

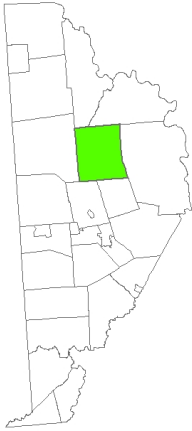
Lebanon Township

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-13, Lebanon 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



Lebanon Township, located in the north central part of Wayne County, is second only to Starrucca in the percentage of cropland retention over the past 43 years. Chart 3, on the following page, shows that 70.5% of the 1959 cropland remained as cropland in 2002. As can be seen from Table 1, {below} over 2,881 acres of

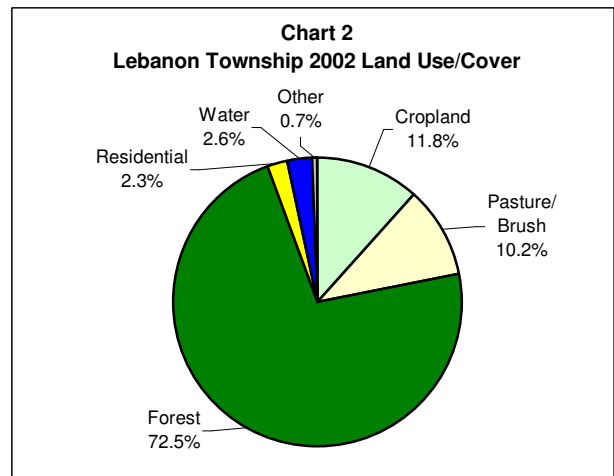
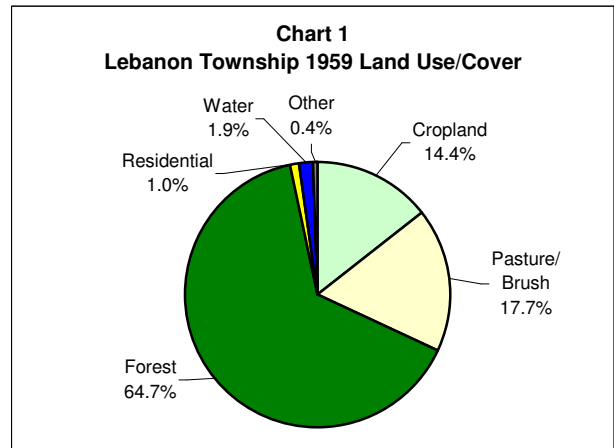
Lebanon Township remains as cropland. The greatest increase in land use/land cover was forestland. Forestland increased from 64.7% of the Township in 1959 to 72.5% of the Township in 2002.

from 0.3% of the Township to 1.6% from 1959 to 2002.

The charts below show the major land use/cover categories. Those categories in Table 1 that are generally less than 1% of the Township are grouped together in one category, "other". Farmsteads, for presentation purposes, were grouped with the residential classification.

Table 1 - Lebanon Township Land Use/Land Cover

Land Use/Land Cover	Lebanon 1959 Acres	Category Percent of Total	Lebanon 2002 Acres	Category Percent of Total
Residential	80.93	0.3%	386.66	1.6%
Commercial	94.67	0.4%	142.43	0.6%
Industrial	3.23	0.0%	-	0%
Transportation	-	0%	18.99	0.1%
Utilities	-	0%	-	0%
Religious	3.32	0.0%	3.24	0.0%
Government/Institution	1.13	0.0%	1.73	0.0%
Recreational	-	0%	1.83	0.0%
Cropland	3,513.28	14.4%	2,881.41	11.8%
Farmstead	159.00	0.7%	160.90	0.7%
Pasture/Brush	4,310.76	17.7%	2,485.11	10.2%
Forest	15,793.73	64.7%	17,710.83	72.5%
Water	463.02	1.9%	629.93	2.6%
Mining/Extraction	-	0%	-	0%
Total	24,423.07	100.0%	24,423.06	100.0%



Over 7,148 acres in Lebanon Township is owned by the Commonwealth of Pennsylvania, most of which is under the management of either the Game Commission or the Fish and Boat Commission. Residential usage increased

The charts shown above provide a quick visual comparison of land use and land cover changes over the past four decades. Cropland and pasture/brush each account for more than 10% of the total land area. In 2002 forestland accounted for almost 8% more of the Township.

