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Agricultural Land Usage in Mansfield, Connecticut: An Analysis of the Town's Past and Present Agricultural Landscapes and Recent Farmland Conservation Efforts

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Agricultural Land Usage in Mansfield, Connecticut: An Analysis of the Town's Past and Present

Agricultural Landscapes and Recent Farmland Conservation Efforts

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University of Connecticut

Anthropology Honors Thesis

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Fall 2021

Abstract

The town of Mansfield has a long history within the agricultural sector of Connecticut, from producing the first successful silk mill in the state to housing Mountain Dairy, a dairy supplier which sells to local consumers. This paper examines the history and progress of agricultural land usage within Mansfield, beginning with an overview of farmland in the town's first century and ending with the current status of resident farms. At the start of settlement by English colonists in the 1700s, the town was deforested to make space for farms, housing, and general expansion. Moving forward to the 20th century, industrialization led to a migration towards larger cities for jobs, resulting in a regrowth of forest over this newly converted farmland and a subsequent decline in the amount of agricultural land available. Following the agricultural trends of the previous century, recent history, which will be categorized as the past thirty to thirty five years, has continued to see a decrease in the amount of land devoted to agricultural processes within Mansfield. The majority of Mansfield's remaining agricultural land is dedicated to livestock use for dairy and beef production. Mansfield's current agricultural landscape can be explained through the positioning of Mansfield and its own history within recent New England agricultural trends and values. Finally, this paper calls for a multifunctional approach to farmland conservation in order to simultaneously preserve and progress agricultural land within the town.

Acknowledgements

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Introduction

As food production becomes highly globalized through the transfer of goods in and out of the United States, it is easy to overlook smaller, local food systems. In order to fully grasp the importance of these local agricultural systems, it is necessary to understand their present status as a reflection of current conservation efforts as well as the history of the town in which they are located. This paper will explain Mansfield's current agricultural landscape through the town's history as an agricultural leader within Connecticut, as well as its position within recent New England farmland trends. As Mansfield's agricultural land continues to decrease in acreage, a look at the last 35 years of land usage within the town provides insight into the recent agricultural trends of Mansfield. Further, it brings to light the importance of a multifunctional approach to farmland conservation which aims for both preserving land, such as prime farmland soils, in addition to allowing for use and development on parts of the land for agricultural purposes. As a whole, this paper aims to combine land coverage and land use research with the outcome of furthering agricultural sustainability and farmland conservation efforts within Mansfield.

This study of Mansfield's past and present agricultural landscapes was guided by four main research questions. First, how is the agricultural history of Mansfield represented through its current farmland? Next, what is the current trend of agricultural land usage within Mansfield and who are the main agricultural land holders in the town? When viewed as part of the general New England landscape, how does Mansfield fit in with recent agricultural trends, notably within the past thirty to thirty five years? Finally, how can methods of conservation be applied to Mansfield in order to preserve its agricultural history and place value on current and future

farmland? Answering these questions requires a look into Mansfield's early agricultural history in conjunction with recent land coverage data from 1985 and onward, and current conservation efforts within the town.

Before describing the historical background of Mansfield's agricultural landscape, it is necessary to define a few key terms. For the purpose of this paper, agricultural land will be considered any cropland or farmland, with "agricultural landscape" referring to the conglomerate of agricultural land within the town. The United States Department of Agriculture (USDA) defines cropland as "areas used for the production of adapted crops for harvest," including both cultivated and uncultivated land, such as hay fields (USDA, n.d.). As for farmland, the USDA designates this as all land on which a farm resides, with a farm being "any place that produced and sold—or normally would have produced and sold—at least \$1,000 of agricultural products during a given year" (USDA 2021). As such, agricultural land will be any land with harvested crops or a farm which sells goods produced on the land.

Historical Background

In order to assess Mansfield's agricultural history, it is necessary to look at a number of archival sources in addition to previously conducted historical research. Two of the most helpful historical sources for understanding Mansfield's agricultural history are Rudy Favretti's *Mansfield Four Corners : What It Used to Be & George Washington Didn't See* and the 1869 *Atlas of Hartford and Tolland Counties*. Favretti's book describes the importance of the section of the town called "Mansfield Four Corners" in the development of the town's population and early history, mainly using property records to describe the early farms and families (Favretti 2003). Moving forward in time, the 1869 atlas provides a detailed map of Mansfield (*Figure 1*)

which indicates different mills, houses, businesses, and other landmarks within the town (Baker 1869). When these two sources are viewed together, the transformation which the silk industry and agricultural development had on Mansfield becomes clear.

Located in eastern Connecticut, Mansfield falls within Tolland County, just on the border of Windham County. Originally land of the Mohegan tribe upon the arrival of the colonists, it was obtained by settlers and incorporated into the town of Windham until Mansfield was established as its own town in 1702 (Connecticut History, n.d.). During this time of early development, the population of Mansfield was heavily centered around the area of Mansfield Four Corners, in what is today the very north end of the town. Here, the land was deforested to make room for expansive family farms, inns, shops, and homes (Favretti 2003). In the early 1800s, it became a producer of gunpowder, organ pipes, bronze cannons, and, even before these products, silk (Connecticut History, n.d.). The silk industry, and therefore the cultivation of mulberry trees and silkworms, was first introduced to the United States in 1603 but did not reach its peak until the early 19th century (Landry 2013). Mansfield itself became heavily involved in the silk industry starting around 1760, when Nathaniel Aspinwall, a resident of Mansfield, began a mulberry orchard in the town, introducing silkworms a few years after (Landry 2013). Silk quickly became a common product of the eastern coast as it was suitable for “exhausted soils and stagnated landscapes,” as many of the landscapes of longer-settled areas on the coast were (Marsh 2012, 219). Much of the silk first produced within Mansfield was spun by hand nearby and was then transported as fabric throughout the country, creating a web of producers and consumers within this new industry (Landry 2013).

