

# Lake 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-12, Lake 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.*



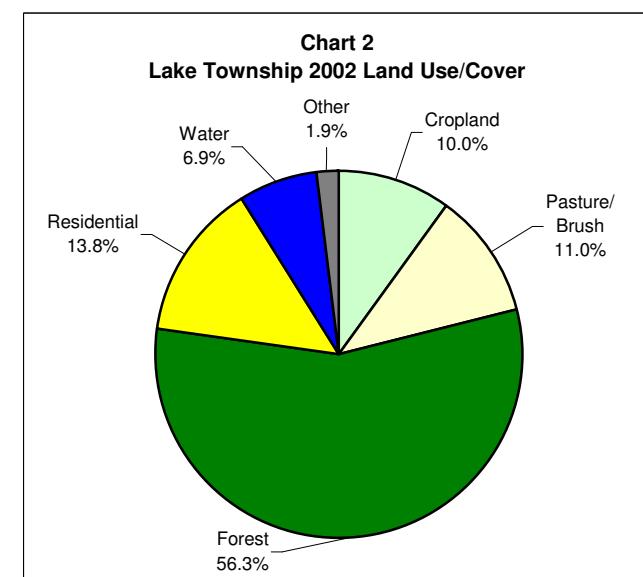
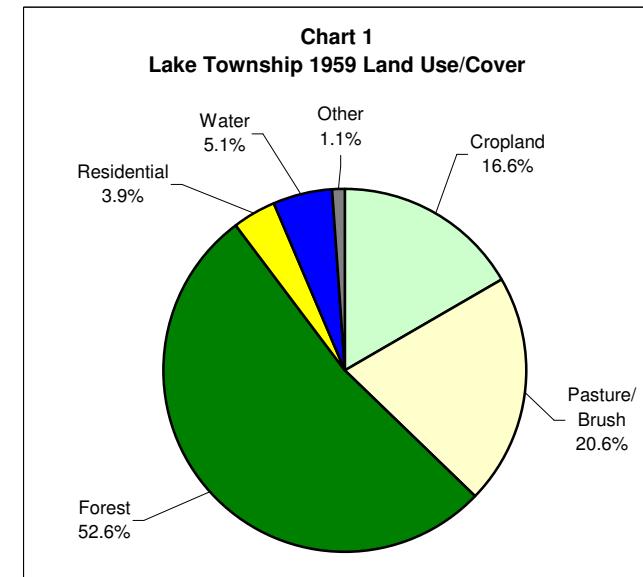
### Overview

Lake Township is located along the western boundary of Wayne County. The total land area of the Township is approximately 19,187 acres or about 30 square miles. Over the span of the 43-year study period, the agricultural types of land use/cover (cropland, farmsteads and pasture/brush) decreased. In 1959, these land use/cover types accounted for about 38.2% of the total Lake Township land area. By 2002, these land use/cover types comprised 21.6% of the total land area, a decrease of 16.6%. {See Table 1, below} Forest was the dominant land use/cover type in both study years. The amount of forest increased by roughly 720 acres between 1959 and 2002. Residential land use/cover also increased by nearly 1,987 acres during the 43-year time frame. By 2002, residential land use/cover accounted for about 13% of the total Township land area. Commercial land also increased, but still comprised less than 1% of the total land area.

**Table 1 – Lake Township Land Use/Land Cover**

Land Use/Land Cover	Lake 1959 Acres	Category Percent of Total	Lake 2002 Acres	Category Percent of Total
Residential	553.72	2.9%	2,540.32	13.2%
Commercial	15.31	0.1%	119.06	0.6%
Industrial	-	0%	2.82	0.0%
Transportation	99.04	0.5%	-	0%
Utilities	-	0%	1.25	0.0%
Religious	13.73	0.1%	14.90	0.1%
Government/Institution	6.09	0.0%	20.84	0.1%
Recreational	2.53	0.0%	49.88	0.3%
Cropland	3,191.34	16.6%	1,914.13	10.0%
Farmstead	187.34	1.0%	111.98	0.6%
Pasture/Brush	3,960.76	20.6%	2,111.73	11.0%
Forest	10,088.76	52.6%	10,809.58	56.3%
Water	987.41	5.1%	1,327.78	6.9%
Mining/Extraction	81.35	0.4%	163.10	0.9%
Total	19,187.38	100.0%	19,187.37	100.0%

The charts below show the percent values for the land use/land cover categories in Lake 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.



