
	Crops	\$29,026,000	31
40. Wayne	Livestock, Dairy, and Poultry	\$187,414,000	5
	Crops	\$60,776,000	11
41. Wilson	Livestock, Dairy, and Poultry	\$9,810,000	63
	Crops	\$96,325,000	5

Source: N.C. Department of Agriculture and Consumer Services, North Carolina Agriculture Statistics, Cash Receipts (2004).

the average U.S. market price of tobacco but for more than the average price of tobacco from Brazil, the dominant producer. As the majority of tobacco crops in the U.S. and Brazil are under contract with international companies, changes in production after the buyout will likely be determined by these companies. Although world tobacco production is not expected to increase significantly, over time it is predicted that there will be an increase in U.S. production; growing the majority of the world's tobacco in one nation, Brazil, is said to be risky.²⁷ Tobacco production also is projected to become more consolidated as tobacco farm sizes continue to increase, causing many farmers to transfer to niche and alternative farming. Thus, tobacco farmers will be taking a risk in the next few years. Whether they

continue growing tobacco or venture into new areas of agriculture, the future of agriculture in the East will in part be determined by their success.

Alternative Crop Farming

While the large farms are growing larger, there has simultaneously been an increase in smaller, specialty farms. Such farms focus on so-called "specialty crops" that fit a market niche overlooked by framers growing standard commercial varieties. The move toward specialty farming is occurring in both Eastern North Carolina and the state as a whole. N.C. Agriculture Commissioner Steve Troxler cites the growing importance of specialty crops as the transition is made from tobacco. He says North

"But if, as often happened, produce didn't bring enough even to pay for itself, let alone anything else; if beans and cucumbers, pepper and squash, were brought back home—the farmer damned if he meant to give them away for fifty or seventy-five cents or maybe a dollar a bushel (the basket alone costing him twenty-five or fifty cents—and allowed to rot or be fed to the hogs, then the only thing to do was borrow more and more heavily—knowing, as you always knew, that tobacco, its price artificially maintained through government support, might bring but the bare minimum"

—LINDA FLOWERS

*THROWN AWAY: FAILURES OF PROGRESS
IN EASTERN NORTH CAROLINA*

Carolina has become the third most diverse state in agriculture, behind only California and Texas. Ed Estes, associate head of the Agriculture and Resource Economics department at North Carolina State University, adds that farmers are looking for high value crops, such as melons, which have the potential to yield thousands of dollars an acre compared with \$20 to \$25 an acre for corn and soybean crops.

These crops, however, come with much more of a risk, as there is a high variance in their yields. "The ability to take a risk is the difference between someone who is successful and someone who is not," says Estes. The search for specialty, or alternative, crops is ongoing as agricultural researchers and farmers seek to reap a windfall harvest in changing consumer tastes and trends. "Niche markets are never big but constantly evolving," says Estes. "It's a different taste with a limited number of consumers who are willing to pay for that experience." He says farmers in the state also are tending to shift from labor intensive crops, citing an increase in pick-your-own strawberry farms as an example. Estes says that overall, North Carolina could already be considered a niche player, outside of turkey and hog production.

"Specialty crops have really taken off the last few years and are an important part of the agriculture economy," says Steven Leath, director of the N.C. Agricultural Research Service. "It is important to keep in mind that soybeans started out as a specialty crop 40 years ago.... You just never know what is going to take off." Lorraine Ruffin, whose brothers all farm on their land in Wilson County, says farmers are looking to new crops with the tobacco buyout because many have large debts from borrowing for equipment purchases. However, many of the new specialty farms appear much more labor

intensive. One example is the sprite melon, a yellow, softball-sized fruit with a taste similar to both watermelon and honeydew melon. The sprite melon is durable, has a long shelf life, and can ship easily. Ruffin's brother, Bill Harrold, began to think toward alternative crops about four years ago because of the tobacco buyout, although his sprite melon crops "are a lot more work than tobacco, with much more [labor] per acre required."