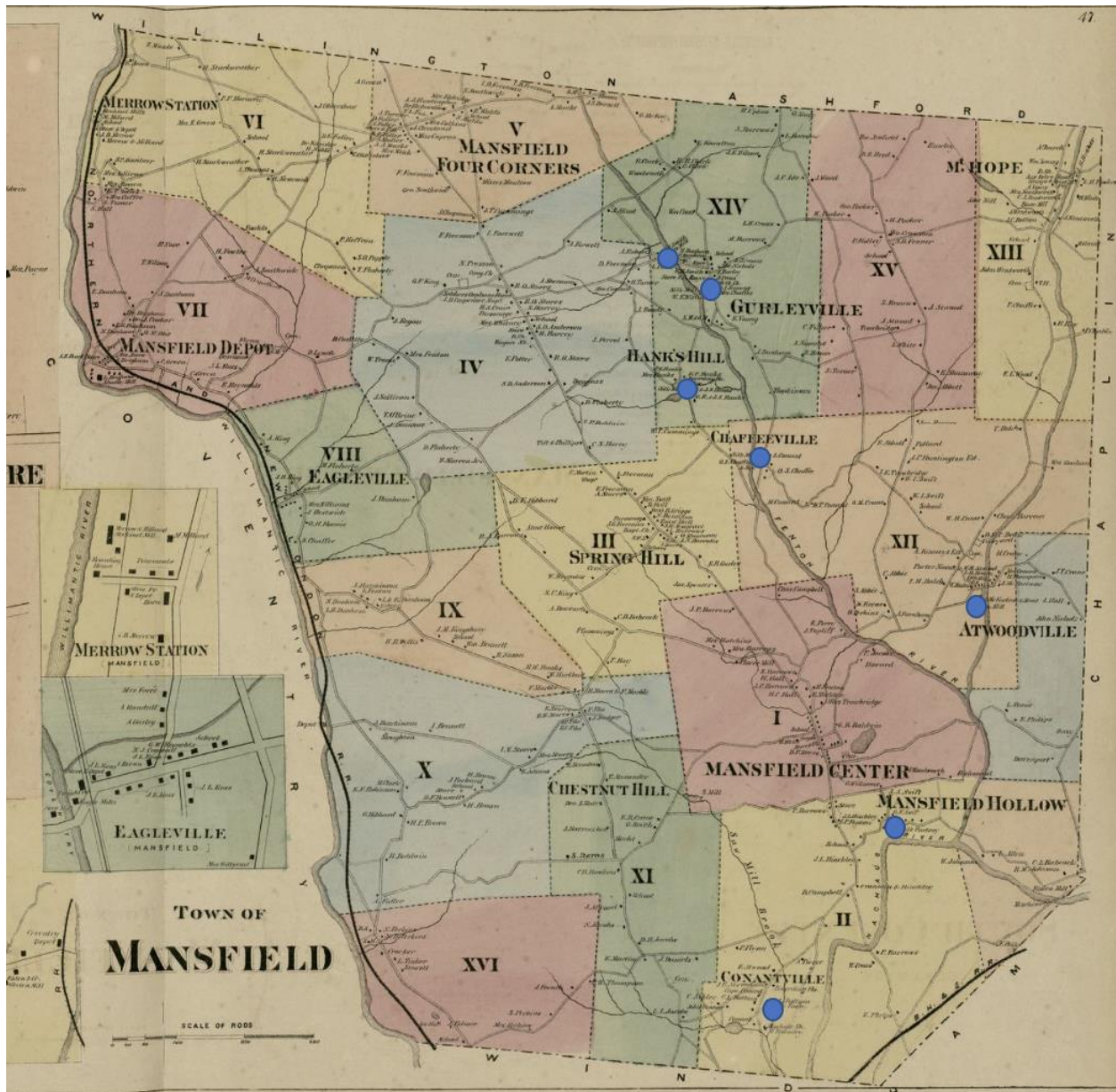


Figure 1: Map of Mansfield, CT in 1869. Each blue dot represents one silk mill (Baker 1869).

By 1792, the towns of Mansfield and Ashford, a neighboring town in Windham County, had produced nearly 150 pounds of raw silk combined, aiding in making Connecticut one of the top producers of silk during the 18th and 19th centuries (Marsh 2012, 229). Specifically leading to Mansfield's dominance in the silk industry was the creation of the Hanks Silk Mill, the

country's first water-powered silk mill (Landry 2020). The original Hanks Mill, located in section XIV of *Figure 1*, was built in 1810 by Rodney Hanks, and soon the mechanized production of silk was widespread throughout the town (Landry 2020). As seen in *Figure 1*, by 1869, there were at least seven distinct silk mills dispersed within Mansfield along the Fenton and Natchaug Rivers (Baker 1869). Although silk production across the country began to decline by the end of the 19th century, through Mansfield's silk successes it had established itself as a leader within Connecticut's agricultural sector.

With Mansfield's significant agricultural contributions to Connecticut, it is no surprise that in 1881 the Storrs Agricultural School was established with donations of land and money from Charles and Augustus Storrs, two brothers from a prominent local family which owned a great deal of agricultural and residential land (Connecticut History, n.d.). In section IV of *Figure 1*, one can see the name of the Storrs family listed on numerous pieces of property, many of which made up parts of the school's campus. Although Yale had originally been the state's land grant university, they were not successful in matriculating agricultural students and therefore farmers in the state felt there was a need for a specific agricultural school (Stave 2020). The school originally opened with the intention of teaching farming and agricultural topics, but eventually grew to become the official University of Connecticut (UConn) in 1939 (Stave 2020). The university became a large landholder within Mansfield over the years as it acquired more students, faculty, and areas of study. The Storrs Campus currently includes roughly 500 acres of agricultural land, which continues to serve the schools original purpose of agricultural education as pastureland and cropland for university-owned animals (Wilson 2021).

During this time of early agricultural progress in Mansfield, much of the agricultural land and populated areas were centered around Mansfield Four Corners in the northern section of the town, close to the Mansfield-Willington border (Favretti 2003). As seen in *Figure 1*, section V of the map, Mansfield Four Corners was still densely populated in 1869, but people were beginning to spread out more along what is now Storrs Road, the diagonal road running from the north to south of the town, starting in section V and ending in section II (Baker 1869). This expansion of the population led to more deforestation and an increase in agricultural land, continuing until the end of the century (Arnold et al. 2020). At the peak of deforestation in Connecticut, which occurred around the 1850s, nearly 70% of the land had been deforested in order to make room for agricultural fields (Faison 2014, 9).

The start of the second Industrial Revolution towards the end of the 19th century and leading into the early 20th century resulted in major shifts in the population inhabiting the town as well as with land use practices. New technology such as tractors and refrigerators increased the time of production and shelf life of goods such as vegetables, meat, and dairy, and much of this production was done on cheaper, larger lots of land where it could be performed year round. This meant that New England farmers could not rival the more consistent supply of vegetables and fruits which were now transported and sold from the southern and western states (Donahue 2007, 27). Farming began to decline as a career and people grew to recognize industrialized cities as hubs of jobs and economic success, leading to a large migration out of the countryside and towards these centers of progress (Johnson and Ouimet 2016, 23). This meant they abandoned their family farms, which soon became reforested and resulted in a decrease of both cultivated and uncultivated agricultural land (Johnson and Ouimet 2016, 25). Much of the

current forest landscape of Connecticut is regrowth, primarily made up of trees which average 80-100 years in age (Faison 2014, 10). Remnants of the farms which were taken over by these new trees can be found as stone walls. Dr. Katharine Johnson and Dr. William Ouimet's work analyzing these stone walls using Light Detection and Ranging (LiDAR) data provides insight into historical agricultural land use, ultimately representing the shift from Native ways of cultivating the land to European-style agriculture (Johnson and Ouimet 2016, 23). While the land on which these earlier English farms were built has been covered up by forests, these stone walls allow for a more accurate understanding of where and how farms were found in the days of Mansfield's early agricultural landscape.

