

# I. MORRIS COUNTY'S AGRICULTURAL LAND BASE

## A. Location and Size of Agricultural Land Base

Several sources provide information about the size of Morris County's agricultural land base, namely the United States Census of Agriculture, the New Jersey Department of Environmental Protection's (NJDEP) Bureau of Geographic Information System's (GIS) Landuse / Landcover (LULC) data, and Morris County tax data. Each of these sources uses a different methodology to calculate the amount of land in agriculture. The Census represents a surveyed sample of the county's farmland owners and operators. The LULC program uses aerial photography to interpret land use. The county's tax data represents the information that landowners fill out on farmland tax assessment forms to represent their agricultural operation. Each source also uses different classification methods. The difference in methodologies between sources makes it impossible to compare the data from one to another; however, on their own, each provides valuable information about the county's agricultural land base.

### 1. Morris County Tax Data

Farmland tax assessment is one means of determining the agricultural land base. In order for land to qualify for farmland tax assessment, the land must be at least five acres devoted to agricultural or horticultural use, with average sales of agricultural products amounting to at least \$500 per year. For each additional acre, a minimum of \$5 per year of agricultural income is required. Farms with woodlot management plans must also produce income, but at a rate of \$0.50 per acre on the area above five acres.

According to Morris County's 2006 tax data, there are approximately 31,400 acres of farmland assess land in the county. The majority of Morris County's farmland is concentrated in Washington Township. Chester Township ranked second with 3,339 acres and Mount Olive Township ranked third in 2006 with 2,755 acres of farm assessed land. Additional municipalities with significant acres of farm assessed land included Harding, Roxbury, and Mendham Townships. Appendix C illustrates the number of farm assessed acres in Morris County by municipality for tax year 2007 and Map B depicts the locations of active agricultural lands in the county in 2007.

<b>Acres of Farm Assessed Lands</b>	<b>2004</b>	<b>2006</b>	<b>Percent Change</b>
Cropland Harvested	9,009	9,132	1.37%
Cropland Pastured	1,328	969	-27.03%
Permanent Pasture	2,952	2,821	-4.44%
Unattached Woodland	14,154	13,731	-2.99%
Attached Woodland	4,632	4,527	-2.27%
Equine Acres	226	227	0.44%
<b>Total for Ag Use</b>	<b>32,301</b>	<b>31,407</b>	<b>-2.77%</b>

Morris County's 2007 farmland assessment data indicates that approximately 9.7% of the county, or 29,998 acres, is classified as agricultural land. According to 2004 tax data, 10.5% of the county, or 32,301 acres, was classified as agricultural land that year. This represents a 7% decrease over the three year period. Farmland assessment data from 2004 indicates that unattached woodland accounted for almost half of the county's farm assessed acreage that year. Cropland harvested accounted for the second highest number of Morris County's farm assessed acreage in 2004.

Two segments of the agricultural industry of interest in Morris County are equine and nursery operations. The 2004 farmland assessment data illustrates where in the county these industries are concentrated. It is not surprising that the highest numbers of acres devoted to these two activities are found in Washington Township, where the most farmland acres are located. Land used for equine activities is otherwise found sporadically throughout Morris County, while the Townships of Mendham, Pequannock, as well as the Borough of Mendham report significant acres of nursery operations. The reporting accuracy of these categories is questionable as reflected in Harding Township's equine acreage. Morris County has preserved two farms in Harding Township that are in equine use and at the time the data was gathered; however, the farmland assessed data indicates no equine acreage in that municipality.