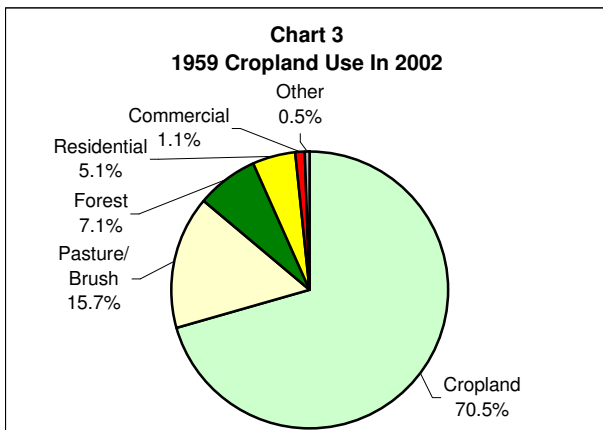
Cropland

As mentioned on the previous page, cropland in 1959 covered about 3,513 acres or 14.4% of the Township's land area. By 2002, that decreased to 11.8% or 2,881 acres. Table 2 {below} shows what changes occurred to that 3,513 acres of cropland in 1959.

Table 2 - 1959 Cropland Use in 2002

Land Use/Land Cover	1959 Cropland Classification in 2002	
	Acres	Percent
Residential	118.85	3.4%
Commercial	40.16	1.1%
Industrial	5.57	0.2%
Transportation	-	0%
Utilities	-	0%
Religious	-	0%
Government/Institution	-	0%
Recreational	-	0%
Cropland	2,477.55	70.5%
Farmstead	58.59	1.7%
Pasture/Brush	550.35	15.7%
Forest	251.01	7.1%
Water	11.21	0.3%
Mining/Extraction	-	0%
Total	3,513.29	100.0%

Over 70% of Lebanon Township's 1959 cropland was still cropland in 2002 {Table 2 above and Chart 3, below}. During the same time, 15% of the cropland became idle and was used as pasture or started to become brush covered. Residential usage (including farmsteads) claimed 5.1% in those 43 years. Other uses accounted for another 0.5%.



Over 7% of the 1959 cropland converted to forest by 2002.

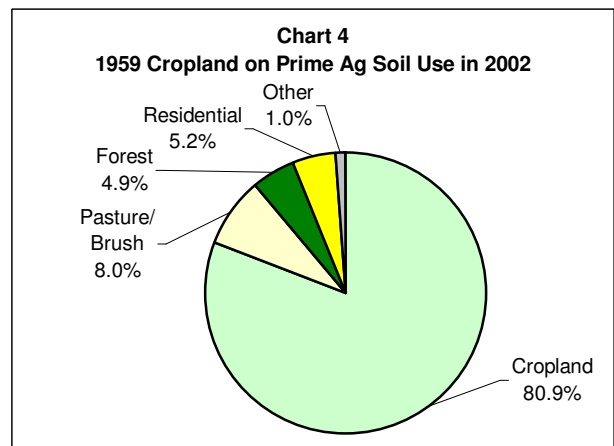
Prime Agricultural Soil

The United States Department of Agriculture classifies soil as prime agricultural, farmland of statewide importance or non-prime soil. Details of the three classes are in the County summary. Table 3 and Chart 4 {below} provide an analysis of prime agricultural soil in cropland in 1959 and how it was used in 2002.

Table 3 - 1959 Prime Soil in Cropland

Land Use/Land Cover	Prime Ag Soil - Crops Classification in 2002	
	Acres	Percent
Residential	42.15	3.2%
Commercial	11.15	0.8%
Industrial	-	0%
Transportation	0.78	0.1%
Utilities	-	0%
Religious	-	0%
Government/Institution	-	0%
Recreational	-	0%
Cropland	1,067.28	80.9%
Farmstead	26.03	2.0%
Pasture/Brush	105.73	8.0%
Forest	64.26	4.9%
Water	1.62	0.1%
Mining/Extraction	-	0%
Total	1,319.00	100.0%

Almost 81% of the cropland on prime soil was still cropland in 2002, while approximately 65% of the non-prime cropland was still classified as cropland. In Table 3, residential and farmland are shown separately, but in Chart 4 they are combined for illustrative purposes.



