

Berkshire County Foodshed Analysis



Meet the Authors

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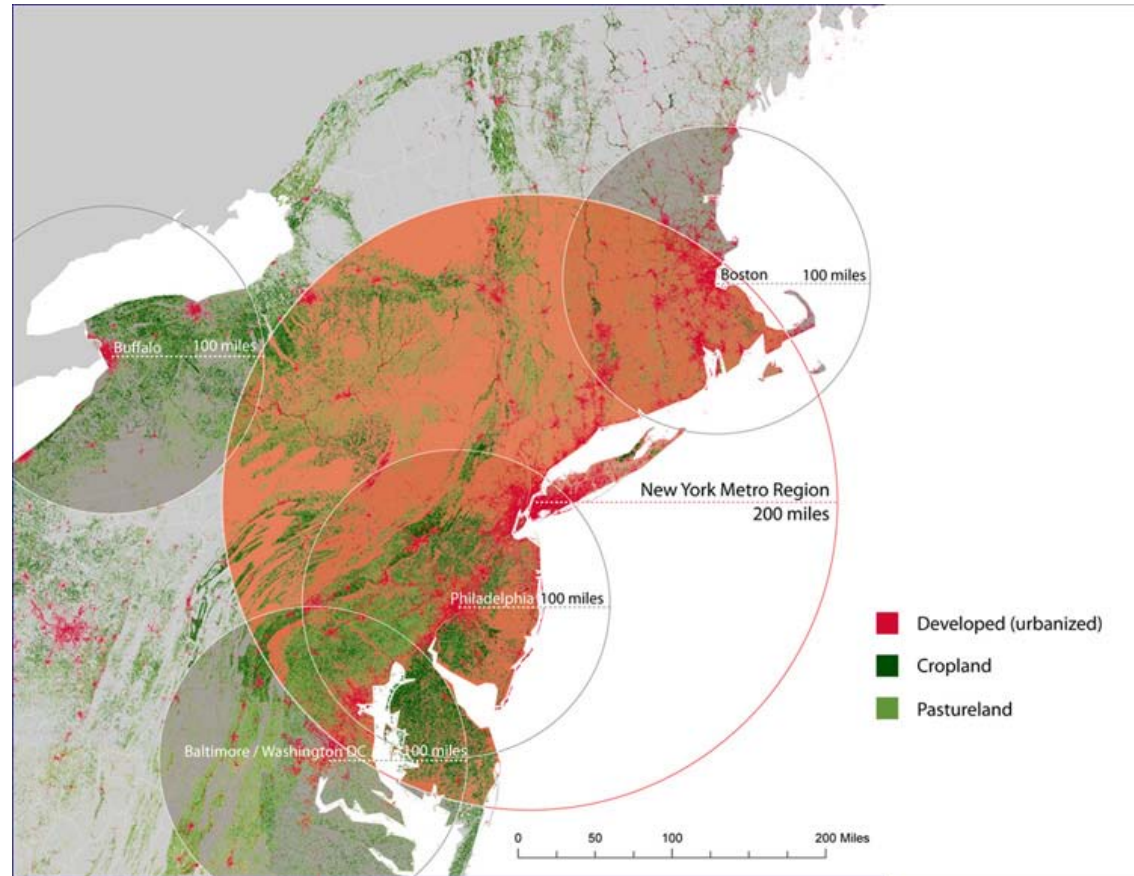


Project Background



What is a Foodshed?

- A play on “watershed”
- Refers to the land resource that supports food production for a region or community



Previous Foodshed Analyses

- Berkshire County
- Massachusetts
 - Statewide – 1975 and 1997
 - Shelburne Falls
 - Pioneer Valley, UMASS thesis
- San Francisco
- New York State – Cornell University



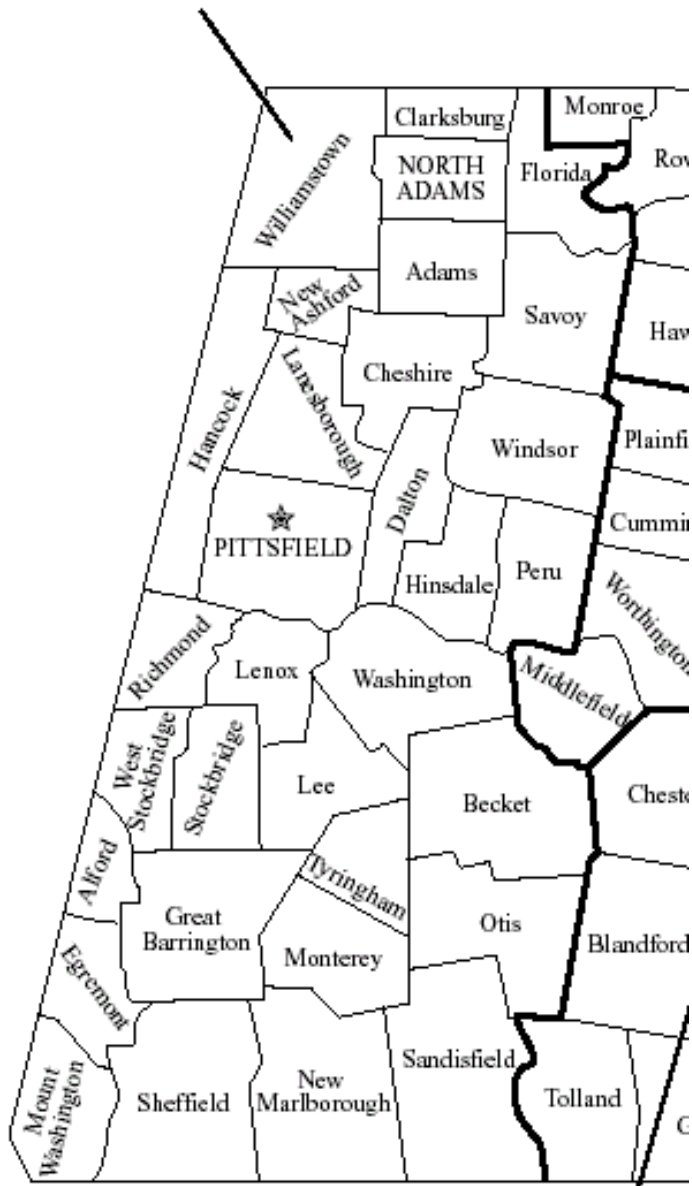
Methodology

1. How much agricultural land is in production?
2. What is produced on the land?
3. What is the “demand” – based on population and the typical American diet?
4. What proportion of the food demand can be met locally?

