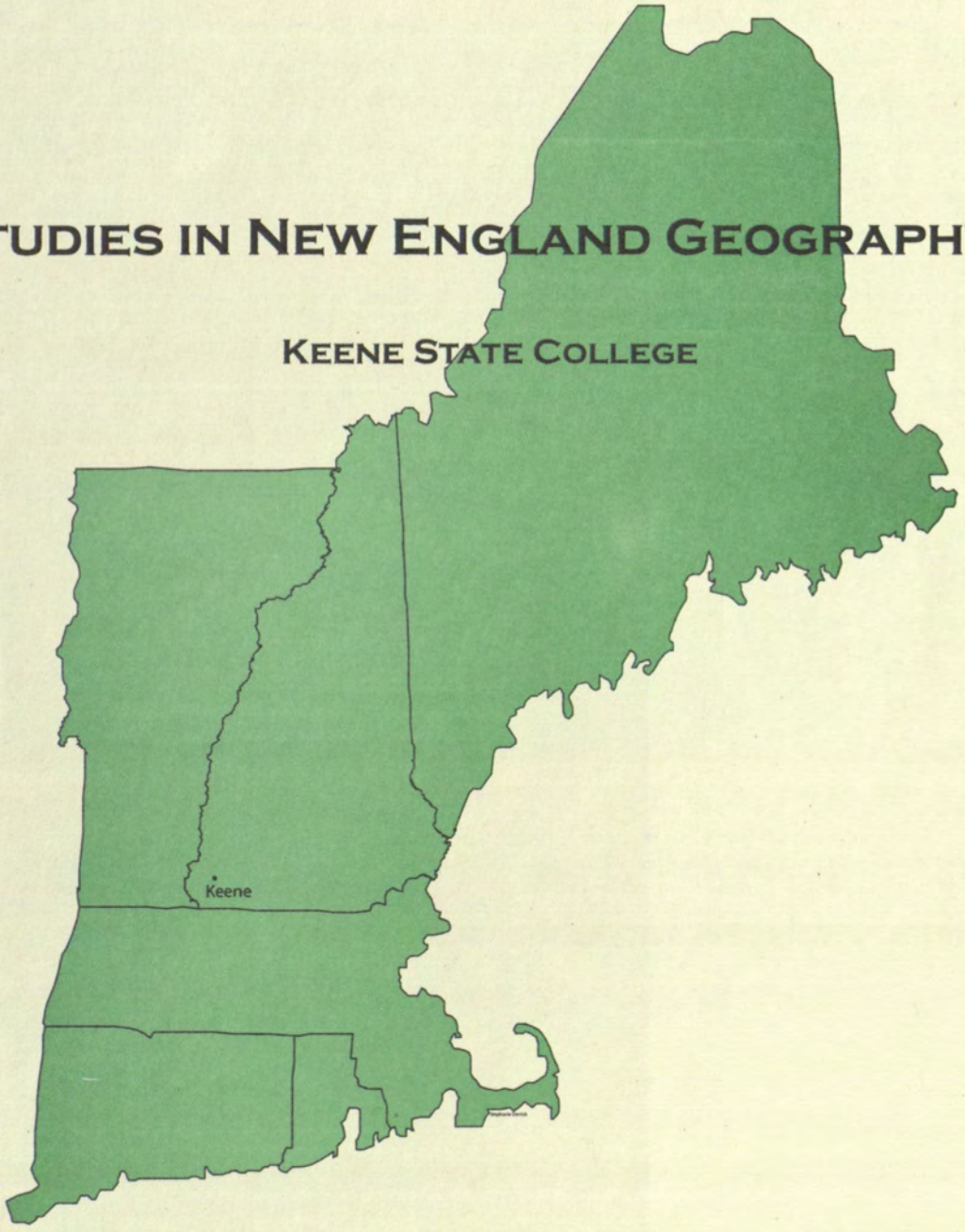
New Hampshire's Changing Agricultural Land-use



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New Hampshire's Changing Agricultural Land-use

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This study examines agriculture in the state of New Hampshire. Literary analysis gives a history of agriculture in the state from the colonial period until the mid-1900s, citing major agricultural practices, regions of agricultural productivity, and areas where agriculture has gone into decline. Reasons for this decline in productivity are discussed, with urban sprawl and rural abandonment being the leading causes. Current productivity of the state as a whole and of the individual counties is discussed through examination of numbers of farms, acres of agricultural land, and most common agricultural practices according to the 1997 Census of Agriculture and the preliminary 2001 New England Agricultural Statistics. Statistics show that the dairy industry is a major contributor to New Hampshire's agricultural activity, and hay, as a primary source of feed for livestock, is the leading crop harvested in the state. **Key Words: New Hampshire, agriculture, dairy, urban sprawl.**

Introduction

New Hampshire has always been a rural state, better known for its mountains and lakes than its urban developments. It is a state laced with narrow country roads and dotted with small towns. Interspersed among these towns are the farms and the forests, New Hampshire's agricultural legacy, a way of life that has endured through centuries of wars, migrations, and depressions. However, in recent decades people have discovered a new threat to this rural paradise: urban sprawl. As cities like Manchester, Nashua, and even Boston, Massachusetts grow and thrive, more and more land that was previously used for agriculture is being sold off and developed into highways, housing tracts, shopping malls, and office buildings.

