

Buckingham 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-3, Buckingham 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.



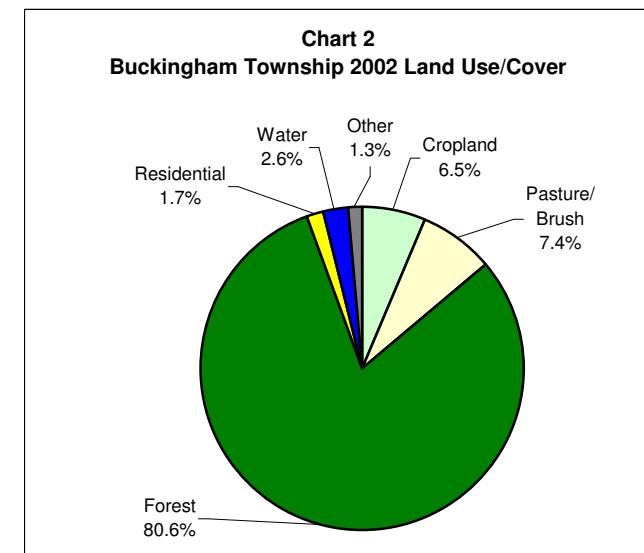
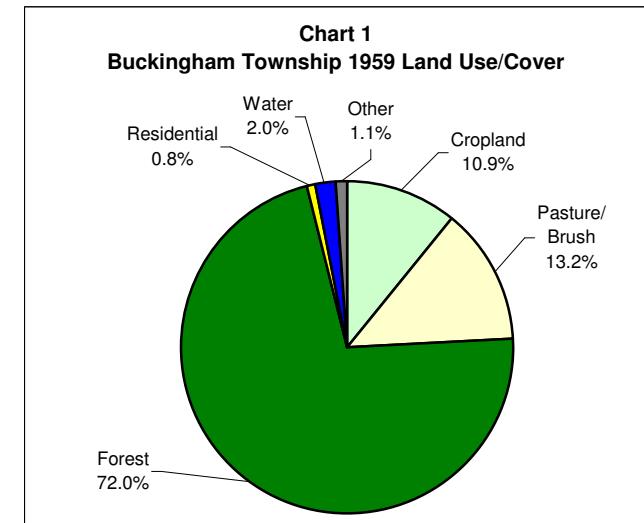
Overview

Buckingham Township is located in northern Wayne County with the Delaware River, Equinunk Creek and Crooked Creek forming its eastern border. It is the fourth largest municipality in Wayne County with a total of approximately 29,059 acres or 45.4 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. As one might expect, the area of farming related activities decreased by a certain extent over the forty-three year period. The amount of cropland, farmsteads and pasture/brush all decreased. Conversely, the amount of forest, residential, commercial and water land use/land cover increased.

Table 1 - Buckingham Township Land Use/Land Cover

Land Use/ Land Cover	Buckingham 1959 Acres	Category Percent of Total	Buckingham 2002 Acres	Category Percent of Total
Residential	146.86	0.5%	423.64	1.5%
Commercial	201.47	0.7%	340.29	1.2%
Industrial	15.32	0.1%	5.05	0.0%
Transportation	80.31	0.3%	-	0%
Utilities	-	0%	-	0%
Religious	9.72	0.0%	9.98	0.0%
Government/Inst.	0.68	0.0%	4.94	0.0%
Recreational	-	0%	11.88	0.0%
Cropland	3,160.74	10.9%	1,879.86	6.5%
Farmstead	99.73	0.3%	60.01	0.2%
Pasture/Brush	3,825.83	13.2%	2,148.24	7.4%
Forest	20,933.98	72.0%	23,420.09	80.6%
Water	574.88	2.0%	747.29	2.6%
Mining/Extraction	9.14	0.0%	7.42	0.0%
Total	29,058.66	100.0%	29,058.69	100.0%

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



Notice the decrease in both cropland and pasture/brush over this time period and the more obvious increase in forest cover. There were also slight increases in the percentage of both residential and water over the forty-three year study period.

