Agricultural Environmental Management Program

Strategic Plan

2026-2030

AGRICULTURAL ENVIRONMENTAL MANAGEMENT

AEM

TOMPKINS COUNTY SOIL & WATER CONSERVATION DISTRICT

Tompkins County AEM Mission Statement

To provide improved quality of life to all residents, visitors and ecosystems of Tompkins County by maintaining and improving environmental stewardship on farms.

Tompkins County AEM Vision Statement

We envision a future where all community members enthusiastically support their local farmers who sustainably endeavor to protect and enhance agriculture and the environment for future generations.

Core Values

- **Farmer Focus** – A sharp focus on agricultural viability (economics, community needs, family, weather, markets, risk management, capacity, succession planning, adaptability, etc.) while maintaining environmental stewardship ethics.

- **Leadership** – empowering conservation professionals, farmers, contractors and those working/living in the agricultural sector to be and inspire environmental leadership in the community.

- **Stewardship** – supporting the planning, implementation and operation/maintenance of Best Management Practices to address natural resource concerns, such as water quality, soil health, and nutrient management (among others) in the agricultural sector.

- **Relationship building** – We believe that relationship building across a diverse network of agricultural areas should permeate every aspect of the program.

- **Confidentiality** – In order to build trust and relationships between farmer and conservation professionals to openly address environmental concerns.

- **Trust** – this is the hallmark of confidence between farmers, conservation professionals and the community that we are all working together to achieve our mission and vision.

- **Voluntary participation** – Farmers should choose to participate in the program to have greater success in meeting the mission and vision.

- **Environmental Compliance** – Supporting farmers in understanding and voluntarily complying with environmental regulations. Voluntary compliance reduces a farm's risk to liability.

- **Incentive based** – using technical and financial resources of the program to encourage farmers to adopt Best Management Practices as a first line of defense to address natural resource concerns before being handled by regulatory compliance agencies.

- **Science Driven** – focusing on implementation of proven soil and water quality Best Management Practices through objective evidence and systematic testing rather than just opinion or tradition.

AEM Program Overview

The Agricultural Environmental Management (AEM) Program is governed by New York State Law [1] and funded through the New York State Environmental Protection Fund (EPF). The Statewide AEM program is authorized and funded by the New York State Department of Agriculture and Markets' (NYS Ag & Markets) Soil and Water Conservation Committee (SWCC). The Tompkins County Soil and Water Conservation District (TCSWCD) serves as the lead agency for the program locally in Tompkins County. As a statewide recognized planning and implementation tool for agriculture, the AEM program makes it possible for Soil and Water Conservation District to access funds for technical planning and implementation expertise while local farms can access that expertise and various NYS cost-share grant programs to improve environmental practices. The AEM program also documents current best management strategies as they pertain to natural resources.

The NYS Aid "AEM Base" funding for the program has been established through law[2] as a means to provide a non-competitive funding source to all interested NYS SWCDs to develop and implement their locally led AEM programs. As guiding documents, five-year strategic plans are required by the SWCC to access this funding. Local SWCDs interact with farms throughout their county based on the priorities in their respective five-year strategic plans and local action plans/priorities to identify environmental resource concerns and suggest appropriate best management practices (BMPs) to address them.

Following a tiered planning and implementation approach, the goal of the AEM program is to address any past, present, or future environmental concerns occurring on farms. The first step is to obtain background information on the farm (Tier 1). Following this step, the planner and farmer explore the entire farm to identify resource concerns and document ongoing BMPs (tier 2). The next step is to craft a plan (Tier 3) targeted at identified resource concerns. Implementation of these plans may be designed by qualified SWCD staff, certified planners, engineers and others in cooperation with farmers to address these environmental resource concerns. If a farm is unable to implement the plan/design on their own for conservation improvement SWCDs are authorized through the program to apply on behalf of the farm to an appropriate competitive funding source to help install the necessary practice (Tier 4). As of the 16th round of the program, funds have also been provided to each county SWCD to implement practices on projects through a non-competitive statewide funding pool. The fifth step (Tier 5) is a review of the implemented BMP and may lead into progressive planning which restarts the cycle back at Tier 1, 2 or 3.

[1] https://www.nysenate.gov/legislation/laws/AGM/A11-A
[2] https://www.nysenate.gov/legislation/laws/AGM/151-F

Program Assessment- (SWOT: Strengths, Weaknesses, Opportunities, Threats)

Internal	External
Strengths	**Opportunities**
Local leadership, at the SWCD Board level, sets priority ranking criteria within watersheds of the County to address natural resource concerns that allow staff to focus on implementation of high priority best management practices on agricultural landscapes.	**The AEM program can deliver on many of the regulatory planning document deliverables for addressing natural resource concerns related to Harmful Algae Blooms in Cayuga/Owasco Lake and nutrient reductions in Cayuga/Owasco/Upper Susquehanna watershed's Total Maximum Daily Load limitations.**
Well established network of farmer/professional working relationships within program and staff	**A variety of external professional organizations that support aspects of agricultural conservation find their home base in Tompkins County.**
AEM program supports 2 full-time staff dedicated to Agricultural Conservation in the County.	**Cornell University sits within Tompkins County that contains the NYS College of Agriculture and Life Sciences and is the Land Grant Institution supporting agricultural research.**
The AEM program has a long history in Tompkins County and predecessor programs set the stage for long-term success.	**Regional partnerships (Eastern Fingerlakes Coalition, Finger Lakes – Lake Ontario Watershed Protection Alliance, Upper Susquehanna Coalition) afford the opportunity to legally partner on large scale regional conservation efforts.**
The AEM Program leads directly to conservation financial incentives through the AEM BMP Implementation Assistance Program, Agricultural Non-Point Source Pollution Abatement Program, Climate Resilient Farming Program, Ecosystem Based Management Programs, Water Quality Improvement Program, FLLOWPA and many other State-run financial incentive programs.	**Federal partners accept AEM program into many of their own financial assistance program requirements (i.e. – Environmental Quality Incentives Program, Conservation Reserve Program, Conservation Stewardship Program, etc.)**
	Many conservation easement programs allow agricultural conservation to take place on lands under their programs if involved with AEM.
Non-competitive State funding for AEM implementation projects have provided successful implementation for a variety of smaller scale BMPs that may not rank well in Statewide competitive programs listed above.	**We need to work with the research community to enhance research/development of enhanced BMP practices/standards so they can be fast-tracked in order to keep up with emerging threats to natural resources (i.e – PFAS, nutrient filtration, agrivoltaics, etc.)**
	Long-term water quality, soil and climate data sets from federal, state, educational and non-profit local

	monitoring efforts help guide AEM implementation efforts.
Internal	**External**
Weaknesses	**Threats**
The Tompkins SWCD needs more staff with planner certifications and "Job Approval Authority" to sign off on conservation planning and implementation projects.	**Competition for land resources in the County from private home development and energy generation (solar) reduces the amount of land available for agricultural conservation BMP Implementation. (refer to Figure 2. Tompkins County Agricultural Land Use Map)**
The lack of a certified engineer on staff dictates that the Tompkins SWCD explore external resources to complete projects that need engineering sign-off.	**Succession planning is hard for some farms with next generations not wanting to take over the farm leading to loss of agricultural conservation stewardship**
State sponsored conservation professional training is limited to workshops and once/year sessions, rather than more one-on-one training for newer conservation employees. More training is needed across the entire spectrum of the AEM program.	**State and local budget reductions lead to loss of capacity and implementation of the program locally.**
	Lack of trust in the program leads to less voluntary compliance, more regulation and higher food costs to offset environmental compliance liabilities. Trust in the program has grown over the lifespan AEM!

Tompkins County Agricultural Resources

Data from the USDA Census of Agriculture[3] are presented in table form below for Tompkins County. Figure 8. Tompkins County Census of Agriculture Data, also shows a broader data analysis of the County. Data for this census is collected every five years, with portions updated periodically during this time. The last full census was taken in 2022 and the next full census will be compiled in 2027.

	1978	1982	1987	1992	1997	2002	2007	2014	2019	2022
Number of Farms	598	567	532	441	557	563	588	558	523	487
Total Farm Acreage	123,210	121,068	110,609	91,822	102,610	100,931	108,739	90,774	91,277	92,950
Average Acreage per Farm	~	214	208	208	184	179	185	163	175	191
Harvested Cropland	79,982	77,047	75,634	62,421	67,731	66,960	67,292	47,143	51,122	54,967
Woodland	~	~	20,329	16,921	19,245	19,245	21,838	19,183	14,419	16,363
Pasture Land	~	~	~	~	~	~	5,659	7,281	9,057	4,302
Other Land	~	~	14,646	12,480	13,898	15,012	13,950	9,886	10,964	4,852
% of County in Farmland	*39%*	*39%*	*35%*	*29%*	*33%*	*32%*	*35%*	*30%*	*30%*	*30.6%*

Table 1. Historic Farm Base Summary, Tompkins County, 1978-2022

Source: USDA Census of Agriculture

Approximately 30.6% of the land base in Tompkins County is operated by 487 farms with the majority of this being harvested crop land. Opportunities for conservation can be found on farmstead, cropland, pastures and woodland through the AEM program. Approximately 10% of farmers utilize no-till practices on their cropland, 12% reduced tillage, 16% intensive tillage and 14% cover crops. Cover Crops, No-till and Reduced tillage practices are all conservation BMPs the Tompkins SWCD prioritized in the last AEM strategic plan and will maintain in this one. Milk from dairy cows still rank as the highest value agricultural product sold in the County but there is a wide variety of crops produced including, but not limited to: Grains, oilseeds, beans, peas, vegetables, fruits, tree nuts, berries, nursery/greenhouse products, hay as well as livestock,

[3] https://www.nass.usda.gov/AgCensus/

including, but not limited to: Poultry, cattle and calves, milking cows, hogs and pigs, sheep, goats, horses, and other animals. A variety of conservation options are available through the AEM program that address the environmental challenges and opportunities this variety of agriculture offers.