To better understand the status of agriculture in New Hampshire today, it will be necessary to examine its history. What was agriculture in the area like in the nineteenth century? What caused its decline in the early twentieth century? Where has the decline in agricultural activity been the most prominent? What efforts have been put forth to

slow the regression of agricultural practices? What impacts may agriculture have had on the environment over time? The goal of this paper is to address each of these questions through literary analysis. After that, recent data for the entire state and each of the individual counties will be discussed, in order to portray agriculture as it exists in New Hampshire today.

Literary Analysis

The area known today as New Hampshire has always been a farming region. As early as the mid-1600s settlers had established towns along the coastline. They used the trees from the plentiful forests to build homes, ships, and other structures or conveyances, and most had private farms to sustain their families and provide some modest income through the sale of surplus crops. Over time the settlers pushed farther inland, more towns were established, and populations grew. The need for more structures led to growth in the timber industry, and rising populations spurred the growth in farming, both of livestock and of crops.

Because of the physical geography of New Hampshire, certain areas are more suited to specific agricultural practices than other areas. In his book, Black (1950) refers to these as "type-of-farming areas". New Hampshire has eight of these different areas, described in Table 1 and mapped in Figure 1. The map shows that there is a predominance of vegetable and fruit farms in the southeastern region of the state (mainly coastal lowlands and river valleys), while along the western side of the state dairy farms and hay fields outnumber other forms of agricultural enterprises. There is also a notable lack of significant agriculture in the northern regions of the state, largely due to the mountainous physical landscape.

Table 1 *New Hampshire's Type-of-Farming-Areas*

Area	Name	Description
1		Connecticut River - intensive dairy, poultry, maple, forestry.
2		Lower Connecticut - Similar to (1) with less dairy.
3		White Mountains – timber, mostly nonagricultural.
4		Semi agricultural area - dairy, forest product.
5		Southwest corridor - Similar to (4) with more orchards and harvested grains.
6		Merrimack River - dairy, poultry, potato, fruit.
7		Lower Merrimack - Similar to (6) with more poultry.
8		Portsmouth - dairy, poultry, vegetable, fruit.

Source: Black (1950, 237).

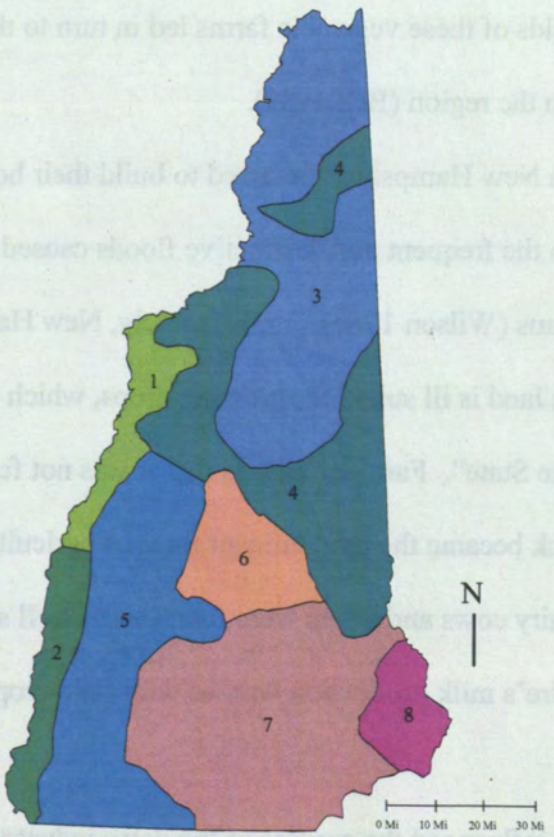

Figure 1 *New Hampshire's type-of-farming areas.*
Source: Black (1950, 239).

The high point in New Hampshire's agricultural productivity was 1860. In that year it is estimated that there were 29,229 farms utilizing 2,251,488 acres of improved

land (roughly one-third of the state's area). In this case, improved lands were defined as those that had been cleared for grazing, tilling, or were cleared but left fallow (Wilson 1967). It must be noted that this figure does not include pasturelands or timber lots, both of which were in great use. One source suggests that in 1860 as much as 65% of New Hampshire's land area was being used for agricultural purposes (Bell 1989). Along the Merrimack and Connecticut River Valleys, where the most fertile land is found, farms tended to focus on fruits, vegetables and field crops such as corn, wheat, and oats. In 1879 New Hampshire was well over the national per acre average for yields of oats, wheat, barley, and buckwheat, with the most successful crops being sweet corn and potatoes. The high yields of these vegetable farms led in turn to the growth and success of canning industries in the region (Bell 1989).

Early settlers in New Hampshire preferred to build their homes in the hills rather than the valleys, due to the frequent and destructive floods caused by rainstorms, spring melting, and beaver dams (Wilson 1967). Unfortunately, New Hampshire's hill regions are quite rocky and the land is ill suited for growing crops, which earned the state its moniker of "the Granite State". Farmers learned that it was not feasible to till large plots of land, and so livestock became the predominant form of agriculture in these upland areas. In particular, dairy cows and sheep were found to be well suited to the climate and terrain. New Hampshire's milk production was, as with field crops, well over the national average.