Cropland

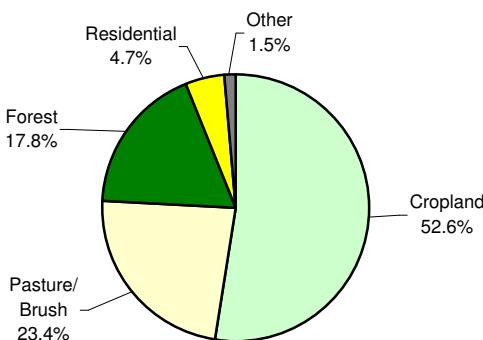
Cropland was the third largest land use in Buckingham Township for the years 1959 and 2002. For the purposes of this study, cropland included land capable of producing such as hay, corn, fruit and Christmas tree farms. In 1959, approximately 11% of the Township land area, accounting for 3,161 acres, consisted of cropland. By 2002, the area of cropland in the Township decreased by 1,281 acres and comprised 4.4% less of the Township. Table 2 {below} and Chart 3 {right} show what became of the 1959 Buckingham Township cropland.

Table 2 - 1959 Cropland Use in 2002

Land Use/Land Cover	1959 Cropland Classification in 2002	
	Acres	Percent
Residential	118.70	3.8%
Commercial	24.65	0.8%
Industrial	0.74	0.0%
Transportation	-	0%
Utilities	-	0%
Religious	0.13	0.0%
Government/Institution	2.26	0.1%
Recreational	9.40	0.3%
Cropland	1,661.01	52.6%
Farmstead	30.57	1.0%
Pasture/Brush	739.43	23.4%
Forest	563.62	17.8%
Water	10.23	0.3%
Mining/Extraction	-	0%
Total	3,160.74	100.0%

Of the nearly 3,161 acres of 1959 cropland, over half, or 1,661 acres, was still being used as cropland in 2002. The remaining 1,500 acres of prior cropland was changed as follows. Nearly 740 acres or 23.4% changed to pasture/brush and 17.8%, equaling almost 564 acres, grew into forest over the 43-year period. Combined, these three land classifications account for nearly 94% of Buckingham Township 1959 cropland. Another 4.8% was converted into residential use (3.8%) and farmstead expansion (1%) and approximately 25 acres became utilized for commercial use, which is less than 1%. The remaining 22 acres was divided among water, recreation, government, industrial and religious uses.

Chart 3
1959 Cropland Use in 2002



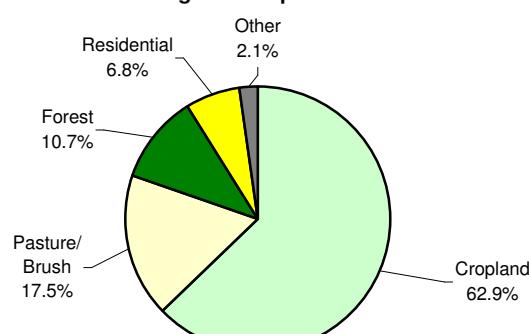
The chart above shows the percent values for the 1959 cropland and what it became by 2002.

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.