Tompkins County Environmental Resources

Tompkins County hosts a wide variety of natural environmental resources from glacially formed gorges and lakes which make it a premier tourist destination in the State to hidden and protected lands found in bogs, fens, marshes, open vistas, grassland and hilly terrain. This natural environment is home to a wide variety of ecosystems and habitats. The County also depends on many environmental resources that need protection for human survival and adaptation which includes drinking water, food, shelter and resiliency to weather/climate. With agriculture occupying 30% of the landscape that these resources are found within, in Tompkins County, there is a significant role for the AEM program to play.

Water Resources

Tompkins County has a plentiful supply of surface water, which is routed by 29 watersheds broken into 12-Digit Hydologic Unit Codes by the Federal US Geological Survey and Natural Resource Conservation Service, which affect and are affected by agricultural practices (see Figure 1). Figure 4. Tompkins County NYSDEC Classified Streams Map" shows the overlap of these watersheds and associated streams to agricultural land uses. This is used for helping to prioritize conservation BMP implementation across watersheds in the SWCD's annual action plans. The following table outlines the correlation between agriculture land use in each watershed.

Watershed Name	*Total Watershed Acreage*	*% of watershed in agriculture land use*
Boardman Creek-Cayuga Lake	12,006	24.18%
Bolter Creek-Taughannock Creek	10,251	42.39%
Egypt Creek-Virgil Creek	11,802	32.58%
Enfield Creek	19,579	24.25%
Headwaters Cayuta Creek	3,569	9.30%
Headwaters Owasco Inlet	16,698	33.06%
Headwaters Sixmile Creek	20,743	14.65%
Headwaters Virgil Creek	3	17.71%
Hemlock Creek-Owasco Inlet	5,097	35.10%
Hencoop Creek-Taughannock Creek	3,776	52.83%
Lively Run-Cayuga Lake	7,531	32.25%
Lower Cayuga Inlet	25,313	9.91%
Lower Fall Creek	14,604	13.87%
Lower West Branch Owego Creek	997	8.98%
Middle Catatonk Creek	2,745	3.86%
Middle Cayuga Inlet	11,639	18.67%
Middle Fall Creek	13,069	36.13%
Middle West Branch Owego Creek	6,728	17.83%
Otter Creek	104	47.04%
Pony Hollow Creek	9,965	7.24%
Salmon Creek	21,893	51.43%
Upper Catatonk Creek	9,731	1.63%
Upper Cayuga Inlet	23,547	13.03%
Upper Cayuta Creek	4,195	2.80%
Upper East Branch Owego Creek	910	47.78%
Upper Fall Creek	8,546	55.03%
Upper West Branch Owego Creek	8,269	12.83%
Willow Creek-Cayuga Lake	28,433	18.74%
Willseyville Creek	12,960	6.46%

The NYSDEC classifies streams according to their designated best uses. This can include drinking water, fishing, swimming or other recreational uses. The Lower Cayuga Inlet, and Headwaters Sixmile Creek watershed produce drinking water for the City of Ithaca, while Lower Fall Creek produces drinking water for Cornell University. The Southern end of Cayuga Lake produces drinking water for the Bolton Point Municipal water supply.

Private Drinking water wells and Town/Village well supplies will rely on ground water resources that have been studied in detail by the United States Geological Survey in partnership with Tompkins County's Department of Planning and Sustainability.[4] Efforts to protect these resources are also a focus of the AEM program.

Wetland protections have been a focus of the AEM program since its commencement and will continue. As the NYSDEC implements changes to the new wetland laws[5] enacted in 2025, the AEM program will be here to help farmers comply with this law. Federal and State Wetland informational maps can be found in Figure 5. Federal Wetlands Inventory in Tompkins County and Figure 6.
Increasing intensity and frequency of rainstorm events have led to new challenges for farms to deal with excess runoff that normally would be sufficiently handled by former drainage practices. Stormwater management is an increasing concern for many of our Tompkins County farmers. Various new pathways for BMP implementation and funding have arisen in recent years including the NYS Climate Resilient Farming grant program to address these stormwater concerns.

Harmful Algae Blooms are also a growing concern for Tompkins County residents as numerous blooms have been spotted in recent years in Cayuga and Owasco Lakes. The NYSDEC HABs Action Plans for these lakes have referenced the NYS AEM program as a significant driver of nutrient reduction on farms.[6]

The NYSDEC has also implemented nutrient runoff reduction st in all 3 watershed of the County including (Cayuga Lake, Owasco Lake, and the Upper Susquehanna Coalition). The AEM strategic plan goals will likely line up with recommendations and actions in each of those implementation plans.[7]

Although not directly addressed in this plan, the Community Science Institute has led a voluntary water sampling effort across the county and region for over a decade. This long-term dataset is useful in showing general trends in water quality under stormflow and baseflow conditions. The data has aided the Tompkins SWCD in noticing issues of concern in a watersheds that need to be addressed for improved water quality of surface streams.[8]

Soil Resources

Historical trends show that farming practices in Tompkins County have become increasingly concentrated on areas with the best soil profiles, which tend to be mostly in the north east and north west corners of the county and located at the tops and bottoms of valleys, though some farming does occur on the steeply sloping sides of the glacial valleys in Tompkins County. These soils represent a finite resource of Tompkins County and should be protected. A compendium of

[4] https://www.tompkinscountyny.gov/All-Departments/Planning-and-Sustainability/Water-Resources#data
[5] https://dec.ny.gov/nature/waterbodies/wetlands/freshwater-wetlands-program
[6] https://dec.ny.gov/environmental-protection/water/water-quality/harmful-algal-blooms/action-plans
[7] https://dec.ny.gov/environmental-protection/water/water-quality/clean-water-plans
[8] https://communityscience.org/

soil maps seen in “Figure 9. Tompkins County Soil Maps” shows how various soil types have driven Tompkins County Agriculture.

Soil health is being recognized globally as a primary environmental resource concern and receives a great deal of attention concerning ways to preserve its unique physical, chemical and biological properties that make it such a vital resource for both natural terrestrial ecosystems and agriculture as a whole. Practices are being developed that encourage the establishment of communities of microorganisms within the soil spaces, reducing compaction, which improves the ability of soil to absorb and hold water, as well as ways of encouraging nitrogen fixation and maintaining the nutrient balance, moisture content and pH of soils to keep soils naturally productive without having to apply chemicals.

In addition to addressing water runoff from agricultural practices that will physically erode soils and nutrients from a site, the AEM program is also used to identify and determine the impact of practices that positively impact soil health. These practices, such as cover crops, no-till cropping, pasture rotation, and other practices, are designed to help maintain and, where necessary, rebuild the physical, biological and chemical properties of the soils, ensuring not only the productivity of the farms but also the soils’ ability to hold and retain water, retain and cycle nutrients, sequester carbon, and detoxify harmful chemicals.

Soil health has also been increasingly threatened by development pressure over the years, which threatens not only to remove valuable farmland from productivity, but also to counter the other beneficial abilities of these prime soils. A portion of the acres lost from agricultural production were lost to housing and other development projects. Additional loss of land for agricultural production is seen with the recent addition of industrialized solar generation with little to no attention for incorporating agrivoltaics into the project for long-term success.

Goals and Objectives

The following goals and objectives will be preferred throughout the next 5 years of the AEM program. Each year an annual action plan will be submitted to NYS for review and approval and incorporated into the overall District wide annual workplan for budget and planning purposes.

Goal A.) – Improve water quality and watershed health on agricultural lands in Tompkins County

Objective #1 – Plan/design/implement/monitor structural, cultural, and biological practices to improve water quality of streams, rivers, lakes, ponds, and wetlands.

Objective #1.1 – Plan/design/implement/monitor practices that capture the movement of nutrients and encourage their recycling to inhibit runoff to waterways.

Planning, design and/or implementation of practices may include (but not limited to) the following systems in the NYS Agricultural BMP Systems Catalogue:

- Agrichemical handling and storage systems
- Cultural Nutrient Management Systems
- Process Wash Water Management Systems
- Short-Term Waste Collection and Transfer Systems
- Silage Leachate Control and Treatment Systems
- Waste Storage and Transfer Systems

Objective #1.2 – Plan/design/implement/monitor practices that capture the movement of and filter nutrients before running off into waterways.

Planning, design and/or implementation of practices may include (but not limited to) the following systems in the NYS Agricultural BMP Systems Catalogue:

- Livestock Heavy Use Area Runoff Management Systems
- Manure and Agricultural Waste Treatment Systems
- Prescribed Rotational Grazing Systems
- Process Wash Water Management Systems
- Riparian Buffer Systems
- Short-Term Waste Collection and Transfer Systems
- Silage Leachate Control and Treatment Systems
- Stream Corridor and Shoreline Management Systems
- Waste Storage and Transfer Systems

Objective #1.3 – Plan/design/implement/monitor practices that capture and treat the movement of other pollutants into surface and/or groundwater flow.

