

# Agricultural Trends in New Hampshire



*a Labor Market Information Report*

## Acknowledgments

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**Agricultural Trends in New Hampshire**

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# Agricultural Trends in New Hampshire

Some people have a concern that New Hampshire continues to lose prime and locally important farmland to economic factors and development pressures.<sup>1</sup> Potential conversion of farmland is a concern because agriculture in New Hampshire is an important element in open-space land use, which helps maintain the Granite State's scenic rural character and is the hallmark of New Hampshire's quality of life.<sup>2</sup> Agricultural Census data from U.S. Department of Agriculture show that total farmland in New Hampshire has been more than halved between 1969 and 1987.

Studies shows that the mix of farm products is changing and that non-food products (e.g., greenhouse and nursery) have become one of the primary cash crops in New Hampshire.<sup>3</sup> This

change in agricultural products has affected employment in the agricultural industry.

## How big is the agricultural business in New Hampshire

According to New Hampshire Department of Agriculture, Markets & Food the sale value of the agricultural industry is nearly \$700 million. The commercial farms in New Hampshire are managing over 150,000 acres of cropland plus an additional 250,000 additional acres devoted to pasture, maple and Christmas tree production, conservation and other agricultural uses. But how big an employer is agriculture? Is agriculture a growing industry? These are some of the questions that will be addressed.

### Agricultural Employment in New Hampshire<sup>4</sup>

	Employment and Wage data			Census of Agriculture			
	Agricultural services	Agricultural Productions		Hired Labor		Operators	
		Crops	Livestock	150 days or more	Less than 150 days	total	full time
1987	2,220	595	301	n/a	n/a	2,515	1,153
1992	2,452	657	345	1,351	3,183	2,445	1,204
1997	3,270	837	467	1,386	3,696	2,937	1,260

1997	Employment and Wage data			Census of Agriculture			
	Agricultural services	Agricultural Productions		Hired Labor		Operators	
		Crops	Livestock	150 days or more	Less than 150 days	total	full time
Statewide	3,270	837	467	1,386	3,696	2,937	1,260
Belknap	151	n	n	49	169	184	
Carroll	131	n	0	47	168	177	
Cheshire	137	n	n	204	208	293	
Coos	12	n	n	54	137	185	
Grafton	220	n	n	89	498	406	
Hillsborough	1,031	96	n	231	630	391	
Merrimack	383	239	29	308	571	413	
Rockingham	727	225	39	189	665	407	
Strafford	258	192	n	108	302	235	
Sullivan	101	26	70	107	348	246	

<sup>1</sup> Citizen Panel on the Future of Food in New England, Sponsored by the University of New Hampshire, Office of Sustainability Programs and Cooperative Extension, June 2, 2003, p.4.

<sup>2</sup> Preserving Rural Character: The Agricultural Connection, NH Office of State Planning, OSP Technical Bulletin #6, revised, Winter 2000, p.1.

<sup>3</sup> Northeast Farm to Food - Understanding Our Region's Food System, The Northeast Sustainable Agriculture Working Group, September 2002, p.63.

<sup>4</sup> There might be an overlap in the data from employment in the agricultural productions industries and hired labor.

In 2000 total taxable wages in Agriculture, forestry and fishing were \$130 million. Considering that this amount only accounts for less than one percent of the total taxable wages for New Hampshire, it can be concluded that agriculture is not a big employer. Because most farmers are self-employed and use unpaid family workers as well as seasonal and migrant workers a lot of the employment in Agriculture is employment not covered by Unemployment Insurance and therefore not included in taxable wages.

By comparing data from New Hampshire Department of Agriculture, Markets & Food one realizes a big difference between the 120 units that are reported as tax paying employers in 2002 within the agricultural productions industries and the approximately 3,100 individual operations that are registered by Department of Agriculture. Another example is to compare New Hampshire Agricultural Department's 174 registered dairy farms with the 50 units reported in 2002 for Unemployment Insurance tax under the industry Agricultural production for livestock (which also include turkey, poultry, and egg production facilities).