Prime Agricultural Soil

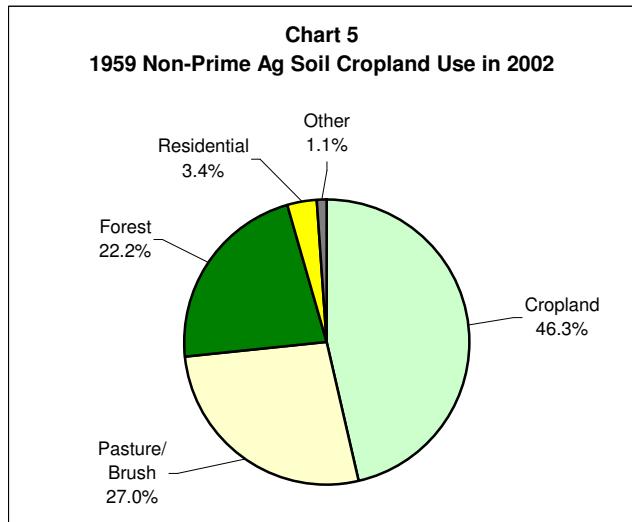
In 1959, a total of 37.7% or approximately 1,192 acres of the cropland in Buckingham Township was located on prime agricultural soil. By the end of the study period in 2002, nearly 750 acres, equaling 62.9%, was still being utilized for cropland production. Over 28% of the prior 1959 prime soil cropland converted to natural types of land cover, namely forest (10.7%) and pasture/brush (17.5%). Another 6.8% was converted to residential land. Chart 4 {below} shows what became of the 1959 cropland on prime agricultural soil.

Chart 4
1959 Prime Ag Soil Cropland Use in 2002



Non-Prime Agricultural Soil

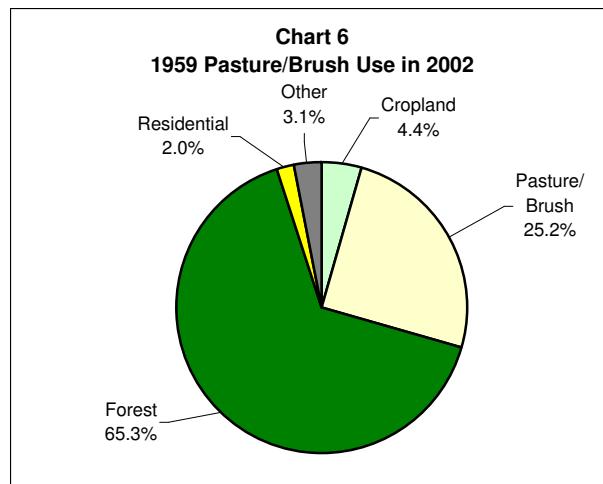
In 1959, a total of 62.3% or 1,969 acres of the cropland in Buckingham Township was located on non-prime agricultural soil. By the end of the study period in 2002, nearly 912 acres equaling 46.3% was being utilized for cropland production. This lower percentage in comparison to the prime agricultural cropland soil percentage, as discussed in the previous section and as graphically shown in Chart 4 {on previous page}, is an indication of a farmer's willingness to let go of the less desirable soil for cropland production. Nearly half converted to natural land cover, namely forest (22.2%) and pasture/brush (27%). Of the remaining 4.5%, 2.7% was converted to residential land, 0.8% each for farmstead and commercial use and 0.3% for water cover. Chart 5 {below} illustrates the conversion of the 1959 cropland located on non-prime agricultural soil.



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, Buckingham Township had 13.2% of its land area in pasture/brush, which equaled roughly 3,826 acres. By 2002, this land cover had decreased by nearly 1,678 acres and comprised 5.8% less of the Township. Of the 1959 pasture/brush, only 25.2% or 965 acres remained as pasture/brush

by 2002. Nearly two-thirds naturally progressed into forest, which equaled nearly 2,500 acres. An additional 167 acres or 4.4% was converted to cropland over this time period. The remaining 5% equaling 193 acres was converted to mainly water (2.1%), residential and farmsteads (2%) and commercial (1%). Chart 6 {below} illustrates the conversion of the 1959 pasture/brush in Buckingham Township.