Planning, design and/or implementation of practices may include (but not limited to) the following systems in the NYS Agricultural BMP Systems Catalogue:

- Agrichemical handling and storage systems
- Cultural Nutrient Management Systems
- Animal Composting systems
- Erosion Control Systems
- Feed Management Systems
- Irrigation Water Management Systems
- Pathogen Management Systems
- Petroleum and Oil Products Storage Systems
- Process Wash Water Management Systems
- Riparian Buffer Systems
- Waste Storage and Transfer Systems

Objective #1.4 – Engage research and development of emerging practices that may not have universal adoption at the federal or state level but have opportunities for water quality improvement locally.

Planning, design and/or implementation of practices may include (but not limited to):

- Saturated Buffers
- Denitrifying Bioreactors
- Phosphorus Removal Systems

Objective #2 – Protect drinking water sources from agricultural runoff concerns

Objective #2.1 – Engage with municipalities through their NYS Drinking Water Source Protection Plans and funding scenarios to plan/design/implement/monitor BMPS listed in Objective #1.

Current plans that have been approved are for the following municipalities/watersheds in Tompkins County:

- City of Ithaca – Six Mile Creek Watershed

Plans that are in progress are:

- Cornell University – Fall Creek Watershed
- Town of Enfield – Upper Cayuga Inlet Watershed

Plans that have been discontinued are:

- Bolton Point (Dryden, Ulysses, Lansing, Town of Ithaca, Village of Cayuga Heights, Village of Lansing) – Southern Cayuga Lake

Objective #2.2 – provide protection to other communities and private residences that supply public drinking water through surface or groundwater

means from agricultural runoff sources by planning/designing/implementing/monitoring practices in objective #1.

Goal B.) – Improve soil health systems on agricultural lands in Tompkins County

Objective #1 – Plan/Design/Implement structural and cultural practices that improve soil health.

Objective #1.1 – Plan/Design/Implement/monitor structural practices that improve soil health.

Planning, design and/or implementation of practices may include (but not limited to) the following systems in the NYS Agricultural BMP Systems Catalogue:

- Access Control Systems
- Structural Erosion Control Systems
- Forestry/Agroforestry systems
- Integrated Pest Management Systems
- Irrigation Water Management Systems
- Manure and Agricultural Waste Treatment Systems
- Prescribed Rotational Grazing Systems
- Riparian Buffer Systems
- Waste Storage and Transfer Systems
- Silage Leachate Control and Treatment Systems

Objective #1.2 – Encourage planning/design/implemention/monitoring of cultural practices that improve soil health.

Planning, design and/or implementation of practices may include (but not limited to) the following systems in the NYS Agricultural BMP Systems Catalogue:

- Access Control Systems
- Cultural Nutrient Management Systems
- Prescribed Rotational Grazing Systems
- Soil Health Systems

Goal C.) – Encourage weather/climate resiliency on agricultural lands in Tompkins County

Objective #1 – Support farming practices that sequester carbon and lower greenhouse gas emissions.

Objective #1.1 – Encourage planning/design/implemention/monitoring of cultural practices that improve climate mitigation.

Planning, design and/or implementation of practices may include (but not limited to) the following systems in the NYS Agricultural BMP Systems Catalogue:

- Feed Management Systems
- Prescribed Rotational Grazing Systems
- Soil Health Systems

- Nutrient Management Systems

Objective #1.2 – Encourage planning/design/implemention/monitoring of structural practices that improve climate mitigation.
Planning, design and/or implementation of practices may include (but not limited to) the following systems in the NYS Agricultural BMP Systems Catalogue:

- Forestry/Agroforestry Systems
- Riparian Buffer Systems
- Feed Management Systems
- Prescribed Rotational Grazing Systems
- Soil Health Systems
- Waste Storage and Transfer Systems

Objective #2 – Build resilience to flooding and drought on agricultural lands.
Planning, design and/or implementation of practices may include (but not limited to) the following systems in the NYS Agricultural BMP Systems Catalogue:

- Access Control System
- Erosion Control Systems
- Forestry/Agroforestry Systems
- Livestock Heavy Use Area Runoff Management Systems
- Irrigation Water Management Systems
- Manure and Agricultural Waste Treatment Systems
- Nutrient Management Systems
- Pathogen Management Systems
- Prescribed Rotational Grazing Systems
- Riparian Buffer Systems
- Short-Term Waste Collection and Transfer Systems
- Silage Leachate Control and Treatment Systems
- Stream Corridor and Shoreline Management Systems
- Soil Health Systems
- Waste Storage and Transfer Systems

Goal D.) – Provide Education, Outreach & Collaboration for the AEM program

Objective #1 – Provide opportunities for outreach and training to farmers, landowners and others regarding agricultural environmental management.

Planning, design and/or implementation may include (but not be limited to):

- Farmer-to-Farmer workshops highlighting success/challenges of Best Management Practice adoption.
- Tours of farms to municipal officials and interested community members to highlight community benefits of responsible agricultural environmental stewardship.

- Regional workshops focusing on latest research and development surrounding topics such as soil health, water quality, climate mitigation and adaptation, community protection of soil and water quality.
- Collaboration with Cornell Cooperative Extension, USDA Natural Resources Conservation Service & Farm Service Agency, NYS Agriculture and Markets, Cornell's College of Agriculture and Life Sciences, Tompkins County Ag & Farmland Protection Board, Tompkins County Water Resources Council and others to provide consistent messaging around agricultural environmental management.

All goals and objectives will be prioritized locally through District priority screening tools, the AEM Action Plan and the Annual Work Plan for the Tompkins County Soil and Water Conservation District to specify performance measure for each goal and objective in this plan.

List of Figures

Figure 1. Tompkins County HUC12 Watersheds

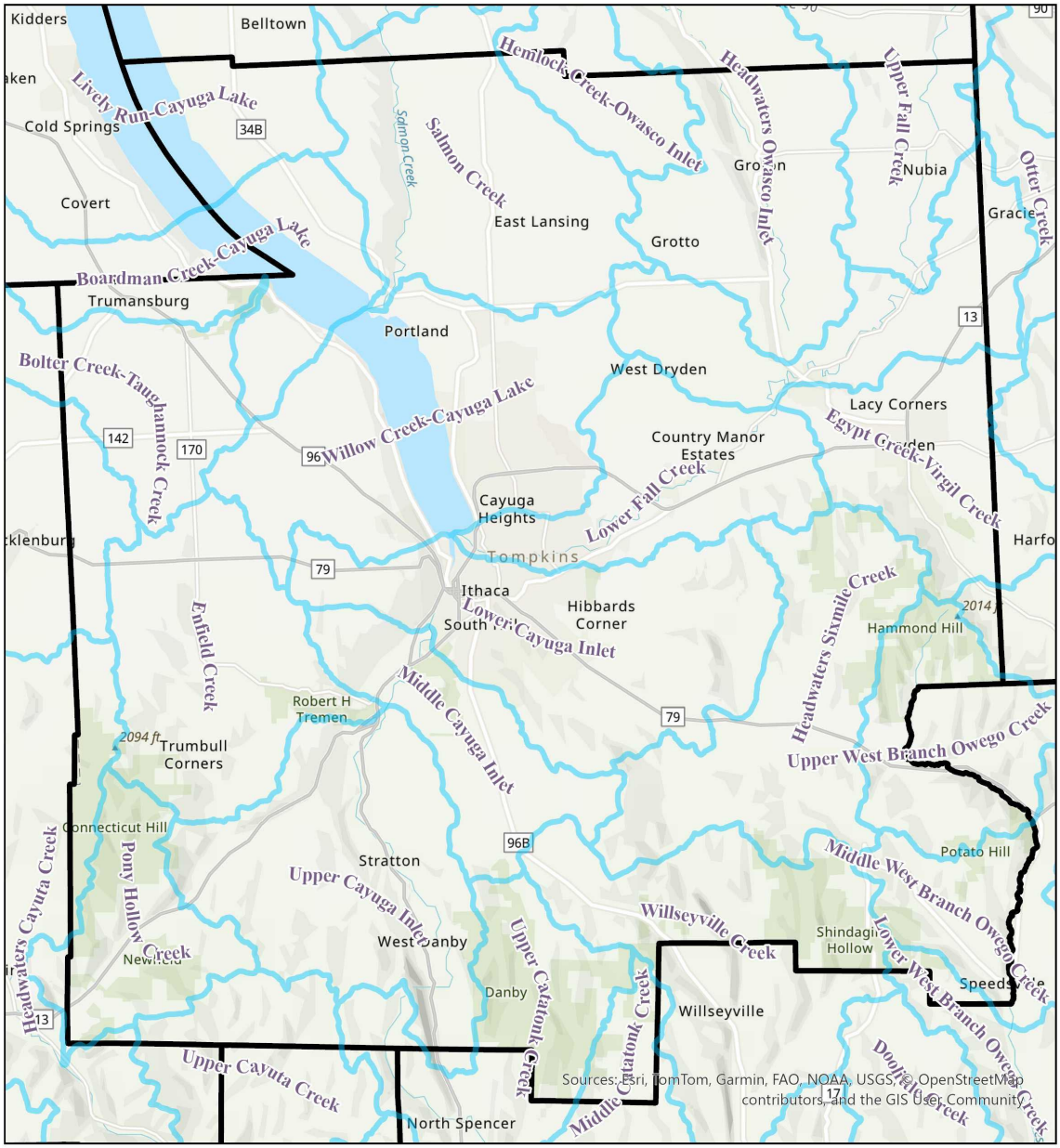

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Figure 2. Tompkins County Agricultural Land Use Map

