



AGRICULTURE & FORESTRY AREAS

Lewis County's economic history has been tied closely to the area's abundant supply of water, wood, and dairy production. A majority of the county's earlier growth occurred along the Black River Valley, with links to the Erie Canal in Rome, NY via the Black River Canal System. The Black River Valley provides a large alluvial plain with high quality soils and relatively flat topography — good for growing crops and providing grazing lands for cattle. The region's cool climate and well-distributed rainfall also contribute to making dairy the primary agricultural industry in Lewis County. Although the amount of land classified as farms is decreasing within the county, approximately 20 percent of current land area remains in agriculture (see Map 1 and Map 3).

In addition to the dairy corridor along the Black River Valley, the county's vast forestry base contains the Tug Hill Plateau to the west and the Adirondack foothills to the east, with over 54 percent of the county's land area as forestland and conservation. A majority of the land in these areas is unsuitable for farming due to soil, climate and topography, lending itself to forestry and recreational uses.

Agriculture (see Map 3)

History

The continued progress of agriculture in Lewis County has been significantly impacted by the formation of organizations and institutions to enhance the knowledge and practices of local farmers. A local "farmer's institute" held in 1903 is recognized as the earliest recorded attempt to bring farmers together in an effort to share information and improve methods of operation. In 1917 the New York State Food Supply Commission, the predecessor of the Cornell Cooperative Extension and the Farm Bureau Association, opened an office in Lowville. In 1918 the Cornell Cooperative Extension was formally created, with the official spin-off of the Farm Bureau taking place in 1955. The Cooperative Extension and the Farm Bureau provide meaningful information to farmers and farm families on topics ranging from cattle raising and improved methods of milk production to improvements in the growth and harvesting of crops.



Team of horses in Turin, circa 1946

In addition to institutions that enhance and promote farming activities, the Home Bureau was organized in 1920 to improve activities done within the household. The Home Bureau was eventually absorbed by the Cooperative Extension as the Home Economics Division, and covered various community projects such as improved nutrition awareness,

cooking skills, parenting and household needs, and survives today as the Community and Family Education Program. The Cornell Cooperative Extension programs and Farm Bureau Association continue in their assigned roles providing relevant and up to date support and information for agriculture producers in Lewis County.

As a result of the well-established and large scale dairy production in the county the Lowville Farmer's Cooperative was founded in 1920 to provide goods and services to the farming community. An additional cooperative, the Lowville Producers Dairy Cooperative, was established in 1936. Located on Route 12 in Lowville, this co-op is made up of over 200 member/owner farms that produce in excess of 300 million pounds of milk per year. In addition to coordinating much of the county's milk production, the Lowville Producers cooperative also has a retail store and markets the county's famous cheese, maple syrup, and Croghan Bologna.

Agriculture has long been considered the largest industry in Lewis County, with the 2007 Census of Agriculture indicating total agricultural sales of approximately \$112.6 million from farm producers. This differs from the USDA reported cash receipts for the same year of \$103 million. The sale of animal products, such as milk and meat, accounts for the largest percent of sales, with the remaining revenue derived from commercial horticulture as well as the traditional sales of hay and other crops. From 1982 to 2007, the number of farms decreased 20 percent, while acres of land in farms decreased 18.8 percent (see Table 13). Market value for products in the aggregate within this same time period increased from approximately \$59 million to approximately \$112 million, although it results in a decrease of 11 percent when adjusted for inflation to 2007 dollars.

Dairy

According to Cornell Cooperative Extension, Lewis County ranked fifth in New York in 2006 milk production, generating 485 million pounds of milk from 28,700 cows on 273 dairy farms. In 2007 the number of dairy cows decreased slightly to 28,400, yet the average production per cow increased from 16,900 to 17,200 pounds of milk, with total Lewis County milk production increasing slightly to 488 million pounds. According to the NYS Agricultural Statistics Service, milk sales accounted for nearly 85 percent of the county's \$76.7 million in agriculture product sales (dairy, crops and maple syrup) in 2006, an increase from \$72 million in 2002.