A full picture of agriculture in New Hampshire requires using data from different sources, primarily US Census of Agriculture and Covered Employment and Wages Database (ES-202).

## Farms and farmland in New Hampshire

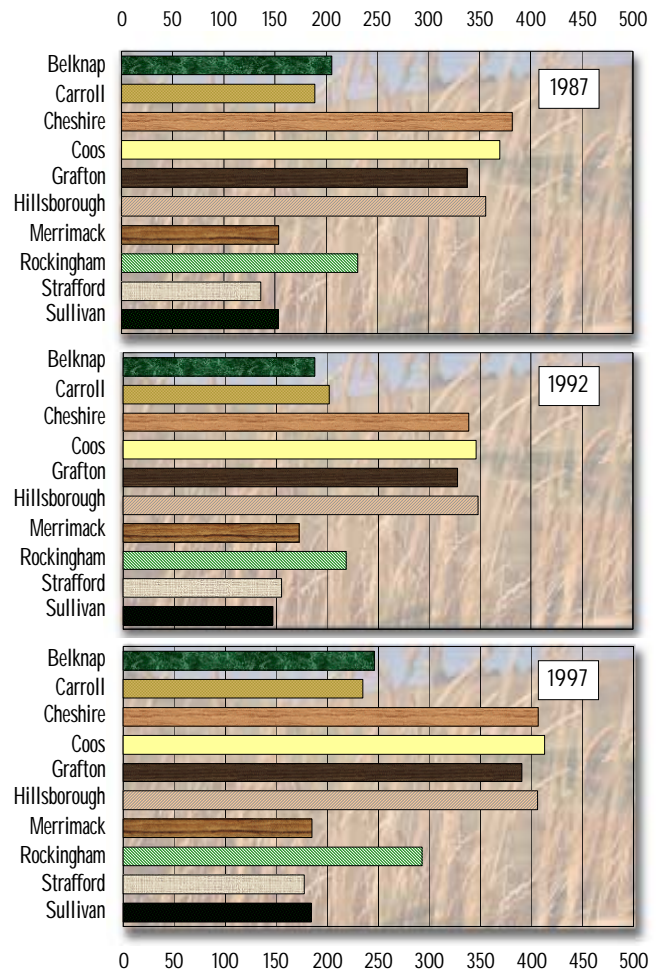
Data from the US Census of Agriculture from 1997 will help provide a better understanding of how many farms and how much land is used for farming in New Hampshire. The 1997 Agricultural Census showed that only 7.2 percent of approximated total land area in New Hampshire belongs to farms. Most of the land in New Hampshire is covered with trees. According to New Hampshire Timberland Owners Association nearly 83 percent of the state's land-base is covered with trees.<sup>5</sup>

<sup>5</sup> *New Hampshire's Current Use program: The Cornerstone of Forestland Conservation*, New Hampshire Timberland Owners Association, <http://www.nhtoa.org/nhcurrentuse.htm>, accessed September 19, 2003.

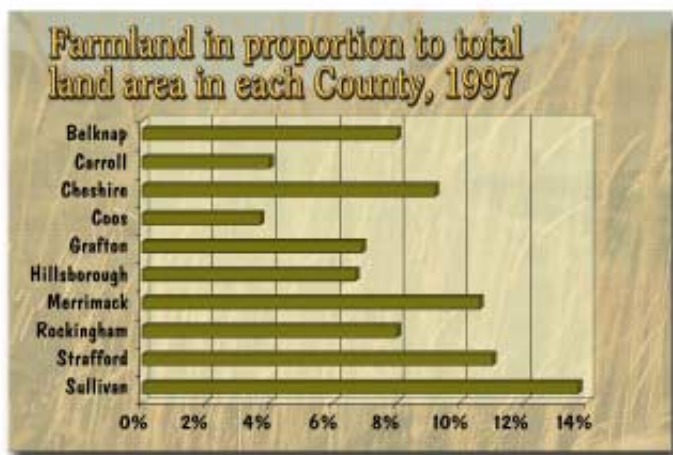
In 1987 there were 2,515 farms in the state. The number of farms decreased by three percent to 2,445 in 1992 and then increased by 20 percent to 2,937 in 1997. And as mentioned earlier total number of registered commercial farms is today more than 3,100. The number of full time farms increased from 1,153 farms in 1987 to 1,260 farms in 1997, so the majority of net new farms were not operated as full-time farms.

