

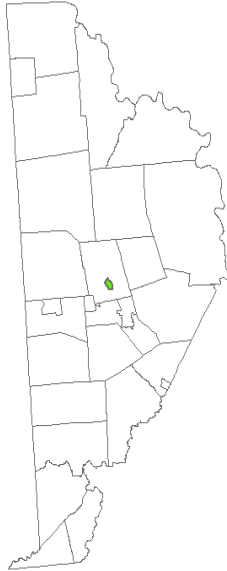
# Bethany Borough

## 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-2, Bethany Borough; 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.*

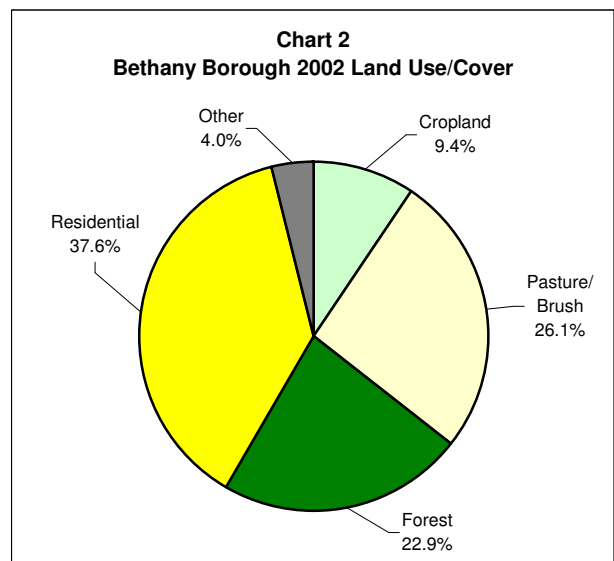
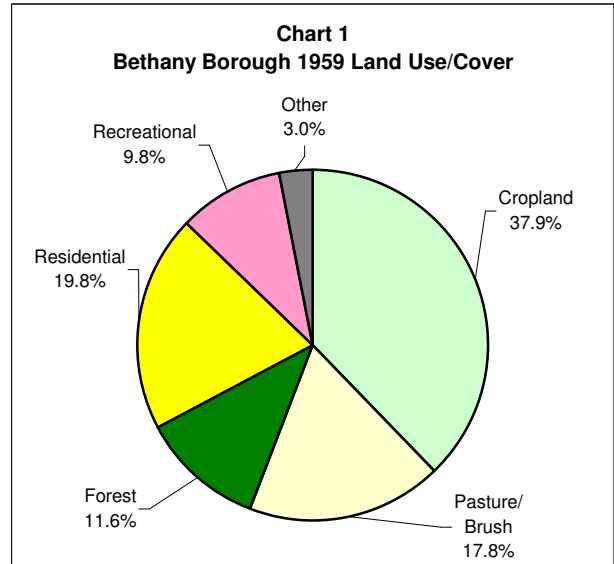
### Overview



Bethany Borough is centrally located in Wayne County. The total land area of the Borough is roughly 320 acres or 0.5 square miles. Bethany is the smallest municipality in the County. It represents less than 0.1% of the total land area. As can be seen in Table 1 {below} and Charts 1 and 2 {right} cropland area decreased and residential land area

increased over this 40-plus year study period. Forest and pasture/brush also saw an increase in area over this time span. Additional changes in land use/land cover that occurred are covered in detail on the following pages.

*The charts below show the percent values for the land use /land cover categories in Bethany Borough for 1959 and 2002. The residential category includes farmsteads in each chart's total throughout this report, and the category "other" includes land uses that had a low value and would be difficult to see individually in a pie chart.*