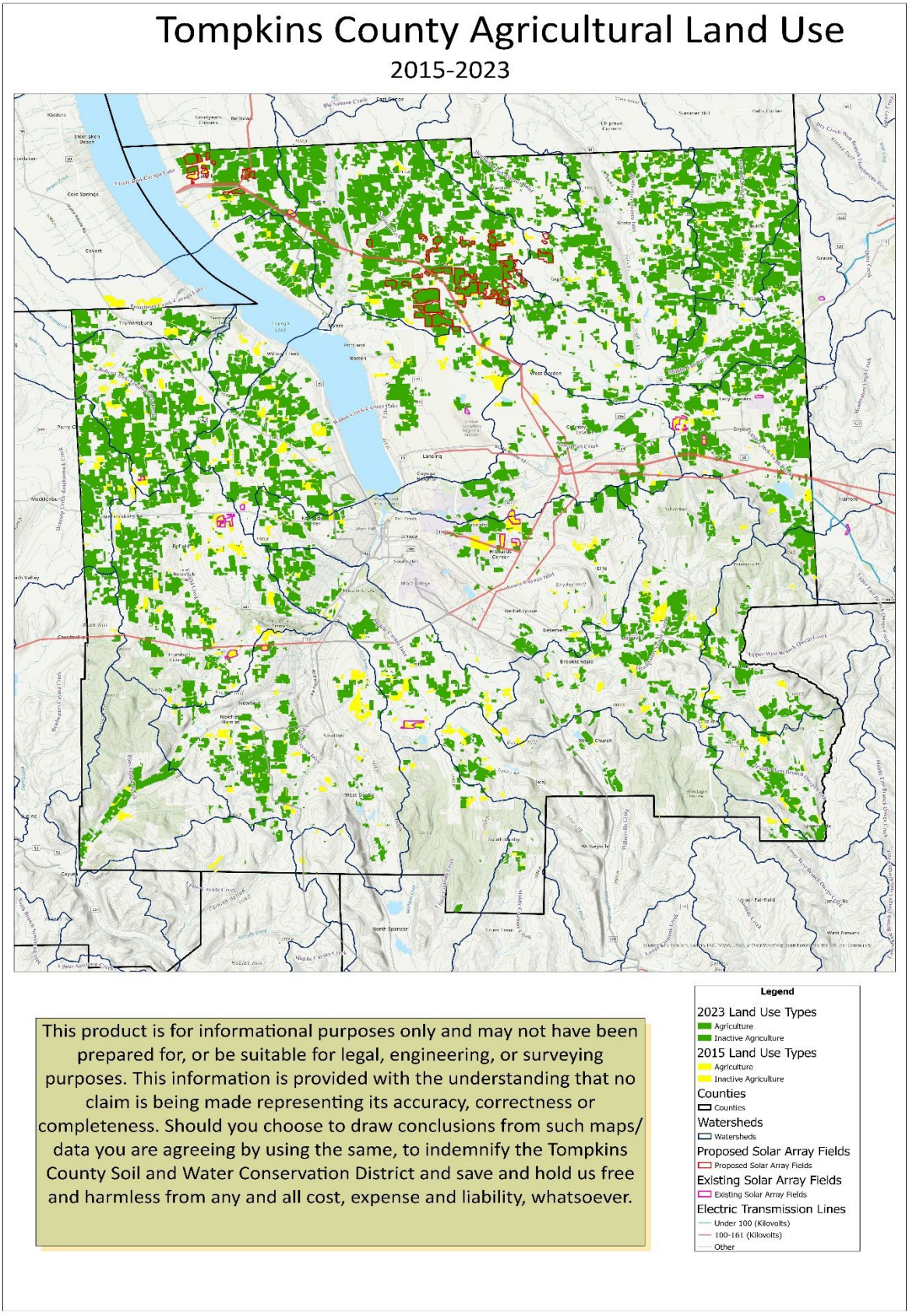


Figure 3. Tompkins County Agricultural District Map

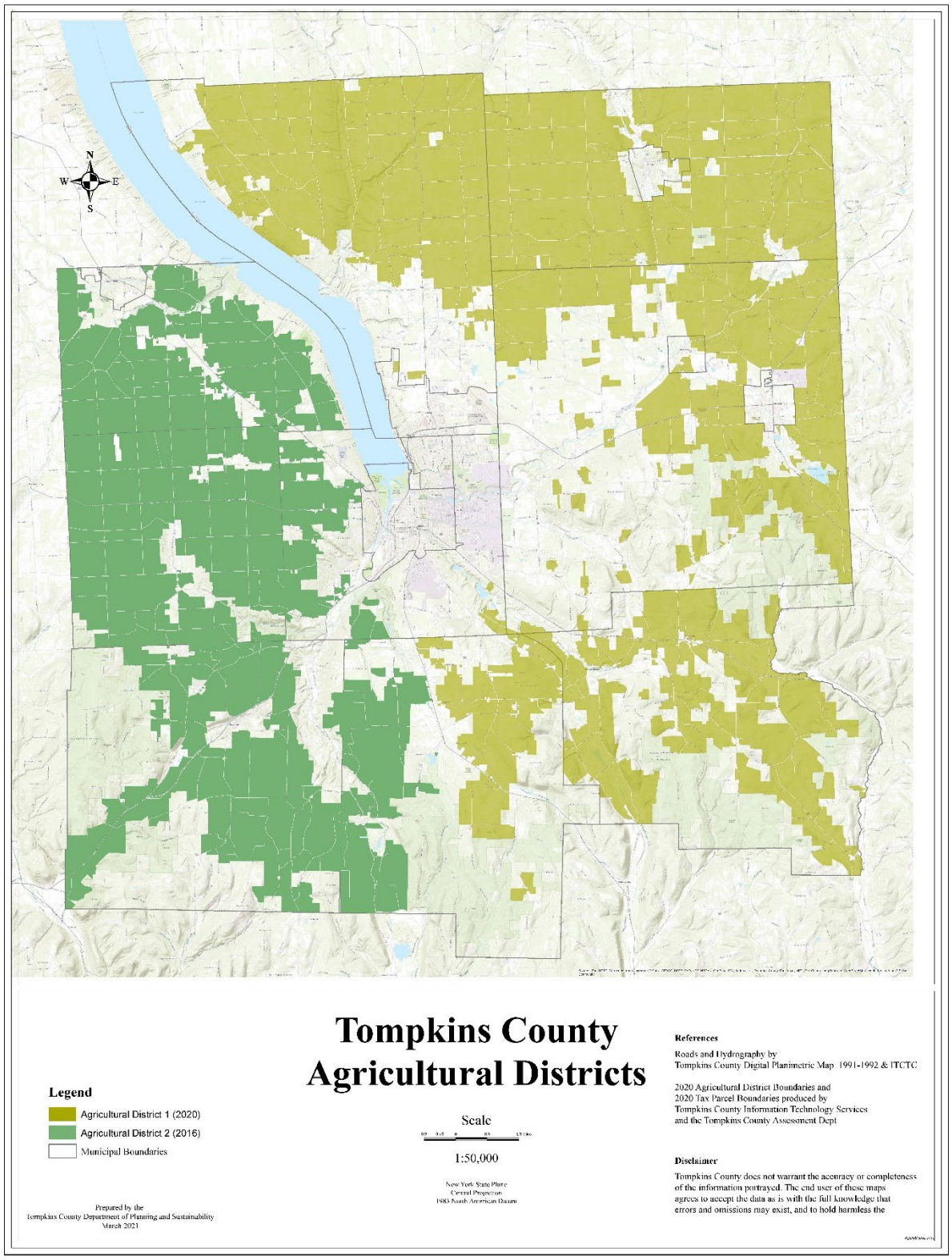
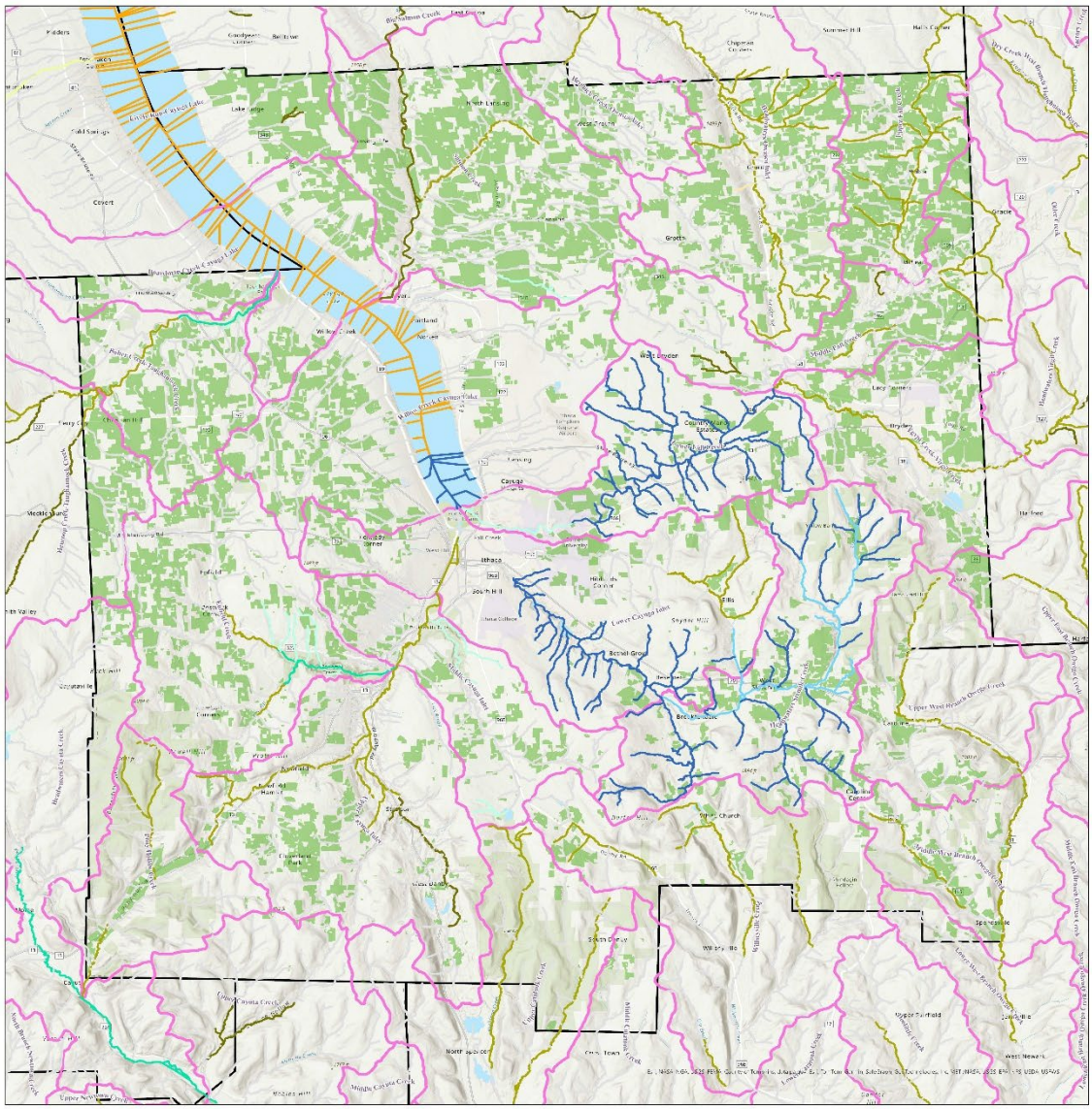


