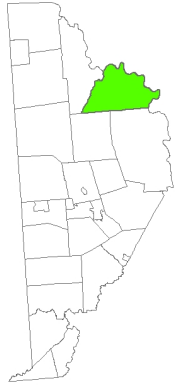


Manchester Township

Wayne County Agricultural Land Use/Land Cover Study

A study examining the change of agricultural land use and land cover
in Wayne County from 1959 to 2002

This is report M-15, Manchester Township; in a series of reports examining land use and land cover change in Wayne County's 28 municipalities, particularly agricultural land between 1959 and 2002. For a detail of the study procedures, see the Project Narrative.



Overview

Manchester Township is located in northeastern Wayne County with the Delaware River forming both its northern and eastern border and the Crooked Creek and Equinunk Creek forming its western border. It is the sixth largest municipality in Wayne

County with a total of approximately 28,840 acres or 45 square miles, which accounts for 6% of the County's total land area. As can be seen in Table 1 {below} and Charts 1 and 2 {right}, the majority of the Township was covered by forest in both 1959 and 2002. The area of farming related activities decreased by a certain extent over the forty-plus year study period. Conversely, the amount of forest, residential, recreational and water land use/land cover increased.

The charts below show the percent values for the land use/land cover categories in Manchester Township for 1959 and 2002. The residential category includes farmsteads in each chart's total throughout this report, and the category "other" includes land use/land cover categories that were too small to illustrate individually.

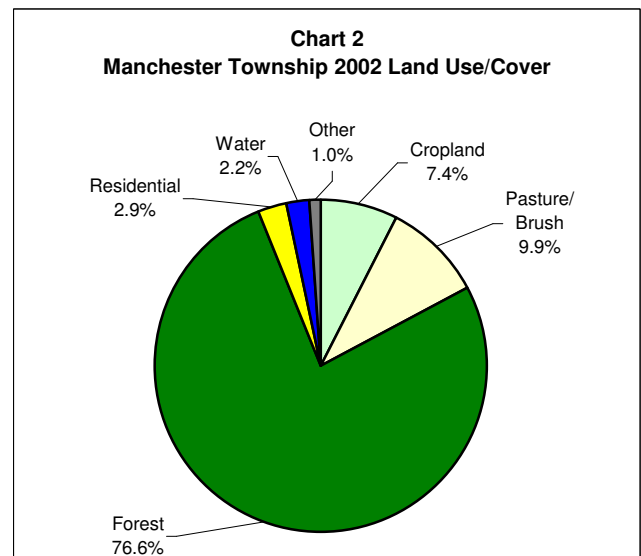
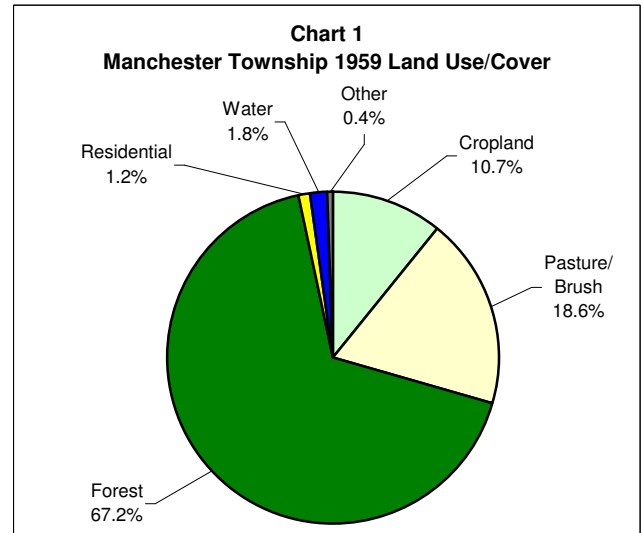


Table 1 - Manchester Township Land Use/Land Cover

Land Use/ Land Cover	Manchester 1959 Acres	Category Percent of Total	Manchester 2002 Acres	Category Percent of Total
Residential	172.80	0.6%	726.63	2.5%
Commercial	107.59	0.4%	145.90	0.5%
Industrial	-	0%	-	0%
Transportation	-	0%	-	0%
Utilities	-	0%	11.77	0.0%
Religious	11.04	0.0%	11.04	0.0%
Government/Inst.	5.39	0.0%	9.72	0.0%
Recreational	-	0%	119.08	0.4%
Cropland	3,095.01	10.7%	2,125.44	7.4%
Farmstead	173.65	0.6%	106.14	0.4%
Pasture/Brush	5,374.68	18.6%	2,859.60	9.9%
Forest	19,379.25	67.2%	22,078.64	76.6%
Water	520.80	1.8%	646.25	2.2%
Mining/Extraction	-	0%	-	0%
Total	28,840.21	100.0%	28,840.21	100.0%

The table above shows the acreage and percentage values for the land use/land cover categories for Manchester Township in 1959 and 2002.