Several factors influenced the success of the dairy industry in New Hampshire. First, although farms in New Hampshire are smaller than those in the Midwest, the higher population density and hence greater demand for products in the Northeast allowed

dairying to be profitable. Second, thanks to railroads and the Erie Canal, the cost of transporting feed grain from the Midwest was low, and so farmers did not have to pay too high a price for feed. Third, New Hampshire's proximity to the Atlantic Ocean results in humid summers and relatively late frosts, allowing for longer grazing and growing seasons than are found in the Midwest. Because of this favorable climate, farmers are able to yield more hay per acre from their lands than many Midwestern farmers can, helping dairy farmers cut costs even more. Thanks to these lower production costs and higher demands, dairy farmers throughout New England received some of the best prices in the nation for their product (Higbee 1958).

The other most common livestock found in the hilly regions of New Hampshire was sheep. They are inexpensive to keep, requiring mainly grazing land in the warmer months, plenty of hay in the colder months, water, and some shelter. Sheep are also sturdy animals, making them well suited to rocky, upland terrain. With the growth of mill industries in New Hampshire and Massachusetts, the demand for wool was very great through most of the nineteenth century. It was not until after the Civil War, when cotton again became available and textile operations moved into the southern states, that wool prices dropped and raising sheep fell largely out of practice (Bell 1989).

So, if New Hampshire's agricultural industries were doing so well in the 1800s, why are there relatively so few farms left in the state today? The answer lies partly in history and partly in human nature, and a great deal in urbanization. After the Civil War had ended, Americans refocused their attention on expanding the country's borders deeper into the West. The discovery of gold and silver deposits drew many people to seek their fortunes in California and the Yukon. Tales of the sea of grass and lush, fertile

northwestern valleys free of bothersome boulders and innumerable rocks drew thousands across the country in search of better farming lands along such routes as the Oregon Trail. These brave souls met with varying degrees of success in their new homes. Many were fortunate in their endeavors, but many were not, such as the returning farmer who wrote the following poem for the Boston Globe:

> "I left the green hills of Vermont
> A year ago last spring,
> I had saved a little money,
> And I thought 't would be the thing
> To go out West and buy a farm,
> And work with might and main,
> Get rich as Gould or Vanderbilt,
> And then come back again.
>
> And now I'm back in old Vermont,
> I've learned a lesson, too.
> I cannot tell you half the ills
> And troubles I've been through.
> My pocket book is empty,
> And I have not got a thing
> To show for all I've suffered since
> A year ago last spring." (Wilson 1967, 134)

The poet goes on to tell of damages caused to his house from winds, locusts devouring his crops, a winter of near starvation, and the final struggle to get back home to Vermont after losing everything. Nevertheless, into the twentieth century people were abandoning their rocky New Hampshire farms and heading for greener pastures and hopes of a fruitful new life.

Human nature also played a role in the abandonment of farms throughout the state. The industrial revolution had wrought many changes on the landscape of the nation, and more and more people were moving off their farms and into the cities, lured by the desire for wealth (Bell 1989). Many younger people at the start of the 1900s had

hopes of receiving higher education, which would free them from the toilsome lifestyle of a farmer and aid in their search for personal wealth. At Cornell University in 1906 a questionnaire was given to students hailing from farms asking if they intended to return to farming after graduation, and why or why not. The why-nots provide a glimpse into the mentality of young people at the time, helping explain the continued trend of farm abandonment. The most common responses were that "farming does not pay", it involves "too much hard work", the "hours [are] too long", "farming is drudgery", there are "no social advantages or activities", and there was "more opportunity for advancement elsewhere" (Wilson 1967, 351). Clearly, the younger generation was disillusioned with agriculture and had higher, more urban, goals in mind.

The decision to leave the farm and pursue more economically beneficial careers was the spark to ignite that most serious threat to agriculture: urbanization. Bryant (1986, 168) defines urbanization as "the process by which an increasing proportion of the population of a [place] lives in urban areas and zones". In addition, he states that urbanization places three demands on that place: a demand for land for urban-related uses, a demand for labor for non-farm employment, and a demand for increased agricultural productivity to support the growing urban population. These demands cause a cascade effect that is detrimental to agriculture. First, as urban boundaries expand, it is usually neighboring farmland that is acquired and developed to meet the needs of the people. Second, the need for labor in the urban area draws workers away from the farms. Thus, farmers lose both land and labor, and are no longer capable of maintaining a level of productivity necessary to sustain operations. Many small farm owners are forced to sell all their land in the hopes of cutting their losses, which feeds the conversion of land

from agricultural to urban uses. With the lost productivity, farmers find they are trying to meet higher demands for food with a lower quantity of supply. With the advancements in farming technology farmers are able to utilize more land with less labor, but if too many workers leave the farms, even technology will not be able to keep up with the workload.

There are three ways in which urban growth has an effect on the surrounding agricultural communities. First, there is selective encroachment, in which urban and agricultural developers are vying for the same piece of land due to its favorable characteristics. An example of this would be along the Merrimack River. This area has some of the most fertile soils in New Hampshire, but it is also the location of most of the state's population growth (shown in Figure 2). Second, there is fragmentation of agricultural land, which is the result of pieces of agricultural land being developed, and so farm and non-farm residents find themselves in close proximity. This can be a problem for farmers, who often find themselves facing nuisance lawsuits due to farm practices and higher property taxes to pay for the increasing demand for public services. Finally, there is urban shadow, in which the sprawl of the urban area has an immediate affect on adjacent agricultural lands, resulting in higher taxes, loss of capital, declining productivity, and eventually the end of the farm (Gregor 1970). This is visible in the seacoast county of Rockingham, whose population growth is most likely attributable to its proximity to the city of Boston, Massachusetts.