Figure 4. Tompkins County NYSDEC Classified Streams Map

NYSDEC Classified Surface Waters

Tompkins County



Class A:
The best usages are: a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The waters shall be suitable for fish, shellfish and wildlife propagation and survival. This classification may be given to those waters that, if subjected, meet New York State Department of Health drinking water standards and are or will be considered safe and satisfactory for drinking water purposes.
Class B:
The best usages are primary and secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish and wildlife propagation and survival.
Class C:
The best usage is fishing. These waters shall be suitable for fish, shellfish and wildlife propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.
Class D:
The best usage is fishing. These waters shall be suitable for fish, shellfish and wildlife propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes. Due to various conditions, Class D waters will not support fish propagation.

The symbols (T) or (TS) appearing in the "standards" column means that the waters are trout waters, or trout spawning waters. Water quality standards and criteria specific to trout and trout spawning applies.

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Legend

Water Quality Classifications (Line)
- A
- A(T)
- AA
- AA(T)
- B
- B(T)
- C
- C(T)
- C(TS)
- D

2023 Land Use Types
- Agriculture
- Inactive Agriculture

Counties
- Counties

Watersheds
- Watersheds

Figure 5. Federal Wetlands Inventory in Tompkins County

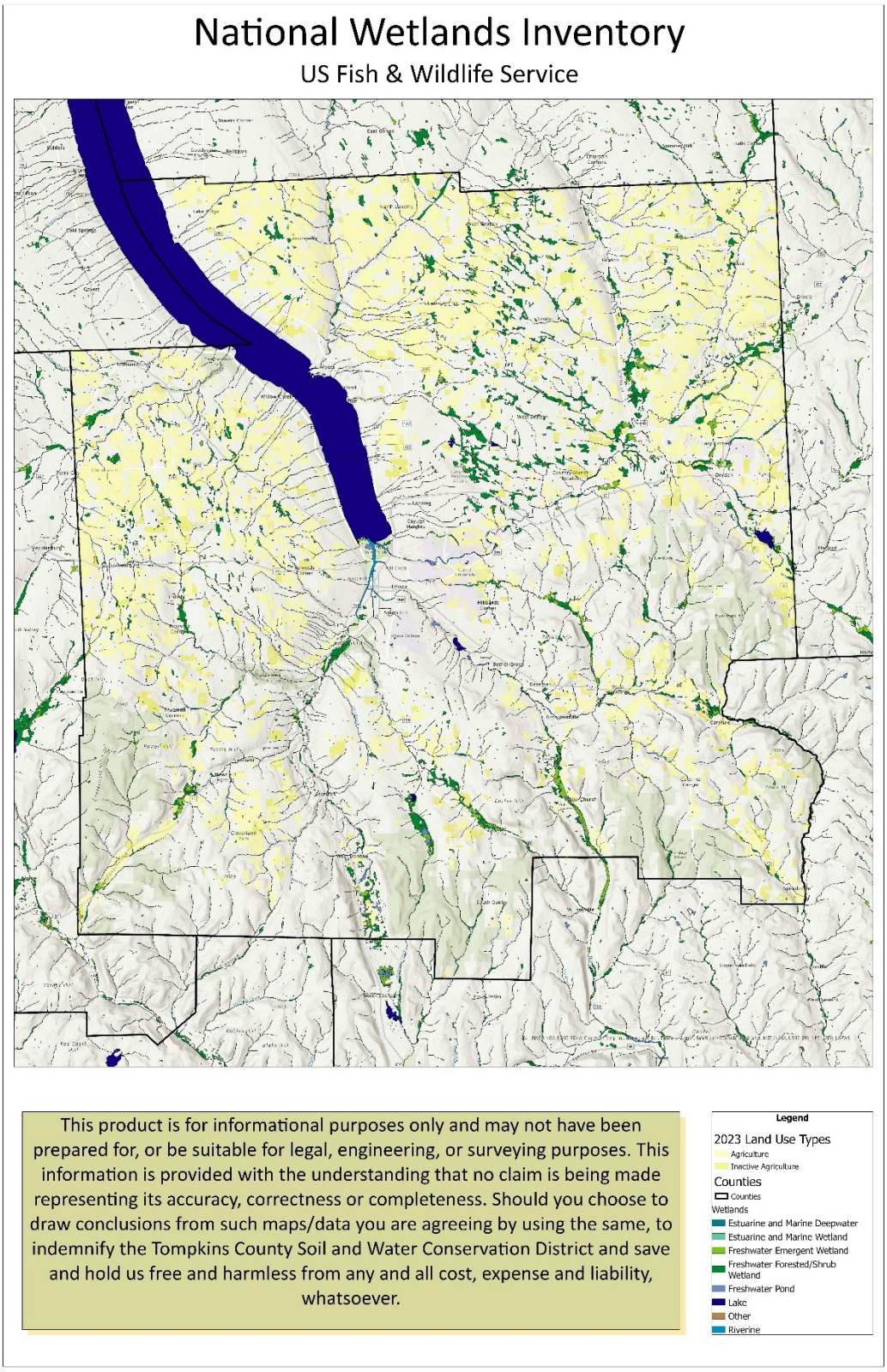
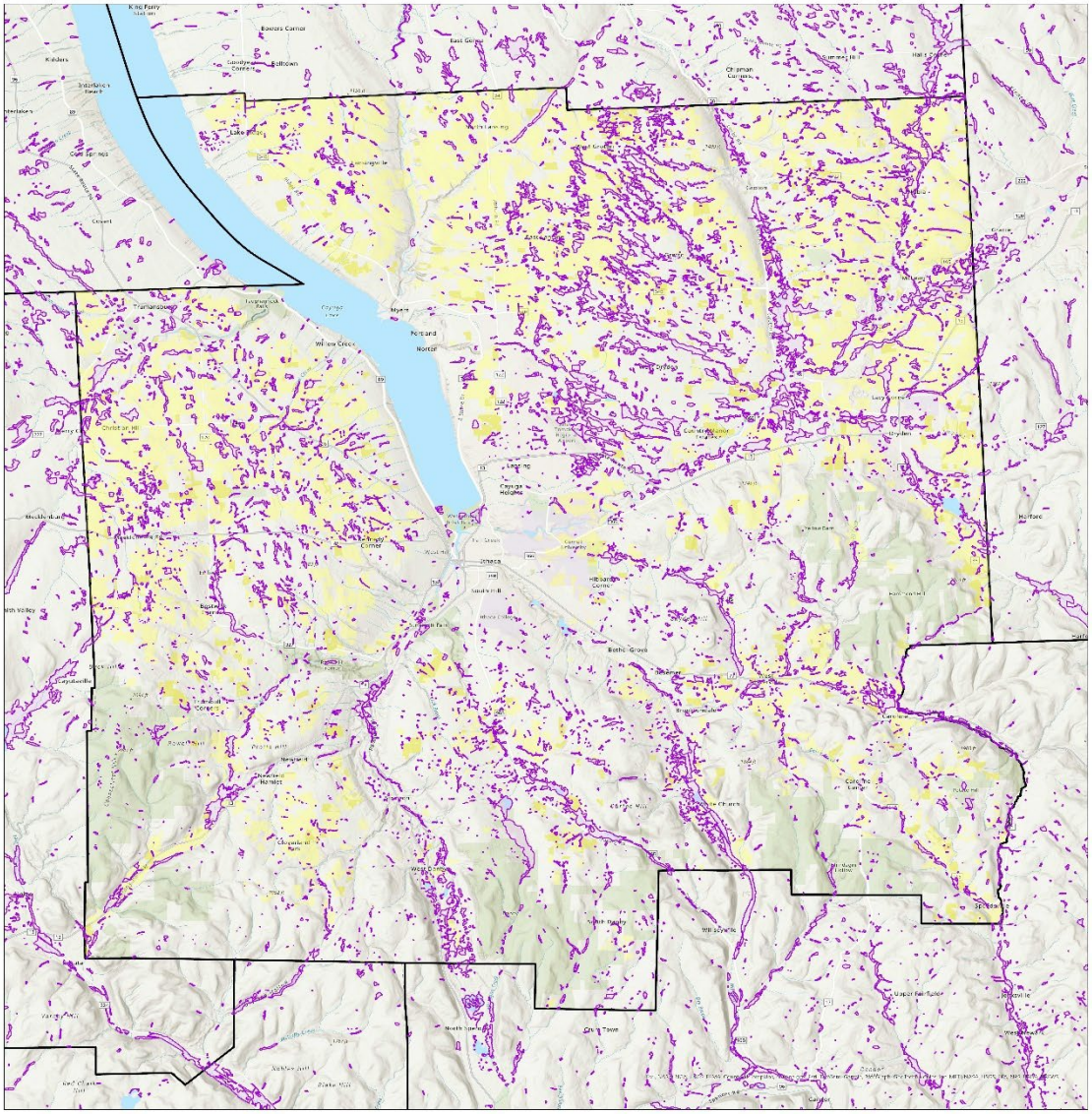