As a result of the second Industrial Revolution and the subsequent move towards cities, these same cities then became overcrowded, leading to the need for more living space (Jindrich 2012, 148). The solution to this issue was found with the creation of suburban neighborhoods which allowed city workers to find a balance between rural and metropolitan life. The development of the suburbs further led to a decline in agricultural land as previous farmland was turned into residential and commercial spaces. Specifically within Mansfield, the trend towards suburban development continued as a result of the expansion of the UConn Storrs campus as it grew to cater to larger classes of students. This section of Mansfield includes 5800 acres which have been federally labeled as an "Opportunity Zone," meaning that there is federal tax incentive for people to invest in new commercial and residential developments within this area (Mansfield Connecticut, n.d.). As advertised on Mansfield's website, the town "offers residents a dense suburban feel" and is within a two hour drive of larger cities such as Hartford, CT; New York City, NY; Boston, MA; Providence, RI; and Worcester, MA, ultimately providing a perfect

example of a town which has shifted from forest to farmland to a reforested suburban landscape (Mansfield Connecticut, n.d.).

This decline in agricultural land was seen across New England as the percentage of the total land which was agriculturally used within the six states - Vermont, Connecticut, New Hampshire, Maine, Rhode Island, and Massachusetts - was over 50% at its peak, yet by 1982 had decreased to roughly 12.5% (Dalton 1986, 362). At the time of the 1982 census, Vermont had the highest percentage of agricultural land out of all of the states, and outside of Vermont there were only four counties where agricultural land exceeded 20% of the total land area (Dalton 1986, 363). One of these four counties happened to be Windham County, which neighbors Mansfield (Dalton 1986, 363). Windham's prominence at the time was due to the production of large amounts of corn and hay, two crops which are used heavily in the care and feeding of livestock such as cattle (USDA 1982). Ultimately, Windham's status in 1982 as one of the few remaining counties with farmland comprising over 20% of the total land area emphasizes the agricultural prominence of the area surrounding Mansfield.

Dalton names a number of factors which contributed to the decline in farmland seen leading up to the 1982 census. Namely, these factors include the economic disadvantages of farming within New England and the increasing suburban sprawl with commuters moving to land which was traditionally wooded or used for agricultural purposes (Dalton 1986, 364). Old farm tracts which were abandoned in the early nineteenth century when people left the country for progressing cities were often developed into housing complexes or reforested. Dalton notes that it is typically the smaller farms which are most likely to be sold or left and then later developed, while the larger farms are more resilient to such changes (Dalton 1986, 364).

Understanding these trends of agricultural land within New England allows for a more holistic view of farmland within Connecticut, and specifically, Mansfield. Mansfield's background as a prominent agricultural figure of Connecticut and the general trend of declining farmland within the surrounding area of New England set the scene for the interpretation of Mansfield's own agricultural trends within the past thirty five years.

Methods and Procedures

Before beginning any research, Mansfield's agricultural committee was contacted. Members of the committee sent along "Mansfield Grown," a list of the farms within the town last updated in 2019, as well as a number of sources such as the CT Environmental Conditions Online (ECO) project. After speaking with Jennifer S. Kaufman, Senior Planner and Inland Wetland Agent, of the committee about existing information regarding Mansfield's agricultural land, it was determined that the research would focus on the development of Mansfield's agricultural landscape and how its history is reflected through its current land usage.

The Connecticut's Changing Landscape (CCL) project has data useful for tracking Mansfield's agricultural land usage from the period of 1985-2015. The project uses remotely sensed land coverage data to divide each town in Connecticut up into the following categories of land use: developed, turf and grass, other grass, agriculture, deciduous forest, coniferous forest, water, non-forested wetlands, forested wetlands, tidal wetlands, barren, and utility forest (Changing Landscape 2015). Using the interactive map of Connecticut, which was created as part of the project, it is possible to compare land coverage data from 1985 and 2015, and then further go into detail by looking at the percent change of each land coverage type between the years. Figures 2 and 3 show the differing data from 1985 (*Figure 2*) and 2015 (*Figure 3*), which

are then compared in order to find the total decrease in agricultural land. CCL was not necessarily an agricultural study, but did call for further research “to ensure that land cover research has an impact on issues of land use and sustainability” (Arnold et al. 2020). This paper aims to do so through the use of CCL’s maps in relation to a discussion of agricultural sustainability and land conservation efforts within Mansfield.

This study primarily uses data from the CCL project in conjunction with historical information regarding Mansfield’s agricultural sector and present day farms to reveal a narrative of Mansfield’s farmland usage over time. A number of other sources were contacted, such as UConn’s Center for Land Use Education and Research (CLEAR), which provided information on the university’s agricultural land holdings, and Jessica Larkin-Wells of UConn’s Spring Valley Farm. While each farm which is still in existence from the Mansfield agricultural committee’s “Mansfield Grown: A Guide to the Agricultural Products and Services in Mansfield, CT” list was contacted a number of times, it was difficult to actually get in touch with farmers or agricultural landowners within the town (Mansfield Agricultural Committee 2019). This influenced the primary source of information, as it was originally intended to be direct information from the farms themselves, but now is based on historical information and knowledge gathered from farm’s websites and their descriptions in “Mansfield Grown” (Mansfield Agricultural Committee 2019).

A second present day source of cartographic information comes from that of the CT ECO project, which provides a wide variety of maps, data sets, and different forms of geographical imagery regarding Connecticut’s landscape (CT ECO, N.d.). The specific information from this project which is useful to this study is that of Mansfield’s farmland soils. *Figure 5* depicts a map

from the project which divides Mansfield's agricultural soils into two groups: prime farmland and statewide important farmland (CT DEP 2011). Prime farmland is defined as soils which "have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops, and are also available for these uses" (CT DEP 2011). Statewide important farmland are soils that do not meet prime farmland standards, but are still important to the agricultural sector of Connecticut due to being managed correctly by farmers (CT DEP 2011). These delineations are simply to show the distribution of soil which would be useful for farming, not to directly show where farms are currently located.

Although the map does not necessarily show farms, it does show land which has the potential to be farmed. In addition, some of the farmland recognized as "prime" or important on the statewide level has the potential to be protected under the Federal Farm and Ranch Lands Protection Program (FRPP) in a conservation effort to prevent current agricultural land from being used for nonagricultural purposes (CT ECO, N.d.). In this sense, CT ECO provides information useful for determining the future of Mansfield's agricultural landscape as it allows for a reflection on current and potential future farmland conservation efforts.