The overall trend seems to be true for most of the counties in New Hampshire, except from Carroll, Coos and Strafford counties. These three counties had a steady increase in number of farms, and did not dip in the 1992 Census of Agriculture.

### Number of Farms in New Hampshire Counties - 1987, 1992, 1997



Source: USDA National Agricultural Statistics Service, 1997 Census of Agriculture <http://www.nass.usda.gov/census/census97/county/farms/nhfarms.xls>



Source: 1997 Census of Agriculture, County data, New Hampshire, Table 6, pp.163-164.

Within the same time-period (1987-1997), the total area of land used for farming decreased by three percent. This means that the average size of farms in New Hampshire decreased by 17 percent from 169 to 141 acres. It is important to point out that the total area of farmland increased from 1992 to 1997 by eight percent but did not get back to the 1987 level of farmland. The 2002 Agricultural Census, when published, will show whether the downward trend since 1964 was broken in 1992.

Overall it looks like the number of farms is on the rise even though the area of land used for farming might continue to decrease. This suggests that the land used for farming is being used more intensively or as an avocation.

This trend of an increase in smaller sized farms in New Hampshire can also be shown by that the average estimated market value of land and








Source: 1997 Census of Agriculture, State data, New Hampshire, Table 1, p. 10.




buildings per farm went down six percent from \$342,607 in 1992 to \$323,523 in 1997.

## The Industry

The industry division for Agriculture, forestry and fishing within the Standard Industrial Classification (SIC) system is divided into the following 5 areas:<sup>6</sup>

-  Agricultural productions - crops
-  Agricultural productions - livestock
-  Agricultural services
-  Forestry
-  Fishing, hunting, and trapping

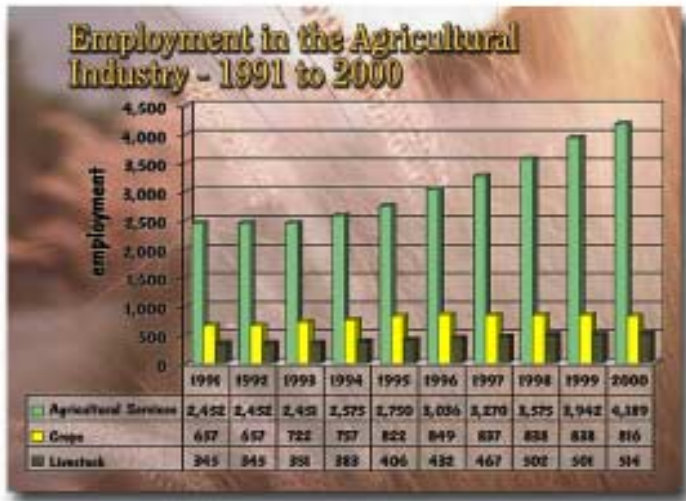
In 2000 total covered employment in the industry was 5,682 employed by 849 units. Only three percent were not employed in Agricultural productions or Agricultural services. To show development in agricultural employment only employment and wage patterns for Agricultural productions and Agricultural services will be described.

-  Agricultural productions for crops include farms, orchards, greenhouses and nurseries that primarily produce crops, plants and small trees.
-  Agricultural productions for livestock include farms, ranches, dairies, egg and poultry production facilities that primarily are engaged in the feeding of livestock for a future sale.
-  Agricultural services include veterinary services, farm labor and management services, and landscape and horticultural services.