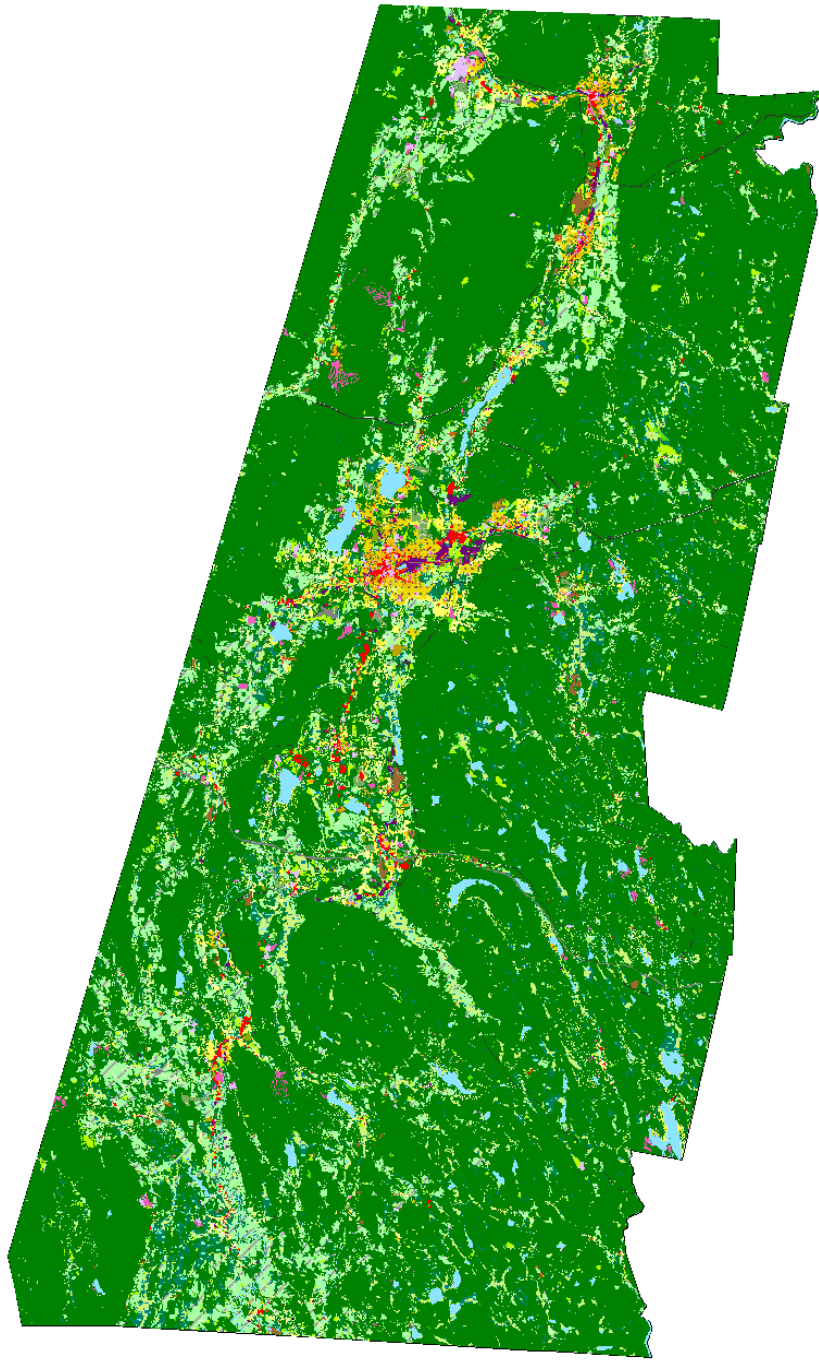
1. Agricultural Land Being Farmed



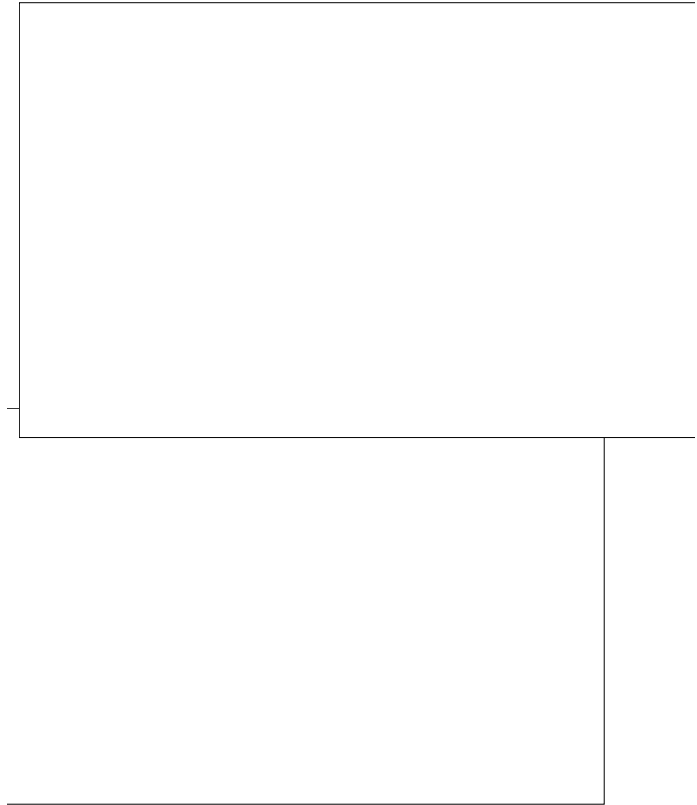
Berkshire



- 931.32 sq miles or 593,093 acres
- 129,288 people
- Median age 43.6 years
- Average age of the principle farm operator is 58.3 years