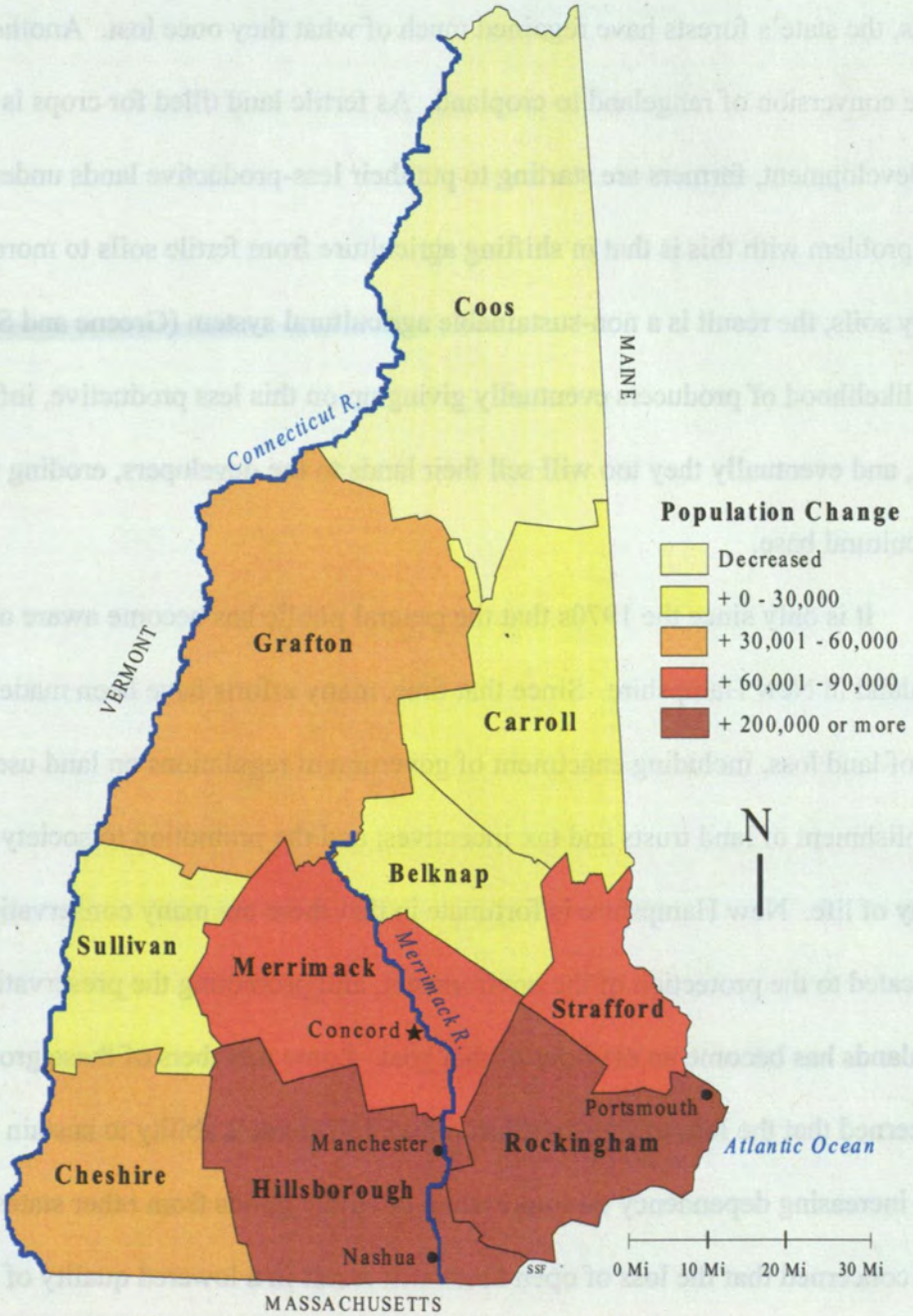

Figure 2 Population change from 1950 to 2000, by county.
Source: United States Census Bureau (2005).

Developers are not the only cause of cropland conversion. In many cases, farmland that has been abandoned is simply reverting to woodland (Higbee 1958). At the start of the twentieth century, most of New Hampshire's forests had been cleared either by loggers or farmers. Now, through some replanting efforts and the abandonment of

fields, the state's forests have regained much of what they once lost. Another occurrence is the conversion of rangeland to cropland. As fertile land tilled for crops is taken away for development, farmers are starting to put their less-productive lands under the plough. The problem with this is that in shifting agriculture from fertile soils to more arid or rocky soils, the result is a non-sustainable agricultural system (Greene and Stager 2001). The likelihood of producers eventually giving up on this less productive, infertile land is high, and eventually they too will sell their lands to the developers, eroding the state's agricultural base.