Notice the slight decrease in cropland and the more noticeable decrease in pasture/brush over this time period. The largest increase was forest, which increased by 2,700 acres and now covers 9.4% more of the Township. There were also increases in the percentage of residential land use and water cover during this time period.

Cropland

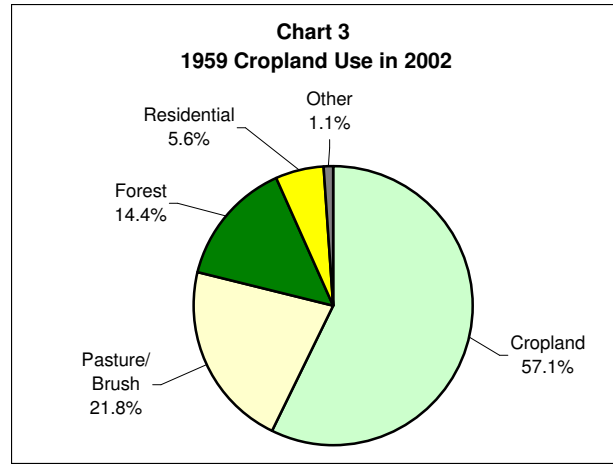
Cropland was the third largest land use in Manchester Township for the years 1959 and 2002. For the purposes of this study, cropland included the agricultural production of hay, corn, fruit and Christmas tree farms. In 1959, nearly 3,100 acres or 10.7% of the Township land area consisted of cropland. By 2002, the area of cropland in the Township decreased by approximately 970 acres and comprised 3.3% less of the Township. Table 2 {below} and Chart 3 {right} show what became of the 1959 Manchester Township cropland.

Table 2 - 1959 Cropland Use in 2002

Land Use/Land Cover	1959 Cropland Classification in 2002	
	Acres	Percent
Residential	151.26	4.9%
Commercial	11.23	0.4%
Industrial	-	0%
Transportation	-	0%
Utilities	6.27	0.2%
Religious	0.31	0.0%
Government/Institution	4.40	0.1%
Recreational	2.06	0.1%
Cropland	1,766.95	57.1%
Farmstead	22.17	0.7%
Pasture/Brush	674.35	21.8%
Forest	446.30	14.4%
Water	9.72	0.3%
Mining/Extraction	-	0%
Total	3,095.02	100.0%

Of the 3,095 acres of 1959 cropland, over 57% or nearly 1,767 acres were still being used as cropland in 2002. Over 36% of the 1959 cropland converted to natural land cover types by 2002, either as forest (14.4%) or pasture/brush (21.8%). These two conversion classifications accounted for over 1,120 acres combined. Nearly 175 acres, equaling 5.6%, was changed to residential and farmstead use.

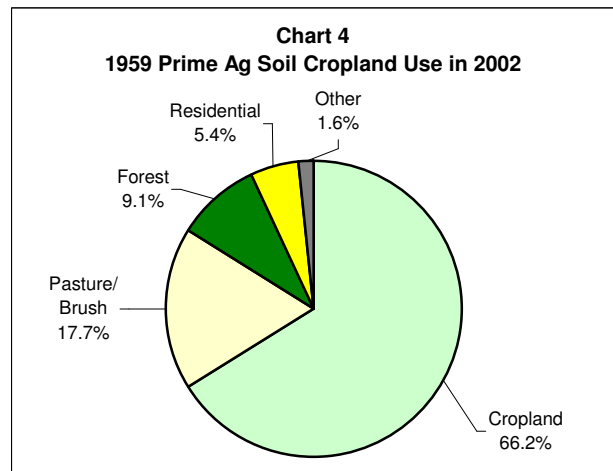
The United States Department of Agriculture (USDA) classifies soil as prime agricultural soil, farmland of statewide importance or non-prime soil. Details of the three classifications can be found in the County summary. The following sections will examine soils from a prime versus non-prime perspective.



The chart above shows the percent values for the 1959 cropland and what it became by 2002.