Total Land Use Berkshire County, 2005



Total Land Use by Acre Berkshire County, 2005

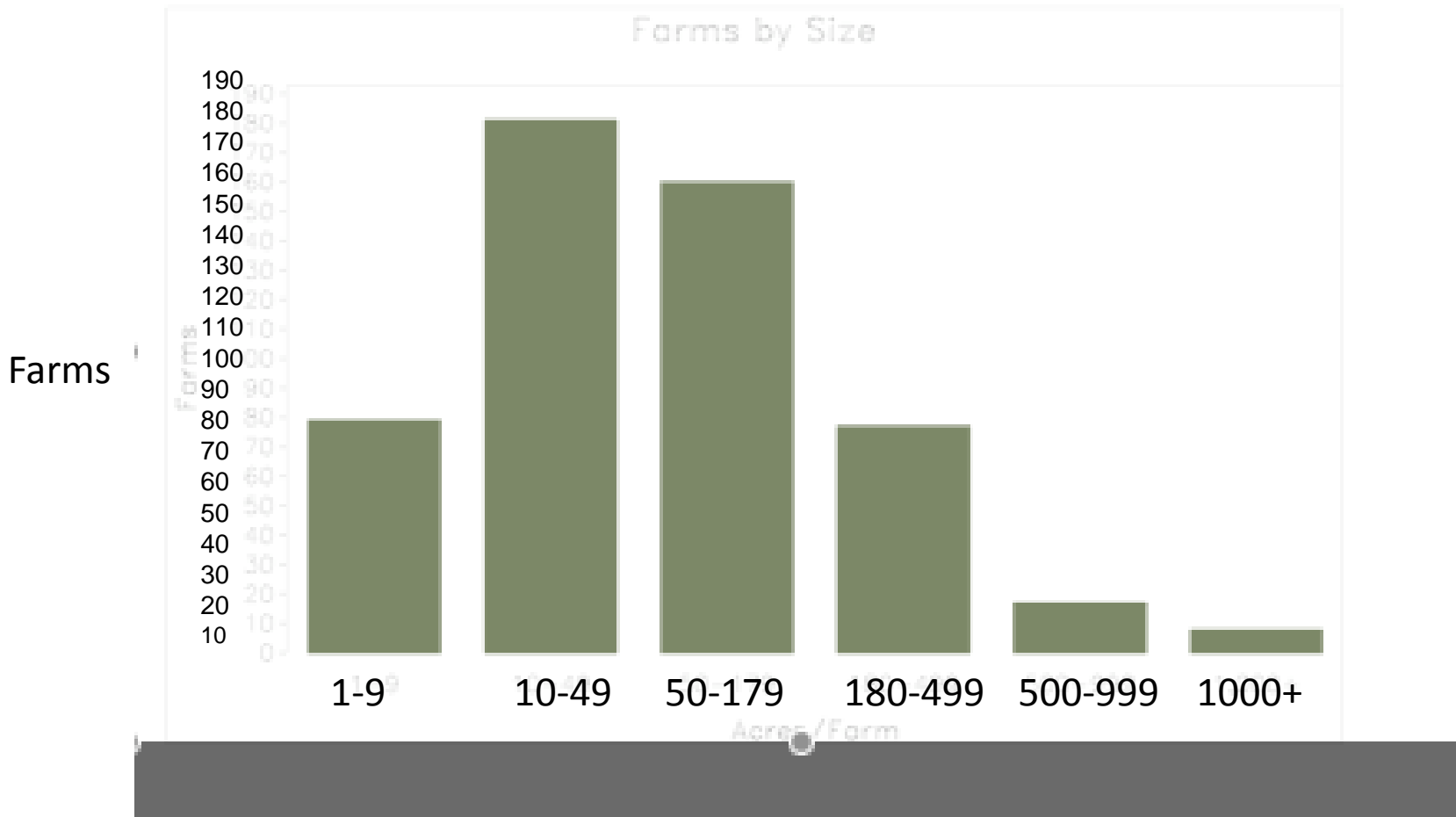
Land Use	Acreage	Percent
TOTAL NATURAL LAND	508,647.84	83.99
TOTAL OPEN LAND	8,353.73	1.38
TOTAL AGRICULTURAL LAND	39,231.71	6.49
TOTAL RECREATION LAND	4,132.48	0.66
TOTAL RESIDENTIAL LAND	32,305.01	5.34
TOTAL INDUSTRIAL LAND	12,984.72	2.14
TOTAL LAND	605,655.49	100

Farm Data

- Total Farms: 522
- Total Acres of Farmland: 66,352
- Average size: 127 acres
- Median size 50 acres



Farms by Size in Berkshire County



Acres/Farm

(2007 US Agricultural Census)

Comparative Data

2007	2002	1997
522 farms	401 farms	501 farms
66,352 acres	68,630 acres	67,983 acres
Avg: 127 acres	Avg: 171 acres	Avg: 136 acres