It is only since the 1970s that the general public has become aware of the loss of farmland in New Hampshire. Since that time, many efforts have been made to slow the rate of land loss, including enactment of government regulations on land use, the establishment of land trusts and tax incentives, and the promotion to society of farming as a way of life. New Hampshire is fortunate in that there are many conservation groups dedicated to the protection of the environment, and promoting the preservation of farmlands has become an offshoot of that goal. Some members of these groups are concerned that the loss of farmland has reduced the state's ability to sustain its citizens, thus increasing dependency on importation of edible goods from other states. They are also concerned that the loss of open lands will result in a lowered quality of life (Schnidman et al. 1990). However, greater forces are working against their goals. New Hampshire has a history of encouraging a hands-off government, meaning most people have not been willing to allow the government to regulate how privately owned land may be used. Also, because New Hampshire has no state sales or income taxes, funding for

preservation policies is severely limited (Schnidman et al. 1990). Nevertheless, there have been many successful steps made toward farmland preservation.

Initially, there were no government land regulations, so the only way to set aside land was through establishment of a private trust. These were successful in that they kept open land out of developers' hands, but they did little to support agriculture. In 1973 the Current-Use Tax Act was established, the aim of which is to "prevent the conversion of open space to more intensive use by the pressure of property taxation at values incompatible with open space usage" (New Hampshire General Court 2003). In other words, land that is not developed is assessed at a lower tax rate than developed land. In 1979 the New Hampshire Agricultural Land Preservation Act was established based on advice submitted by the Conservation Commission. The act enables the state to purchase development rights from farmland owners in order to keep it open for agricultural use. The act also allowed for individual communities to establish their own conservation commissions, in order to determine at a local level what steps should be taken to ensure the survival of farmland for future generations (Schnidman et al. 1990).

One other important piece of legislation is the Nuisance Liability Law, passed in 1981. Because of urban developments encroaching on farms, tensions often arise between farmers and their non-farm neighbors. The purpose of the liability law is to protect farmers from lawsuits filed due to annoyances stemming from agricultural practices. Examples of possible lawsuits might be neighbors complaining about odors from a hog farm, or about the appearance of an old barn in a newly developed, upscale neighborhood. The law is temporarily beneficial, but as one article points out, a farmer

could win all of the individual suits brought against him, only to become exhausted and disgruntled and give up farming to avoid the hassles (Nelson 1992).

Perhaps one preservation tool that has been found to be the most effective is agricultural zoning. Although this has not generally been implemented in New Hampshire, states such as Oregon have had considerable success with it. Exclusive agricultural zoning defines boundaries around areas that are to be used only for agricultural purposes, effectively establishing farming districts in which development may not occur. Nonexclusive agricultural zoning merely acts to restrict the sizes of lots, generally imposing a minimum lot size that may be purchased. The goal here is that by forcing people to buy larger pieces of land, it will encourage them to go into some variety of agricultural practice. Though successful in putting off development in the short term, it is not as successful over time (Alterman 1997).

Promotion of agriculture does not simply rest in the hands of lobbyists and government regulators. The United States Department of Agriculture provides grants for research into various agricultural practices, in order to provide farmers with possible alternatives to current methods and help sustainability. To that end, there has been a growing demand from farmers for information pertaining to alternative methods of agriculture, such as organic, regenerative, and low-input farming (Duram and Larson 2001). The American Farmland Trust, a group dedicated to the preservation of farmland, annually presents a $10,000 Steward of the Land Award to a farmer who has worked to protect farmland and the environment (Reuther 2000).

There are also numerous social functions that serve to focus public attention on state agriculture. The 4-H Club serves to teach youngsters about the benefits of farming

and agriculture, and has many chapters located throughout New Hampshire. The state also has a number of agricultural fairs, such as the state fair held annually in Hopkinton, and the Hillsborough and Cheshire County fairs. These fairs serve as a showcase of the best livestock and produce the state has to offer, including prizes for all varieties of fowl, rabbits, cattle, corn, and even a prize for the largest pumpkin.

Preservation of agricultural lands should not only be a concern for farmers. Good farmland is needed near urban areas for the production of truck and specialty crops such as vegetables, fruits, and flowers. Also, open land is beneficial to a community, as it serves to absorb floodwaters, filter groundwater, clean the air, and provide definition to urban boundaries (Nelson 1992).

One cannot discuss agriculture without addressing the impact it has on the environment. One of the real impacts is soil compaction and a sinking of land surfaces resulting in a reduction of the soil's water capacity, which in time will lead to increased flooding (Gregor 1970). One environmental perk is that, unlike in many western states, New Hampshire has suffered little soil erosion resulting from agricultural practices. The main reasons for this are that very little rural land is used toward the production of crops, and perennial hays cover most of the cropland that is harvested, meaning that the land is not tilled, and so the soil is not broken up (Higbee 1958). Something that has become more of a question of concern, especially in areas of intensive livestock farming, is air and water quality. Many people (generally non-farming neighbors of farmers) have become concerned that ground water is being contaminated by animal waste as it is absorbed into the ground. There have also been rising numbers of complaints from those who do not care for the smells of an active farm, and are concerned that the air quality

has been impaired in something more than an aesthetic manner (Caldwell 1998). Although there is some merit in the concern over water contamination, the concern over air quality is generally accepted to be merely a perceptual impact.