Prime Agricultural Soil

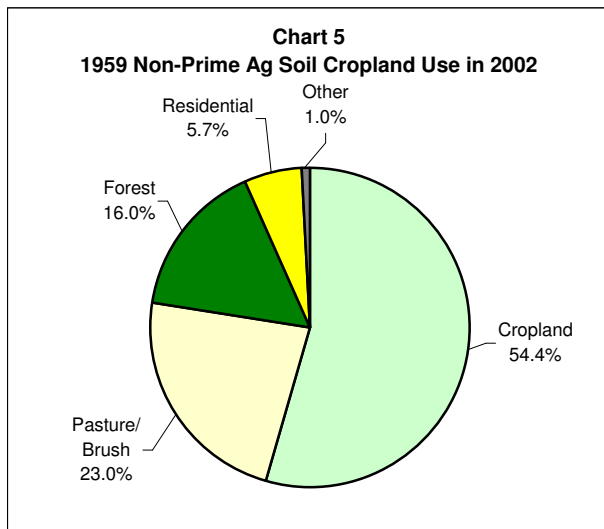
In 1959, a total of 23%, or approximately 712 acres, of the cropland in Manchester Township was located on prime agricultural soil. By the end of the study period in 2002, almost two-thirds (66.2%), equaling almost 471 acres, was still being utilized for cropland production. Nearly 27% of the prior 1959 prime soil cropland converted to natural types of land coverage, namely forest (9.1%) and pasture/brush (17.7%). These two land classifications accounted for over 191 acres. Almost 35 acres or 4.9% (plus 0.5% as farmstead) became utilized for residential purposes. The remaining area converted to other various land use/cover. Chart 4 {below} illustrates what became of the 1959 cropland located on prime agricultural soil.



Nearly two-thirds of the 1959 prime agricultural soil cropland remained as cropland by 2002.

Non-Prime Agricultural Soil

In 1959, a total of 77%, equaling roughly 2,383 acres, of the cropland in Manchester Township was located on non-prime agricultural soil. By the end of the study period in 2002, a total of 1,296 acres, equaling 54.4%, was being utilized for cropland production. A total of 39% had converted to natural land cover, namely forest (16%) and pasture/brush (23%). These two land cover classifications accounted for nearly 930 acres. Approximately 116 acres was changed to residential use, which equaled 4.9% (plus the 0.8% as farmstead). The remaining 1959 non-prime cropland converted to other land use/cover. Chart 5 {below} shows what became of the 1959 cropland located on non-prime agricultural soil.

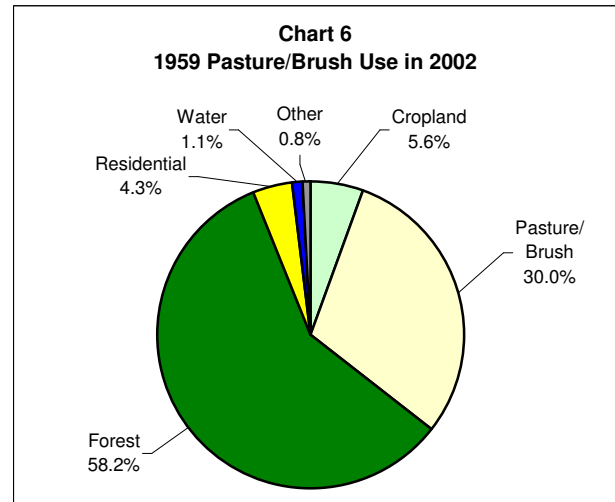


A total of 1,296 acres or 54.4% of the 1959 non-prime soil cropland remained as cropland by 2002.

Pasture/Brush

The pasture/brush land cover classification is land that is in the early reforestation process or is used for agricultural support operations, such as livestock grazing. In 1959, Manchester Township had 5,375 acres or 18.6% of its land area as pasture/brush. By 2002, this land cover had decreased over 2,500 acres to approximately 2,860 acres, which equaled nearly 10% of the Township's land area. Of the 1959 pasture/brush, only 30% remained as such when compared to 2002. A total of 58.2% or roughly 3,128 acres of the 1959 pasture/brush converted naturally into forest. Almost 300

acres was worked into cropland by 2002, which was 5.6% of the 1959 pasture/brush total land cover. Another 4.3% or 231 acres (including farmsteads) was converted into residential land and almost 60 acres or 1.1% became water cover by 2002. Chart 6 {below} shows what became of the 1959 pasture/brush in Manchester Township.



Only 30% of the 1959 pasture/brush remained as such by 2002, but nearly 60% grew into forestland, which was equal to approximately 3,128 acres.