Dairy cattle outside of Lowville

The increased efficiency and production of dairy farms mirrors overall farm productivity trends found throughout the county. In contrast to total farm sales for the county, inflation-adjusted average sales per farm increased 137 percent from 1982 to 2007, equating to an increase of 10.6 percent when adjusted for inflation. This is due to the 20 percent decrease in farms and improved capabilities. When compared to 2002, 2007 per farm values increased 58 percent. These increases are a positive signal of the overall value of agricultural activity in Lewis County. It is likely that much of the increases are the result of improved efficiency and productivity from the farms over 1,000 acres. However, this dramatic increase of purchasing power has not lead to significant investments county-wide, as Lewis County's low- and moderate-income families continue to struggle.

The continued contraction of small family farms between 50 and 1000 acres aides in the out-migration of residents in search of work and income. Thus, some of the major pressures influencing agriculture and the economy in Lewis County are external and largely beyond the control of county residents or local leaders. While the continued loss of dairy and other farm acreage impacts the local agricultural economy, it also creates opportunities for alternative land use patterns within the county. However, the utilization of prime agricultural lands for uses other than agricultural activity should be done with deliberate consideration to the compounded impacts a loss of agricultural land may mean to the county and its economy.

Table 13: Lewis County Agricultural Characteristics

Lewis County	1982	1997	2002	2007	Percent Change (1982 to 2007)
Number of Farms	771	623	721	616	-20.10%
Land in Farms (acres)	205,846	179,696	196,774	167,249	-18.75%
Average Farm Size (acres)	267	288	273	272	1.87%
Farms by Size:					
1 to 9 acres	20	18	24	31	55.00%
10 to 49 acres	34	41	92	81	138.24%
50 to 179 acres	200	151	204	184	-8.00%
180 to 499 acres	444	333	304	246	-44.59%
500 to 999 acres	70	65	83	56	-20.00%
1,000 or more acres	3	15	14	18	500.00%
Harvested Crop Land (acres)	91,237	82,748	97,402	82,977	-9.05%
Market Value of Agricultural Products Sold (\$1,000)	\$59,337	\$61,686	\$72,178	\$112,629	89.81%
Average Value per Farm	\$76,961	\$99,015	\$100,108	\$182,839	137.57%

Source: US Census of Agriculture

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Reserve for Map 3.

Maple Syrup

According to the USDA 2007 Census of Agriculture, Lewis County continues to be the state's largest producer of maple syrup. In 2007, the 112 maple producers had approximately 171,643 taps that produce 28,786 gallons of syrup, accounting for approximately 13 percent of the state's maple syrup production from 13 percent of its taps. The US Forest Service estimates there are approximately 289 million sugar and red maple taps available in New York State. Currently, it is estimated that state maple producers utilize only 0.5 percent of available taps. Lewis County, however, utilizes approximately two percent of available taps, which is higher than the statewide average. Even a small percentage increase in tap utilization within Lewis County may have a dramatic economic impact. Data from the June 2008 USDA Maple Report suggests that the approximate 2007 crop of maple syrup generated an estimated \$964,000 in sales based on an average price of \$33.50 per gallon.



Collecting sap in Croghan, circa 1974

In order to explore the economic potential of maple syrup, the county is currently partnering with Cornell Cooperative Extension to develop a feasibility study for locating a maple syrup bottling/processing plant in the county. This is an example of value-added agri-products that the county intends to foster as part of its current economic development strategies.

Forestry Areas (see Map 3)

Lands devoted to the forestry industry are owned and managed by logging firms, sawmills, paper mills, finished/secondary wood products processors, and the wood energy industry. The NYSDEC estimates that there are more than 125 logging operations that originate in Lewis County. In addition, at least 30 businesses within the county process raw wood into finished products. The waste generated from these processing operations in many instances is sent to the Lyonsdale Biomass facility, which produces power, steam and wood ash. Yet, industry is not the only group to benefit from Lewis County's abundance of timber. Thirty-six percent of residential households within the county utilize wood for heating, consuming an estimated 12,000 cords annually.

The county's abundant timber and natural resources have permitted annual growth to exceed annual timber removals, even though removals of growing-stock outside of the Adirondack Park Preserve have increased by as much as 36% from 1993 to 2005.