**Table 1 - Bethany Borough Land Use/Land Cover**

Land Use/Land Cover	Bethany 1959 Acres	Category Percent of Total	Bethany 2002 Acres	Category Percent of Total
Residential	54.53	17.0%	120.44	37.6%
Commercial	2.01	0.6%	0.83	0.3%
Industrial	-	0%	-	0%
Transportation	-	0%	-	0%
Utilities	-	0%	-	0%
Religious	6.78	2.1%	6.53	2.0%
Government/Institution	0.40	0.1%	0.38	0.1%
Recreational	31.53	9.8%	3.24	1.0%
Cropland	121.37	37.9%	29.96	9.4%
Farmstead	8.88	2.8%	-	0%
Pasture/Brush	57.06	17.8%	83.52	26.1%
Forest	37.15	11.6%	73.37	22.9%
Water	0.47	0.1%	1.90	0.6%
Mining/Extraction	-	0%	-	0%
<b>Total</b>	<b>320.18</b>	<b>100.0%</b>	<b>320.17</b>	<b>100.0%</b>

*The above table shows the amount of acres and percent for each land use/land cover category in Bethany Borough for 1959 and 2002.*

Notice the decrease in cropland and the increase in pasture/brush, forest and residential land use/cover over this time period. The amount of acreage in recreational was greater in 1959 because it includes a private/personal golf course that no longer was in use in 2002.

## Cropland

For this study, cropland includes areas containing a number of agricultural products including hay, corn, fruit, and Christmas trees. In 1959 approximately 38% of Bethany Borough was cropland. By 2002, cropland was reduced to approximately 9% of the Borough {see Table 1}. Table 2 and Chart 3 {below} illustrate 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	38.57	31.8%
Commercial	0.01	0.0%
Industrial	-	0%
Transportation	-	0%
Utilities	-	0%
Religious	0.45	0.4%
Government/Institution	-	0%
Recreational	-	0%
Cropland	29.45	24.3%
Farmstead	-	0%
Pasture/Brush	37.38	30.8%
Forest	15.50	12.8%
Water	-	0%
Mining/Extraction	-	0%
Total	121.36	100.0%

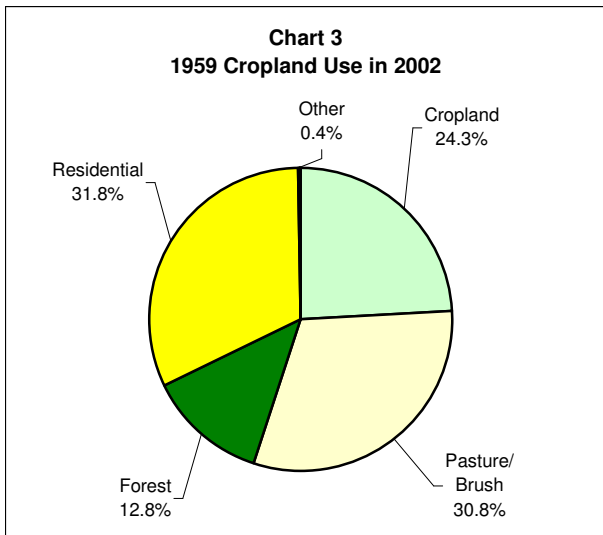
County where 7.2% of the 1959 cropland became residential by 2002 and 18.0% of the 1959 cropland became pasture/brush by the end of the study period. Also, nearly one quarter (24.3%) remained as cropland in Bethany Borough by 2002. This was in contrast to the County as a whole, since over 61% of Wayne County’s 1959 cropland remained as cropland in 2002. The final significant change was the 12.8% that became forest. One item to note is that almost 68% of the area that was cropland in 1959 remained undeveloped in 2002 as pasture/brush, forest or cropland.

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 analyze soils from a prime versus non-prime perspective.

### Prime Agricultural Soil

In 1959, approximately 2% or only two acres of the cropland in the Borough was utilizing prime agricultural soil. In 2002, 83% of the two acres became residential and 17% became pasture/brush. Table 3 illustrates what became of 1959 cropland for both prime and non-prime soil by 2002.