A comparison of the above charts illustrates the decrease in the agricultural types of land use/cover and the distinct increase in residential land use. Also, note the increase in forest and water.

## Cropland

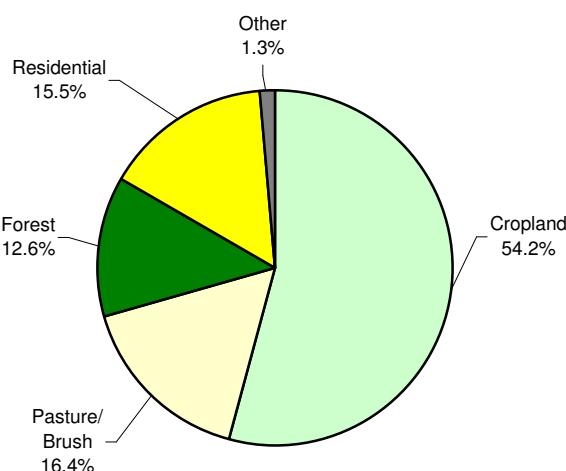
For the purposes of this study, the cropland consisted of various types of agricultural products, including but not limited to corn and hay. In 1959, nearly 17% of the total Township land area was comprised of cropland. By 2002, 10% of the Township consisted of cropland. The amount of cropland decreased by about 1,277 acres, as seen in Table 1 on the preceding page. Table 2 {below} and Chart 3 {right} depict what became of the 1959 cropland.

Table 2 – 1959 Cropland Use in 2002

Land Use/Land Cover	1959 Cropland Classification in 2002	
	Acres	Percent
Residential	476.96	14.9%
Commercial	11.85	0.4%
Industrial	-	0%
Transportation	-	0%
Utilities	0.24	0.01%
Religious	-	0%
Government/Institution	-	0%
Recreational	6.56	0.2%
Cropland	1,731.27	54.2%
Farmstead	18.52	0.6%
Pasture/Brush	522.47	16.4%
Forest	401.66	12.6%
Water	17.57	0.6%
Mining/Extraction	4.43	0.1%
Total	3,191.53	100.0%

Of the 1959 cropland, approximately 54% or about 1,731 acres remained as cropland in 2002. In terms of cropland retention, Lake Township ranked sixteenth out of all Wayne County municipalities. By 2002, a substantial amount of the 1959 cropland had converted to natural types of land use/cover either as pasture/brush (16.4%) or forest (12.6%). Almost 15.5% or 495 acres of 1959 cropland converted to residential use. The remaining area converted to various other types of land use/cover. The United States Department of Agriculture 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 analyze soil from a prime versus non-prime perspective.