The subdivision of large forest areas into smaller tracts, however, often precludes sustainable forestry techniques at the parcel level due to the loss of economies of scale. As a result, some forest landholders are turning to conservation easements and special taxing programs to continue to make the growing of forests for timber affordable by reducing their tax burden and maintaining the ability to actively harvest limited amounts of timber. However, as stated previously, the county's taxable revenue is approximately 75 percent of its assessed valuation. Further use of conservation easements be studied for long term fiscal impacts associated with reductions in taxable property.

Forest-based Manufacturing

Lewis County's forest-based manufacturing system consists of timber harvesting and associated trucking, primary manufacturing, and secondary manufacturing. Large and small operations in the timber harvesting sector cut the trees down and sell the logs and waste products to markets in Lewis County, New York State and throughout the region. After cutting, timber is rated by quality to determine the ultimate utilization of the wood, which is then trucked to mills throughout the region for processing. Sawlogs, the portions of harvested trees that are large enough to be sawed for lumber, are trucked to sawmills, with the highest value logs shipped to veneer mills that take thin layers from the log to produce products such as plywood. Low quality timber is predominantly refined by mills to create the pulp used in the manufacture of paper. In addition to pulpwood, low quality timber is also utilized by the wood energy industry, which takes whole trees or residues such as chips and sawdust from sawmills and uses the material as fuel for the production of electricity via steam powered generators. In some instances, the steam is also used for manufacturing processes such as dry kilns, greenhouses or piped to other industrial users.

Primary Manufacturing

The conversion of trees or parts of trees into lumber, veneer, pulp or energy starts with the primary manufacturing sectors. In Lewis County and throughout the state, the pulp and paper industry was once the primary end user of the wood harvested. However, the sawmill and wood energy industries increasingly are the major wood users within New York and Lewis County. The state has approximately 125 substantial sized sawmills and additional specialty wood products mills; Lewis County has a total



Example of bundled slab wood

of seven mills with an annualized output of 15 to 30 million board feet of timber in 2008. The products from these mills are sent to secondary processors to be included in products.

Secondary Manufacturing

Secondary manufacturing refers to the drying, planing, cutting and assembly of lumber into parts or finished products. The diversity of tree species growing in Lewis County contributes to an established secondary forest products industry composed of over 30 companies that provide jobs and economic stability to the community. In Lewis County, secondary products include kitchen cabinets, furniture, countertops, custom millwork, molding, stakes, benches, swings, and the nation's only location for the production of bowling pins. Many other products are manufactured from the varied hardwood and softwood tree species available.



Forestland in Watson

According to the USDA Forest Service, Lewis County gained about three percent of timberland between 1993 and 2005. The increase in timberland has also led to a 14 percent increase in net saw-log volume of growing-stock trees, and an 18 percent increase in growing-stock volume on timberland over the same time period. The growth in growing-stock and saw-log volume county-wide, however, is off-set by a substantial decrease in these categories outside of the Adirondack Park Preserve, where volumes are down as much as 35 percent on a board-foot basis. In addition, the number of growing stock trees has declined 6.7 percent from 1993 to 2005. There is also a larger portion of timberland stands classified as small diameter currently than was present in 1993. This could potentially be explained by the reforestation of previously harvested stands or newly reforested areas.

Table 14: Lewis County Timberland by Ownership (acres)

	Ownership				Total
	Department of Defense or Energy	State	Local (county, municipal, etc.)	Undifferentiated private	
2002-2005	22,740	105,081	11,591	432,491	571,902
1993	6,067	80,520	*	468,119	554,705
Change	274.8%	30.5%	*	-7.6%	3.1%

* Data not available

Source: USDA Forest Service

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Reserve for Map 4.

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Reserve for Map 5.



As of 2005, it is estimated that private interests hold 75.6 percent or roughly 432,500 acres of the timberland in Lewis County, a decrease of 7.6 percent from 1993. The State of New York holds roughly 18.4 percent, or 105,000 acres, an increase of over 30 percent from 1993. As can be seen in Table 14, the federal government also holds approximately four percent of the county's timberland, a near four-fold increase from 1993. Local municipalities now hold the remaining two percent of timberlands, whereas in 1993 no timberland was reported under local ownership. It should also be noted that roughly 61,000 acres of NYS Forest Preserve lands in Lewis County are not included as timberland.