Results

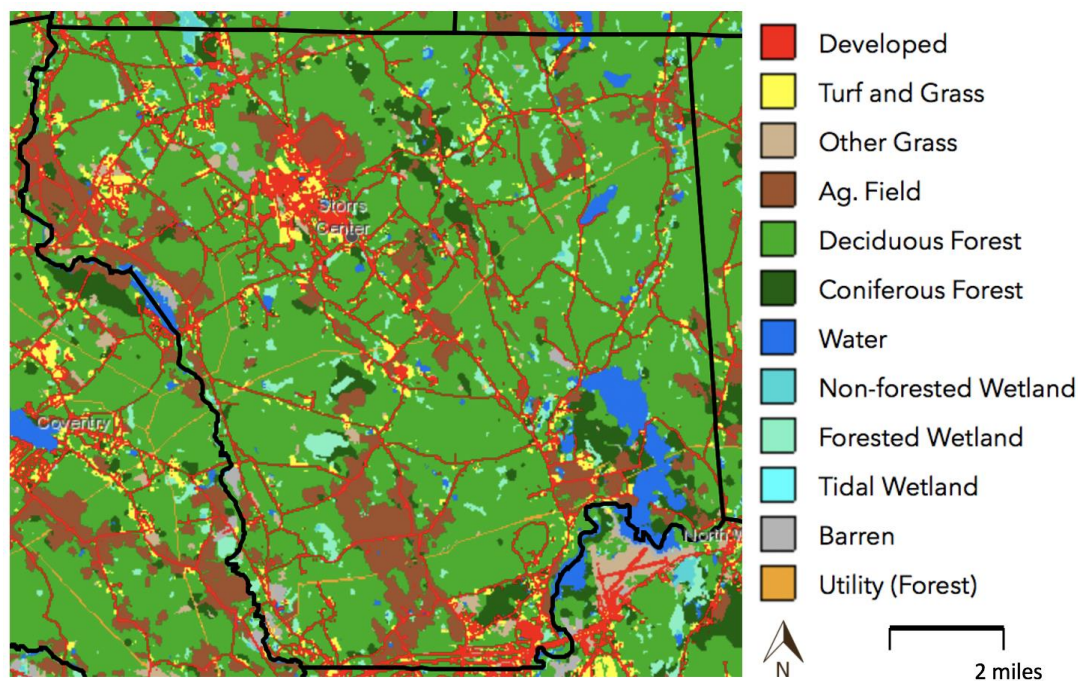


Figure 2: Land coverage of Mansfield, CT in 1985 (*Changing Landscape 2015*).

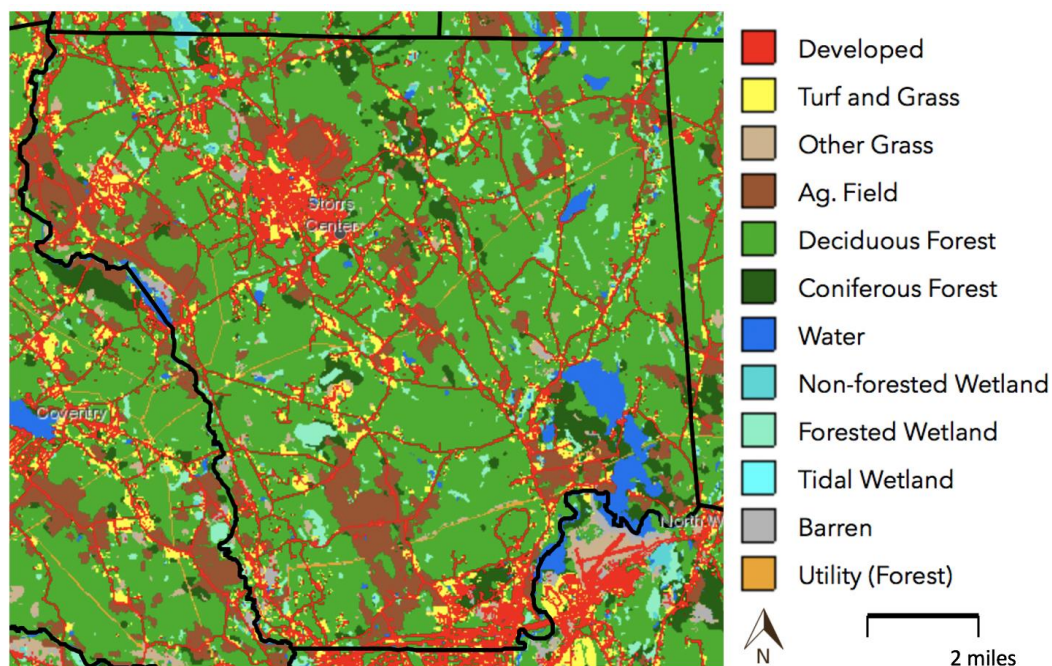


Figure 3: Land coverage of Mansfield, CT in 2015 (*Changing Landscape 2015*).

Using the legend portrayed next to *Figure 2* and *Figure 3*, it can quickly be concluded that within Mansfield, there has been an increase in the amount of developed land within recent years. This development mainly occurred within the area surrounding UConn and Storrs Center, the aforementioned “Opportunity Zone,” as well in as the southeast corner bordering Willimantic and Windham. When comparing the two maps, the decline in agricultural field land coverage is evident. The agricultural land has mainly been replaced by developed land, as well as turf and grass which have also replaced some of the agricultural fields as the Storrs campus expands their athletic fields, such as with the new Elliot Ballpark, and new neighborhoods are built, resulting in residential developments which include yards of grass (Husky Athletic Fund, n.d.).

As a whole, land which falls within the agricultural field category has decreased from 1985 to 2015 by 225 acres, with the total agricultural fields of 1985 composing 3,318 acres and those of 2015 composing 3,093 acres, which from here on will be used as the current estimate of agricultural land in Mansfield (Changing Landscape 2015). This represents a 6.8% decrease in farmland from the 1985 total area. Given that the average farm size in Connecticut is around 69 acres, there was a comparative drop in agricultural acreage equal to that of three farms (Farmland Information Center 2017). While the agricultural land decreased by 6.8%, the developed land increased by 922 acres, going from 3,348 acres in 1985 to 4,270 acres in 2015 (Changing Landscape 2015). This is a roughly 28% increase in developed land in relation to the total area in 1985. Since a large amount of this development occurred on land surrounding UConn, an area which shows less agricultural land in 2015 than in 1985, in reality there was not a significant decrease in agricultural land from small family farms or private property, but rather from within UConn owned farmland. Although agricultural land is seen to be on the decline, a 225 acre

decrease over 30 years averages out to roughly 7.5 acres per year, a relatively small number when considered in the context of the reforestation and subsequent agricultural land loss which occurred in the beginning and middle of the twentieth century.

A second type of land coverage which decreased within the period between 1985 and 2015 is forest. This category of “forest” includes the areas labeled as deciduous forest, coniferous forest, forested wetland, and utility in *Figure 2* and *Figure 3*. Whereas in 1985 there were 20,012 acres of forest, making up 68.6% of the town, in 2015 there were 18,789 acres of forest comprising 64.4% of the town’s total area (Changing Landscape 2015). As mentioned with agricultural field coverage, although there has been a decline in the total percentage of the town which is forested land within 30 years, compared to the rapid deforestation which took place within the eighteenth and nineteenth centuries this is a relatively small decrease. Since much of the current forested land in Connecticut is a result of trees’ regrowth, this deforestation for development shows the ever changing nature of land coverage both within Mansfield and Connecticut as a whole, shifting from forest at the time of colonization, to agricultural fields, back to forest, and now to developed land, as the population adapts the land to fit their needs.