Forest

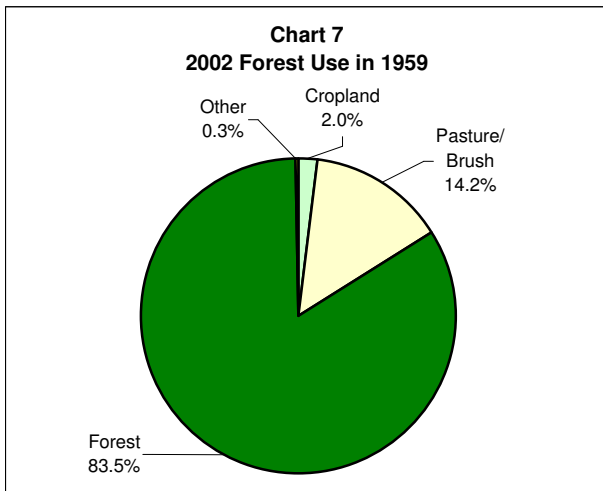
As stated in the "overview", the majority of Manchester Township was covered by forest in both 1959 and 2002. In 1959, there were approximately 19,379 acres of forest, which equaled 67.2% of the Township's land area {see Table 1}. By 2002, the forest cover had increased by an additional 2,700 acres to a total of approximately 22,079 acres. A total of 76.6% of Manchester Township was covered by forest in 2002. Almost all of the 1959 forest in the Township remained as forest by 2002. Of the 19,379 plus acres of 1959 forest, a total of 18,442 acres remained by 2002, which equaled 95.2% and ranked Manchester Township fifth in the percentage of forest retention within the County over the forty-three year study period. {See Table 3 on next page} Of the 4.8% that changed to a different land use/cover category, a total of 3% converted to other natural land covers, namely pasture/brush land (2.5%) and water cover (0.5%). Less than 1% (180 acres) was converted to residential land use.

Table 3 - 1959 Forest Use in 2002

Land Use/Land Cover	1959 Forestland Classification in 2002	
	Acres	Percent
Residential	180.47	0.9%
Commercial	26.51	0.1%
Industrial	-	0%
Transportation	-	0%
Utilities	0.32	0.0%
Religious	-	0%
Government/Institution	0.30	0.0%
Recreational	100.10	0.5%
Cropland	46.15	0.2%
Farmstead	4.03	0.0%
Pasture/Brush	490.20	2.5%
Forest	18,442.00	95.2%
Water	89.18	0.5%
Mining/Extraction	-	0%
Total	19,379.26	100.0%

The table above shows the acres and percentages of the 1959 forest in Manchester Township and what it became by 2002. Notice the percentage of forest that was retained over the study period, which ranked fifth in the County.

In 2002, the majority of Manchester Township was forested land cover, with a total of nearly 22,079 acres, which was equivalent to 76.6% of the Township. Chart 7 {below} shows how this forest acreage existed back in 1959, by percentage.



A total of 97.7% of the 2002 forest in Manchester Township was natural land cover back in 1959, namely forest with over 18,440 acres and pasture/brush with approximately 3,127 acres. Less than 450 acres, equaling only 2%, of the 2002 forest cover was previously cropland back in 1959.

Protected Agricultural Land

Manchester Township had a total of approximately 3,014 acres of land enrolled in the Agricultural Security Area Program by 2002. There were no farms enrolled in the Agricultural Conservation Easement Purchase Program. However, there were approximately 8,529 acres of land accepted into the Act 319 (Clean & Green) Program, which accounts for 31.5% of the taxable acreage within Manchester Township. This tax designation reduces the assessed value of the Township by 10,802,300 or 9.2%.

Summary

The most notable change in the Township during the study period was the increase of forest, covering 9.4% more of the Township and the reduction of pasture/brush, covering 8.7% less of the Township. Cropland covered 3.3% less of the Township. Due to the forest cover increase during the study period, over three-quarters of Manchester Township's land area consists of forest. Residential land now covers nearly 2% more of Township's total land area. One important factor, which attributes to the large amount of forest in Manchester Township is the steep terrain located throughout the Township and especially along both the northern and eastern border with the Delaware River, which accounts for about half of Manchester Township's border with New York State.

Wayne County Agricultural Land Use/Cover

This project was funded in part by the Wayne County Commissioners and by a grant from the Pennsylvania Department of Community and Economic Development. This study examines the change in agricultural land use/cover over 43 years (1959-2002). The base data is 1959 USDA aerial photos which were registered to the state plane coordinate system by Wilkes University's Center for Geographic Information Sciences. This enabled comparison with the 1997 aerial photos taken by Wayne County. To aid in the analysis of the data, local municipal volunteers worked with planning department staff members in reviewing the aerial photos and resulting land use maps. A complete list of those community volunteers who aided in the completion of this report can be found in the report summary.

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