Agricultural Land Use

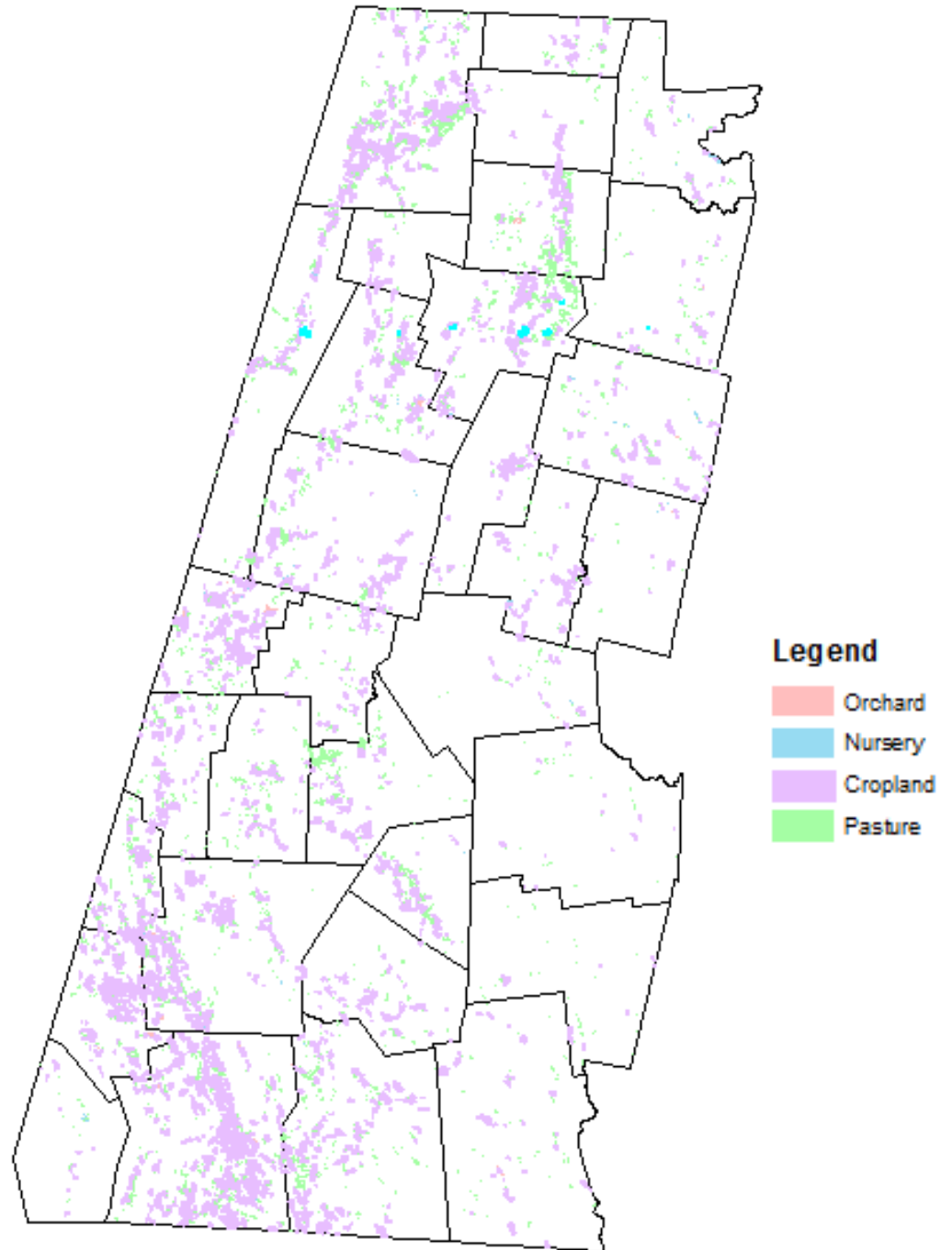
Cropland: 24,103.7801 acres

Orchard: 328.194624 acres

Pasture: 14,467.6526 acres

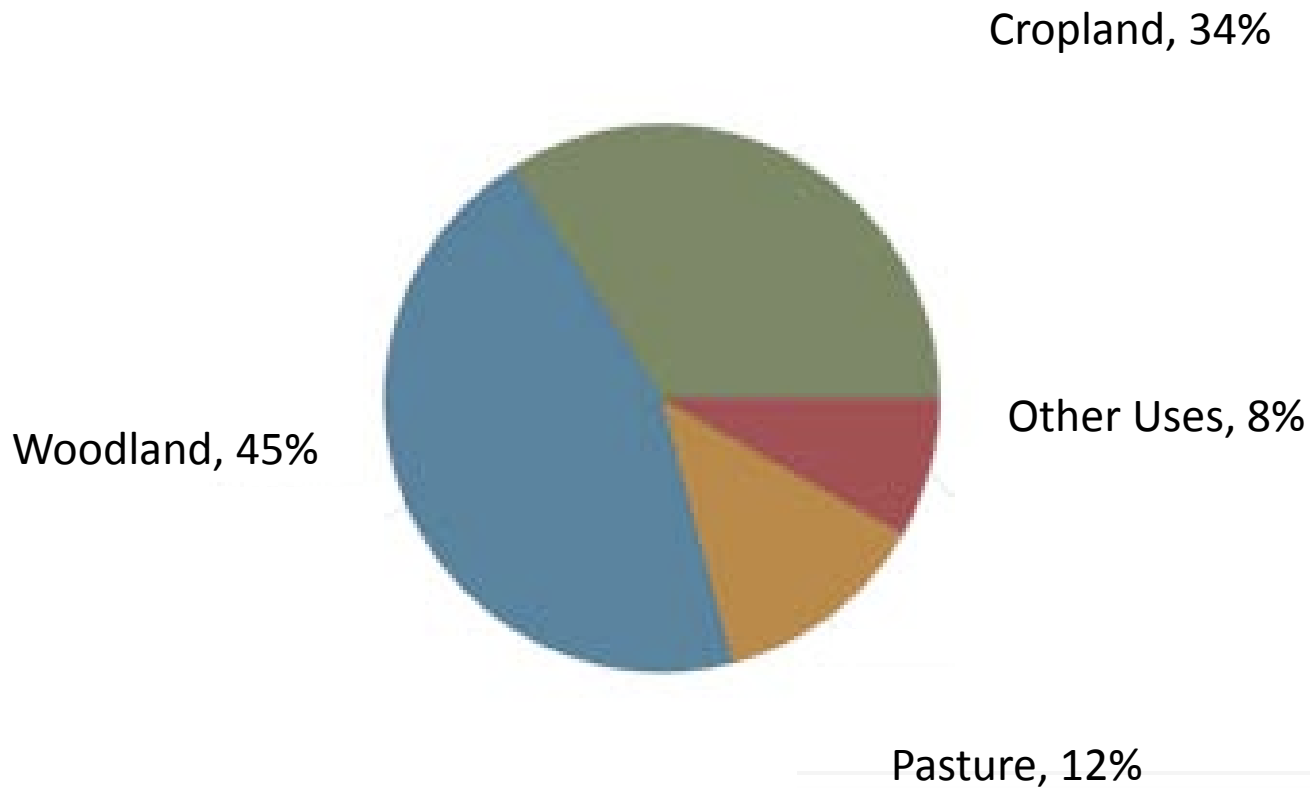
Nursery: 332.082151 acres

Total: 39,231.71 acres

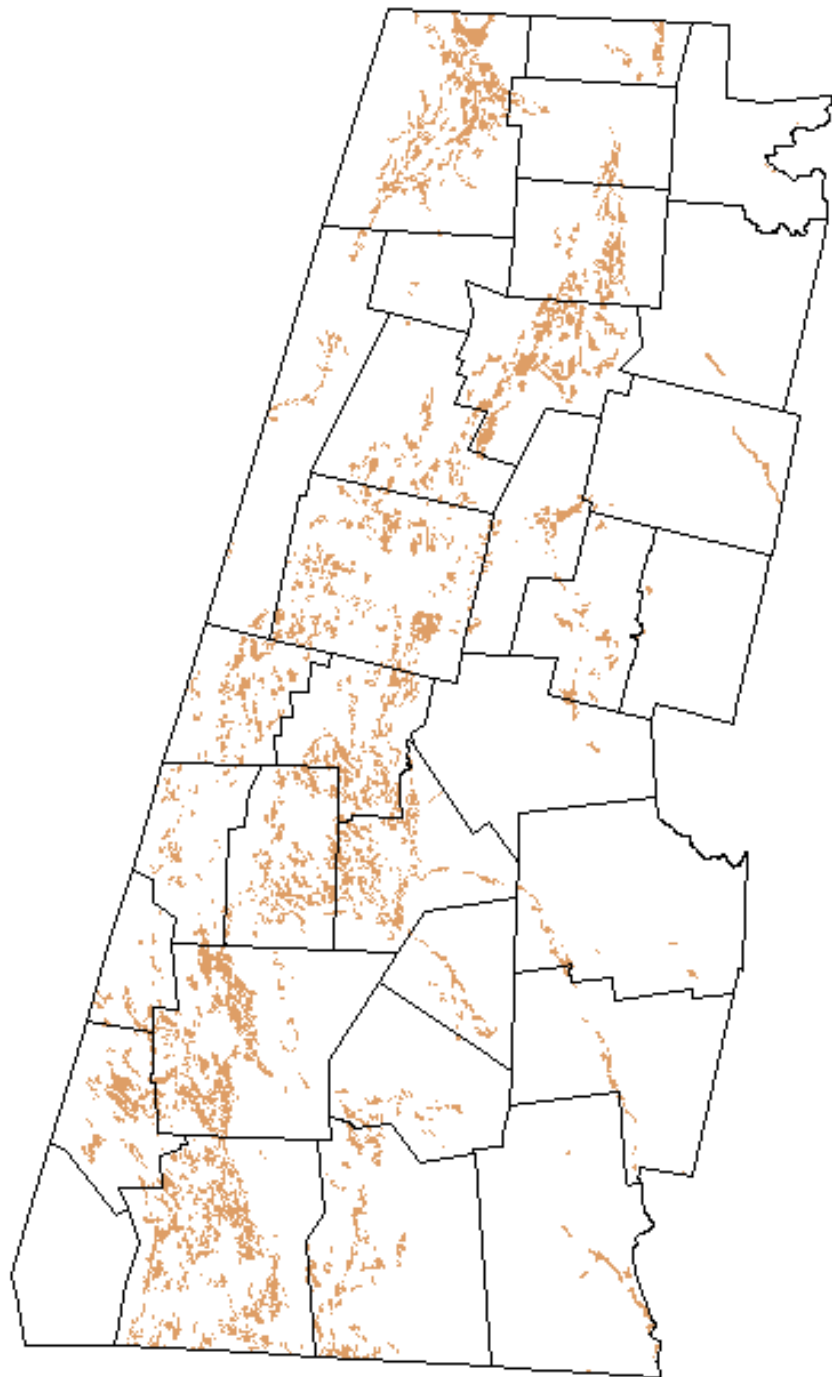


Land in Farms in Berkshire County (by type of land)

66,352 total acres



(2007 US Census of Agriculture)