UConn itself currently holds around 520 acres of agricultural land (Wilson 2021), which equates to around 16.8% of the 2015 total agricultural land values. The fact that it is a rather large agricultural land holder compared to the majority of family farms in the town can be explained through the history of the university itself, given that it originally started off as an agricultural school with land donations from the Storrs family. As Connecticut’s flagship university, UConn has continuously been expanding its campus at Storrs due to the need for increased housing, classrooms, research labs, and administrative buildings. Much of UConn’s

farmland includes grazing land for cows and other animals, as well as open fields which are not under current use. The UConn farms have over 200 Holstein and Jersey cows, 50 brood ewes, 45 mature beef cattle, 85 horses, and 800 poultry which are mainly housed in barns on or near the UConn campus (Animal Science, n.d.). The university maintains these animals with the intent of “raising beef cattle for better quality meat, breeding and feeding dairy cattle to produce higher quantities of milk, improving the reproductive efficiency of livestock, understanding the biology of animal growth, and improving the safety of animal based food products,” all of which is done by staff and students (Animal Science, n.d.).

UConn has also recently begun to revitalize a bit over one acre of their off-campus agricultural land as part of the Spring Valley Student Farm. This farm grows food directly for UConn Dining Services and produces mainly vegetables, small fruits, and flowers. While they do not have any specific labels, they only use organic practices (Larkin-Wells 2021). The surrounding land is used for beef cattle grazing as well as the production of hay and corn to be used for feed (Larkin-Wells 2021). Spring Valley was also used for beef cattle grazing until 2010, when it began to be used for the student run farm.

By far the single largest agricultural land holder in the town is the Stearns Family Farm, or Mountain Dairy, which has been an operating farm since 1772 (Mountain Dairy 2021). Although their first agricultural products were mainly mulberries and silk, over time they began to focus more on the dairy industry and have been “adjudged one of the finest dairy units in the state” (State of Connecticut Executive Chamber 1971). Their products are nearly all dairy related, ranging from different types of milk, cream, and eggnog. Many of their goods are sold all over the state at larger grocery chains such as Big Y Supermarkets and Price Chopper,

however they also have smaller, local retailers such as the Willimantic Food Co-Op and the Red Barn Farmstand and Creamery, a small farmstand located just down the road from Mountain Dairy's barns (Mountain Dairy 2021).

Mountain Dairy has grown to reach roughly 1000 acres, making up around 32.3% of the farmland within Mansfield (Mountain Dairy 2021). Their agricultural land consists mainly of grassland, hay fields, and corn fields, all of which are used to support their cows. As such, when combined with the agricultural land owned by UConn, the two make up roughly half (49.1%) of all of Mansfield's agricultural land. The majority of the land which they both own is considered grazing land for ruminant animals such as cows, which have become a major aspect of both UConn and Mountain Dairy's images, with Mountain Dairy's milk and UConn's Dairy Bar ice cream.

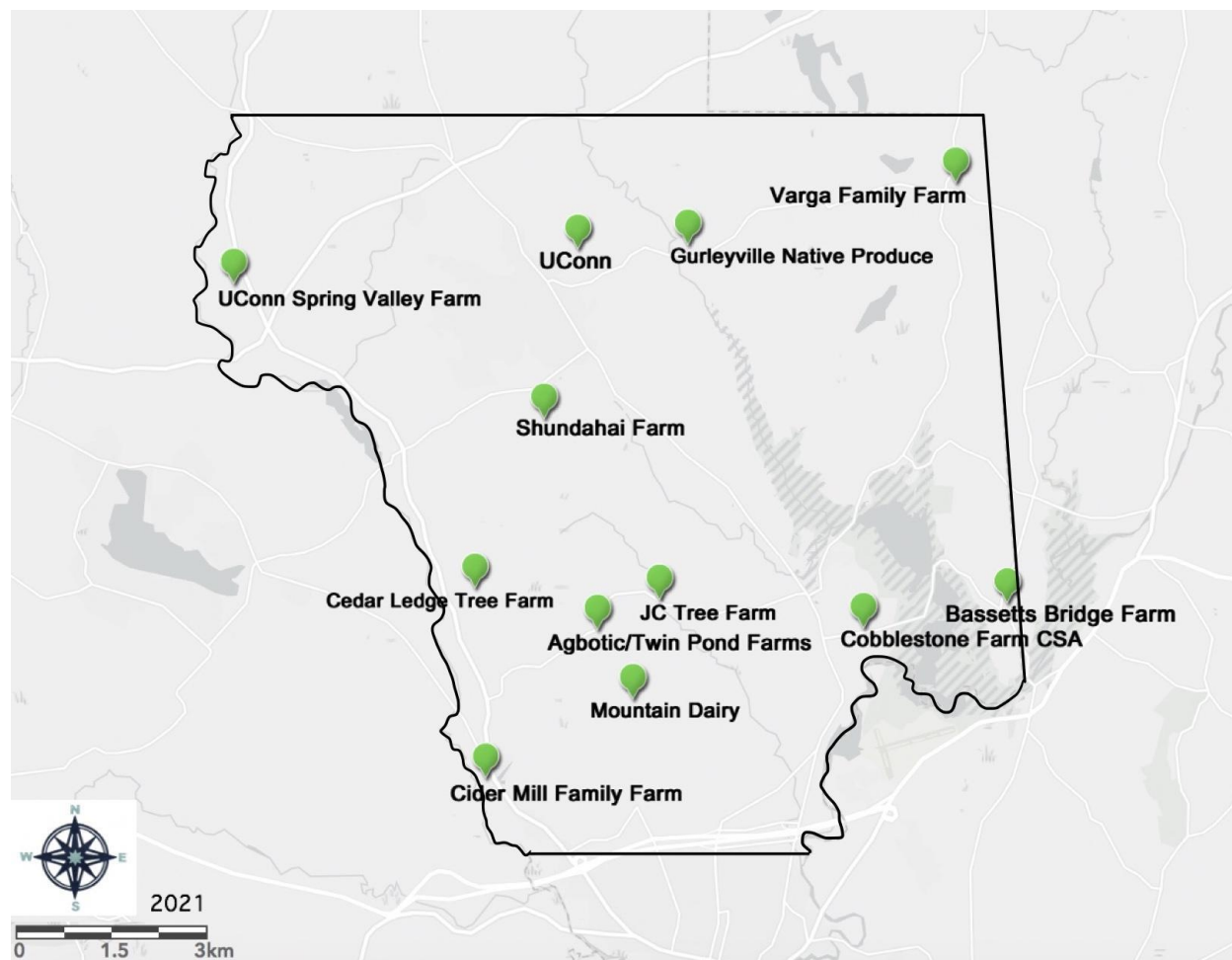


Figure 4: Farms within Mansfield showing the wide range of locations across the town.