The average annual increase in employment for Agricultural services was seven percent for the 1991-2000 period. Employment in Agricultural

<sup>6</sup> The SIC code structure has recently been replaced with a new classification system called NAICS (North American Industry Classification system). Agricultural Services was replaced by a new category called Agriculture and Forestry Support Services, and Logging was added to the category Forestry.



# Agricultural Trends in New Hampshire



production for livestock increased in the same period with an average five percent annually, whereas the average annual increase in employment for Agricultural production for crops was three percent.

## Where is the agricultural business located?

The agricultural industry is represented throughout the state. More than half of the employment is located within Hillsborough, Rockingham and Merrimack counties. Approximately one third of the employment within Hillsborough is located in Manchester and Nashua. Some interesting regional comparisons:

-  More people are in covered agricultural industry employment in Portsmouth than in the whole of Coos County
-  Covered agricultural industry employment in Manchester is about the same as that of Carroll County

The regional data show that the agricultural industry is very strong in New Hampshire's urbanized areas. But as the following table shows, the high number of employment in the urbanized areas can be explained with a strong presence of employment in Agricultural services.

In general the Covered Employment and Wages database (ES-202) for the agricultural industry is heavily based on data from Agricultural

## Agricultural Employment in Selected Counties

	Hillsborough	Rockingham	Merrimack	Stafford
Agricultural Productions – Crops		83	178	229
Agricultural Productions – Livestock		n	44	43
Agricultural Services	1,299	936	521	342

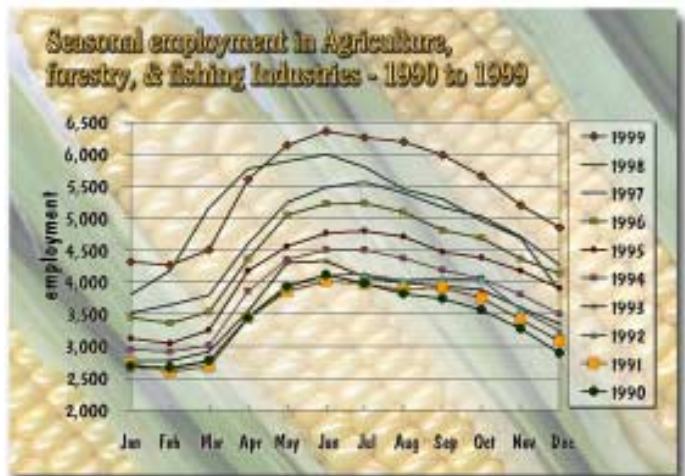
n indicates that the data does not meet disclosure standards.

services. The data from the Agricultural productions does not give a true picture of agricultural employment, as a high percentage of employers are not found in Covered Employment.

After knowing that the employment data for the agricultural industry is heavily weighted toward Agricultural services, it is interesting to see that employment in the agricultural industry is following a traditional agricultural seasonal employment pattern. In other words employment in agriculture as an industry is still a useful indicator on the economic status of agriculture.

## Farm Labor and Migrant Workers

As mentioned earlier, the data on agriculture as an industry does not give a complete picture of agricultural employment. One reason is that migrant workers and farm labor are typically not covered by Unemployment Insurance (UI)



and are therefore not included in the statistical data from Covered Employment and Wages (ES-202). Another reason is that 87.6 percent of total farms in New Hampshire are owned by an individual or a family and therefore self-employed and not included in the ES-202 data.<sup>7</sup>

Current Population Survey, an annual survey conducted by U.S. Census Bureau, estimates the number of self-employed, hereunder self-employed in agriculture. Their estimate stayed about the same since 1997 rounded at 4,000 self-employed in agriculture.<sup>8</sup> To get a more accurate picture of hired agricultural employment additional data from the U.S. 1997 Agricultural Census will be required.