Over 80% of Lebanon Township's prime agricultural soil cropland from 1959 remained as cropland in 2002.

Almost 5% of Lebanon Township’s prime agricultural soil was converted to forestland during the study period while 8% of the prime soil saw cropland converted to pasture/brush. Totaled together, close to 13% of Lebanon Township’s cropland on prime agricultural soil was reclaimed by nature.

Pasture/Brush

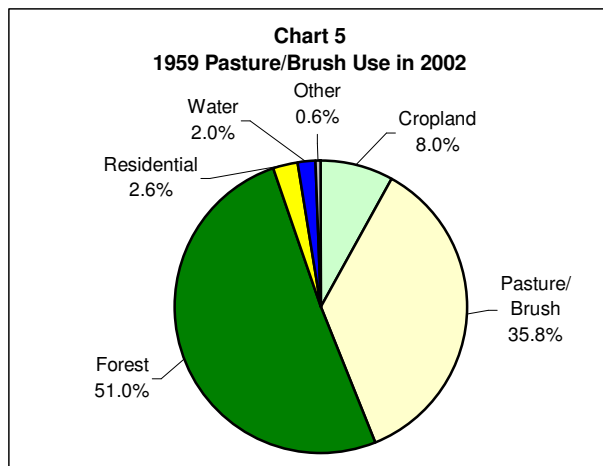
The land cover classification for pasture/brush decreased over the four decades from 4,311 acres in 1959 to 2,485 acres. This land cover included acreage used as part of agricultural operations including those areas that became idle, and are in the very early stages of reforestation but not a forest yet. Table 4 {below} shows the 2002 classification of those 4,311 acres from 1959.

Table 4 – 1959 Pasture/Brush Use in 2002

Land Use/Land Cover	1959 Pasture/Brush Classification in 2002	
	Acres	Percent
Residential	97.36	2.3%
Commercial	13.58	0.3%
Industrial	-	0%
Transportation	11.36	0.3%
Utilities	-	0%
Religious	-	0%
Government/Institution	-	0%
Recreational	-	0%
Cropland	344.50	8.0%
Farmstead	14.14	0.3%
Pasture/Brush	1,545.28	35.8%
Forest	2,199.41	51.0%
Water	85.29	2.0%
Mining/Extraction	-	0%
Total	4,310.92	100.0%

Chart 5 {above right} provides another visual representation of the changes in Lebanon Township’s changing land coverage. Pasture/brush land from 1959 converted to forestland more than any other land cover. Fifty-one percent of the pasture/brush land was idled long enough to allow forest to reclaim those areas.

By comparing Charts 3 and 5, it is obvious that a much greater percentage of the 1959 pasture/brush converted to forestland than cropland to forestland.



Only 35.8% of the 1959 pasture/brush land remained in that classification in 2002, but over one-half of the pasture/brush was reforested.

Lebanon Township, in terms of pasture/brush retention, was much higher in percentage than the county overall. Wayne County was 29.5% in pasture/brush retention, while Lebanon Township was 35.8%. It is interesting to note that when comparing the percentage of 1959 pasture/brush land being converted to cropland by 2002, Lebanon Township ranked fourth in Wayne County. While countywide, 6.2% of the pasture/brush was improved to raise crops, 8.0% in Lebanon Township was converted in this manner. Table 3 shows that when it comes to cropland on prime agricultural soil, these areas were less likely to become pasture or brush over the last 43 years than were the croplands on non-prime soils. This is probably a reflection of improved efficiencies in the agricultural industry as farmers were making decisions on which lands made sense to continue in crop production and which should be left idle from an agricultural business perspective.