Data

The most useful tools for measuring New Hampshire's agricultural productivity is the Census of Agriculture, conducted by the Census Bureau prior to 1978, and by the United States Department of Agriculture after 1978. Although the official definition of a farm has been changed nine times since 1850, the current definition is "any place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year" (US Department of Agriculture 2003). Table 2 shows the changes in the number of operating farms and the total land in farms from 1964 to 2001. In that time period New Hampshire has seen an overall, though not always consistent, loss of both farms and acres farmed. At first, the numbers would seem to indicate that currently the state is experiencing an agricultural boost, indicating that perhaps conservation efforts have in fact made an impact. However, examination of livestock and poultry inventories during the same period of time, shown in Table 3, indicates that the number of animals kept on farms has consistently dropped over time, alluding to lower productivity. With this data, one can prove agriculture is increasing or decreasing, depending on which statistics they choose to highlight.

According to the 1997 Census of Agriculture, New Hampshire had 415,031 acres of agricultural land. Figure 3 shows how this land was utilized. Clearly, the majority of land in use for agriculture is woodland, indicative of the importance of the timber industry in New Hampshire. Most timber harvested goes either to paper or lumber mills,

Table 2 *Farms and Farmland Acreage*

Year	Number of Farms	Land (acres)
1964	4,648	903,197
1974	2,412	506,464
1982	2,757	469,582
1987	2,515	426,237
1992	2,445	385,832
1997	2,937	415,031
2001	3,100	420,000

Source: United States Department of Agriculture (2003), New England Agricultural Statistics Service (2003).

Table 3 *Inventories of Various Livestock and Poultry*

Year	Cattle/Calves	Hogs/Pigs	Chickens
1964	81,906	13,397	1,831,188
1974	69,198	8,899	1,311,754
1982	69,006	6,399	647,655
1987	54,012	5,040	459,446
1992	48,419	4,458	212,748
1997	45,115	4,373	213,782
2001	41,000	3,500	152,000

Source: United States Department of Agriculture (2003), New England Agricultural Statistics Service (2003).

the majority of which are located in the northern counties, known collectively as "The Great North Woods". Of the 32% of land designated as cropland, only 76% was harvested. The other 24% was designated as fallow, idle, failed, or pastured. Harkening back to earlier statements regarding New Hampshire's ability to produce large crops of hay, it is remarkable to note that 78.8% of all harvested crops were varieties of hay. Other notable crops were corn for silage (16%), vegetables (3.5%), land in orchards (3.4%), and corn for grain (1.2%).

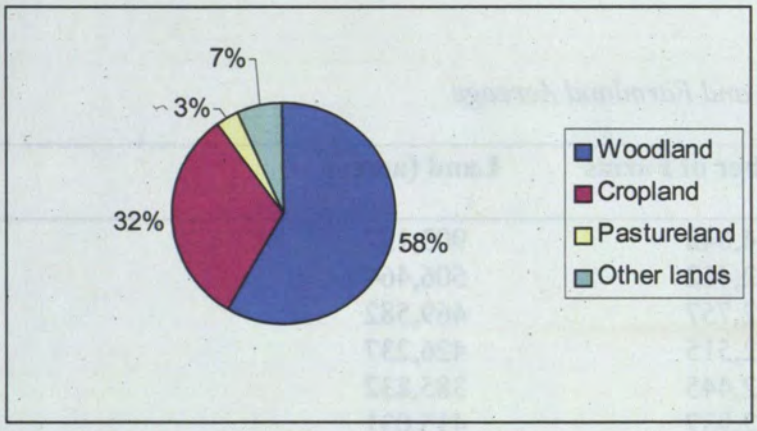

Figure 3 *Uses of agricultural land in New Hampshire. Source: United States Department of Agriculture (2003).*

Having discussed the general agricultural outlook of New Hampshire as a whole, it is time to take a closer look at the productivity of the individual counties. Figure 4 shows a comparison of the total acres of agricultural land per county, and the agricultural land as a percentage of total land per county. While the western counties have the highest amount of total acreage, it is the central counties that use the highest percentage of their land for agriculture. The high percentage in Strafford County, whose acreage of farmland is so low, can be accounted for by the simple fact that the overall land area is relatively small. Table 4 gives a summary of the number of farms and total farmland in each of New Hampshire's ten counties for 1987 and 1997. From this we can see that although some counties reported an increase in the number of farms and total acreage of farmland, across the board the ten year time period saw a reduction in the average size of farms – in some cases by as much as twenty-five percent.

So, we must ask, how does the agricultural data compare with statements made in the previous section? Looking again at Table 4, we can see that Grafton and Merrimack Counties have significantly more farmland than any other counties, which is perfectly