The other half of Mansfield’s agricultural land comes mainly from family vegetable farms, tree farms, and greenhouses. *Figure 4* shows the spread of farms across the town, indicating the wide range of access points to local, fresh produce. Aside from UConn and Mountain Dairy, the majority of farms in the town are locally based and family run, many of which provide Community Supported Agriculture (CSA) programs that allow for local residents to purchase shares of crops received on a set basis. Mansfield’s agricultural committee creates their “Mansfield Grown” brochure every few years in the spring, with the most recent releases being spring of 2015 and spring of 2019 (Mansfield Agriculture Committee 2015 and 2019).

Within the four years between the brochures' release dates, there were a number of changes as farms left, were disbanded or created, and some merged with previously existing establishments.

To start, the Red Barn Creamery and Farm Store was created in 2016 to sell local produce, Mountain Dairy products, baked goods, and ice cream at a small store built on land which at the time was part of Twin Pond Farms, which produced a number of items including firewood, hay, and seasonal berries (Mansfield Agricultural Committee 2019). Since 2019, however, the land where Twin Pond Farms was located has been considered for future agricultural development through the creation of Agbotic Greenhouses "Smartfarms", which would produce a number of vegetables and herbs year round. There were two farms mentioned on the 2015 brochure which were not mentioned on that of 2019: Valley Farms LLC, which mainly produced beef, and Bird Walk Farm, which sold eggs, lamb, pork, and chicken (Mansfield Agricultural Committee 2015 and 2019). These farms have closed down and provide insight into the variability of small, family owned farms.

Similarly, from 2019 to the present, farms such as Fox Meadow Farm Food, which was created in 2011, ceased to exist as the owners moved out of state (Neumann 2021). In addition, Bailey's Maple Syrup and Honey LLC, which was in operation since 1951, was taken over by the Varga Family Farm, created in 2018 (Mansfield Agricultural Committee 2019). The farm now produces vegetables, eggs, hay, and wood while also maintaining Bailey's honey and maple syrup production (Mansfield Agricultural Committee 2019). A few other changes to the agricultural businesses in Mansfield include the creation of the Cobblestone Farm CSA, the switch of Foxfire Farm and Stables to just Foxfire Stables, meaning that their dairy production was ceased, and finally the creation of Cider Mill Family Farm, a small farm which began in

December of 2020 and produces eggs, vegetables, fruits, and herbs (Mansfield Agricultural Committee 2019 and Cider Mill Family Farm 2021). Through this overview of changes in Mansfield's smaller farms over the past six years, it is possible to see the progression of agriculture within the town. Of the 20 unique farms and greenhouses listed in "Mansfield Grown 2019," 10 were formed within the past 20 years (Mansfield Agricultural Committee 2019). An agricultural landscape composed of 50% new, small farms represents a trend towards family farms and CSAs as local, environmentally sustainable options for residents to become involved in food systems close to home.

Discussion

Given that agricultural land has seen recent decreases, there have been numerous pieces of legislation and programs created to address this issue. Agricultural land which has been developed for urban purposes rarely is converted back to farmland because of the financial disadvantages of doing so, meaning that in order to maintain the current agricultural landscape there is a need for conservation efforts within the town (Phelps 2017, 636). As for current conservation tactics regarding agricultural land in Mansfield, there have been a number of efforts to protect prime farmland soils as shown in *Figure 5* through the Connecticut Department of Agriculture's Farmland Preservation Program. *Figure 6* portrays the successful conservation by this program which has taken place across the state. Combined efforts of the Farmland Preservation Program and Connecticut's Farmland Trust have protected 1003 acres of farmland across five farms within Mansfield, and as a whole have preserved 48,455 acres throughout the state (Wilson 2020).

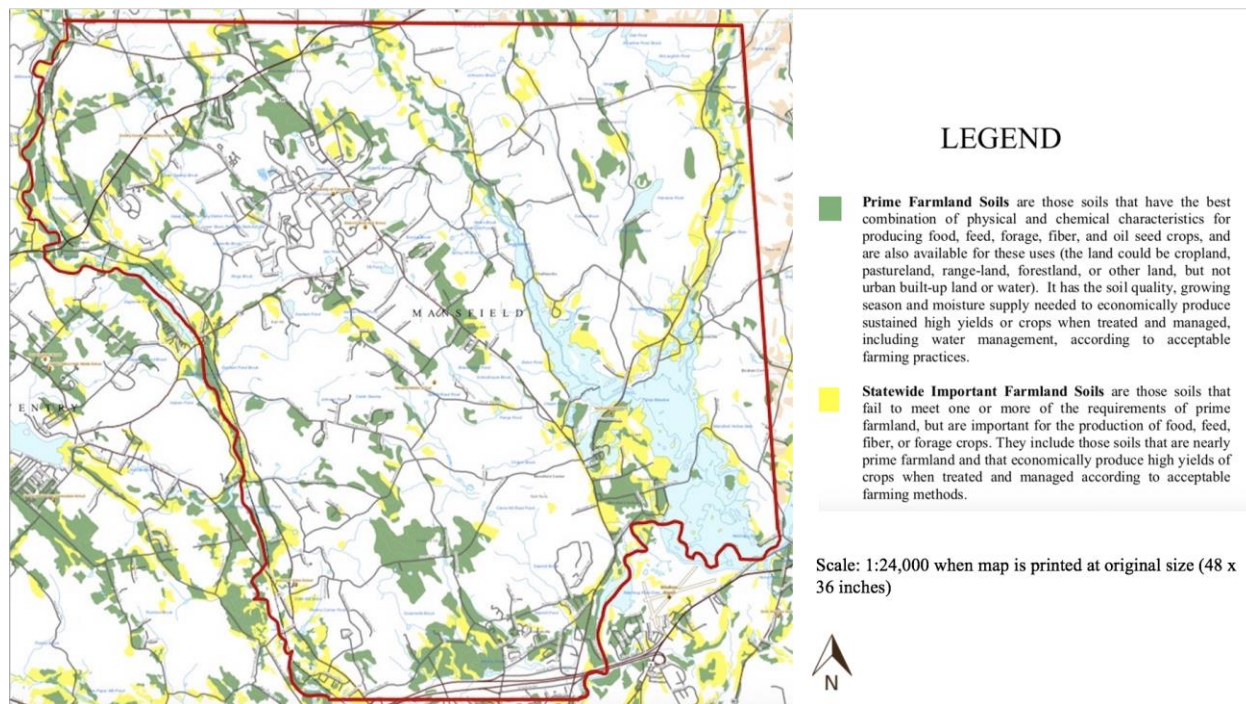


Figure 5: Farmland soils within Mansfield, divided into “Prime Farmland Soils” and “Statewide Important Farmland Soils” (CT DEP 2011).