Nonetheless, alternative crops are growing in popularity among North Carolina farmers. The number of organic farms also continues to increase across the state, as demand increases. More organic food was purchased in conventional supermarkets than at food cooperatives and natural food stores for the first time in 2000, and consumer interest in organically grown foods continues to increase market opportunities for organic farmers.²⁸ Other alternative crops such as sea oats and even aquaculture are attracting various farmers, including those who are seeking to make the switch from tobacco. As restrictions are increased on the wild harvest of various seafood species due to over-fishing and habitat concerns, and those supplies become more limited, aquaculture is expected to grow further throughout the nation, and Eastern North Carolina seems well-situated to take advantage of this trend. Already, North Carolina aquaculture practitioners raise such species as clams, oysters, hybrid striped bass, and trout.

Global climate changes also are expected to have an impact on agriculture, as gradual warming is predicted to decrease soil moisture and reduce water availability for irrigation, and warmer temperatures and milder winters will increase the presence of agricultural pests. Kenneth Sorenson, extension entomologist at N.C. State University, says that specialty crops can be more vulnerable to insects and to pesticides, as problems and reactions are unique with

each crop and are still being researched. Sorenson says each unique crop brings its own challenges. While “concern seems to always be with developing the product that will make the most money, we must remember to work within the agricultural system,” Sorenson says.

Specialty crops may not have a tremendous overall impact on the state or even the eastern region, but statistician Dee Webb of the N.C. Department of Agriculture says that on a “county-by-county level, these alternative crops will have an impact,” especially in smaller Eastern counties that are traditionally supported by agriculture. Nick Augostini, marketing specialist for specialty crops at the department’s Cunningham Research Station in Kinston, N.C., agrees. “They are certainly not going to hurt the industry,” says Augostini. Indeed, a new and different product often will lead to success. “Twenty years ago, supermarkets had 20 to 60 produce items throughout the year,” Augostini says. “Now, it can be over 600 items. A successful crop will have to stand out to the consumer.” For example, Augostini says the sprite melon is a specialty crop with a great deal of potential because it is new money to the state, it has a long shelf life, and there is a high demand from consumers for melons. North Carolina sprite

melon sales in 2004 generated more than \$3 million. Augostini says that research must be market-driven, so that farmers are always producing crops for which there is a market.

If the reaction of Charlotte residents at a watermelon tasting is any indication, the producers of alternative crops *are* having success in reaching new markets. Kids at a research station-sponsored watermelon tasting were shocked to find that some watermelons still contain, of all things, seeds! “What are we supposed to do with those black things?” Augostini recalls the children asking. Some had never tasted a watermelon with traditional black seeds, having only experienced seedless varieties.

But if marketing is a crucial part of these crops, farmers are traditionally production specialists, and many are not familiar with the marketing and entrepreneurial aspects that come with new, alternative crops, says Blake Brown, a professor and extension economist of agriculture and resource economics at N.C. State University. He says it is yet to be seen whether farmers will develop the new skills required to have success in new areas of the industry. Ronnie Handey, a second generation produce farmer from Wallace, N.C., is one who has learned that it is not wise to get ahead of the market. Handey reluctantly

Table 8. North Carolina Agricultural Products Ranking in Top Five Among the 50 States, 2004

Rank	Item	Percent of U.S. Production	Top 3 States with N.C.
1	Total tobacco	39.8	NC, KY, TN
	Flue-cured tobacco	75.3	NC, SC, VA
	Sweet potatoes	42.0	NC, CA, MS
2	Hogs and pigs	16.2	IA, NC, MN
	Christmas tree—cash receipts	21.3	OR, NC, MI
	Turkeys raised	14.8	MN, NC, AR
3	Cucumbers for pickles	11.8	MI, FL, NC
	Trout sold	8.3	ID, WA, NC
	Poultry & egg products—cash receipts	9.2	GA, AR, NC
4	Blueberries	10.1	MI, NJ, OR, NC
	Broilers (chickens)	8.6	GA, AR, AL, NC
	Greenhouse and nursery—cash receipts	6.2	GA, TX, AL, NC
	Strawberries	.8	CA, FL, OR, NC
5	Catfish sold—food size	1.5	MS, AL, AR (NC-5)
	Peanuts	8.4	GA, TX, AL (NC-5)
	Snap beans	4.6	FL, GA, CA (NC-5)