The 1997 Agricultural Census showed that 907 farms hired farm labor. The total number of hired workers was 5,082 in 1997 and they were paid \$30 million in total. About three-quarters of all hired labor worked less than 150 days during the year.

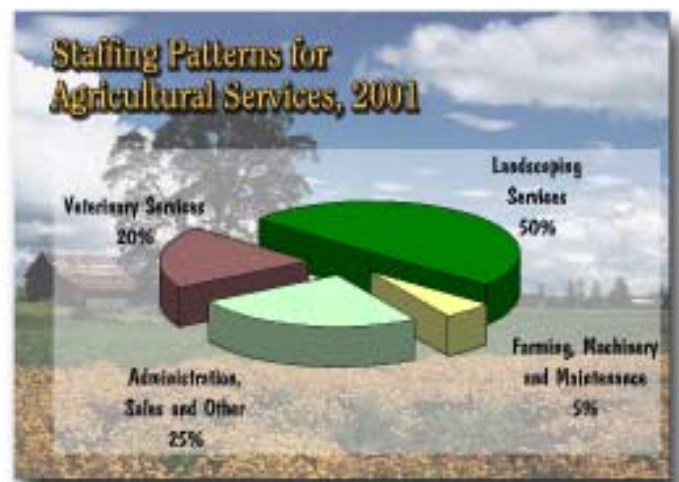
Another unknown labor force in agriculture is the number of migrant workers. Some migrant workers might be included in the 1997 Agricultural Census data as hired farm labor. Under the Wagner-Peyser Act migrant workers are grouped together with seasonal farmworkers and estimated during peak growing season to range from 50 to 200 workers.<sup>9</sup>

In the Agricultural Census the number of farm operators equals the number of farms, which means that only one person per farm is included. Unfortunately, unpaid family workers are not included in the Agricultural Census data.

In 1997 there were 2,937 farm operators in New Hampshire. Of these, 517 were females and only 6 were not White. Only 1,260 were considered full time farmers. A third of the full time farmers were age 65 and over and about another third of the full time farmers were between 45-64 years old. The average age of the full time farmers was 54.3 years. Farmers in New Hampshire are substantially older than the rest of the state's labor force as the average age of the New Hampshire civilian labor force in 2002 was 40.9 years.<sup>10</sup> Since 1978 there has been a steady increase in the average age of the full time farmers, so a generational change in farm population can be expected.

## Staffing pattern for Agricultural Services

In 2000, employment in the industry Agricultural services made up 74 percent of the total Agriculture, forestry and fishing industry. Staffing patterns will be used to get a better understanding of what types of occupations are employed within the industry Agricultural services. Using the Standard Occupational Classification (SOC) code the occupational divisions present within Agricultural services range from management, business and sales to healthcare (includes veterinarians) and landscaping.<sup>11</sup>



<sup>7</sup> Farmers are though considered an employer under the Unemployment Tax law, when having wages of \$20,000 or more for agricultural labor in a calendar quarter or have 10 or more employees in 20 different weeks during a calendar year.

<sup>8</sup> Unpublished data from Current population Survey, Bureau of Labor Statistics (BLS), obtained data from Ed Saddler on September 17, 2003.

<sup>9</sup> Estimated by Francis I. Morrissey, State Monitor Advocate, Alien Labor Certification, Employment Services Bureau, NH Employment Security. Under the Wagner-Peyser Act employment services are provided to the agricultural community, both employers and migrant and seasonal farmworkers. The purpose of estimating seasonal and migrant farmworkers is part of the outreach program in order to get an idea of how many workers might need employment services such as counseling and training.

<sup>10</sup> Unpublished data from Current Population Survey, Bureau of Labor Statistics (BLS), obtained data from Jim Caplan on September 24, 2003.

<sup>11</sup> SOC code - a code used by Bureau of Labor Statistics (BLS) to define occupations uniformly and to organize occupational data logically.