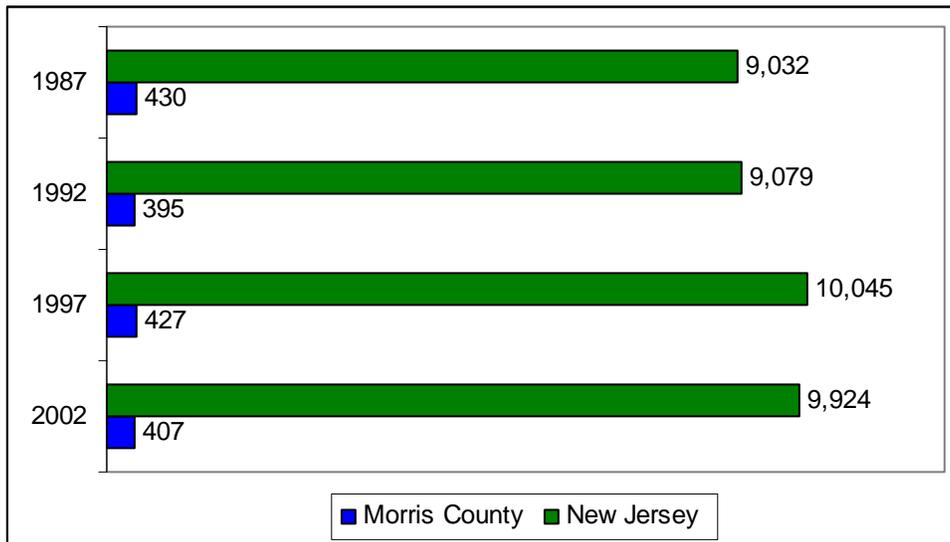
	2004		2006		Equine Uses (2006)	Acres
	Equine	Nursery	Equine	Nursery		
Boonton Twp	2	26	2	22	Boarding	108
Chatham Boro	0	1	0	1		
Chatham Twp	2	45	2	49		
Chester Boro	0	4	0	3		
Chester Twp	13	49	11	27	Training	88
Denville	1	36	1	36	Unspecified	4
Harding	0	41	0	48		
Kinnelon	5	0	6	0		
Lincoln Park	0	14	0	17	Nursery Uses (2006)	Acres
Long Hill	0	1	6	1		
Mendham Boro	3	59	0	60	Bedding Plants	112
Mendham Twp	17	66	17	65	Cut Flowers	35
Montville	32	47	32	47	Trees & Shrubs	528
Morris Twp	0	11	0	11	Cultivated Sod	16
Mount Olive	15	17	23	33	Xmas Trees	228
Parsippany T-H	0	2	0	2	Other Ornamental Crops	27
Pequannock	8	77	38	59		
Randolph	12	32	6	20		
Rockaway Twp.	4	0	2	1		
Roxbury	1	5	4	22		
Washington	111	412	77	415		
Wharton	0	1	0	0		
<b>Total</b>	<b>226</b>	<b>946</b>	<b>227</b>	<b>939</b>		

## 2. United States Census of Agriculture

Every five years the US Department of Agriculture's National Agricultural Statistics Service (NASS) asks all farmers to fill out a supplied report form in order to collect information about multiple areas of farming including individual farm characteristics, production practices, and income and expenditures. The Census provides comprehensive agricultural statistics by county and thus is an excellent indicator of agricultural trends in the region. However, reliability is dependent upon voluntary participation of each farmer.

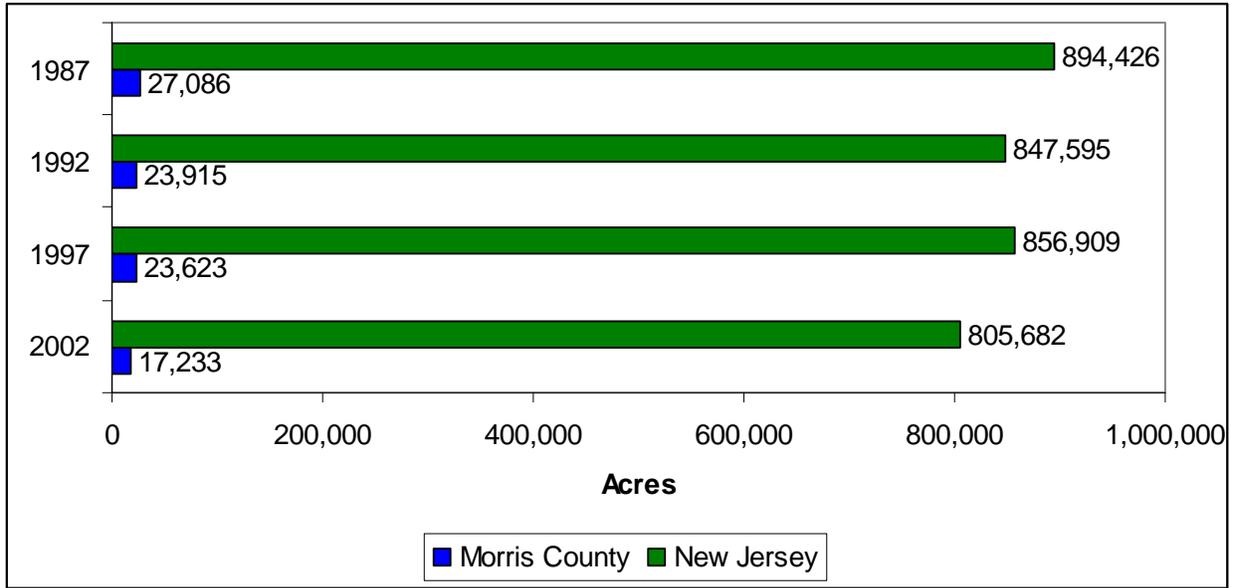
According to the US Census of Agriculture, Morris County had 17,233 acres of farmland in 2002, representing 5.6% of the county's land area. This represents a 36% decrease from the 27,086 acres of farmland reported in 1987. The five year period between 1997 and 2002 alone saw a 27% decrease in the amount of farmland acreage in Morris County.

