

Social and Economic Landscapes of Dairy Farming in Madison County, NY, 1860-1945

Eric E. Jones, Jordan Davis, Wyatt Fleming, Kelli Hajek, and Amber Wellings



Settlement Ecology Research Group
If you are interested in a copy of this poster, it can be found at the link below or QR code to the right along with updates on all of the current work being done by the Settlement Ecology Research Group. Corresponding author's email: jones@uofsc.edu
settlementecology.weebly.com/research



Preface

This research examines the relationship between farming practices, surplus production, and landscape to describe the history and evolution of a rural dairy-farming community in the Town of Fenner and the broader county in which it is located, Madison County, NY. From 1860-1945, Upstate NY became one of the primary dairy producing regions in the United States, built on family-run farms of 80-100 acres (i.e. smallholders [Netting 1993]). Around these farms, non-farming households settled and complementary businesses and services formed. Over the intervening years, some social and economic structures have changed drastically while many have stayed very much the same. This constancy and change at various scales in rural communities, the dialectics of them, and how this complexity is often lost in discussions of "rural America" is our ultimate interest for the Settlement Ecology of Early Rural America(s) (SEERA) project.

Goals for this Research

Establish a baseline for the economic landscape of farms and farming in the mid-1800s (1860 to be exact) using historic maps, census data, and agricultural schedules.

Describe and explain consistency and change in farm activities and production and the economic landscape of the town from 1860-1890.

Compile countywide data, collected by the USDA, from 1860-1945 and compare with century economic trends to those in the 20th-century.

History and Background

Pre-1770: all of modern Upstate NY was Haudenosaunee territory. Oneidas had a village in the northeast corner of the Town of Fenner during the 1300s and 1400s. By treaty it should be Oneida land still.

1770-1802: New York state seizes the southern half of the county, first permanent Euro-American settlements are built, and the state seizes the northern half of the county.

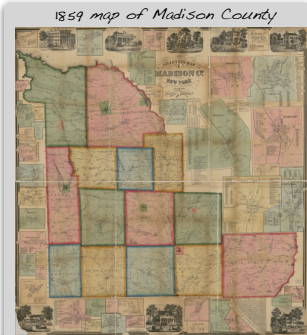
Early 1800s: white settlers flood into the region, mainly from New England and the Hudson Valley

Mi-1800s: increase in dairying activities after the building of the Erie Canal, which made crop farming less profitable and cheese the cash crop of the region (McMurry 1996)

Mid-1800s: the shift from subsistence to commercial farming took dairy production out of the home and into cheese factories (Henretta 1991; Parkerson 1995)

Late 1800s-early 1900s: corporations sell farmers on the Progressive Era: new tools, technologies, and scientific approaches to crop raising and animal husbandry (Parkerson 1996; Huey 2000).

From a historical archaeology standpoint, research into farmsteads has been common in upstate NY for several decades. Research has documented prominent farmers, household life, and even farming itself, in a few instances (e.g. Peña 2000; Rafferty 2000). Historians have surveyed farming-related documents and records have characterized county and regional patterns (Atack & Bateman 1987; McMurray 1996; Parkerson 1996). However, the middle level scale of communities and farm neighborhoods (Beaudry 2001) and agricultural landscapes (Adams 1996) have been studied less. Part of our goal here is to explore farming at this scale to connect it to existing descriptions and explanations.



Methods

Step 1

We combined the 1860 federal agricultural schedule data and household census data with an 1859 map of Fenner in QGIS:

Step 2

We digitized agricultural schedules and calculated surplus by modifying Parkerson's (1996) equation:

Surplus
(converted to bushels of corn via caloric equivalency)

= products - seed requirements - feed - household consumption

Step 3

We collected landscape data for farms from 1875 and compared commercial vs. subsistence farms via DFA.

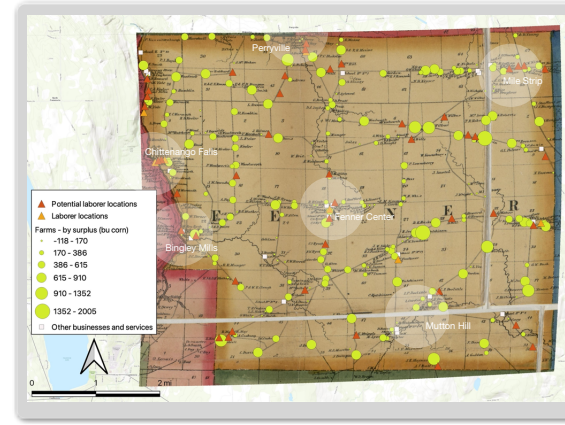
Step 4

We collected and summarized USDA county data from 1860-1945, linking it to the overlapping town patterns.