Half of the people employed within Agricultural services are involved in landscaping services. The strong presence of landscaping services reflects a strong housing market and new housing development. In a time with economic confidence and rising real estate value, both businesses and individual property owners invested in landscaping.

## Wages for Agricultural Workers

The average weekly wage for the agricultural industry division is 35 percent lower than the average for private employment. Is the big difference explainable? - Maybe part of the difference is because seasonal workers are included? Seasonal workers are not paid as much as regular farmworkers so average weekly wage figures show lower than what it is in reality.

Wages in the industry for production of crops and Agricultural services generally followed a four and five percent annual increase, respectively, likewise the average annual increase for private employment. Wages in the industry for production of livestock went up and down but increased 23 percent over the entire period and was the industry, within agriculture, closest to the wage level of the private industry.

The legal binding wage determined by Department of Labor for migrant workers in the state of

New Hampshire is set to be \$8.53 per hour in 2003, which equals an average weekly wage of \$341.2 based on a 40 hour week. Farmers employing migrant agricultural workers through the agricultural recruitment system are required to offer the same pay to the U.S. agricultural workers as well.<sup>12</sup>

## Market value of Agricultural Products

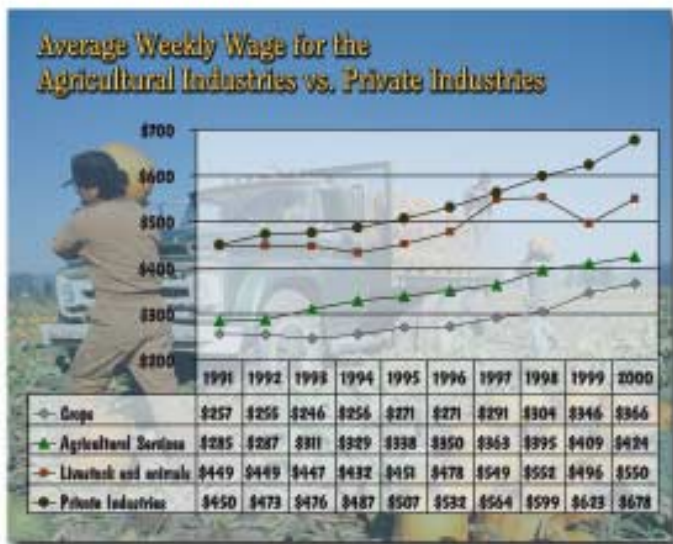
According to the 1997 Census of Agriculture, the total market value of agricultural products sold in 1997 was \$149,467,000. Agricultural products from crop sales accounted for 49 percent and agricultural products for livestock accounted for the remaining 51 percent.

In economic terms farming in New Hampshire is increasing as the average market value of agricultural products sold per farm increased nine percent from \$46,654 in 1992 to \$50,891 in 1997. This increase for total New Hampshire hides substantial differences between the counties.

First of all there is a big difference in the market value of sold products. In 1997 the average market value of sales per farm in Cheshire County was \$93,972 whereas the average value of sold products per farm for Belknap and Carroll counties was about \$20,000.

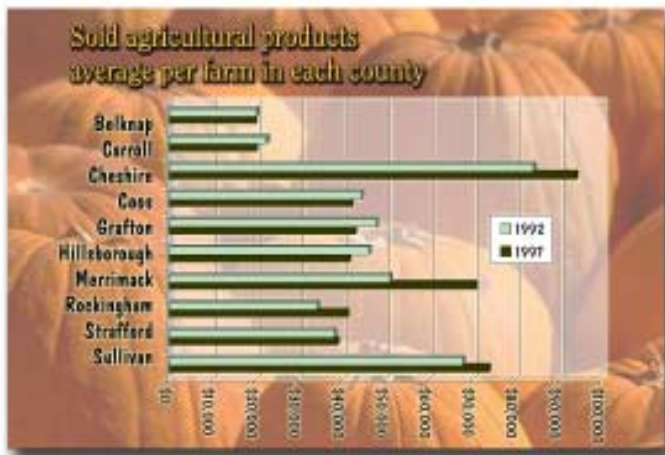
Furthermore, Belknap, Carroll, Coos, Grafton and Hillsborough all had a decrease in average value of sold products per farm from 1992 to 1997, whereas Rockingham and Merrimack counties had large increases in average value of sold products per farm at 21 percent and 39 percent respectively.