**Number of Farms in Morris County and New Jersey from 1987-2002**



Source: US Census of Agriculture

### Land in Farms in Morris County and New Jersey from 1987-2002



Source: US Census of Agriculture

### Land in Farms According to Use

	1997	2002
Harvested cropland	10,631	7,516
Pastured land, including woodlands	3,760	3,354
Other croplands	1,566	896
Woodlands, not pastured	5,089	3,701
Other lands associated with farms (house lots, ponds, etc.)	2,577	1,766
<b>Total Land in Farms</b>	<b>23,623</b>	<b>17,233</b>

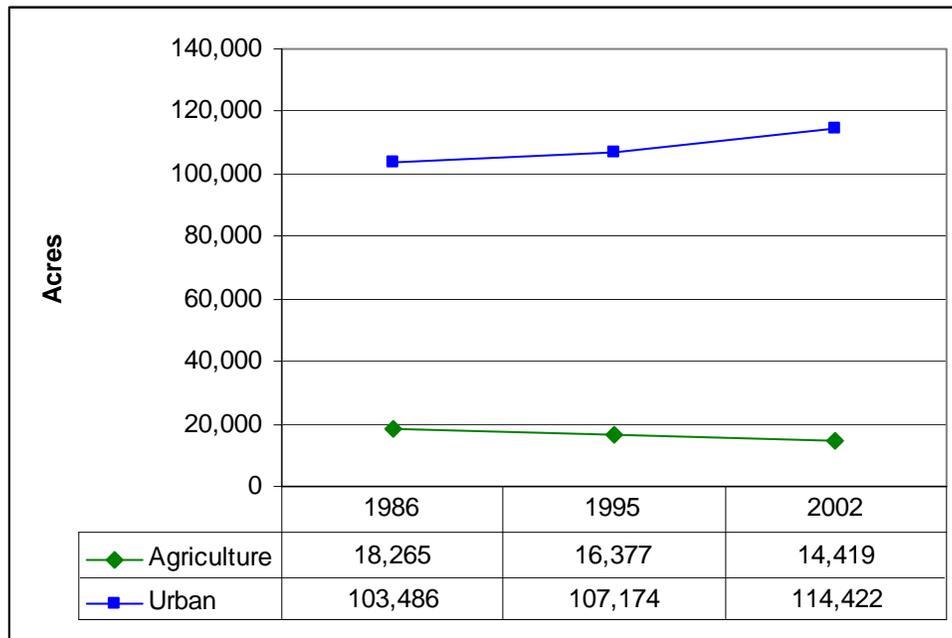
Source: US Census of Agriculture

### 3. NJDEP Land Use / Land Cover Data

The NJDEP's LULC classification system uses a geographic information system (GIS) and digital orthophotography to examine land features within the context of its surrounding landscape. Land use (LU) describes the way humans are utilizing the land, while land cover (LC) is used to describe the physical surface of the land.

LULC data for Morris County was available for the years 1986, 1995, and 2002. This data shows that the amount of agricultural land steadily decreased over this 16 year period, while the amount of urban land steadily increased as illustrated in the chart and table below.

Land Use	Acres		
	1986	1995	2002
Agriculture	18,265	16,377	14,419
Barren Land	2,986	3,919	3,749
Forest	129,290	129,292	124,011
Urban	103,486	107,174	114,422
Water	10,190	10,500	10,398
Wetlands	43,149	40,767	41,030
<b>Total</b>	<b>307,366</b>	<b>308,029</b>	<b>308,029</b>



Agricultural LULC data is further broken down into several agricultural cover types as listed below. These land use trends indicate a steady decrease in the amount of cropland and pastureland, while the amount of land being used for orchards, nurseries, and horticultural operations has steadily increased. The amount of land described as “other agriculture” has also seen a significant increase over the 16 year period from 1986 to 2002. This category contains experimental agriculture fields, isolated structures for crop or equipment storage and horse farms, i.e. specialized farms for the raising and training of horses.