Source: N.C. Department of Agriculture and Consumer Services

decided to give the sprite melon a try based on the advice of extension specialists, but no one would buy them. Handey found that his customers at the farmers markets in Kinston and his family's produce stand in Wallace preferred plain, old-fashioned cantaloupes.

John Sparrow, who owns farmland in Kinston, says marketing is something he would like to learn more about, though he too is approaching the experiment cautiously. "If we start these specialty crops, who is going to buy them? Is there a market for them? We can develop all sorts of crops, but we need someone who will buy them. Whoever marketed Vidalia onions is brilliant. They taste the same as white onions to me, but were marketed as having a new taste. Marketing is what the research stations need to focus on." Sparrow rents his farmland to farmers who primarily grow corn, soybeans, and tobacco.

Agriculture research at the state's 18 research stations is becoming more necessary now than ever, and with an increasingly urban legislature, funding for this research is getting harder to come by.²⁹ Since 1998, the N.C. Agriculture Department's budget has

*Men who can graft the trees and
make the seed fertile and big can
find no way to let the hungry people
eat their produce. Men who have
created new fruits in the world can-
not create a system whereby their
fruits may be eaten. And the failure
hangs over the State like a great
sorrow.*

—JOHN STEINBECK
THE GRAPES OF WRATH

been cut by 9.6 percent, from \$58.5 million to \$52.2 million, and its work force has been trimmed by 127 positions. However, learning what markets are available as well as methods to produce each unique crop requires extensive research that will remain vital to an increasingly complex industry.

Developments in the industry also are allowing for more than just producing commodities; they are adding value to them. For example, a new manufacturing facility to be constructed in 2006 in Mt. Olive will use renewable resources, such as oil from soybeans, to produce bio-diesel.³⁰ Demand for bio-fuels manufactured from renewable sources is anticipated to grow rapidly due to federal tax incentives. Many government entities also now mandate that a percentage of their vehicles use bio-diesel, according to the N.C. Department of Agriculture, thus increasing the need for soybean production in the state. Blake Brown says that value-added research and niche marketing are key to the success of specialty crops. This added value can range from the creation of the bio-diesel plant, to marketable melons such as new small, seedless watermelons created with smaller families in mind. At the Tidewater Research Station in Washington County, rice is being genetically engineered to produce proteins found in human milk in hopes that it will eventually be used in products ranging from sports drinks to rehydration formulas.

Upton, the Sampson County agricultural extension chairman, sees limited potential in specialty crops for the typical Eastern North Carolina farmer. "I don't think it will be the salvation, but a lot of people do," says Upton. He holds more hope for the development of new markets for existing commodities, such as the use of soybeans for bio-diesel. His

**Table 9. Rank in
Cash Receipts of
Major North Carolina
Agricultural Products**

Rank	Product	2004 Cash Receipts (in Millions)
1	Hogs	\$2,709
2	Broiler Chickens	2,042
3	Greenhouse/Nursery	832
4	Tobacco	620
5	Turkeys	449
6	Cotton	304
7	Soybeans	288
8	Cattle and Calves	258
9	Chicken Eggs	240
10	Corn	182

Source: N.C. Department of
Agriculture and Consumer
Services, Agricultural Statis-
tics Division



Karen Tam

reasoning? Farmers already are growing the crop and production costs are low. Thus, new sources of demand will drive up profitability.

Estes agrees that specialty farming is not going to provide an alternative for a farmer growing 3,000 acres of soybeans. More likely, it will be a farmer looking to lessen dependence on his tobacco crop or an individual who wants to commit one or two acres to trying something different. "In addition to specialty crops, there's going to have to be some large acreage solution," says Estes.