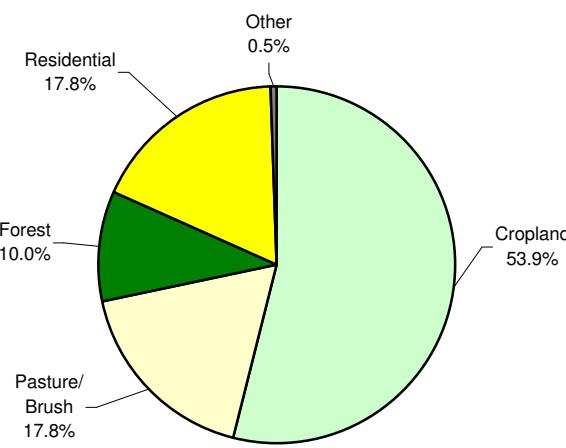
Chart 3  
1959 Cropland Use in 2002



## Prime Agricultural Soil

In 1959, about 23.5% or approximately 750 acres of the cropland in Lake Township was situated on prime agricultural soil. Of that prime agricultural soil cropland, nearly 54% or 404 acres were still in existence as cropland at the end of the study period in 2002. {See Chart 4, below} Of the remaining percentage of 1959 cropland that was utilizing prime agricultural soil, almost 28% converted to natural types of land use/cover as pasture/brush (17.8%) or forest (10.0%). Nearly 18% of the 1959 prime agricultural soil cropland converted to residential land use/cover by 2002. The remaining area converted to various other land use/cover types.

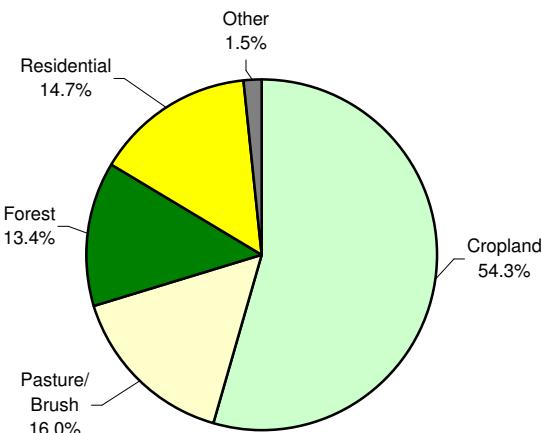
Chart 4  
1959 Prime Ag Soil Cropland Use in 2002



## Non-Prime Agricultural Soil

In 1959, about 76.5% or about 2,442 acres of the cropland in Lake Township was situated on non-prime agricultural soil. Similar to the prime agricultural soil results, over 54% of the non-prime agricultural soil was retained as cropland at the end of the study period in 2002. {See Chart 5 below} Of the remaining area of non-prime agricultural soil cropland, over 29% converted to natural types of land use/cover as either pasture/brush (16.0%) or forest (13.4%). Nearly 360 acres or 14.7% converted to residential land use by 2002. The remaining area converted to other types of land use/cover.

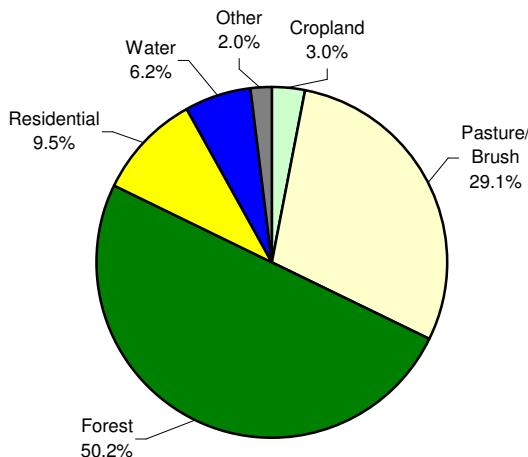
**Chart 5**  
1959 Non-Prime Ag Soil Cropland Use in 2002



## Pasture/Brush

In 1959, pasture/brush accounted for about one fifth of the total Township land area. By 2002, the area of pasture/brush had decreased from about 3,960 acres to 2,112 acres and accounted for 11.0% of the total land area. {See Table 1} Of the 1959 pasture/brush, nearly 30% remained as pasture/brush at the end of the period in 2002. {See Chart 6, above right} The majority of the 1959 pasture/brush evolved into forest cover by 2002. Nearly 377 acres or 9.5% converted to residential use. Over 6%, was covered by water and 3% was utilized as cropland by 2002. The remaining area converted to various other types of land use/cover.

