# Settlement Ecology of 19th- and Early 20th-Gentury Caroline Watson Farmsteads in Madison County, NY

# Introduction

Primary question: how diverse was the economic landscape of the Town of Fenner, Madison County, NY in 1868-75 (and how does that compare to family history data from the 20th century)?



## Components to this question:

- 1. What is the history of settlement in the county?
- 2. In addition to farms, what other economic ventures existed in the town during this time?
- 3. What was the spatial distribution of farms? Other businesses?
- 4. What factors influenced observed spatial patterns at the scale of the town and districts within?
- 5. Can we operationalize Beaudry's (2001) concept of farm neighborhoods--farms that cooperate socially and economically--as a viable scale of analysis?
- 6. How do our findings compare to the farming experience in the mid-20th century?

## Our Approach:

- 1. Examine the history of Haudenosaunee and Euro-American settlement in the region
- 2. Examine data from an 1868 Gazetteer of business listings and maps from 1875
- 3. Use GIS to gather basic spatial distribution data and to generate more complex settlement ecology results using discriminant function analysis to describe the spatial patterning of a sample of farmsteads from 1875 in relation to various environmental and cultural landscape features.
- 4. Incorporate early findings from oral histories of farmers.

## A Brief History of Settlement and Farming in Madison County

### Haudenosaunee Territory:

Haudenosaunee (Iroquois) settlement and use of land in what is today Madison County extends back at least 2000 years (Snow 1994; Engelbrecht 2001). Onondaga settlements were built in the present-day Town of Cazenovia. The Oneida homeland was the present-day Towns of Stockbridge, Smithfield, and Lenox. In the early 1600s, there were likely around 1200 Oneidas and 2700 Ononondagas each in a single village (Jones 2010a). Farmland surrounded each village, and the land between them was hunting, fishing, and gathering territory. Settlement patterns for both Nations were influenced by overland trails and high quality agricultural land that had lower frost probabilities (Jones 2010b). After the American Revolution, some Onondagas and Oneidas--despite their either neutrality or support for the Americans--were forced onto reservations or moved to Canada where they still reside today.



ne Oneida Nation in



#### Timeline of important events:

1770: first Euro-American squatters on Oneida lands.

- 788: the southern half of Madison County was "ceded" to the state on September 22 at Fort Schuyler by Oneidas (Child 1868:27).
- 1790: the first road was constructed. followed by the first grist mill four years later.
- 1795: immigrants from New England built the first permanent Euro-American settlements.
- 1802: the state purchased land from the Oneida Nation that would eventually become the northern part of the county. Soon, more Euro-Americans flooded into the area.

#### Important 19th-century trends:

- . The transition from crops to dairying after the building of the Erie Canal in the 1820s, which made cheese the cash crop of the region (McMurry 1995)
- 2. The shift from subsistence to commercial farming during the mid-1800s, which took production out of the home and into cheese factories (Henretta 1991; Parkerson 1995)
- . The impact of the Progressive Era on farming during the late 1800s and early 1900s (Huey 2000).

ap of Madison County from 1859

Analysis of 1868 Gazetteer of Businesses

1868-9

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Step 1:

Transcribe 1868 Gazetteer listing details of each town onto an Excel spreadsheet

Name of owner, Lot #, Acres owned, Occupation, Subscriber (is this a status marker?)

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130 Kenney, Michael	63 Mile Strip	farmer	205						
131 King, Bryan	45 Persyville	famer	-40						
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Spatial Analysis of Farms



Step 3:

Establish districts within the town based on rural population centers and clustering of farms and businesses



Step 1 Digitize the 1875 town map onto ArcGIS

Digitize buildings and cross-reference names with the 1868 Gazetteer listings for acreage and occupation



Step 4:

Calculate first-order spatial statistics using nearest neighbor and kernel density

### Step 5:

Measure 14 landscape variables associated with farms, including distance to cheese factories, number of farms within 1 mile, wetland size and area on farms, and sediment characteristics

Oral Histories: informal (for now) conversations about the town in the mid-20th century.

it function analysis comparing farms to on-farms and comparing districts to one another









## First Order Spatial Statistics

![](_page_0_Figure_64.jpeg)

## Fenner Gazetteer Trends: the percentage of farms to overall residences, compared to 75% in most other towns

Results

- average farm acreage

The Perryville district had the most farms.

Percent Muck on Property

Number of Wetlands on the Property

Largest Wetland on the Property

Percentage of Farm that is Wetland

Total area of Wetlands on the Property

Wyss, Peterboro, and Perryville had the most farms over 150 acres.

Genera	1 Town				Acres	Percentage of Total Area
C	To To	otal area			37,627	
Charac	Ceristics	rop of gray	11 v oilt 10		22 501	86 670/
	Good	rea of chai	nnerv silt	loam	2782	7.39%
	Best — A	rea of silt l	loam		1319	3.51%
	Worst A	rea of muc	ck		935	2.48%
	Te	Total area of wetlands			1712	4.50%
	Feature		Farm	Non-Farm	F	emember, at
	Distance to nearest Cheese Factor	ry (miles)	2.40	2.17	t,	his time cheese
	Distance to nearest Blacksmith (n	niles)	3.02	3.07	is	s the "cash
	Distance to nearest School House	istance to nearest School House (miles)				"Cuptor
	Distance to nearest Saw Mill (mil	es)	2.73	1.94	C	rop of upscal
	Farms within 1-mile radius		6.5	6.9	~	lew York
	Farms within 2-mile radius	rms within 2-mile radius				
	Percent Gravelly Silt Loam on Pro	87.8	91.4			
	Percent Channery Silt Loam on P	roperty	4.6	5.3		
	Percent Silt Loam on Property			0.85		

# **Results (continued)**

stance to nearest hat is wetland Road distance to earest Cheese actory (miles)

Largest wetland on he farm (acres) Distance to nearest placksmith (miles) Percent Channery -0.025 ilt Loam

90% of cases were correctly predicted when group membership was ignored. This supports the significance of the results.