Figure 6. NYSDEC Informational Wetlands

NYS Informational Wetlands

NYS Department of Environmental Conservation



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Legend

2023 Land Use Types
- Agriculture
- Inactive Agriculture

Counties
- Counties
- Informational Freshwater Wetland Mapping

Figure 7. Tompkins County Agricultural Resource Protection Focus Areas

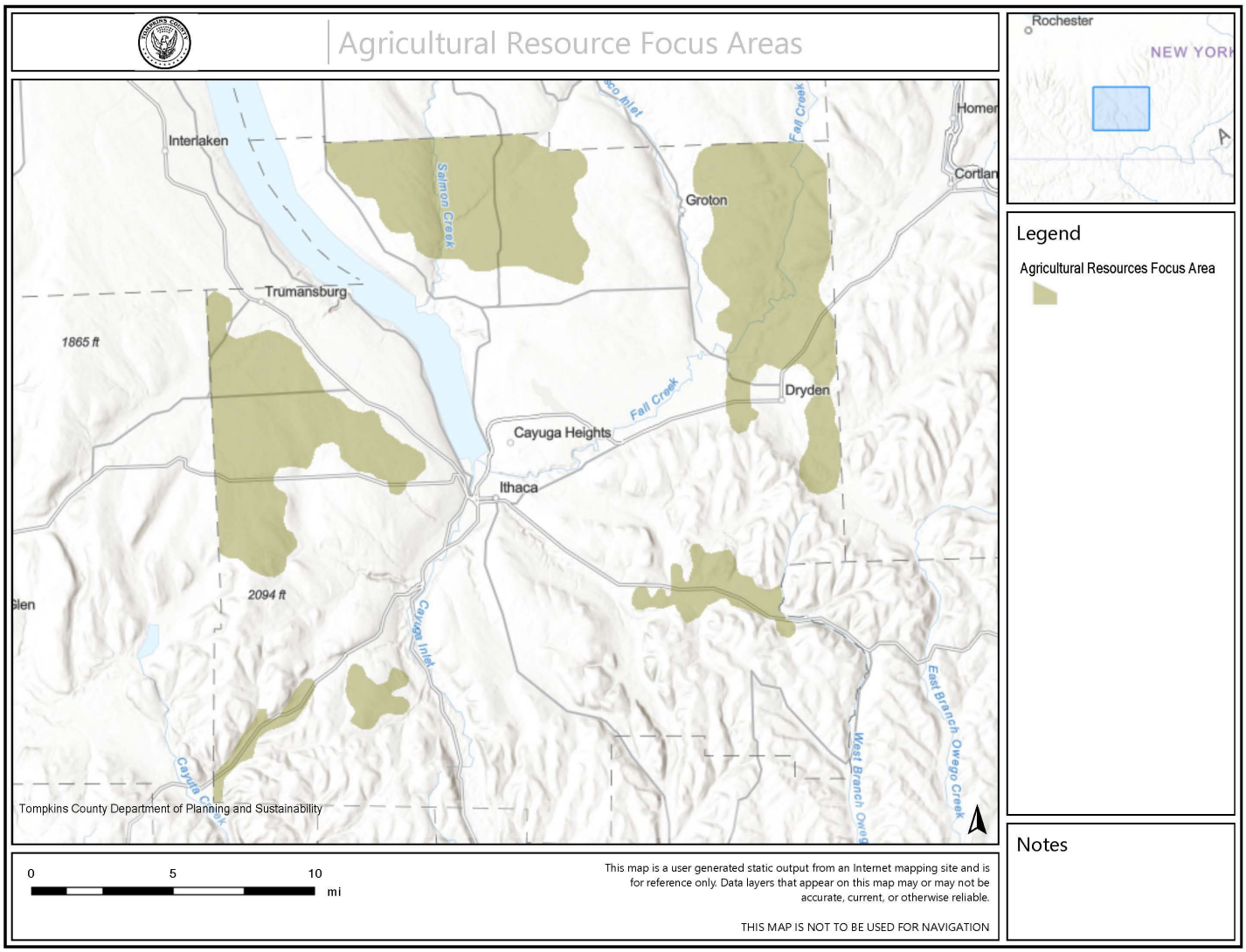
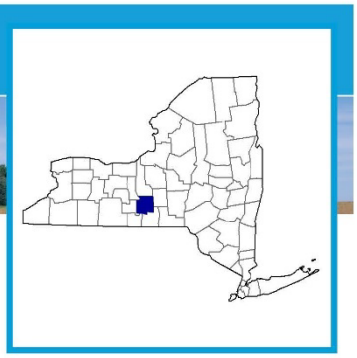


Figure 8. Tompkins County Census of Agriculture Data

2022 CENSUS OF AGRICULTURE *County Profile*



Tompkins County
New York

Total and Per Farm Overview, 2022 and change since 2017

	2022	% change since 2017
Number of farms	487	-7
Land in farms (acres)	92,950	+2
Average size of farm (acres)	191	+9
Total	($)	
Market value of products sold	89,827,000	+39
Government payments	1,131,000	-28
Farm-related income	4,225,000	-14
Total farm production expenses	68,778,000	+27
Net cash farm income	26,405,000	+56
Per farm average	($)	
Market value of products sold	184,450	+49
Government payments [a]	13,148	-2
Farm-related income [a]	22,595	+12
Total farm production expenses	141,228	+36
Net cash farm income	54,220	+68

1 Percent of state agriculture sales

Share of Sales by Type (%)

Crops	32
Livestock, poultry, and products	68

Land in Farms by Use (acres)

Cropland	67,433
Pastureland	4,302
Woodland	16,363
Other	4,852

Acres irrigated: 216
(Z)% of land in farms

Land Use Practices (% of farms)

No till	10
Reduced till	12
Intensive till	16
Cover crop	14

Farms by Value of Sales

	Number	Percent of Total [b]
Less than $2,500	173	36
$2,500 to $4,999	38	8
$5,000 to $9,999	63	13
$10,000 to $24,999	76	16
$25,000 to $49,999	39	8
$50,000 to $99,999	21	4
$100,000 or more	77	16

Farms by Size

	Number	Percent of Total [b]
1 to 9 acres	62	13
10 to 49 acres	171	35
50 to 179 acres	146	30
180 to 499 acres	69	14
500 to 999 acres	16	3
1,000+ acres	23	5

USDA United States Department of Agriculture
National Agricultural Statistics Service
www.nass.usda.gov/AgCensus