Type of Agricultural Land	Acres		
	1986	1995	2002
Cropland and Pastureland	16,026	13,427	11,539
Agricultural Wetlands	1,517	1,190	1,016
Former Agricultural Wetlands	0	296	101
Orchards, Vinelands, Nurseries, Horticultural Areas	341	597	727
Confined Feeding Operations	0	4	4
Other Agriculture	382	862	1,032
<b>Total</b>	<b>18,266</b>	<b>16,376</b>	<b>14,419</b>

## B. Distribution of Soil Types and Their Characteristics

A map showing the soil classifications for all soils in Morris County is found in the back of this report and is labeled "Map A." According to the Soil Survey of Morris County, prime farmland has the necessary soil quality, growing season, and moisture supply to allow for the economical production of sustained high yields of crops when it is properly treated and managed. In order to be classified as prime farmland, the land must be available to produce food and other crops and cannot be covered with water or urban structures. Prime farmland soils generally have an adequate and dependable water supply from precipitation or irrigation, are permeable to water and air, and are not excessively saturated with water for long periods of time. Prime soils also have a favorable growing season and temperatures, suitable acidity or alkalinity, suitable salt content, and few or no rocks.

Unique farmlands are defined as lands that cannot be classified as prime farmland but are used for the production of specific high value food and crops. The soil quality, location, growing season and moisture supply of unique farmlands are capable of producing sustained high quality and / or high yields of a specific crop when treated and managed following acceptable methods.

Farmlands of statewide importance encompass all other lands important for the production of food and crops but that do not fit into the prime or unique farmland category. Specific criteria for defining and delineating these lands are determined by the appropriate State agency or agencies.

Farmlands of local importance are lands that do not meet the criteria of the above three categories, but are identified by local agencies as important for the production of food and crops.

Farmland Classification	Acres	Percent of Morris County
Prime Farmland	60,526	19.68
Farmland of Statewide Importance	31,285	10.17
Farmland of Unique Importance	12,884	4.19
Farmland of Local Importance	8,822	2.87

Source: USDA's Natural Resource Conservation Service - SSURGO soil data

### Morris County's Farmland Soils

Symbol	Soil Name	Acres
<b>Prime Farmland Soils</b>		
AnoB	Annandale gravelly loam, 3 to 8 percent slopes	5,342
BabB	Bartley loam, 3 to 8 percent slopes	3,617
BhnB	Birdsboro silt loam, 2 to 6 percent slopes	29
BohB	Boonton moderately well drained gravelly loam, 3 to 8 percent slopes	1,005
CakB	Califon loam, 3 to 8 percent slopes	5,264
CanB	Califon gravelly loam, 3 to 8 percent slopes	949
CapfB	Califon variant loam, 3 to 8 percent slopes	1,333
EkhkB	Ellington loamy substratum variant fine sandy loam, 3 to 8 percent slopes	792
GkaoB	Gladstone gravelly loam, 3 to 8 percent slopes	9,114
HanB	Haledon silt loam, 3 to 8 percent slopes	4,491
NekB	Neshaminy gravelly silt loam, 3 to 8 percent slopes	1,011
NerB	Netcong gravelly sandy loam, 3 to 8 percent slopes	4,360
PdtB	Pattensburg gravelly loam, 3 to 8 percent slopes	422
PeoB	Penn channery silt loam, 3 to 8 percent slopes	1,780
PohB	Pompton sandy loam, 3 to 8 percent slopes	4,370
RksB	Riverhead gravelly sandy loam, 3 to 8 percent slopes	5,098
RksnB	Riverhead variant gravelly sandy loam, 3 to 8 percent slopes	1,283
RocB	Rockaway gravelly sandy loam, 3 to 8 percent slopes	2,205
TurB	Turbotville loam, 3 to 8 percent slopes	4,117
WadB	Washington loam, 3 to 8 percent slopes	1,133
WhpB	Whippany silt loam, 3 to 8 percent slopes	1,367
WhphB	Whippany silt loam, sandy loam substratum, 3 to 8 percent slopes	1,445
<b>Soils of Statewide Importance</b>		
AnoC	Annandale gravelly loam, 8 to 15 percent slopes	1,033
AnoC2	Annandale gravelly loam, 8 to 15 percent slopes, eroded	4
BacC	Bartley gravelly loam, 8 to 15 percent slopes	610
BohC	Boonton moderately well drained gravelly loam, 8 to 15 percent slopes	1,111
CakC	Califon loam, 8 to 15 percent slopes	993
EkhC	Ellington loamy substratum variant fine sandy loam, 8 to 15 percent slopes	934
GkaoC	Gladstone gravelly loam, 8 to 15 percent slopes	6,301
GkaoC2	Gladstone gravelly loam, 8 to 15 percent slopes, eroded	110
HanC	Haledon silt loam, 8 to 15 percent slopes	792
MknB	Minoa silt loam, 3 to 8 percent slopes	915
NekC	Neshaminy gravelly silt loam, 8 to 15 percent slopes	1,342
NerC	Netcong gravelly sandy loam, 8 to 15 percent slopes	2,725
PaoC	Parker gravelly sandy loam, 3 to 15 percent slopes	8,673