It is uncertain what the next few years will bring to the industry. Corporations in the hog industry will be working towards more environmentally friendly farming methods, as North Carolina becomes increasingly strict on environmental regulation. During the first years of the federal buyout, tobacco farmers may stick it out, waiting to see if changing global production will boost sales. Others may retire from farming. Still others may try their hands at alternative crops, feeding the steadily growing and diverse needs of consumers. Trends in consolidation toward larger farms in such traditionally powerful industry segments as hogs, poultry, and tobacco likely will continue, as will the trend toward fewer and larger farms generally. These trends will have an out-sized impact on Eastern North Carolina, since the East

is more reliant on agriculture than the rest of the state.

The North Carolina Rural Prosperity Task Force sees three major challenges: fluctuating prices on world markets, the decline in importance of tobacco in the East and statewide, and potential devastation from hurricanes and flooding. The task force offered eight recommendations to help farmers weather the coming storms. These included: (1) creation of the Agricultural Advancement Consortium to research

"Never to have attended the fall of night from a chaise-swing in the backyard, work mercifully forgotten, the corn thick behind you, and the voices soft and fine in the darkening, is to have known privation, too."

—LINDA FLOWERS

**THROWN AWAY: FAILURES OF PROGRESS
IN EASTERN NORTH CAROLINA**

trends in agriculture and identify and promote new economic opportunities for farmers; (2) increased funding for promoting North Carolina agricultural and biotechnology products; (3) expanded marketing of horticultural products to help replace some of the income lost from the tobacco quota buyout; and (4) expanding the number of facilities available to farmers to process their crops and add value in the marketplace.³¹

These efforts are important as the rural economy seeks to right itself, though not everyone is certain that efforts such as increased marketing and production of alternative crops will be enough to fill the potential void left by the end of the tobacco quota program and the uncertainties of international competition. With increasing farm size, fewer farms, greater environmental concerns, and development pressure brought by population growth, the role of agriculture may be reduced in the future—throughout North Carolina but most profoundly in the East.

Estes, the North Carolina State University agricultural economist, says some analysts see the end of American agriculture within the next 50 years, as global trade barriers fall and land and labor costs increase in the U.S. “You’re going to see more and more reasons for not trading eliminated,” says Estes. “Certainly we’ll grow less as global pressures continue to exist, and we can get cheaper foods elsewhere. We going to have less agriculture 10 to 20 years from now than we do now, and the agriculture we do have is going to have to be much higher value if even one in 10 farmers are going to survive.”

Adds North Carolina State University economist Michael Walden, “I don’t think it’s going to fade away, but I think it will be more competitive.” Walden says the U.S. enjoys a competitive advantage over many international producers due to its growing season, rich soil, and government-funded technical support provided through the agricultural extension service. But agricultural trade barriers increasingly are at the center of international trade disputes. Like Estes, Walden believes many of these barriers ultimately will fall and the market ultimately will flood with lower cost food from places such as Asia, Mexico, and South America. In response, the U.S. will continue its shift toward fewer and larger farms, with more and more contract arrangements to smooth out the risk.

Even in the face of these changes, agriculture retains a great deal of vitality and is likely to remain vibrant for the foreseeable future. “Agriculture is a necessity,” says Nick Augostini. “People have to eat, they have to buy clothes, and they have to build houses. All of this comes from agriculture.” ■

FOOTNOTES

¹ Bryce Knorr, “Hotbeds of Profitability: The Best Places To Farm,” *Farm Futures* magazine, Decatur, Ill., September 2005, pp. 13–18.

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⁴ *Ibid.* Data compiled from Table 8 using the 41 Eastern counties; data unavailable for Camden, Dare, and New Hanover counties.

⁵ Lu-Ann Coe, “Understand agriculture’s value,” guest editorial, *The Charlotte Observer*, April 7, 2000, p. 14A.

⁶ U.S. Department of Agriculture, note 3 above, Table 1: County Summary Highlights, 2002.