Merrimack is the largest agricultural producing county in New Hampshire. Out of the \$29 million agricultural products sold in the county, \$17 million came from sales of nursery and greenhouse crops. In Rockingham County six



<sup>12</sup> Changes in the Adverse Effect Wage Rate (AEWR), U.S. Department of Labor, Employment & Training Administration, February 27, 2003.





Source: 1997 Census of Agriculture, State Profile, United States Department of Agriculture, New England Agricultural Statistics Service, <http://www.nass.usda.gov/census/census97/profiles/nh/nh.htm>.

million, out of the total \$16 million agricultural products sold, were sales from nursery and greenhouse crops. For both Merrimack and Rockingham counties sales from nursery and greenhouse crops were the number one commodity.

Cheshire was the second largest agricultural producing county in the state. Out of the \$27.5 million agricultural products sold, \$24 million came from sales of livestock and poultry. Poultry and poultry products were number one commodity but the actual sales figure were not published due to confidentiality. Dairy products ranked second and accounted for \$6.7 million. Cattle and calves ranked as the fourth most sold commodity and accounted for \$0.8 million. The numbers from dairy and cattle sales can be used to help estimate the sales value of poultry to be around \$16 million.<sup>13</sup>

Belknap and Carroll counties show very similar numbers for sold agricultural products. In total each county only sold for about \$3.6 million. Nursery and greenhouse crops were number one commodity in both counties and accounted for about \$1.2 million. Dairy products were the second most sold commodity in both counties and were \$0.7 million in Belknap County and \$0.8 million in Carroll County.

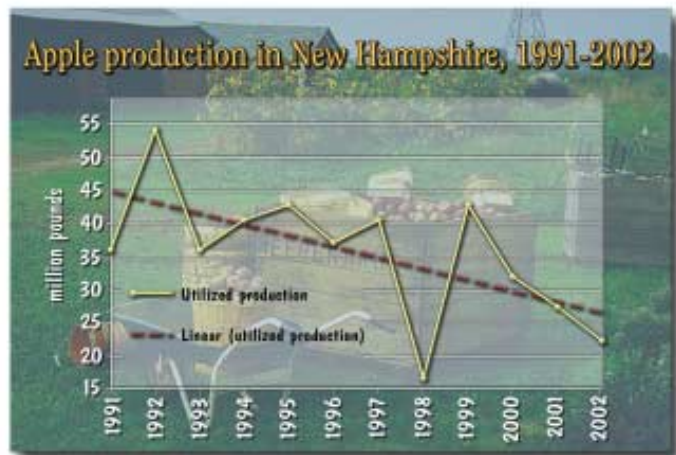
<sup>13</sup> 1997 census of Agriculture, State Profile, United States Department of Agriculture, New England Agricultural Statistics Service, <http://www.nass.usda.gov/census/census97/profiles/nh/nhpb003.pdf>.

It's interesting that the nursery and greenhouse crops were number one commodity in both the largest and smallest agricultural producing counties. It is therefore not the commodity produced, that determines how lucrative the farm is but more the farm's location. The Lakes Region and the White Mountains are in other words not so conducive to farming.