Agriculture Districts (see Map 4)

As defined by the New York State Department of Agriculture and Markets:

The purpose of agricultural districts are to encourage the continued use of farmland for agricultural production. The Agricultural Districts program is based on a combination of landowner incentives and protections, all of which are designed to forestall the conversion of farmland to non-agricultural uses.

Lewis County's first Agricultural District was formed in 1975 and included portions of Lewis, West Turin, Leyden and Lyonsdale. Agricultural Districts 2, 3, and 4 were formed in 1976 and included portions of Lowville, Martinsburg, Harrisburg, Watson, West Turin, Lewis, Lyonsdale, Greig, Martinsburg, Leyden, and Turin. Agricultural District Number 5 was formed in 1978 and included portions of Denmark, Lowville, Montague, Harrisburg, and Pinckney. Agricultural Districts are required to be reviewed every eight years, and recertified by the NYS Department of Agriculture and Markets as viable Agricultural Districts.

The County Agriculture and Farmland Protection Board recommended the five existing Agricultural Districts be consolidated as Agricultural District 6. Since the original five districts were contiguous with one another, the consolidation aids in the management and administration requirements as dictated by the Department of Ag & Markets Law 25-AA. The process of consolidating these five Districts began in April of 2007 and the certification date of Ag District 6 is February 15, 2008. There are 246,141 total acres of land within the County Agricultural District, 151,891 acres of which are active agricultural land. To be considered a viable Agricultural District at least 50% of the District must be made of land that is being used for active agriculture.

County-level planning and policy should provide for the review of land use and policy recommendations by the county's Agricultural District administrator to ensure uniformity with Agricultural District Law and the intent of Lewis County's districts. In conjunction with the county's

agricultural district, Lewis County has also developed an Agricultural Enhancement Plan that defines an overall vision, goals and primary recommendations that will improve the community's knowledge and understanding of agriculture's importance to Lewis County, increase the profitability of agriculture in the county, and increase the competitiveness of the county within the region.

Prime Farmland & Hydric Soils (see Map 5)

There are two levels of soils data available for interpretation and analysis from the Natural Resources Conservation Service (NRCS). The most detailed mapping database supplied by the NRCS (SSURGO), is designed for use by landowners, townships, and county natural resource planning and management. This data, which includes Soils of Statewide Importance, is not currently available in an updated format. The STATSCO soil database utilized for this report is a generalized version of the SSURGO, and is designed for broad planning and management uses covering state, regional, and multi-state areas. An additional level of detail available through the database is Prime Agricultural Soils and Hydric Soils (see Map 5). These measures provide generalized information on the appropriate use for soils based on crop yield potential and the tendency to support wetland habitats.

According to the Natural Resources Conservation Service (NRCS), prime farmland is:

Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. It has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner if it is treated and managed according to acceptable farming methods.

Approximately 21 percent of Lewis County comprises prime farmland soils (see Table 15). As is depicted on Map 5, areas of prime farmland in Lewis County are largely confined to the Black River valley, although an extensive swath of potential prime farmland (when drained) is located along the foothills of the Tug Hill Plateau on the western edge of the valley. Much of the areas identified as prime farmland are within the boundary of Agricultural District 6 (see Map 4).

In addition to prime farmland soils, hydric soils also play a role in planning for future development. Hydric soils are those soils that "formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (NRCS). These poorly drained soils are characterized by high water tables (often at or just below the surface) and are often located within the

floodplains of creeks, streams, and rivers. Areas highly concentrated with hydric soils can impose a wide range of limiting conditions on development resulting from fair to poor load-bearing capacities, as well as medium compressibility and shear strength. In more rural areas, hydric soils can limit the efficient operation of septic drain fields.

Only 3.2 percent of all land in Lewis County is identified as comprising hydric soils (see Table 15). Of the approximately 26,000 acres of hydric soils, more than 85 percent are located outside of the Black River valley and away from existing nodes of development. Currently, soils mapping for Lewis County is being updated, with new data expected in early 2011.

Table 15: Prime Farmland and Hydric Soils

Soil Classification	Acres	Percent of Lewis County
Prime Ag Soils	170,076	20.6%
Prime Ag Soils, when drained	56,068	6.8%
Hydric Soils	26,259	3.2%

Source: Natural Resources Conservation Service