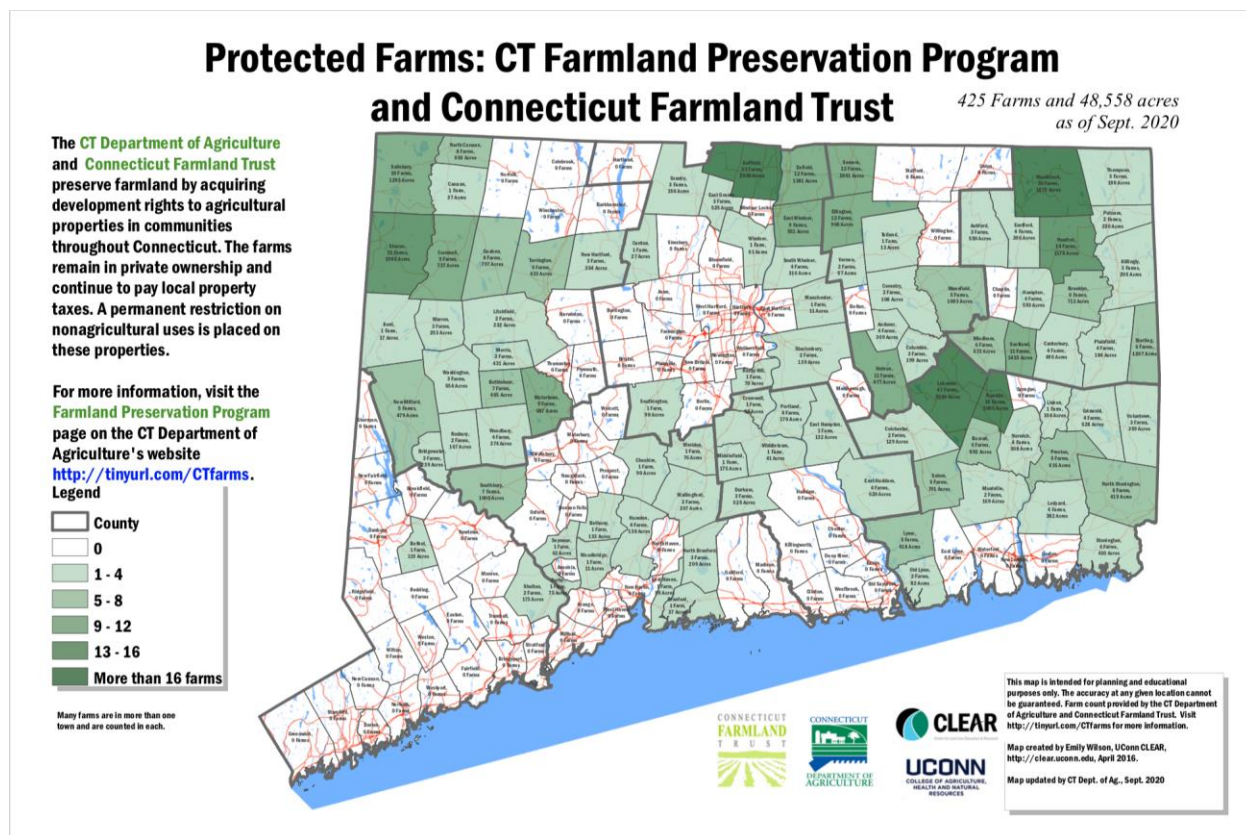


Figure 6: Farmland protected across Connecticut through the CT Farmland Preservation Program and Connecticut Farmland Trust (Wilson 2020).

One of the largest continuous areas of protected prime farmland soils falls within the property of Mountain Dairy, making it a focus of the Farmland Preservation Program as well as separate preservation efforts. From 2015 to 2018, there were five conservation easements put into place that in total protected nearly 1,100 acres of the Stearns Family Farm (Bowsza 2018). In addition, the business was recognized as a “Century Farm” in 1971, meaning that they had been successful for at least 100 years and were expected to be successful for at least 100 more (State of Connecticut Executive Chamber 1971). While these are very vague parameters for receiving the award, the farm’s status as a Century Farm shows the importance of the land to the general population. This increases the need for the conservation of such land as it benefits the

Connecticut public who rely on Mountain Dairy's locally produced goods. In this sense, a multifunctional view towards the conservation of Mountain Dairy preserves both farmland and local business, allowing for continued agricultural use of prime farmland soils by a historically significant dairy operation.

Although farmland within Mansfield has decreased within the past few decades, this does not mean agricultural development is not happening. While some farms shut down as people move away, such as that of Fox Meadow Farm, others begin to pop up, such as that of Cider Mill Family Farm (Cider Mill Family Farm 2021). One of the most recent agricultural developments which has spiked controversy within the town and can be used as a case study for potential efforts of simultaneous agricultural land conservation and progress is the previously mentioned Agbotic Greenhouses.

The development plan includes six greenhouses, built within 159 acres off of Browns Road on two parcels of land which were previously used for agricultural purposes, with the possibility for development of up to ten buildings over the years, all connected to a washing and packing house and an office (Town of Mansfield 2021, Office of the Commissioner 2021). The developers of Agbotic have stated that they will maintain around 50 acres of the land for hay production in addition to continuing the Red Barn Creamery, producing blueberries, and beekeeping, all which are part of the current uses of the two parcels, with the proposed development taking up roughly 3% of the existing land (Office of the Commissioner 2021). The greenhouses are expected to produce a year round supply of organic vegetables and herbs including "spinach, kale, arugula, baby beets with greens, various types of radish, industrial hemp ... grown together with tulsi and Thai basil, and rainbow Swiss chard" (Office of the

Commissioner 2021). As the greenhouses are part of the “Smart Farm” they will utilize robotics, machine learning, and automation in order to use less water and energy inputs in the production of their goods (Office of the Commissioner 2021).

While the project was conditionally approved by Commissioner Bryan Hurlburt of the CT Department of Agriculture in 2020, there have been mixed opinions on the development from citizens of Mansfield (Planning and Zoning Commission 2021). The majority of the concerns are regarding the production of hemp and the development of parcels of land which contain prime and state-important soils (Town of Mansfield 2021). However, within the Statement of Use which was revised in 2021, Agbotic clarified that there was no intention to grow marijuana and the smell of the hemp would be handled by using charcoal filters, as suggested by UConn’s College of Agriculture, Health, and Natural Resources (Office of the Commissioner 2021). In relation to the concerns about disturbing prime farmland soils and wetlands, the current plan for development of the greenhouses does not place them on any wetlands, prime farmland soil, or state-important soils (Office of the Commissioner 2021). However, there is a maximum of 2.62 acres of prime farmland soil which can be developed on these properties and only 1.2 acres used so far by previous developments, therefore Agbotic could legally build on up to 1.42 acres of prime farmland soils (Office of the Commissioner 2021). Although the project claims to be focused on sustainable food production and has planned its development in a way which would not affect the current agricultural activity on the land or the wetlands, prime soils, and state soils, there is still lingering concern within the town regarding the greenhouses and their development and production of goods. Currently, Agbotic

has been approved, but an appeal of the decision has been filed in the Superior Court meaning that the future of this farm remains uncertain (Town of Mansfield 2021).