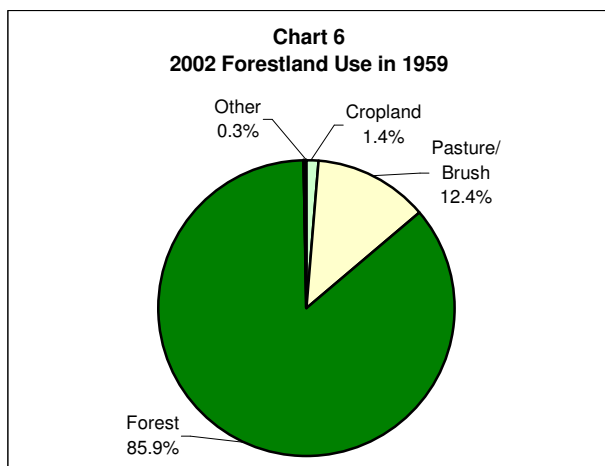
Forest

Forestland is by far the largest land use/cover category in Lebanon Township. Part of its large presence is due to the large acreages owned by Commonwealth agencies. Over 96% of 1959’s forestland remained forest in 2002. Less than 1% of the 1959 forestland was converted to cropland by 2002 and a little over 2% was classified as pasture/brush. Table 4 {on the following page} provides a breakdown of how the 1959 forestland changed during the 43-year study period.

Table 4 – 1959 & 2002 Forestland

Land Use/Land Cover	1959 Forestland		2002 Forestland	
	Acres	Percent	Acres	Percent
Residential	95.95	0.6%	13.73	0.1%
Commercial	9.26	0.1%	16.36	0.1%
Industrial	-	0%	2.23	0.0%
Transportation	2.05	0.0%	-	0%
Utilities	-	0%	-	0%
Religious	-	0%	-	0%
Government/Institution	1.43	0.0%	0.35	0.0%
Recreational	1.83	0.0%	-	0%
Cropland	37.93	0.2%	251.01	1.4%
Farmstead	2.42	0.0%	7.02	0.0%
Pasture/Brush	345.53	2.2%	2,199.41	12.4%
Forest	15,215.08	96.3%	15,215.08	85.9%
Water	82.26	0.5%	5.70	0.0%
Mining/Extraction	-	0%	-	0%
	15,793.74	100.0%	17,710.89	100.0%

Table 4 {above} looks forward from 1959 and shows what happened to the 1959 forestland. It also looks backward from 2002 to show where the 2002 forestland came from. Large tracts of land owned by the Commonwealth are located in the southwest and northeast corners of the Township. Chart 6 {below} provides another depiction of the 2002 forestland cover and the source of the changes.



Over 12% (2,199 acres) of the 2002 forestland was pasture/brush in 1959. Another 1.4% (251 acres) was cropland.

An examination of the land use maps for 1959 and 2002 shows how, other than the Cold Spring area and the southeastern section of the Township, the predominant forestland patterns of the Township have generally remained the

same; the reforestation of the southeastern section is also noticeable.

Residential

During the study period, residential land in the Township increased from 0.3% (81 acres) of the Township in 1959 to 1.6% (387 acres) in 2002. Of these 387 acres in 2002 over 10% was residential in 1959, 31% was cropland, 26% was pasture/brush and 25% was forestland.

Protected Agricultural Land

There are approximately 2,640 acres of land in the Agricultural Security Area Program in Lebanon Township. No landowners in Lebanon Township have elected to take advantage of the Agricultural Land Preservation Program. There are 2,767 acres in Lebanon Township with a preferential assessment under the clean and green program. These 2,767 acres represent 16% of the taxable acreage in Lebanon and this tax designation reduces the assessed value of the Township by 2,670,700 or 3.3%.

Summary

Nearly 16% (550 acres) of the 1959 cropland was idled and became pasture/brush by 2002. Seven percent (251 acres) of the cropland on prime agricultural soils remained as cropland and 8% became pasture/brush. A little over 5% was converted to residential land uses. Over half of the 1959 pasture/brush grew into forest in this period and 8% of the pasture/brush or 345 acres, was improved to be placed in crop production.

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.

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