Creating the 1860 map: reconstituting community in QGIS

This is a screen shot of our work set up for transferring data from 1860 household census and agricultural schedules onto a digitized version of the 1859 town map. Not every household or farm from the census was included in the map, which is another topic entirely. When possible, we added them to the map by tracking the spatial arrangement and order of households visited by the enumerator. Those that were in the census between two households on the map were added to that location.

Reconstructing Social and Economic Landscapes and Trends



1860: The Emerging Commercial Farming Economy

The existence of a map from 1859 and the 1860 federal census with individual farm agricultural schedules, gave us a starting point for examining economic landscapes.

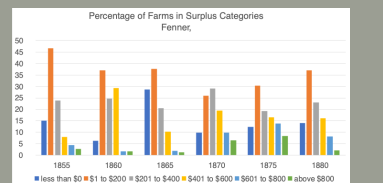
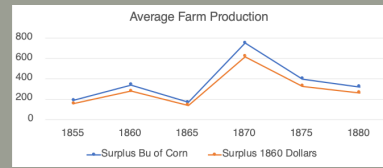
Landscape and Production – This map displays farms by overall surplus amounts. Locations of farm and day laborers (including those not originally on the map) are also shown. High producing farms were slightly more prevalent in the eastern half of the town. These farms were also not particularly close to clusters of other residents and businesses (1-mile diameter circles). The farms were mostly there first, so other residents, mills, carpenters, blacksmiths, etc. clustered in these 6 locations based on other factors. Transportation may not have been a major factor, particularly if one did not have to go beyond the 6x6-mile town border to find a needed good or service, which appears to have been the case.

Labor and Race – The maps to the right show surplus by the primary moneymaking products and laborers as three categories: Black, white U.S.-born, and white immigrants. We immediately saw two patterns:
1) Laborers were near the most productive farms, but the primary cash crop on those farms varied
2) Black laborers had fewer farms from the two highest classes of surplus within 2 miles of them
Laborers usually cycled between several farms for work, but being near the wealthiest appears to have been a deliberate strategy. Despite being home to prominent abolitionists and architects of resettlement programs for free Black Americans, central Madison County was not attracting many Black residents. Part of this may have been that they were marginalized with regard to job opportunities. Being slightly farther from the most productive farms, who likely had the highest labor needs, may signal that Black laborers did not get hired as often as them.



1865-1875: Diverse economy, egalitarian principles?

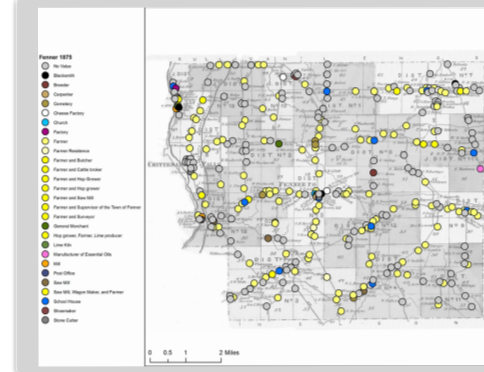
Year	Sample Size	Total Farms	Avg Total Acres	Avg Improved Acres	Avg Value
1855	116	240	76.4	59.8	\$3,003
1860	67	253	95.6	69.3	\$3,640
1865	176	245	82.7	63.1	\$2,635
1870	62	218	106.4	81.7	\$5,513
1875	95	236	112.2	71.3	\$4,214
1880	100	239	85.0	62.4	\$3,362



Production Trends – Farm values and profits grew throughout the Civil War. The increased profits that resulted from the high demand for food for Union troops is well documented (see Atack & Bateman 1987, Parkerson 1996, McMurray 1996). They decreased after the war, and farm values in 1880 fell below pre-war values. So, it's not as simple as farms continued to produce more surplus after 1855. Our histogram of farms by \$200 surplus categories shows a leveling out in 1870 and 1875.

After 1870, cheese factories were established. The 1875 map to the right shows a diverse economic landscape with several mills, carpenters, blacksmiths, and farmers with multiple listed professions. As surplus variation between landowning farmers decreased, the town experienced the formation of perhaps its most economically diverse landscape.

1875: the landscape of local cheese production



Farm Settlement Ecology – The results of discriminant function analysis on a sample of farms from 1875 shows farms producing more than \$100 in surplus were closer to Fenner Center – which became more densely populated by businesses and services by 1875 – and to cheese factories. Cheese factories were setting up near larger, more productive farms, which were producing more milk, in addition to the staples of oats, corn, and hay.