![](_page_0_Figure_76.jpeg)

2.19 2.48

3.90% 4.92%

#### Kernel Density

The kernel density shows the highest density of farms in Chittenango Falls, Mile Strip, Peterboro, and two dense clusters in Fenner near the town center. There are another 10 clusters, with lower density.

![](_page_0_Picture_79.jpeg)

![](_page_0_Picture_80.jpeg)

)hen we overlay the farms (yellow) and cheese factories (white), we see 3/4 of the latter are between clusters

![](_page_0_Picture_82.jpeg)

Each cluster is 5-8 farms

# Discussion

Acknowledgment

This work would not be possible without the town history and family history from an support of the entire Jones family, particularly Dave and Lynne (thanks Mom and Dad! EEJ), and the support of Sharon DeWitte. We must thank several undergraduate resear assistants for their help in turning the 1868 Gazetteer into a database. First and foremost, the crew chief Emma Grace Sprinkle and the MVP Zach Boal who started the process, and then in no particular order: Emma Sandifer, Robby Outland, Ally Swartzberg, and Andrew Lenart.

495, New York State Education Department, Albany, NY, pp. 37-43. \\ Rafferty, Sean (2000) A Farmhouse View: The Porter Site, in in 19- and Early 20-Century Domestic Site Archaeology in New York State, edited by J. P. Hart and C. L. Fisher, New YorkState Bulletin 495, New York

0 0.5 1 2 Miles 

![](_page_0_Picture_91.jpeg)

Districts vs. one another

combinations of variables that on the farm

values are the most influential Percent Muck<sup>b</sup>

The positive or negative value the farm (acres)

**Future Directions** 

Smaller scales:

excavations.

Similar and larger scales:

higher average value.

in distinguishing the groups. Largest wetland on

most distinguish the districts

![](_page_0_Figure_92.jpeg)

#### Returning to questions 1-5:

1. After Oneidas are forced off the land, Euro-American farms were established the areas with better sediments in the early 1800s. Cheese factories were later built in strategic locations to minimize travel distance to farms.

2. The town is dominated by farms, but cheese factories, blacksmith shops, saw mills, carpenters, and merchants are present in small numbers. There are also isolates like a lime kiln, a shoemaker, a non-specified factory, and a stone cutter. 3. Farms tend to cluster in groups of 5-8.

4. Farm location were likely influenced by several environmental factors that would have been better for crop production and pastureland, as well as being close, but not too close to 5-8 other farms.

5. There are 15 of the aforementioned clusters. This may be a good way to operationalize Beaudry's (2001) concept of farm neighborhoods. Those clusters are generally a mile in diameter or less, and farms average 6.5 farms within a mile radius. Based on preliminary oral history results, this is a reasonable number.

#### Question 6 (i.e what we can say so far ):

On these large scales, it does not appear that the town was ever economical diverse. This lack of diversity became more extreme as local cheese production and other local businesses closed or moved out of the town by the mid-20th century. Farm size increased and the number of farms decreased as they consolidated lands and herds during the 20th century. Some characteristics stayed the same, however, such as groups of 5-8 cooperative farms.

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will help to interpret the archaeological findings.

 Functions are linear
 Number of wetlands
 -0.128
 0.036
 0.146
 0.043
 .633\*
 -0.224

77% of cases correctly Number of farms 0.155 0.141 0.152 -0.117 0.152 -.282\*

Our next steps are to expand our sample and include the towns of Cazenovia

and Nelson, which have historically been linked together with Fenner as a social

and economic unit. Eventually, we will examine all 13 towns in the county to

We will examine census data, historic documents, and conduct farmstead-level

Neighborhood: Did economic diversity or farmer class/status vary between or

within particular neighborhoods? As Wurst (1999) noted, class has been difficult

for archaeologists to operationalize. And, farmers have often been assumed to be

Farms: Rafferty (2000) found that the Porter farm household had similar

domestic wares as contemporary urban households, showing they were

connected to local economic networks. Dairying was their main venture, but

other agricultural products were commonly sold. This was common into the

1980s, when dairy production became the sole focus of many farms. Thus, we

cannot simply measure economic diversity on larger scales. We need to examine

individual farms to explore the scale at which diverse economic ventures existed

and changes in them during the 20th century. That is where the oral histories

socioeconomically monolithic, which has never been the case.

characterize settlement patterns and economic diversity on the county scale.

for the most variability, and Area of wetlands on -0.105 0.082 0.223 0.012 .345<sup>\*</sup> -0.254

Number of farms

within 2-mile radius

Percent Channery

predicted. within 1-mile radius

0.296 0.383 -0.030 -0.041 .539\* 0.219

-0.048 0.102 0.047 -0.104  $-.328^{*}$  -0.204

-0.122 0.198 0.190 0.121 .286\* -0.270

-0.144 -0.205 -0.068 -0.058 -0.072 -.495\*

![](_page_0_Picture_103.jpeg)