Prime Farmland

Legend

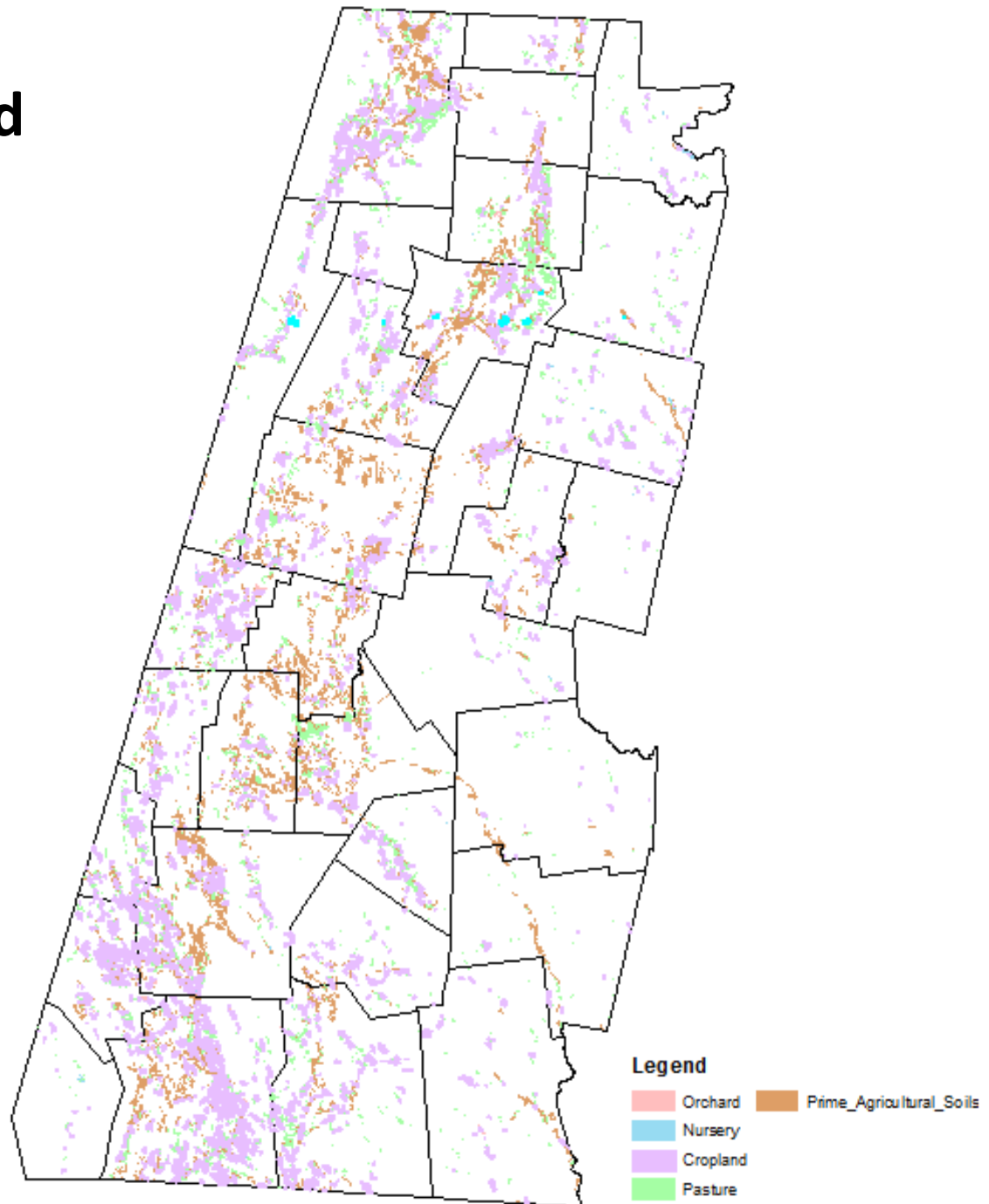
- Prime_Agricultural_Soils
- Towns
- County