Symbol	Soil Name	Acres
PdtC	Pattenburg gravelly loam, 8 to 15 percent slopes	277
PeoC	Penn channery silt loam, 8 to 15 percent slopes	1,206
RerB7	Reaville deep variant channery silt loam, 0 to 6 percent slopes	1,066
RksC	Riverhead gravelly sandy loam, 8 to 15 percent slopes	2,087
RocC	Rockaway gravelly sandy loam, 8 to 15 percent slopes	1,107
WadC2	Washington loam, 8 to 15 percent slopes, eroded	0.08
<b>Farmland of Unique Importance</b>		
AdrAt	Adrian muck, 0 to 3 percent slopes, frequently flooded	3,492
CarAt	Carlisle muck, 0 to 2 percent slopes, frequently flooded	7,497
CatbA	Catden mucky peat, 0 to 2 percent slopes	47
PafAt	Palms muck, 0 to 2 percent slopes, frequently flooded	864
WkkAt	Willette muck, 0 to 2 percent slopes, frequently flooded	982
<b>Farmland of Local Importance</b>		
PbphAt	Parsippany silt loam, sandy loam substratum, 0 to 3 percent slopes, frequently flooded	8,822

### C. Number of Irrigated Acres and Available Water Sources

The Census indicates that the number of irrigated acres in Morris County has steadily increased from 483 in 1987 to 1,006 in 2002. However, the trend in the number of farms using irrigation methods has not been steady. The number decreased from 66 in 1987 to 64 in 1992, then increased to 87 in 1997, followed by a decrease to 78 in 2002.

	2002	1997	1992	1987
Number of Farms	78	87	64	66
Acres of Land in Irrigated Farms	4,599	4,699	2,995	3,993
Acres of Irrigated Land	1,006	895	566	483

Source: US Census of Agriculture

An agricultural or horticultural operation that withdraws ground and/or surface water in excess of 100,000 gallons per day is required to obtain an Agricultural Water Usage Certification or an Agricultural Water Use Registration. According to the records of the New Jersey Department of Environmental Protection's Division of Water Supply, 12 operations in Morris County currently have Agricultural Water Usage Certifications.

	Irrigated Acres
Field Crops	2
Fruit	0
Ornamental	150
Vegetable	62
Total	<b>214</b>

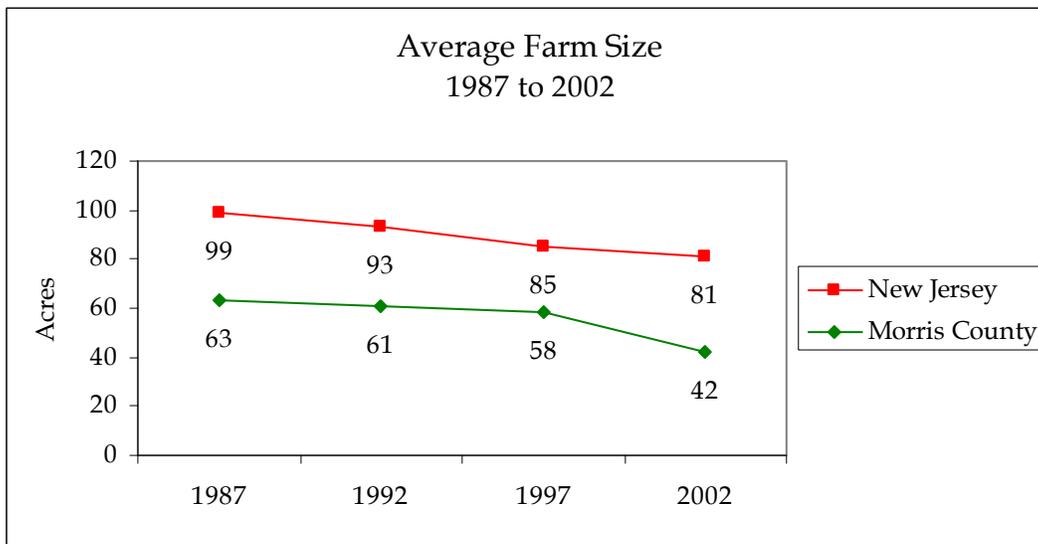
Source: 2004 NJ Farmland Assessment Data

A detailed discussion about Morris County's water resources can be found in Section C of Chapter VI.