**Chart 3  
1959 Cropland Use in 2002**



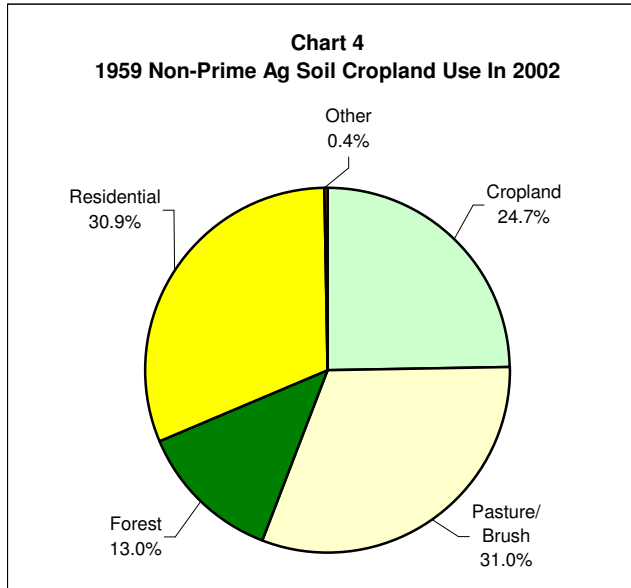
Of the 121 acres of cropland in 1959, an approximately equal amount became residential (31.8%) and pasture/brush (30.8%) by 2002. This varies from the percentages for the entire

**Table 3 – 1959 Prime & Non-prime Soil in Cropland**

Land Use/Land Cover	Prime Ag Soil - Cropland Classification in 2002		Non-Prime Ag Soil - Cropland Classification in 2002	
	Acres	Percent	Acres	Percent
Residential	1.71	83.0%	36.87	30.9%
Commercial	-	0%	0.01	0.0%
Industrial	-	0%	-	0%
Transportation	-	0%	-	0%
Utilities	-	0%	-	0%
Religious	-	0%	0.45	0.4%
Government/Institution	-	0%	-	0%
Recreational	-	0%	-	0%
Cropland	-	0%	29.45	24.7%
Farmstead	-	0%	-	0%
Pasture/Brush	0.35	17.0%	37.03	31.0%
Forest	-	0%	15.50	13.0%
Water	-	0%	-	0%
Mining/Extraction	-	0%	-	0%
Total	2.06	100.0%	119.31	100.0%

## Non-Prime Agricultural Soil

In 1959, approximately 98% or 119 acres of the cropland in Bethany Borough was utilizing non-prime agricultural soil. Chart 4 {below} and the text that follows, indicates what became of the 1959 non-prime agricultural soil.



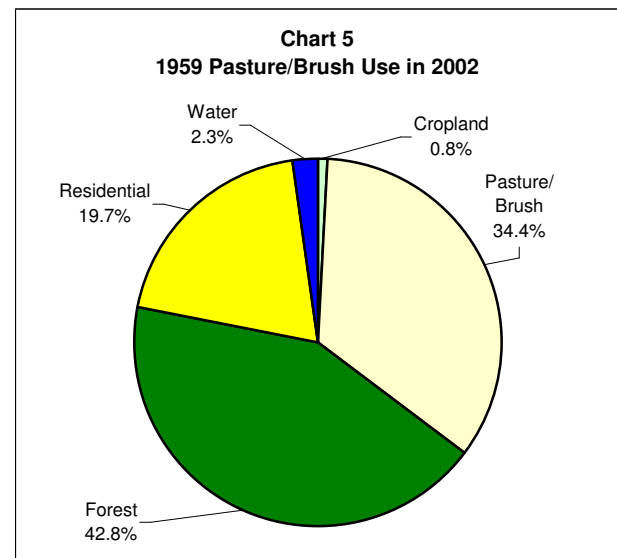
It can be observed that nearly 62% was divided almost equally between residential and pasture/brush use. Approximately one quarter remained as cropland in 2002 and 13% became forest. The 119 acres may appear to be a small area, but it is important in regard to the Borough since it represents over 37% of the total land area.

### Pasture/Brush

In 1959, pasture/brush covered almost 18% or 57 acres and by 2002, this land cover increased to over 26% or 84 acres of the Borough {Table 1}. The pasture/brush classification is land that is in the early reforestation process or is used for agricultural support operations. A total of almost 20 acres or 34% of the 1959 pasture/brush remained this cover type in 2002 {see Table 4 and Chart 5, right} while over 24 acres or 43% became forest and over 11 acres or 20% became residential. Of the remaining 1959 pasture/brush, 1.32 acres or 2.3% became water and 0.46 acres or 0.8% became cropland. Chart 5 {right} illustrates what became of the 1959 pasture/brush within Bethany Borough.