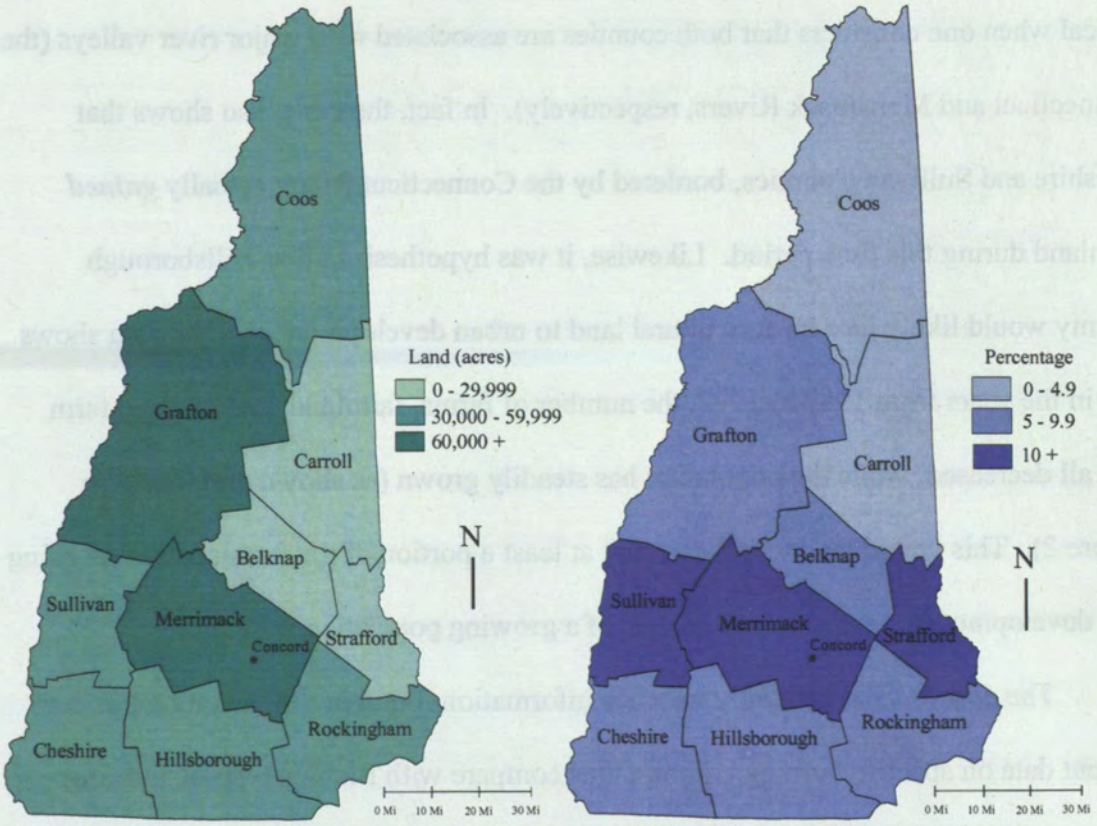

Figure 4 *Acres of agricultural land per county (left) and agricultural land as a percentage of total land, by county (right).*
Source: United States Department of Agriculture (2003).

Table 4 *Number of Farms, Land in Farms, and Average Size of Farms (acres) by County, 1987 and 1997*

	1987			1997		
County	**Farms**	**Farmland**	**Average**	**Farms**	**Farmland**	**Average**
Rockingham	382	36,862	96	407	35,465	87
Hillsborough	338	43,131	128	391	37,572	96
Cheshire	231	38,216	165	293	41,651	142
Sullivan	206	44,873	218	246	47,267	192
Merrimack	370	59,734	161	413	63,417	154
Belknap	153	21,479	140	184	20,612	112
Strafford	189	26,574	141	235	26,078	111
Carroll	136	26,574	195	177	24,155	136
Grafton	356	80,871	227	406	75,883	187
Coos	154	47,923	311	185	42,931	232

Source: United States Department of Agriculture (2003).

logical when one considers that both counties are associated with major river valleys (the Connecticut and Merrimack Rivers, respectively). In fact, the table also shows that Cheshire and Sullivan Counties, bordered by the Connecticut River, actually *gained* farmland during this time period. Likewise, it was hypothesized that Hillsborough County would likely lose its agricultural land to urban development, and the data shows that in the years from 1987 to 1997, the number of farms, farmland, and average farm size all decreased, while the population has steadily grown (as shown previously in Figure 2). This would tend to indicate that at least a portion of the farmland lost is going into development to support the demands of a growing population.

The data on land generally matches information found in the literature, but does current data on specific farming commodities compare with Black's type-of-farming areas of 1950? Starting at the seacoast, census data shows us that Rockingham County recorded high populations of sheep, milk goats, and chickens, along with high acreages of apple orchards, harvested vegetables, and hay. To the north, Stafford County also has a large chicken population, and large acreages of apple orchards, hay, and Christmas trees (considered a harvested crop by the USDA). The descriptions for these two counties corresponds well with Black's analysis of Area Eight – dairy, poultry, vegetables, and fruit, and so it seems fair to say that it is still accurate.

Hillsborough and Merrimack Counties roughly constitute what Black delineated as Area Seven – Lower Merrimack, a region of dairy, poultry, potatoes, and fruit. Census data from these counties shows us that Hillsborough has high populations of beef cattle (not to be confused with dairy cattle), hogs and pigs, sheep, and honey bees, in addition to large acreages of orchards and harvested vegetables. These partially coincide with the

types of farming described by Black. The remainder of the practices he mentions can be found in Merrimack County, which reported high populations of dairy cattle, hogs and pigs, chickens, horses, and very high acreages of hay. So, again the current data tends to indicate that Black's assessment of the region still holds true.

In the southwest corner of New Hampshire are the counties of Cheshire and Sullivan, which lie within Black's Areas Two (Lower Connecticut – dairy, poultry, maple, forestry) and Five (Southwest Corridor – dairy, forest product, orchards, harvested grain). Starting with the southern extent, records show that Cheshire, with 64,477 birds, has the largest population of chickens in the state. It also has high numbers of dairy cattle and sheep, and a significant production of maple products. Sullivan County also holds a record, in this case they have the highest population of dairy goats in the state. In addition, there is a high population of dairy cattle and the state's highest number of tapped maple trees. In concert, these two counties closely match the description of Area Two, but only partially match the description of Area Five. While it is true that there are many orchards in the area, records do not indicate that they are any more prevalent here than in other parts of the state.