2022 CENSUS OF AGRICULTURE *County Profile*

Market Value of Agricultural Products Sold

	Sales ($1,000)	Rank in State [c]	Counties Producing Item	Rank in U.S. [c]	Counties Producing Item
Total	**89,827**	**34**	**62**	**1,495**	**3,078**
Crops	**28,842**	**32**	**62**	**1,613**	**3,074**
Grains, oilseeds, dry beans, dry peas	14,114	23	55	1,417	2,917
Tobacco	-	-	-	-	267
Cotton and cottonseed	-	-	-	-	647
Vegetables, melons, potatoes, sweet potatoes	2,786	27	61	542	2,831
Fruits, tree nuts, berries	1,370	33	59	505	2,711
Nursery, greenhouse, floriculture, sod	2,591	27	60	651	2,660
Cultivated Christmas trees, short rotation woody crops	700	8	52	84	1,274
Other crops and hay	7,281	23	56	479	3,035
Livestock, poultry, and products	**60,986**	**27**	**60**	**965**	**3,076**
Poultry and eggs	(D)	47	59	(D)	3,027
Cattle and calves	6,112	27	56	1,577	3,047
Milk from cows	53,482	24	54	211	1,770
Hogs and pigs	(D)	5	55	(D)	2,814
Sheep, goats, wool, mohair, milk	212	25	55	889	2,967
Horses, ponies, mules, burros, donkeys	141	35	55	1,334	2,907
Aquaculture	-	-	30	-	1,190
Other animals and animal products	188	36	58	738	2,909

Producers [d]	**948**
Sex	
Male	546
Female	402
Age	
<35	91
35 – 64	457
65 and older	400
Race	
American Indian/Alaska Native	1
Asian	3
Black or African American	3
Native Hawaiian/Pacific Islander	-
White	937
More than one race	4
Other characteristics	
Hispanic, Latino, Spanish origin	17
With military service	56
New and beginning farmers	228

Percent of farms that:

Have internet access	**92**
Farm organically	**5**
Sell directly to consumers	**18**
Hire farm labor	**22**
Are family farms	**94**

Top Crops in Acres [e]

Forage (hay/haylage), all	28,111
Corn for silage/greenchop	10,314
Corn for grain	5,829
Soybeans for beans	3,898
Wheat for grain, all	1,977

Livestock Inventory (Dec 31, 2022)

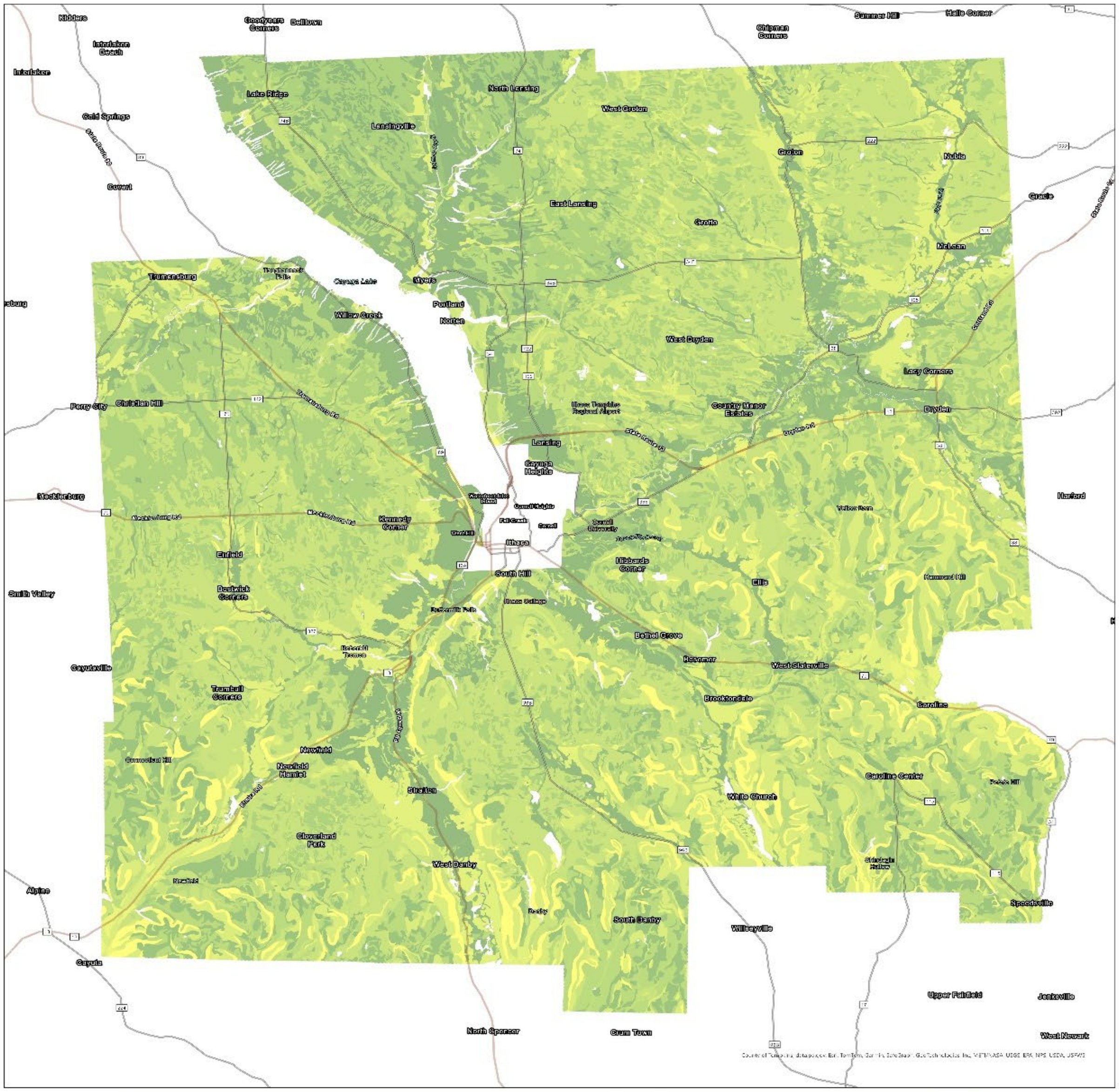
Broilers and other meat-type chickens	265
Cattle and calves	26,129
Goats	204
Hogs and pigs	(D)
Horses and ponies	925
Layers	2,117
Pullets	261
Sheep and lambs	1,052
Turkeys	-

[a] Average per farm receiving. [b] May not add to 100% due to rounding. [c] Among counties whose rank can be displayed. [d] Data collected for a maximum of four producers per farm. [e] Crop commodity names may be shortened; see full names at www.nass.usda.gov/go/cropnames.pdf. [f] Position below the line does not indicate rank. (D) Withheld to avoid disclosing data for individual operations. (NA) Not available. (Z) Less than half of the unit shown. (-) Represents zero.

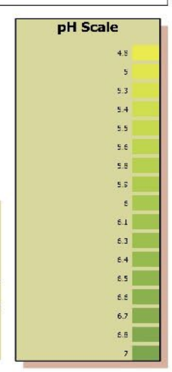
Figure 9. Tompkins County Soil Maps

pH

Tompkins County Soils



Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.



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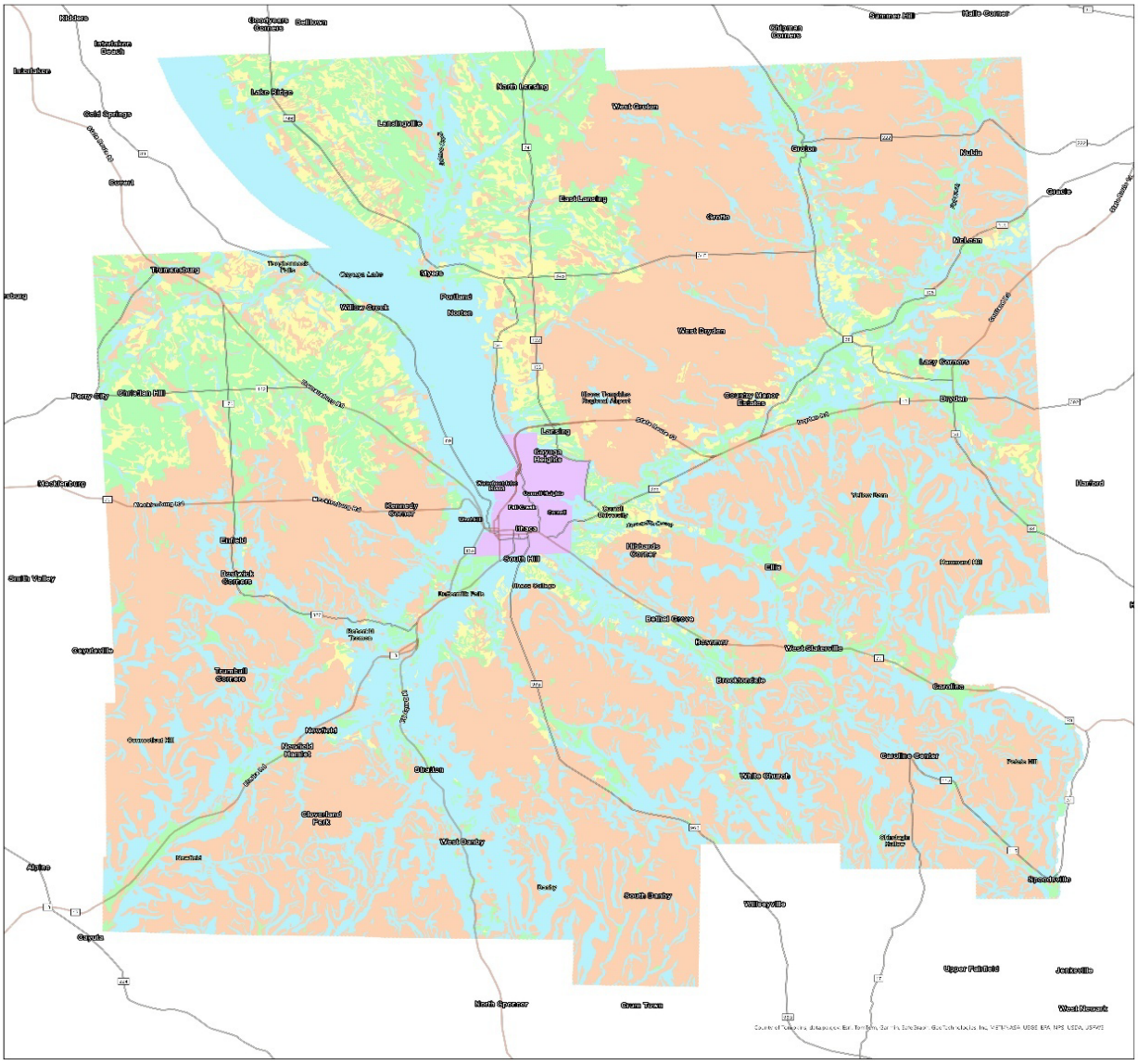
Farmland Classification