**Table 4 – 1959 Pasture/Brush use in 2002**

Land Use/Land Cover	1959 Pasture/Brush Classification in 2002	
	Acres	Percent
Residential	11.22	19.7%
Commercial		0%
Industrial		0%
Transportation		0%
Utilities		0%
Religious		0%
Government/Institution		0%
Recreational		0%
Cropland	0.46	0.8%
Farmstead		0%
Pasture/Brush	19.64	34.4%
Forest	24.41	42.8%
Water	1.32	2.3%
Mining/Extraction		0%
<b>Total</b>	<b>57.05</b>	<b>100.0%</b>



### Forest

As can be seen in Table 1 on the front page, the area of the Borough covered by forest almost doubled in the 43-year period between 1959 and 2002. In 1959, forest covered over 37 acres or nearly 12% and in 2002 the area increased to over 73 acres or 23%. As seen in Chart 5 {above}, a significant amount of the increase in forest is attributable to the area of pasture/brush that became forest over this period of time. This was a common type of change that was often seen in many areas of the County over the study period. Table 5 {next page} lists what land use/land cover the 1959 forest became by 2002.

**Table 5 – 1959 Forest use in 2002**

Land Use/Land Cover	1959 Forestland Classification in 2002	
	Acres	Percent
Residential	8.18	22.0%
Commercial	-	0%
Industrial	-	0%
Transportation	-	0%
Utilities	-	0%
Religious	-	0%
Government/Institution	-	0%
Recreational	-	0%
Cropland	0.05	0.1%
Farmstead	-	0%
Pasture/Brush	1.26	3.4%
Forest	27.35	73.6%
Water	0.30	0.8%
Mining/Extraction	-	0%
<b>Total</b>	<b>37.14</b>	<b>100.0%</b>

Of the 37 acres that were forest in 1959, over 27 acres or nearly 74% remained as forest in 2002. Over 8 acres or 22% changed to residential use and several insignificant changes accounted for the remaining area.

**Residential**

In 1959 almost 55 acres or 17% (20% including farmsteads) of the total land area of Bethany was occupied by a residential use. Over the 43-year study period the area occupied by this use increased to over 120 acres or 38%. Of the 120 acres in 2002, over 52 acres or 43% was also residential in 1959. The most significant increase came from what was cropland in 1959 accounting for almost 39 acres or 32% of the 2002 total residential acreage. Additionally, over 11 acres or 9% was previously pasture/brush, over eight acres or 7% came from forest and over 6 acres or 5% was previously farmsteads. The remaining change came from small acreages from several other sources.

**Commercial**

Only a small area of the Borough, 2 acres or 0.6% of the total land area in 1959 and 0.8 acres or 0.3% in 2002 contained a commercial use. In both time periods, the commercial use was located along Wayne Street, which is also known as State Route 670. The larger acreage in

1959 is due to a more extensive use of a property that was still a commercial use in 2002 and to a store located in the Borough in 1959 that was no longer in operation by 2002. Generally, commercial uses have not accounted for a significant amount of the total area of the Borough during the period of time covered by this study.

**Protected Agricultural Land**

The Agricultural Security Area Program, the Agricultural Conservation Easement Purchase Program and the Act 319 (Clean and Green) Program are a means by which agricultural land can be protected in Wayne County. As of 2002, Bethany Borough did not contain property in any of these programs.

**Summary**

The most notable change in the Borough over the 43-year study period resulted from the loss of active farming from 1959 to 2002. In 1959, the largest category of land use/land cover was cropland, which occupied over 121 acres or 38% of the total area. The cropland was reduced to 30 acres or 9% in 2002. The largest category in 2002 was residential with over 120 acres or 38% which experienced an increased from almost 55 acres or 17% in 1959. Also forest increased from nearly 12% or 37 acres in 1959 to almost 23% or 73 acres in 2002 and pasture/brush increased from nearly 18% or 57 acres in 1959 to approximately 26% or 84 acres in 2002. Even with the increase in residential use, over half of the area of the Borough (over 58%) remained open area in 2002 as either cropland, pasture/brush or forest land use/cover.

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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