Prime Farmland =
43,814.70652 acres

Prime Farmland and Agricultural Use

Intersection of prime farmland and current agricultural use = 12,696.82 acres

32.3% of total agricultural land use

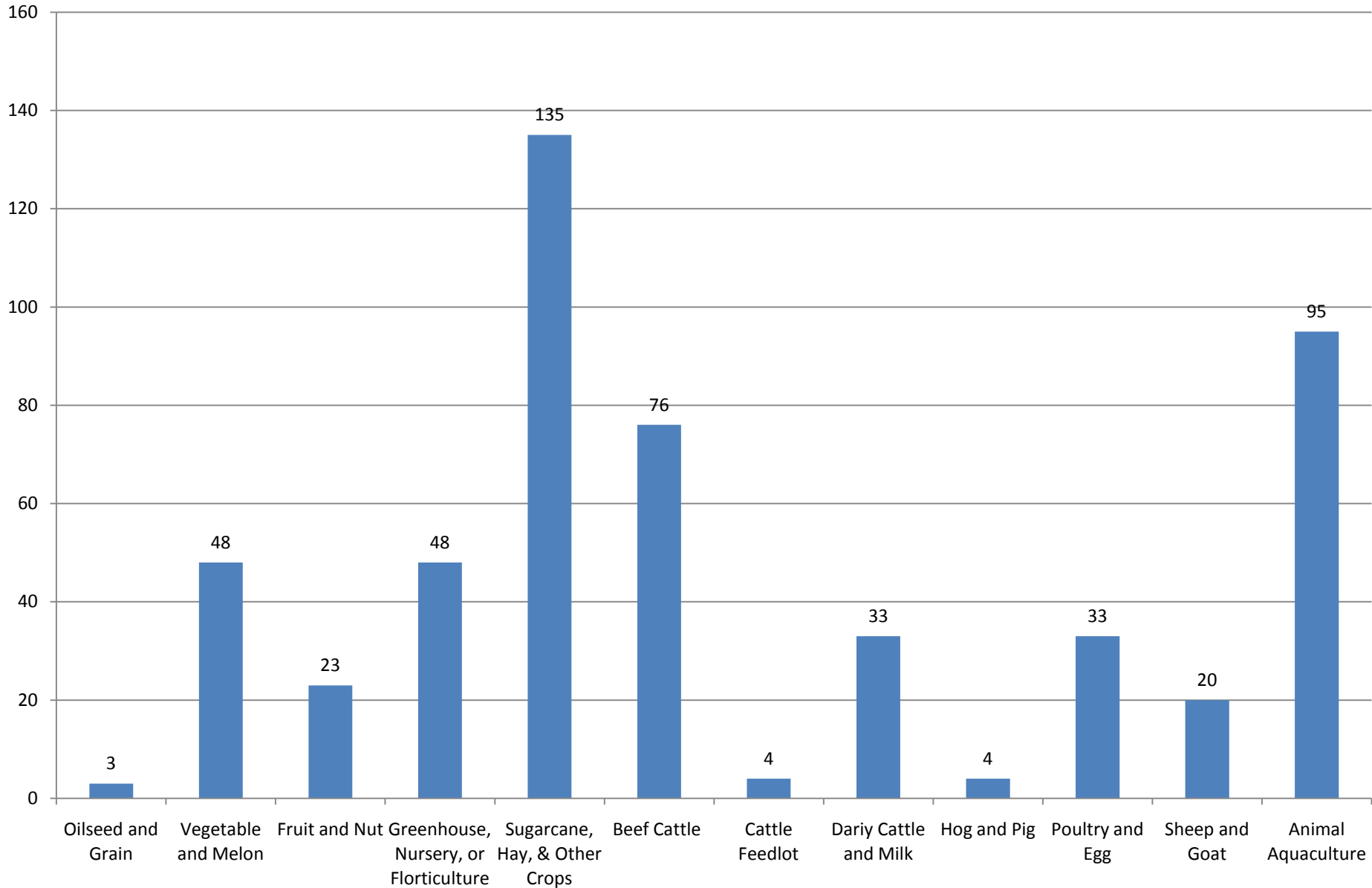


2. What is Produced?



Types of Farms

According to 2007 Agricultural Census



Economic Characteristics

- Government payments:
 - 32 farms -- \$205,000
 - avg. payment --\$6,391.
- average market value of products sold per farm -- \$39,465
- 186 farms have a value of sales less than \$1,000
- only 9 have sales of \$500,000 or more
- net County farm income --\$871,000
- net average income per farm -- \$1,669

Berkshire County Farm Sales

Farm Sales for Berkshire County:

Total Farm Sales: \$20,601,000

Crops – including nursery and greenhouse - \$7,726,000

Animals and animal products - \$12,875,000

Total Value of Sales by Commodity Group (total food sales):

Crops:

Grains, oilseeds, dry beans, and dry peas: \$286,000

Vegetables, melons, potatoes, and sweet potatoes: \$2,159,000

Fruits, tree nuts, and berries: \$1,204,000

Livestock:

Cattle and calves: \$1,548,000

Hogs and pigs: \$51,000

Milk and other dairy products from cows: \$10,648,000

Poultry and eggs: \$69,000

Sheep, goats, and their products: \$132,000

Source: 2007 Census of Agriculture, US Department of Agriculture

3. Calculating Demand



Consumer Expenditure Patterns

Consumer Units in
Berkshire County: **56,031**

Table 3: Comparison of 2007 Annual Consumer Expenditures

	National		Northeast	
	Dollars	Percent	Dollars	Percent
Number of Consumer Units	120,171,000		22,382,000	
Average Number in Consumer Unit	2.5		2.4	
Average Number of Earners in Consumer Unit	1.3		1.3	
Average Annual Expenditures	49,638	100.0	51,624	100.0
Food	6,133	12.4	6,419	12.4
Housing	16,920	34.1	19,085	37.0
Apparel & Services	1,881	3.8	2,068	4.0
Transportation	8,758	17.6	8,014	15.5
Health Care	2,853	5.7	2,645	5.1
Entertainment	2,698	5.4	2,811	5.4
Other Expenditures	9,939	20.1	10,073	19.7

Source: BLS Consumer Expenditure Survey 2007

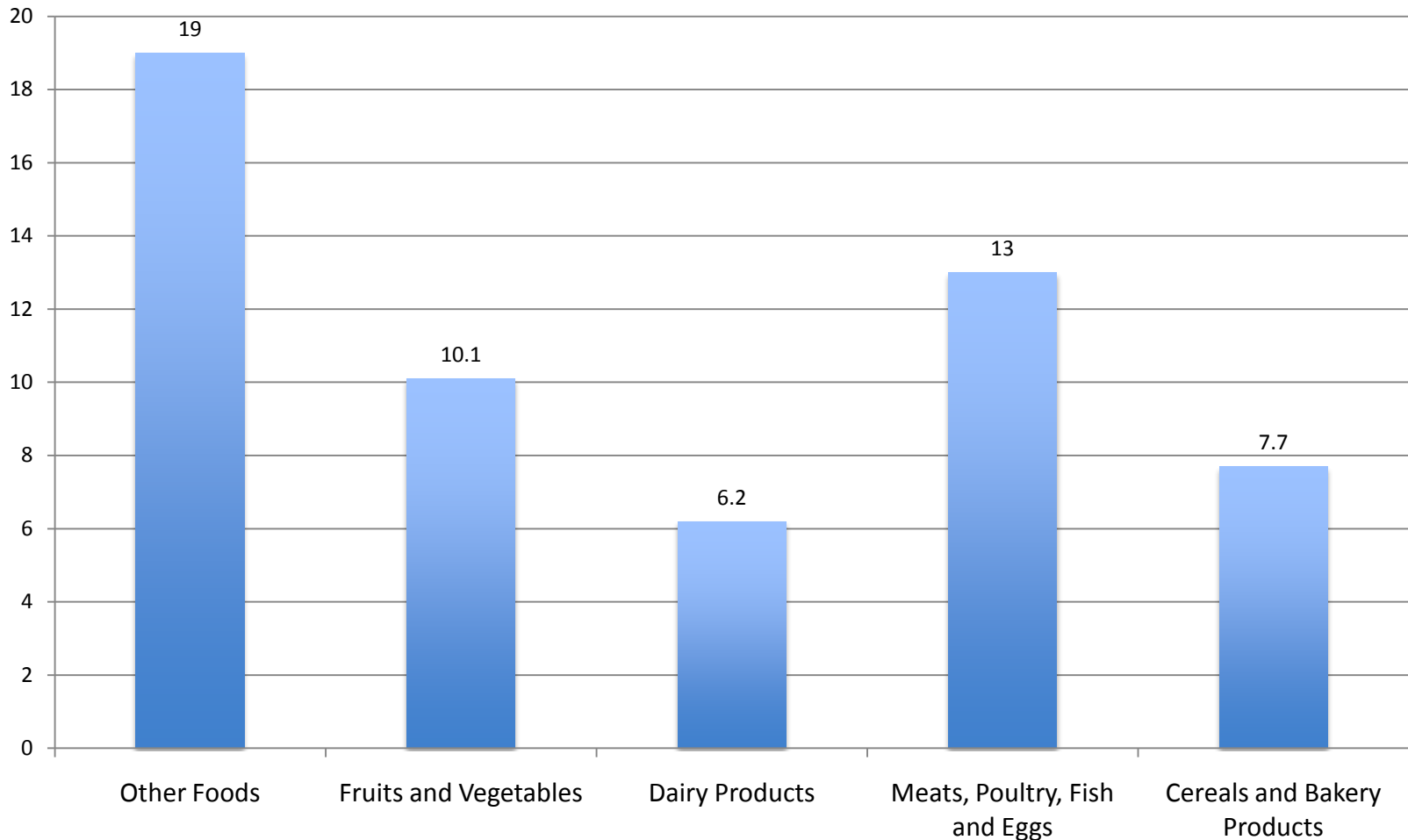
Food Expenditures by Commodity Group (2007)