**Chart 6**  
1959 Pasture/Brush Use in 2002



## Forest

More than half of Lake Township was forested in both 1959 and 2002. Over the course of the study period the amount of forest cover increased by approximately 720 acres. {See Table 1} The relatively slight gain in the amount of forest cover is likely attributed to the maturation and evolution of the pasture/brush. As illustrated in Chart 6 {above}, more than 50% or 1,988 acres of the 1959 pasture/brush converted to forest by 2002. Additionally, most of the land that was forested in 1959 remained forested in 2002. As illustrated in Table 3 {below}, nearly 82% of the forest cover was retained between 1959 and 2002.

**Table 3 – 1959 Forest Use in 2002**

Land Use/Land Cover	1959 Forestland Classification in 2002	
	Acres	Percent
Residential	1,180.23	11.7%
Commercial	48.52	0.5%
Industrial	2.82	0.0%
Transportation	-	0%
Utilities	0.13	0.0%
Religious	0.31	0.0%
Government/Institution	9.38	0.1%
Recreational	18.58	0.2%
Cropland	35.16	0.3%
Farmstead	4.39	0.0%
Pasture/Brush	368.31	3.7%
Forest	8,259.27	81.9%
Water	91.58	0.9%
Mining/Extraction	69.79	0.7%
Total	10,088.47	100.0%

Although this is a large percentage, only Bethany and Hawley Boroughs ranked lower in terms of forest retention within Wayne County over the course of the forty-plus year study period. The majority of the forest cover that was not retained converted to residential use. About 1,185 acres or 11.7% of the 1959 forest cover converted to residential use by 2002. Another 3.7% or about 368 acres converted to pasture/brush. The remaining area converted to various other types of land use/cover.

## Residential

Between 1959 and 2002, the amount of residential land use/cover in Lake Township increased from nearly 554 acres to about 2,540 acres. In terms of percentage of total land area, the residential land use/cover increased from almost 3% in 1959 to more than 13% by 2002. According to the U.S. Census Bureau, the total population of Lake Township increased from 1,621 in 1960 to 4,361 at the time of the 2,000 census. In a municipality that is roughly 30 square miles, that translates to a change in population density from 54 persons per square mile to about 145 persons per square mile. The substantial increase in population and residential land use/cover is in large part attributed to the establishment of several major developments in the eastern portion of the Township during the study period.

## Commercial

The amount of commercial land use/cover increased by more than 100 acres during the study period. However, despite the increase in acreage, commercial land accounted for only 0.6% of the total Lake Township land area by 2002. {See Table 1}

## Protected Agricultural Land

Lake Township had approximately 1,178 acres enrolled in the Agricultural Security Area Program by 2002. Additionally, there were approximately 143 acres enrolled in the Agricultural Conservation Easement Purchase Program in Lake Township by the end of the study period. There were also approximately

3,108 acres of land accepted into the Act 319 program (Clean & Green), which accounts for 19% of the taxable acreage in the Township. This tax designation reduces the assessed value of the Township by \$5,060,400 or 0.9%.

## Summary

The most notable change over the course of the study period was the decrease in agricultural related land use/cover. As a percentage of the entire municipal land area, the cropland, pasture/brush and farmstead classifications decreased by nearly 17%, cumulatively. At the beginning of the period, pasture/brush accounted for slightly more than 20% of the total land area. By 2002, only 11% of the land area was classified as pasture/brush. Similarly, cropland accounted for 16.6% of the total land area, but by 2002 only 10% of the total Township land area was classified as cropland. The forest cover accounted for slightly more than half of the total land area in both study years and increased by more than 720 acres between 1959 and 2002. The amount of residential land use/cover increased substantially during the period. In 1959 residential land use/cover accounted for nearly 3% of the total land area. However, by 2002, residential land use/cover comprised more than 13% of the Township. This increase was influenced by the establishment of large-scale residential developments in the eastern portion of the municipality. Also noteworthy is the fact that nearly 7% of the entire Township's land area consisted of water at the end of the study period, up from 5% in 1959.

### Wayne County Agricultural Land Use/Cover Study

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 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.

Wayne County Department of Planning 2006

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