Structure Matrix	Function
	1
Distance to town center (mi) ^a	0.834
Distance to cheese factory (mi)	0.833
Distance to railroad (mi)	-0.605
No. of farms in 1 mile	-0.542
Percentage of silt loam on farm	0.375
Percentage gravely silt loam on farm	-0.375
No. of family members within .5 mile	-0.192
No. of farms in .5 mile	-0.077
No. family members in 1 mile	-0.075
Distance to closest water source (mi)	-0.072

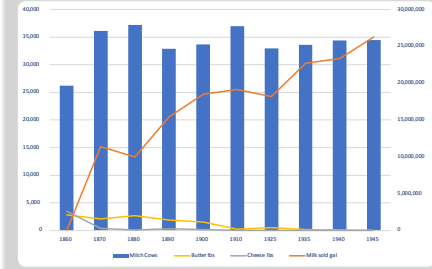
Strongly discriminant
Moderately discriminant
Weakly discriminant
Did not distinguish

Higher producing farms have more silt loam, which is slightly better for crops than gravely silt loam. The latter soil type is more prevalent at lower producing farms.

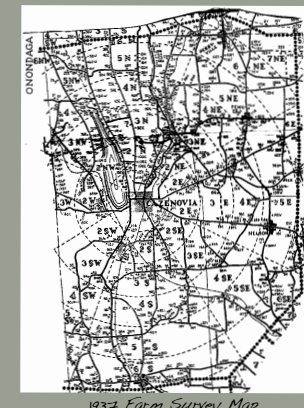
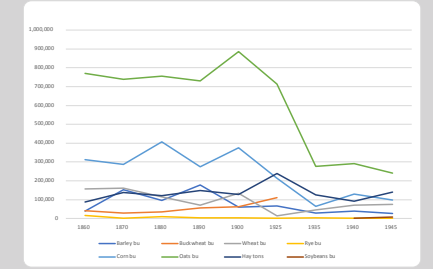
Lower producing farms have more farms within 1 mile and more relatives within .5 mile. Perhaps labor sharing and social networks were more important to farms not producing as much surplus.

1880-1945: modern dairy farming emerges

From 1870-1945, the numbers of cows in Madison County stayed relatively constant. However, the number of farms decreased by almost half, farm size grew 1.5x, and milk production increased 2.5x.



Crop production peaked in 1900, dropped until 1935, and then leveled off. This negatively correlated with the second surge in milk production after 1925. This may mark the move toward more of a focus on milk production.



The more things stay the same, the more they change

As farms decreased in number and increased in size from 1870-1945, they were still largely under 260 acres (so still smallholders). In addition, ownership decreased and debt load increased until 1925. It dropped after WWII, and current farmers report around 30% or so in the early 2000s.

Year	Avg Acres	No. of Farms	Percent Owned	Percent under 260 acres	Avg. debt amount/land and building value
1870		4,140			
1880	85	4,637	82		
1890	90	4,212	78		
1900	93.8	4,144	63	94.1	
1910	94.4	4,042	70		35.4
1925	95.9	3,632	79	96.3	44.5
1935	102.5	3,358	77		
1940	115.6	2,752			
1945	122.7	2,786		98.2	

Social scientists struggle when talking about American farmers and whether they're wealthy. From a historical perspective, wealth in Madison County appears to have changed from 1860 to 1925, if the debt load is any indication. During this time, farming itself changed very little, as milk, oats, hay, and corn continued to constitute the main activities. Being a smallholder may have shifted mid-century, from a middle or even higher class to one of working class. The 2-6% of farms larger than 260 acres at this time are another story for another time.

Discussion

Late 1800s farm socioeconomics – 30 years ago, archaeologists like LuAnn Wurst (1993) correctly challenged the Agrarian Myth that 1800s rural America was egalitarian. We must be careful, though, not to over-correct and study rural socioeconomics similar to urban counterparts or to treat all rural communities as "rural America". As our findings suggest, there may have been a leveling of landowning farm production from 1865-1875 in Fenner, resulting possibly from cooperative labor between intermarried farm families and higher overall profits from war-time demand. That said, there clearly were distinctions between farmers – with 50% still making less than \$200 in surplus – and geographic variability in production across the town.

In addition, there were clear distinctions between farmers and laborers, who rarely owned property. Furthermore, it appears Black laborers may have had less access to opportunities at the most productive farms compared to white laborers. And, by midcentury, there was 1 non-white farmer in all of Madison County. Perhaps the Agrarian Myth came from focusing only on wealthier white landowning farmers, who had overlapping labor and social support networks.