	National		Northeast	
	Dollars	Percent	Dollars	Percent
Food	6,133	100.0	6,419	100.0
Food at home	3,465	56.5	3,595	56.0
Cereals and bakery products	460	7.5	495	7.7
Cereals and cereal products	143	2.3	157	2.4
Bakery products	317	5.2	339	5.3
Meats, poultry, fish, and eggs	777	12.7	832	13.0
Beef	216	3.5	207	3.2
Pork	150	2.4	149	2.3
Other meats	104	1.7	121	1.9
Poultry	142	2.3	151	2.4
Fish and seafood	122	2.0	159	2.5
Eggs	43	0.7	45	0.7
Dairy products	387	6.3	400	6.2
Fresh milk and cream	154	2.5	151	2.4
Other dairy products	234	3.8	249	3.9
Fruits and vegetables	600	9.8	647	10.1
Fresh fruits	202	3.3	216	3.4
Fresh vegetables	190	3.1	205	3.2
Processed fruits	112	1.8	133	2.1
Processed vegetables	96	1.6	93	1.4
Other food at home	1,241	20.2	1,221	19.0
Sugar and other sweets	124	2.0	125	1.9
Fats and oils	91	1.5	93	1.4
Miscellaneous foods	650	10.6	626	9.8
Nonalcoholic beverages	333	5.4	333	5.2
Food prep for out-of-town trips	43	0.7	44	0.7
Food away from home	2,668	43.5	2,824	44.0

Source: BLS Consumer Expenditure Survey 2007

(“Designing a Foodshed Assessment Model,” Blum Evitts)

Food at Home: Expenditures by Commodity Group



(BLS Consumer Expenditure Survey, 2007 ("Designing a Foodshed Assessment Model," Blum Evitts))



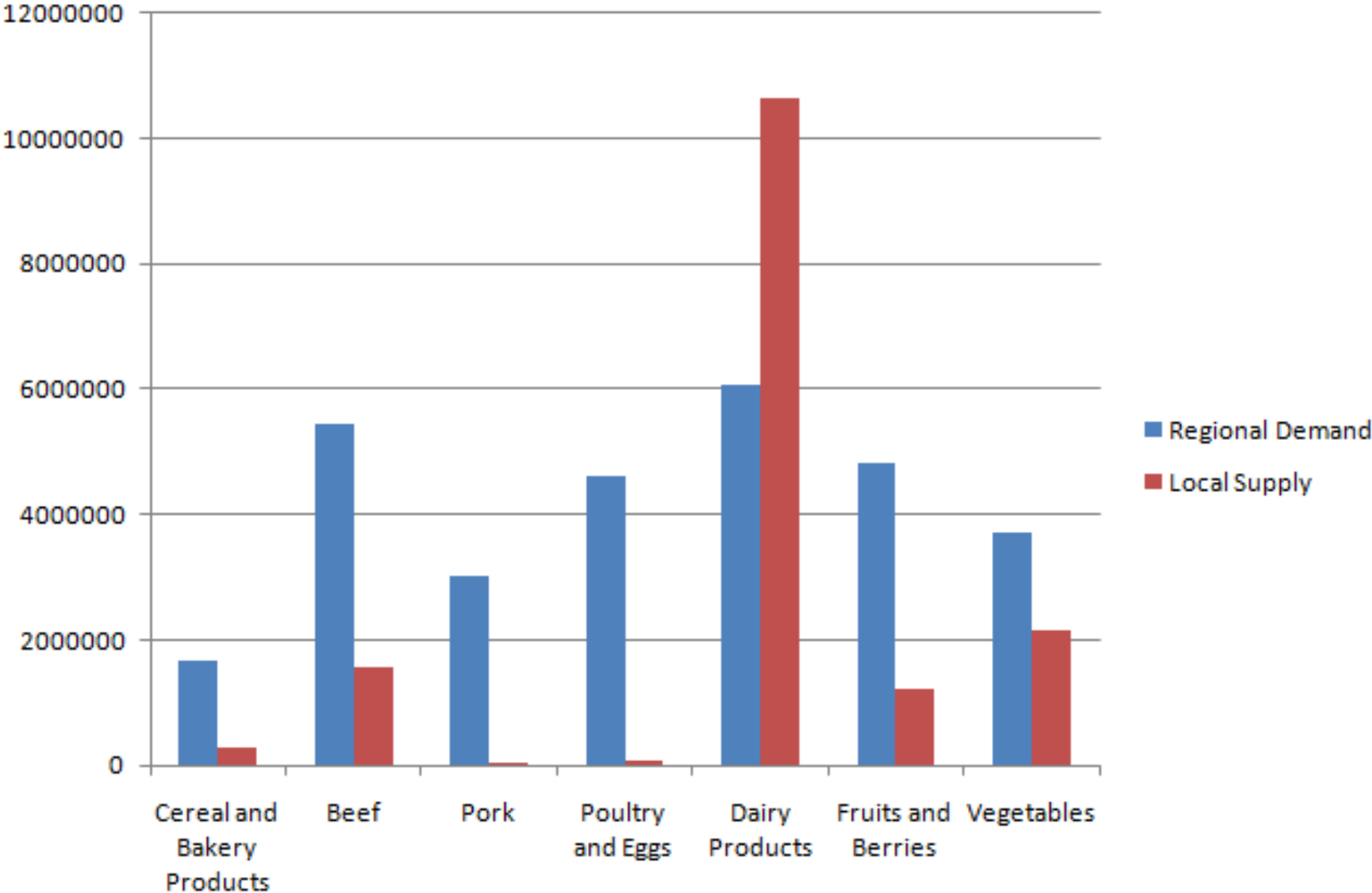
Can we feed
ourselves
locally?

Comparison of Food Consumed at Home and Local Farm Production for Berkshire County

	In Dollars			Percent of Local Supply Fulfilling Regional Demand
	Regional Demand	Local Supply	Balance	
Cereal and Bakery Products	1,664,121	286,000	(1,378,121)	17.19
Beef	5,451,256	1,548,000	(3,903,256)	28.4
Pork	3,005,503	51,000	(2,954,503)	1.7
Poultry and Eggs	4,628,721	69,000	(4,559,721)	1.49
Dairy Products	6,051,348	10,648,000	4,596,652	175.96
Fruits and Berries	4,823,148	1,204,000	(3,619,148)	24.96
Vegetables	3,705,330	2,159,000	(1,546,330)	58.27
Total	29,329,427	15,965,000	(13,364,427)	54.43
All food at home, including <u>miscellaneous</u> and other foods	42,328,059	15,965,000	(26,363,059)	37.72

Note: Fish and seafood as well as other meats including sheep and lambs have been excluded from supply and demand

Comparison of Food Consumed at Home and Local Farm Production for Berkshire County