⁷ Michael Walden, “North Carolina County Agribusiness Values,” Department of Agricultural and Resource Economics, North Carolina State University, Raleigh, N.C. On the Internet at www.ag-econ.ncsu.edu/faculty/walden/counties.htm.

⁸ N.C. Department of Agriculture and Consumer Services and the National Agriculture Statistics Service, USDA. *North Carolina Agriculture Statistics 2004*, Raleigh, N.C., 2005.

⁹ North Carolina General Statute 143-215.10A.

¹⁰ By contrast, the state experienced 700 spills in excess of 10,000 gallons or more in 1998 from municipal waste water treatment systems or sanitary sewer systems according to the N.C. Department of Environmental and Natural Resources.

¹¹ North Carolina Department of Agriculture and Consumer Services, “Agriculture Overview, Livestock,” N.C. Department of Agriculture, Raleigh, N.C., on the Internet at www.ncagr.com/stats/general/livestoc.htm. See also Markets and Management Studies Program, Duke University. “North Carolina in the Global Economy: Hog Farming” Spring 2005. On the Internet at www.soc.duke.edu/NC_GlobalEconomy/hog/overview.php

¹² Steve Hannaford. “Industry Brief: U.S. Pork,” December 28, 2003. Available at www.oligopolywatch.com/2003/12/28.html

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¹⁴ Markets and Management Studies Program, Duke University. “North Carolina in the Global Economy: Hog Farming,” Spring 2005, p. 1. Available on the Internet at www.soc.duke.edu/NC_GlobalEconomy/hog/overview.php

¹⁵ *Ibid.*

¹⁶ Knorr, note 1 above.

¹⁷ Karen Rives. “CAFTA doesn’t spook all of N.C.,” *The News & Observer*, Raleigh, N.C., May 12, 2005, p. 1A.

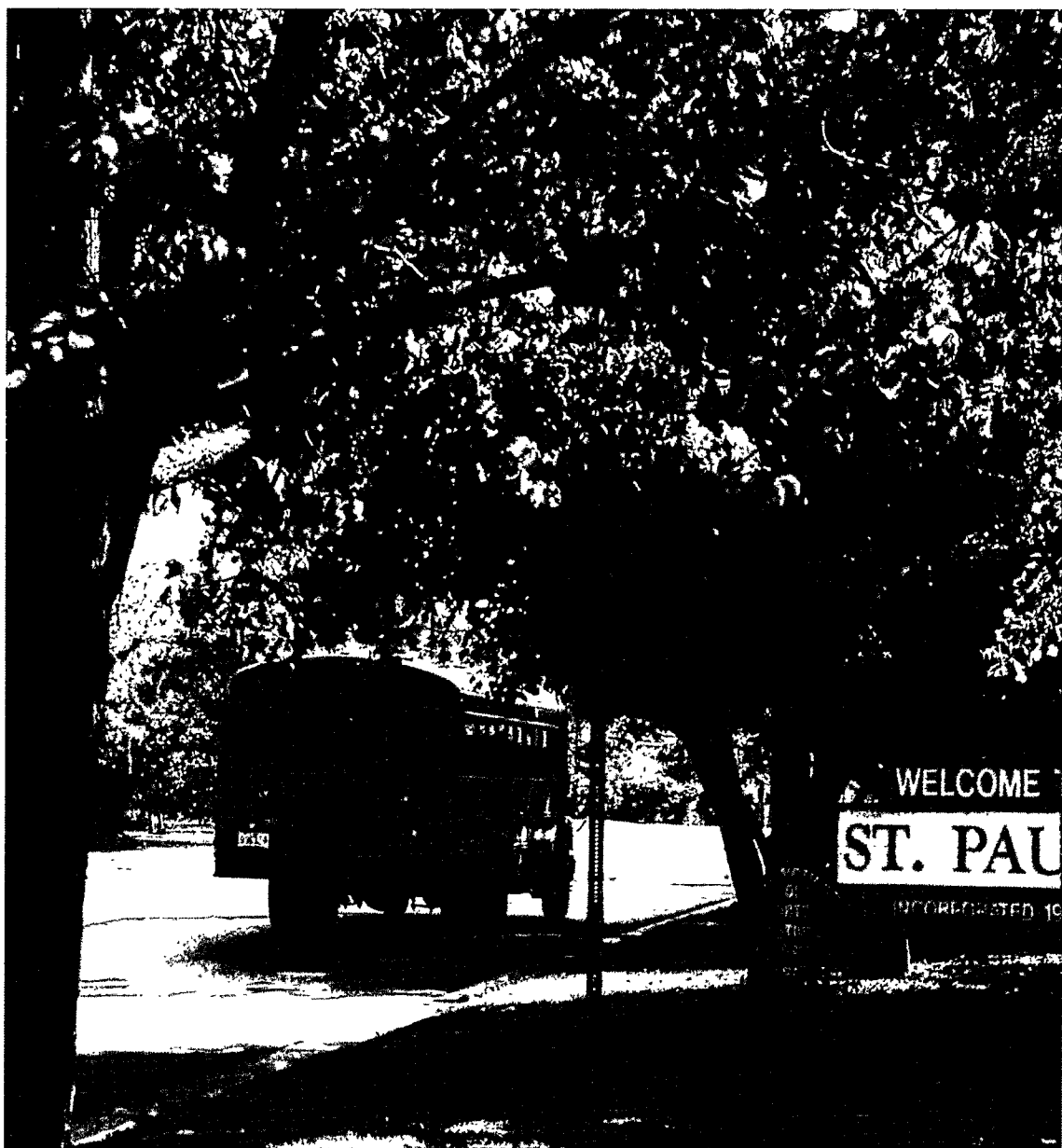
¹⁸ NC Department of Agriculture and Consumer Services and the National Agriculture Statistics Service, U.S. Department of Agriculture, *North Carolina Agriculture Statistics 2004*, Raleigh, N.C., 2005, p. 42.