While preserving prime farmland is often thought of as maintaining the land's ability to produce food and fibers, which is seen as necessary to many within the world of conservation, Jess Phelps (2017) argues that "a project primarily designed to secure land for the continued production of food and fiber can still protect open space," ultimately advocating for a multifunctional approach of farmland conservation efforts (Phelps 2017, 643). Using Agbotic Greenhouses as a case study for the multifunctionality of farmland conservation, it is possible to see the development of robotic, modern agriculture while also maintaining the prime farmland soils and continuing the majority of land's current use. In this sense, farmland conservation efforts by the CT Farmland Preservation program have allowed for two important agricultural processes to occur on the same land at the same time: the conservation of prime farmland soils while maintaining the current land use, and the development of a modern agricultural model which would provide a sustainable, year-round food source to the community.

As stated in Aldo Leopold's "A Sand County Almanac" (1949), "[conservation] is a state of harmony between man and land" (Leopold 1949, 196). However, a difficult issue within the field of conservation is figuring out exactly how to reach this state of harmony. Some scholars turn to strict preservation, while others turn to "wise-use" practices, and yet others advocate for a mix of the two (Phelps 2017). Multifunctional conservation creates a system of preservation and progress which generates a compilation of economic success, environmental sustainability, and awareness of cultural history all within the same parcel of land. Without some sort of modernized development on the land, it would be difficult to compete economically or socially

with other areas of the country. Without conservation of the land, it would be difficult to ensure the continued preservation of prime agricultural soils and the maintenance of an environmentally sustainable local food system. However, at the same time, Leopold argues that conservation performed with the intent of economic interests, such as preserving farmland simply for the maintenance of the business, is “hopelessly lopsided” as it overlooks parts of the “land community” which do not necessarily have economic value (Leopold 1949, 196).

In stark contrast to Leopold’s argument, theorists such as Ulrich Hampicke, call for purposeful attempts to place economic value on nature in order to increase conservation efforts (Hampicke 1993, 219). Hampicke applies a scientific and economic approach to conservation and preservation of ecological diversity, expanding the definition of economics to mean “rational, thoughtful management of scarce resources of whatever kind,” the “resources” in this case being animals, plants, soils, and other ecological characteristics (Hampicke 1993, 219). In this sense, Hampicke uses principles of economics and ethics to argue that applying an anthropocentric mindset to conservation, where a person sees environmental protection as an obligation to future generations due to the loss of resources which would occur otherwise, is “sufficient to substantiate ecological improvements” (Hampicke 1993, 221). When applying Hampicke’s argument to farmland conservation, recognizing value in agricultural land is simple as it directly feeds into our economy through the sale of produce. Decreasing agricultural land means lessening the space available for growing and harvesting crops, raising livestock, and as a result, running an economically successful farm. As such, agricultural land is one of the most obvious types of land to be considered for conservation if using Hampicke’s anthropocentric framework as without nearby land to produce food, there would be no sustainable food system.

As positive as the intentions behind farmland conservation may be, a number of issues can arise for the farmers themselves. Through direct interviews with planners taking part in farmland preservation in the Northeastern United States, Max Pfeffer and Mark Lapping determined points of conflict between farmland preservation and the farmers who are directly impacted (Lapping and Pfeffer 1994). First, regulations imposed on farmers to ensure the safety and quality of their goods, such as maintaining certain levels of water quality, increase the costs of farming without increasing the returned profit (Lapping and Pfeffer 1994, 239). In addition, many farmers were hesitant to invest in more land or farming technology because they expected a downward trend of agriculture and an opposite upward trend of urban development (Lapping and Pfeffer 1994, 238). Similarly relating to the financial struggles of farming is the fact that preservation of farmland gets rid of the opportunity for land sales and ultimately removes some of the land rights which the farmers have over their own property (Lapping and Pfeffer 1994, 239). This loss of property rights is one of the major conflicting values between farmers and preservation and can create reluctance to partake in preservation programs (Lapping and Pfeffer 1994, 244). Ultimately, keeping farmers themselves involved in the preservation process is extremely important as it allows for emic perspectives to be considered when making decisions regarding the future of farmland.

In sum, farmland conservation must take into account not only the business of the farm and the quality of the land, but also the entire ecosystem which can be found directly in, on, and around the farm - including the farmers. Therefore, a multifaceted, ecocentric method of farmland conservation allows for a variety of current and future uses, whether they are through the creation of an open space, the continuation of current agricultural processes on the land, the

development of new forms of agriculture, or any combination of these three, in addition to maintaining a holistic view of the land being considered.

Conclusion

Mansfield's agricultural history can be seen in a variety of ways throughout its current landscape. With the Storrs Agricultural School's journey to becoming the official public University of Connecticut, the Stearns Family Farm's evolution from a mulberry farm to becoming one of Connecticut's few Century Farms and a well-known dairy producer in the state, and the widespread variety of family farms which are seen across the town, it is evident that Mansfield remains a prominent figure within the agricultural sector of Connecticut.

However, similar to many towns across New England, Mansfield's agricultural land is decreasing in acreage. While farmland decreases, there is an opposite trend for development and construction. Although agricultural land holders such as UConn and Mountain Dairy are still able to hold onto roughly 50% of the agricultural land in the town due to UConn's economic and social power in the region and Mountain Dairy's preservation, the remaining 50% is comprised of smaller tree farms, greenhouses, and family farms that are much more susceptible to external factors such as monetary deals from developers, lowered economic success due to a lack of customers, and climatic events which might harm their smaller amount of goods produced. In order to truly conserve Mansfield's agricultural history and landscape, it is essential that smaller farms are kept in consideration when discussing future conservation efforts as they make up half of all the farmland within the town.

One aspect of this paper which was not deeply explored and would require further research is Mansfield's early agricultural history. Ideally, future research would take into account

pre-colonial and early-colonial landscapes and attempt to trace Mansfield and the surrounding towns' agricultural landscapes as far back as possible in relation to specific crops grown and land ownership. Understanding the history of the land on which Mansfield's current farms are seated is essential to understanding where they are today and where they will be tomorrow. Through future research and conservation efforts, it is possible to have a more holistic view of the town's agricultural landscape and ultimately decide how to progress within this sector.

Applying a multifunctional method of conservation to Mansfield's farmland supports the connection of the agricultural community and general public of the town through an appreciation of both Mansfield's agricultural history and its present day agricultural successes and systems. By allowing for preservation and continuation of current agricultural practices, such as that of Mountain Dairy, in concert with new agricultural developments, such as that of Agbotic Greenhouses, Mansfield's history as an agricultural leader within Connecticut will undoubtedly be acknowledged and continued for years to come.

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