Economic Diversity – The most surprising finding was the diversity in economic ventures from 1860-1900. This was a time of complementary businesses – farms, carpenters, mills, wheelwrights, blacksmiths, etc. – and local production of dairy products. The former were gone by the early 1900s. The latter began on the farms, moved to local cheese factories, and then those factories were replaced in the early 1900s by a smaller number of milk plants that either bottled milk themselves or were depots for shipping to bottling plants (David and Lynne Jones, personal communication). These were still in operation when current residents were growing up in the town. By the 1970s, these were replaced by trucking operations that shipped milk to plants in cities, like Oneida or Syracuse.

Constancy, Change, and Farming – As we discuss town- and county-wide changes, we must acknowledge that major farm activities have largely stayed the same from 1860 to today: milking cows and growing oats, corn, and hay. The proportions of those products have certainly shifted over this time, with milk increasing in proportion after 1925. This shows the importance of examining farming on several scales. On a farm, change and consistency exist simultaneously in space and time. It is a way of life that requires long-term planning but almost hourly flexibility; attention to individual animals and knowledge of markets. Examinations of the history of American farming must work at multiple scales and recognize that contradictory findings across them is characteristic of an industry where farmers simultaneously value their independence (household scale) and community-building (town scale), while being increasingly separated from the modes that turn the products of their labor into commodities (county scale and larger).

Status, material culture, and debt – We have largely ignored the two largest elephants in the room: debt when discussing farming and status when discussing historical archaeology. To fully explore the wealth and status of farmers and farming, we must examine more than the dishes and food remains. We must examine the farms and the fields, too. For example, Rafferty's (2000) findings that ceramic housewares decreased in value as the Porter Farm produced more, does not seem contradictory given our findings here. It signaled a more 20th-century approach to status displays on farms, where more money went into landscaping and the farm than domestic spaces. This could be connected to increasing debt loads because agricultural loans could be used to build new barns and buy new tractors, but not buy fancy dishes. A more extensive examination of production, status displays in both the household and on the farm, and farm debt is needed to fully understand status, wealth, and the history of American farming.

Acknowledgments

Thank you to a large number of undergraduate research assistants, particularly Caroline Watson, Emma Grace Sprinkle, Jacob Daunais, and Zach Boal for their hard work getting this research off the ground. Megan Pangrass is the other member of our UofSC team currently collecting data for this project; the only reason she's not a co-author is because she started working with us after the submission deadline. I (Eric) owe almost everything to both sides of my family, the Joneses and the Marshalls, for instilling in me my love of history and farming, and their desire to discuss family and local history. The Cody family has been gracious with their stories, family history, and letting me wander their property. Countless residents, both long-term and recent arrivals, have reached out to help with this work in various ways, and we appreciate them immensely.

References Cited

Adams, William Hampton (1990) *Landscape Archaeology, Landscape History, and the American Farmstead*. Historical Archaeology 24(4):92-101. || Atack, Jeremy and Fred Bateman (1987) *To Their Own Soil*. Iowa State University Press. Beauty, Mary C. (2011) *Trying to Think Progressively About 19th-Century Farms*. Northeast Historical Archaeology 31: 129-142. Henretta, James A. (1991) *The Transition to Capitalism in America, in The Transformation of Early American History: Society, Authority, and Ideology*, edited by J. A. Henretta, M. Kammen, and S. N. Katz, Alfred A. Knopf || Huey, Paul R. (2000) *Research problems and Issues for the Archaeology of Nineteenth-Century Farmstead Sites in New York State, in 19- and Early 20th-Century Domestic Site Archaeology in New York State*, edited by J. P. Hart and C. L. Fisher, New York State Bulletin 495, New York State Education Department, Albany, NY || McMurry, Sally Ann (1996) *Transforming Rural Life: Dairying Families and Agricultural Change, 1820-1895*. Johns Hopkins University Press || Netting, Robert McC. (1983) *Smallholders, Householders* || Parkerson, Donald H. (1996) *The Agricultural Transition in New York State: Markets and Migration in Mid-Nineteenth-Century America*. Iowa State University Press || Peña, Elizabeth (2000) *Prospects for the Archaeology of Nineteenth-Century Farmsteads in New York State, in 19th- and Early 20th-Century Domestic Site Archaeology in New York State*, edited by J. P. Hart and C. L. Fisher, New York State Bulletin 495, New York State Education Department, Albany, NY, pp. 37-43. || Rafferty, Sean (2000) *A Farmhouse View: The Porter Site, in 19- and Early 20th-Century Domestic Site Archaeology in New York State*, edited by J. P. Hart and C. L. Fisher, New York State Bulletin 495, New York State Education Department, Albany, NY || Wurst, LuAnn (1993) *Living Their Own History*. Unpublished PhD.