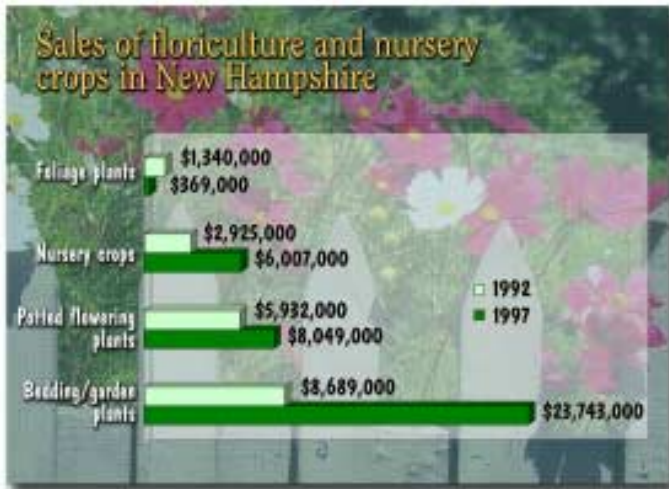
## Changes in Farm Products

Even though farmland continues to be used for farming, the agricultural production seems to be changing, at least according to the 1997 Agricultural Census and annual statistics from National Agricultural Statistics Service (NASS) on agricultural products.

The 1997 Agricultural Census shows that the amount of harvested apples has gone down from 52 million pounds in 1992 to 40 million pounds in 1997. According to the Annual Agricultural Statistics the production of apples in New Hampshire fluctuated over the last 12 years. But from 1999 to 2002 apple production has decreased from 42 million pounds to 24 million pounds, which is a 43 percent decrease. It is important to note that the production of apples more than halved from 1997 to 1998 and then bounced back in 1999. The reason for this drastic decline was due to harsh weather in the



Source: USDA-NASS Agricultural Statistics 2003, Table 5-3 and *New England Agricultural Statistics 2001*, New England Agricultural Statistics Service, USDA, p.54. Utilized production is the amount sold plus quantities used at home or held in storage and include both fresh market and processing utilization apples.



Source: 1997 Census of Agriculture, State data, New Hampshire, Table 44, p. 40.

spring and early summer, which prohibited pollination and made disease control difficult.<sup>14</sup>

Total value of agricultural products coming from sales of nursery and greenhouse crops, cut Christmas trees harvested, mushrooms, and sod (grown for sale) was 45 million dollars in 1997, an 87 percent increase in sales since 1992. The number of farms producing these crops increased from 322 in 1992 to 619 in 1997.

The total value for floriculture crops was \$35.3 million in 1997, an increase of 79 percent since 1992. From 1992 to 1997 the number of farms that produced floriculture crops also increased from 240 to 292.

In New Hampshire the inventory of milk cows went down from 19,000 in 1999 to 17,000 head in 2002, which is a 11 percent decrease. In 1997, 1998 and 1999 the number of milk cow heads went up from 20,000 head in 1997 to 21,000 in 1998 and then down at 19,000 head in 1999. It seems like the milk cow production, after a positive cycle leading up to 1998, is declining.

## Conclusion

Producing nursery and greenhouse crops is the most lucrative business in both the largest and smallest agricultural producing counties.

As the overall market value of sold agricultural products is on the rise and as there is an increase in part-time farmers, farming seems to be a growing business in New Hampshire. With total number of farms in New Hampshire on the rise and with an increase in farmland acreage, farmland in New Hampshire does not seem threatened to be converted into non-agricultural uses.

The agricultural industry has grown over the last ten years through adaptation to consumer needs and in response to competition. It is important to understand that the farming industry is dependent on the urbanized area. Therefore development is not necessarily bad for the agricultural industry, but should be looked upon as an opportunity to expand. Urban growth is not necessarily hurting the agricultural industry. In fact our analysis shows that the agricultural industry has increased due to a "blooming" housing market. A non-planned and not controlled urban growth can though destroy the agricultural landscape. Legislative measures to preserve open space land are therefore still important in order to protect the pristine New Hampshire rural picture. But growth in the agricultural industry is still a part of the New Hampshire agricultural economic sustainability.

<sup>14</sup> New England Agricultural Statistics, 1999, NASS, p.54.

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