¹⁹ Rives, note 17 above.

²⁰ Susan Pollack and Agnes Perez, “Fruit and Tree Nuts Outlook,” March 31, 2005, Electronic Outlook Report from the Economic Research Service, U.S. Department of Agriculture. Available on the Internet at www.ers.usda.gov/publications/fts/mar05/FTS315.pdf

²¹ Leslie Boney and Lucy Gorham, *North Carolina Rural Prosperity Task Force Report*, N.C. Department of Commerce, Raleigh, N.C., Feb. 21, 2000, p. 57.

²² For more on this topic, see William R. Finger, editor, *The Tobacco Industry in Transition*, North Carolina Center for Public



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Policy Research, Raleigh, N.C., 1981. See especially pp. 13–25.

²³ A. Blake Brown, Professor, Agricultural and Resource Economics, “A Summary of the Tobacco Buyout,” North Carolina State University, November 12, 2004, Available at N.C. State University’s Tobacco Buyout Information Website at www.cals.ncsu.edu:8050/advancement/tobaccobuyout/buyoutbkgd.htm.

²⁴ Brian McDearmon, “Tobacco buyout should mean double in Pitt,” *The Daily Reflector*, Greenville, N.C. June 21, 2005, p. 1A.

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²⁶ A. Blake Brown, Professor and Extension Economist, “U.S. Flue-Cured Tobacco Outlook and Situation,” Department of Agricultural and Resource Economics, N.C. State University, December 8, 2004. Available on the Internet at www.ces.ncsu.edu.

²⁷ *Ibid.*

²⁸ Carolyn Dimitri and Catherine Greene, “Recent growth patterns in the U.S. Organic Foods Market,” Economic Research Service, U.S. Department of Agriculture, September 2002. Available on the Internet at www.ers.usda.gov/publications/aib777/.

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³¹ *North Carolina Rural Prosperity Task Force Report*, note 21 above, pp. 58–64.