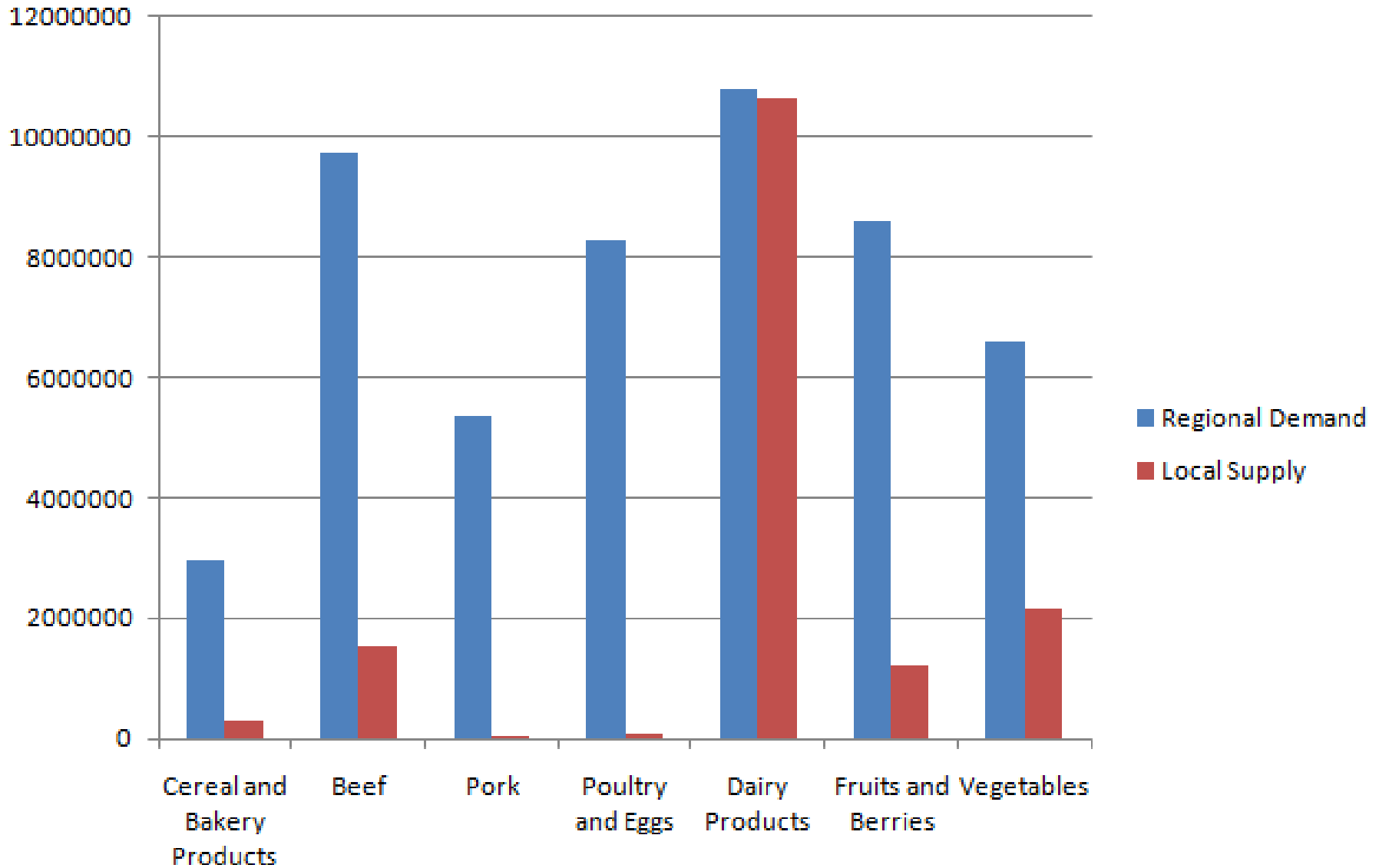


Comparison of Food Consumed at Home and Away with Local Farm Production for Berkshire County

	In Dollars			Percent of Local Supply Fulfilling Regional Demand
	Regional Demand	Local Supply	Balance	
Cereal and Bakery Products	2,971,645	286,000	(2,685,645)	9.62
Beef	9,734,386	1,548,000	(8,186,386)	15.9
Pork	5,366,970	51,000	(5,315,970)	0.95
Poultry and Eggs	8,265,573	69,000	(8,196,573)	0.83
Dairy Products	10,805,979	10,648,000	(157,979)	98.54
Fruits and Berries	8,612,764	1,204,000	(7,408,764)	13.98
Vegetables	6,616,661	2,159,000	(4,457,661)	32.63
Total	52,373,978	15,965,000	(36,408,978)	30.48
<u>All food at home, including miscellaneous and other foods</u>	<u>65,372,610</u>	<u>15,965,000</u>	<u>(49,407,610)</u>	<u>24.42</u>

Note: Fish and seafood as well as other meats including sheep and lambs have been excluded from supply and demand

Comparison of Food Consumed at Home and Away and Local Farm Production for Berkshire County



How Much COULD We Supply?



Potential Land – GIS Data

Farmland Soils and Available Land in Berkshire County

	Acres	Percent of Total Land
Total Land Area	593,093	100
Prime Farmland Soil	43,814.71	7.39
Current Lands in Agricultural Use (2005 GIS Land Use) (inc. cropland, nursery, orchard, pasture)	39,231.71	6.61
Farmland Soils not Developed	17,258.80	2.9
Total Potential Farmland Available	56,490.51	9.51

Meeting our Demand – GIS Data

Farmland Needed for Different Diets

	Acres	Percent of Total Land	Percent of Potential Land
Total Land Area	593,093	100	
Total Potential Farmland Available	56,490.51	9.51	
Vegetarian Diet (.5 acre/person)	64,644	10.9	114.43
Light Meat Diet (.6 acre/person)	77,572.8	13.08	137.64
Heavy Meat Diet (2 acre/person)	258,576	43.6	457.73
Vegan Diet/Soil Sustenance (4,000sq ft/person)	11,872.18	2	21.01

Potential Land – Ag Census

Farmland Soils and Available Land in Berkshire County

	Acres	Percent of Total Land
Total Land Area	593,093	100
Prime Farmland Soil	43,814.71	7.39
Current Lands in Agricultural Use (2007 Ag Census) (inc. cropland, pasture, woodland, and other uses)	66,352	11.19
Farmland Soils not Developed	17,258.80	2.9
Total Potential Farmland Available	83,610.8	14.1

Meeting our Demand – Ag Census

Farmland Needed for Different Diets

	Acres	Percent of Total Land	Percent of Potential Land
Total Land Area	593,093	100	
Total Potential Farmland Available	83,610.8	14.1	
Vegetarian Diet (.5 acre/person)	64,644	10.9	77.32
Light Meat Diet (.6 acre/person)	77,572.8	13.08	92.78
Heavy Meat Diet (2 acre/person)	258,576	43.6	309.26
Vegan Diet/Soil Sustenance (4,000sq ft/person)	11,872.18	2	14.2

Conclusions

- We are currently producing roughly 25% of the food we need
- We have the land potential to produce nearly 100%!

So now what?

Food Security

Definition:

“when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”.

World Food Summit, 1996



Food Security

- 3 Pillars of Food Security:
 - **Food availability:** sufficient quantities of food available on a consistent basis.
 - **Food access:** having sufficient resources to obtain appropriate foods for a nutritious diet.
 - **Food use:** appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation

Potential Work Areas / Programs

- Local Agriculture Supports
 - Production, easements, food processing facilities, marketing, direct sale opportunities (farmers markets)
- Community gardens
- Location and quality of grocery stores
- Farm to School, Farm to Institution, etc.
- WIC and Food Stamp Farmers Market Vouchers
- Subsidized CSA shares for low income households
- Food banks, feeding sites

Food for Thought

- **What is the role of BRPC in local food security work?**