#### **D. Farmland Assessment and Census of Agriculture statistics and trends**

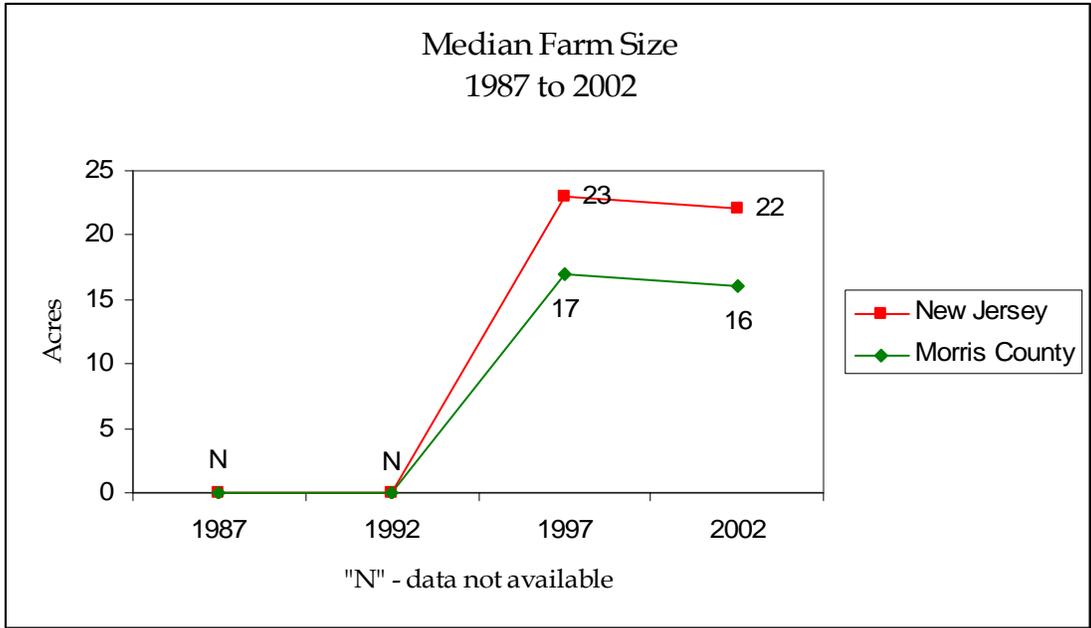
The US Census of Agriculture reported 23,915 farmland acres in 1992. By 1997 this number had decreased to 22,351 acres or about 7.3% of the county. Morris County ranks 13<sup>th</sup> in the state for lands in agriculture. The number of farms in Morris County has remained relatively stable. The US Census of Agriculture reported 430 farms in 1987. This number decreased to 395 in 1992 and to 383 in 1997. The five year period between 1997 and 2002 saw an increase in the number of farms from 383 to 407.

In 2002, the average size of a farm in Morris County was 42 acres, roughly half of the statewide average of 81 acres. The average farm size in Morris County has steadily decreased over the 15 year period between 1987 and 2002 with the sharpest decline occurring between 1997 and 2002. Census of Agriculture data indicates that the size of the average farm in New Jersey has continuously decreased over this 15 year period.



Source: US Census of Agriculture

Notes: 1987 and 1992 values have not been adjusted for coverage



Source: US Census of Agriculture

In 2002, the median size of a farm in Morris County was 16 acres, compared to 22 acres statewide. Median farm size data for years prior to 1997 is not available, based on available data, the median farm size in Morris County and statewide has decreased from 1997 to 2002. The 2007 Census of Agriculture data will show whether this trend is continuing.

Type of Agricultural Land	Acres
Cropland Harvested	9,009
Cropland Pastured	1,328
Permanent Pasture	2,952
Unattached Woodland	14,154
Attached Woodland	4,632
Equine Acres	226
<b>Total for Agricultural Use</b>	<b>32,301</b>

Source: Morris County Tax Board, 2004