Forest

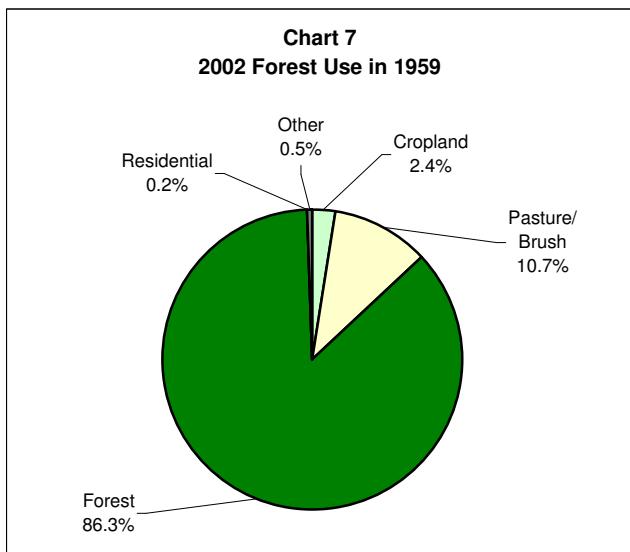
As stated in the "overview", the majority of the Buckingham Township landscape was covered by forest in both 1959 and 2002. In 1959, there were 20,934 acres of forest, which equaled 72% of the total land area {see Table 1}. By 2002, the forest cover had increased by roughly 2,486 acres to 23,420 acres or 80.6% of Buckingham Township's entire land area. The nearly 2,500-acre increase in forest came primarily from the progressive growth of pasture/brush, which was mentioned in the previous section and shown in Chart 6 {above}. Also, the vast majority of the 1959 forest in the Township remained as forest by 2002. Of the 20,934 acres of 1959 forest, over 96.5% or 20,208 acres remained as forest cover in 2002, which ranked Buckingham Township first in the percentage of forest retention within the County over the study period. Of the 3.5% that actually did change to a different land category, a total of 2.5% converted to other natural land covers, namely pasture/brush (1.9%) and water (0.6%) {see Table 3 on next page}.

Table 3 - 1959 Forest Use in 2002

Land Use/Land Cover	1959 Forestland Classification in 2002	
	Acres	Percent
Residential	85.90	0.4%
Commercial	84.17	0.4%
Industrial	0.18	0.0%
Transportation	-	0%
Utilities	-	0%
Religious	0.32	0.0%
Government	0.27	0.0%
Recreational	1.95	0.0%
Cropland	36.41	0.2%
Farmstead	5.49	0.0%
Pasture/Brush	393.51	1.9%
Forest	20,208.20	96.5%
Water	116.34	0.6%
Mining/Extraction	0.98	0.0%
Total	20,933.72	100.0%

The table above shows the acres and percentages of 1959 forest in Buckingham Township and what it became by 2002. Notice the percentage of forest that was retained over the study period, which ranked 1st in the County.

Since the majority of Buckingham Township is still forested land cover with a total of 80.6% or 23,420 acres, Chart 7 {below} will show how this acreage existed back in 1959 by percentage.



A total of 97% of the 2002 forest in Buckingham Township was natural land cover back in 1959, namely forest with over 20,210 acres and pasture/brush with nearly 2,500 acres. Approximately 564 acres or 2.4% of the 2002 forest was previously cropland back in 1959.

Protected Agricultural Land

Buckingham Township had a total of approximately 3,058 acres of land enrolled in the Agricultural Security Area Program by 2002, which is equivalent to about 10.5% of the Township's land area. By 2005, a total of 198 acres had been placed within the Agricultural Conservation Easement Purchase Program. There were also approximately 10,286 acres of land enrolled in the Act 319 (Clean & Green) Program, which accounts for 36.3% of the taxable acreage within Buckingham Township. This tax designation reduces the assessed value of the Township by 8,253,100 or 8.3%.

Summary

The most notable change in the Township during the study period was the decrease of cropland, covering 4.4% less of the Township, and the reduction of pasture/brush, covering 5.8% less of the Township. The largest increase in land cover was obviously forest, which now accounts for over 80% of Township's land area. Residential land increased by 277 acres over this forty-three year period, meaning it utilizes 1% more of the Township. Commercial land increased by approximately 140 acres over the 43-year period, comprising 0.5% more of the Township. This increase can be attributed mainly to the expansion of the seasonal summer camp business located throughout the Township. One important factor involved with the large amount of forest retention in Buckingham Township is the steep terrain located throughout the Township and especially along the eastern border of the Delaware River.

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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