Belknap County, in roughly the center of the state, comprises what Black delineated as Area Six – Merrimack River, containing dairy, poultry, potatoes, and fruit. Census data shows us that Belknap has significantly little land used in farming (refer back to Table 4). To make up for this, the two types of farming that comprise the majority of agriculture are high-yield productions: greenhouse and nursery crops (consisting of vegetables, flowers, etc.), and chickens. Here we see a distinct difference from Black's observations, for while poultry is still of high importance, dairy, potatoes

(not a greenhouse crop) and fruit are not. One may speculate that development has taken away land that was needed and used for these productions, but there is no way to say for certain.

Carroll County can be found in eastern New Hampshire, bordering the state of Maine. It is caught between two of Black's areas, with the bulk of the county comprising Area Four (Semi-agricultural – dairy, forest product), and the northern portion of the county in Area Three (White Mountains – timber, mostly nonagricultural). This seems an apt description for this region; with the second-lowest total acreage of farmland in the state, despite its relatively large size. The most notable agricultural productions in Carroll County are the raising of turkeys and honey bees, which bear no resemblance to the area descriptions put forth by Black in 1950.

On the other hand, Grafton County, which consists of three different type-of-farming areas, seems to match the descriptions well. The three areas in question are Area One (Connecticut River – intensive dairy, poultry, maple, forestry), Area Five (Southwest Corridor – dairy, forest product, orchards, harvested grain), and Area Four (Semi-agricultural – dairy, forest product). Census records show that Grafton is home to the largest populations of *both* beef and dairy cattle than any other county in New Hampshire, and logically enough, harvests more hay than any other county as well. There is also a strong sheep population, along with high numbers of tapped maple trees and harvested Christmas trees. All three area descriptions mentioned dairy and forest product, and one added maple product, which indicates that the descriptions for Areas One and Four apply to this region. What is lacking from Black's description is a strong presence of chicken farming, orchards, and grains, which significantly reduces the

present-day validity of Area Five (you will recall, it was not accurate for Cheshire or Sullivan Counties, either).

Finally, we come to the northern-most portion of the state, Coos County, which comprises nearly all of Black's Area Three (White Mountains – timber, mostly nonagricultural), with a small section of Area Four (Semi-agricultural – dairy, forest product). Indeed, these delineations seem quite apt for the region, as the county reported high numbers of dairy cattle, along with high acreages of hay and Christmas trees. The timber industry is also very important to the economy in this region. So, overall, it appears that the majority of Black's areas are still accurate, despite being published over fifty years ago.

Conclusion

For centuries farming has been and continues to be an important part of New Hampshire's heritage. Many say it is not simply a job, it is a lifestyle. Hearing the name of the state conjures for many mental images of backcountry roads, cows grazing in meadows, and an idyllic rural life away from the noise and hustle and bustle of big cities. But New Hampshire is not so very far away from the rush. The growth of Manchester, Nashua, and Boston in Massachusetts have brought attention to the plight of diminishing farmlands as suburbs push farther and farther into rural areas. Several laws have been passed in an attempt to stem the tide of development, and social programs to promote farming and its charm have popped up across the state. It will take several more years before anyone can really tell how much of an impact these efforts have made.

Recent decades have seen both increases and decreases in the number of farms and acreage of farmland in New Hampshire. Many larger farms have been broken into smaller fragments, some of which are sold to create smaller farming operations, while others are sold to private developers. The result is that in years where there is an increase noted in the number of farms to be found in the state, they often occupy less land than in prior years. Over time, farms could continue to become smaller and less productive as population growth crowds out agriculture. In that case, New Hampshire, like so many industrial states, will have to look more and more to other states for its food. But hopefully that time is still a long way off.

The dairy industry has long been a significant part of New Hampshire's agricultural productivity. With large parcels of pastureland available to farmers, it is possible to own larger herds, while at the same time keeping down feed costs by allowing the animals to graze as their primary food source (though this is not so common now as it once was). Also, rising populations in surrounding areas have increased the demand for dairy products, allowing New Hampshire's dairy farmers to receive some of the highest prices in the nation. Higher selling prices and lower production costs mean more revenue for the farmers, and that is important in keeping agriculture viable in the state today.

Dairy, while vitally important, is not the only form of agriculture practiced in New Hampshire. In the southeastern counties where farms are hedged in by development, localized crops such as produce, orchard fruits, and greenhouse/specialty plants are predominant. Moving west and north through the state, into the hilly regions less conducive to extensive cropping, orchard fruits, grains, and hay take over as the primary crops. In many of these counties, the crops are grown to feed livestock rather

than people, for it is in these rural, western and northern counties where livestock is most commonly found. In those regions where even dairy is not economically viable, such as portions of Coos County, the timber industry constitutes an important piece of the agricultural industry.

Only time will tell what lies in store for New Hampshire agriculture. Perhaps urbanization will at some point sweep through the state, reducing fields of hay and the lowing of cows to memories in the minds of the elderly and pictures in history books. Perhaps urbanization will level off quickly, leaving plenty of space for the farmers to continue their practices well into the future. It is impossible to know with any certainty what the future has in store. In the meantime, the apple trees will keep blossoming, the sap will flow through the maples, and the cows will graze in the hills, as they have done for hundreds of years.

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