Tompkins County Soils



Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

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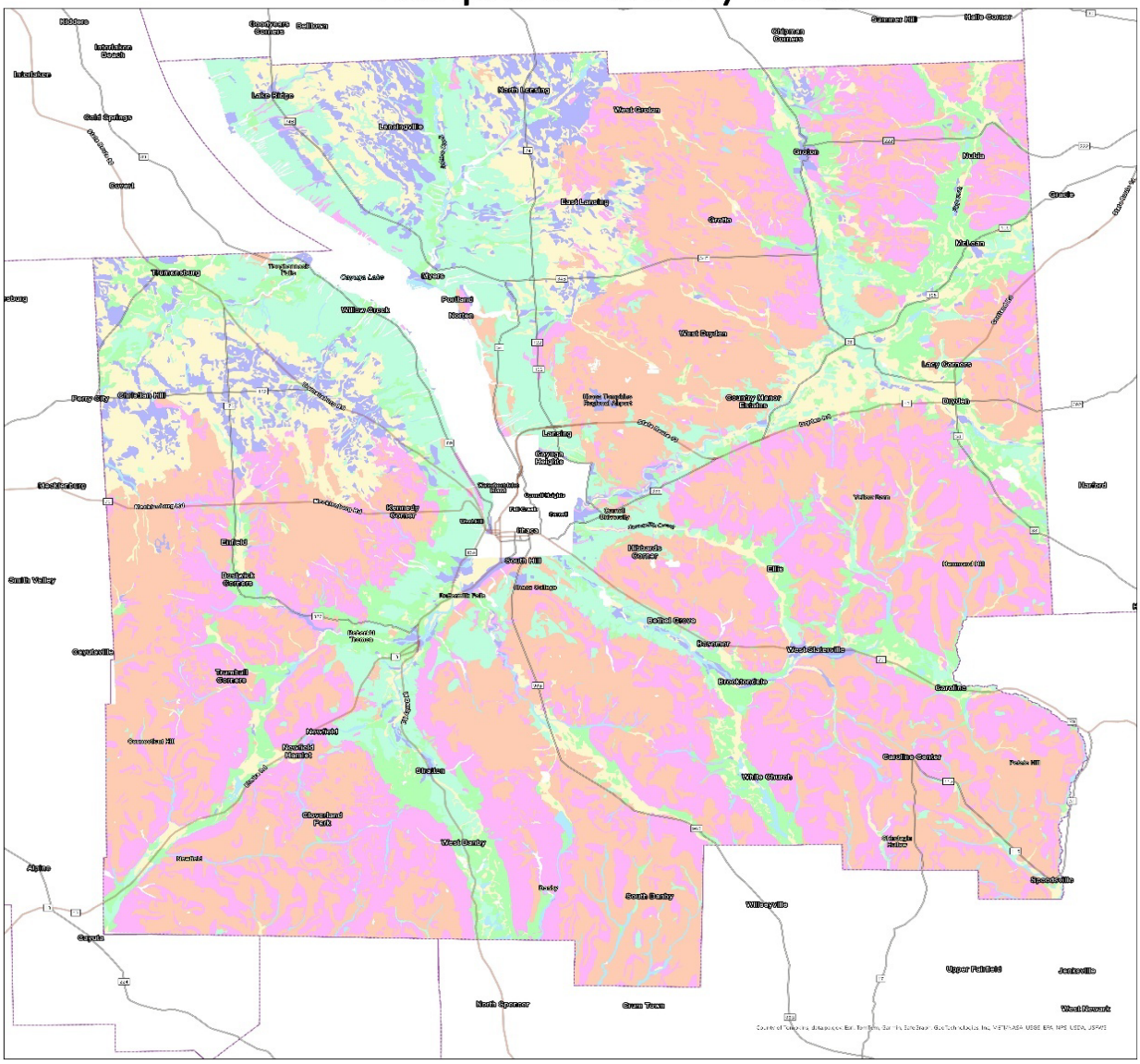
Hydrologic Soil Groups

Tompkins County Soils



Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

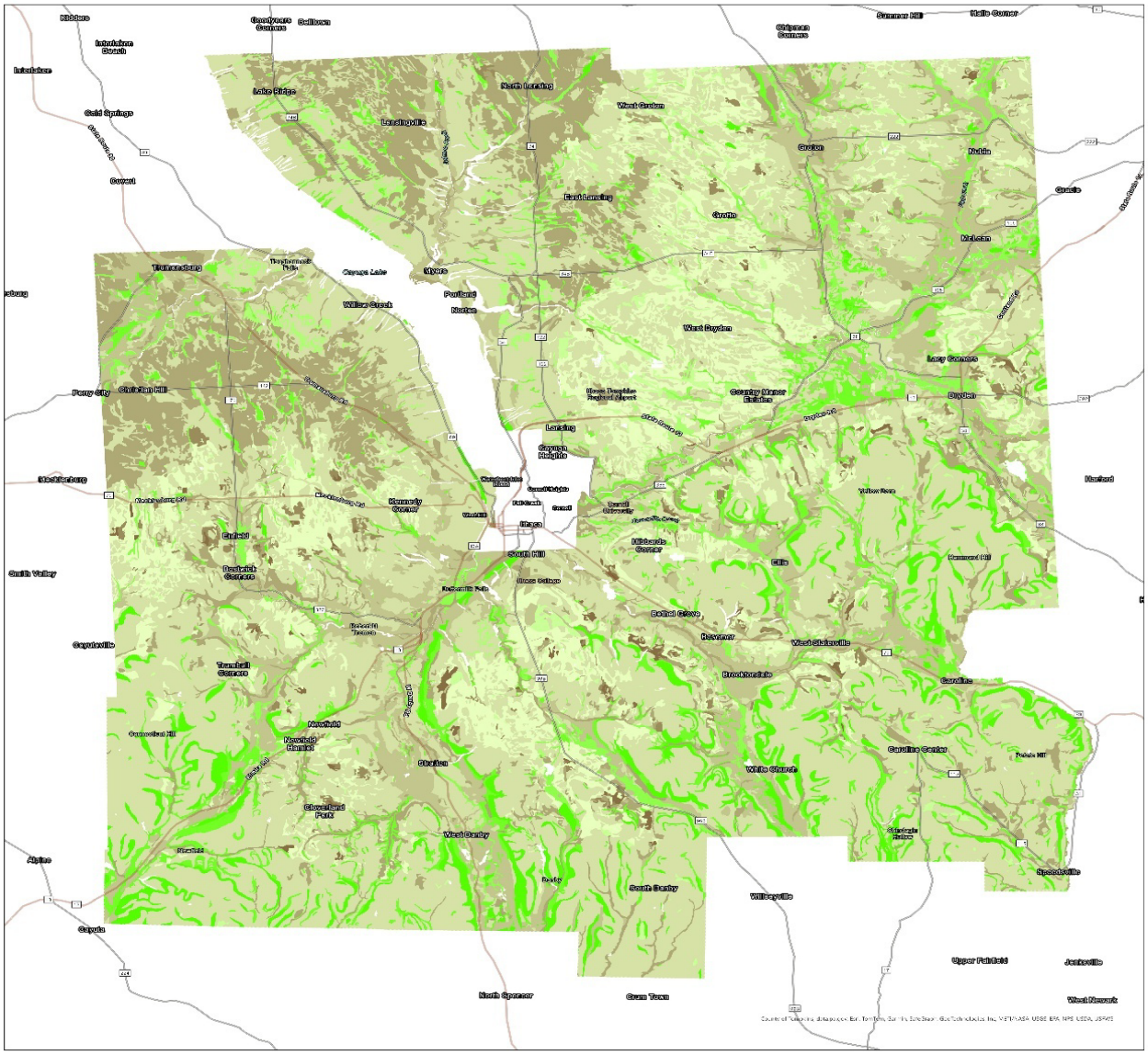
Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Organic Matter

Tompkins County Soils



Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms. An irregular distribution of organic carbon with depth may indicate different episodes of soil deposition or soil formation. Soils that are very high in organic matter have poor engineering properties and subside upon drying.

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T Factor

Tompkins County Soils

The T factor is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Legend

T_Factor

- 1
- 2
- 3
- 4
- 5

N

W E

S

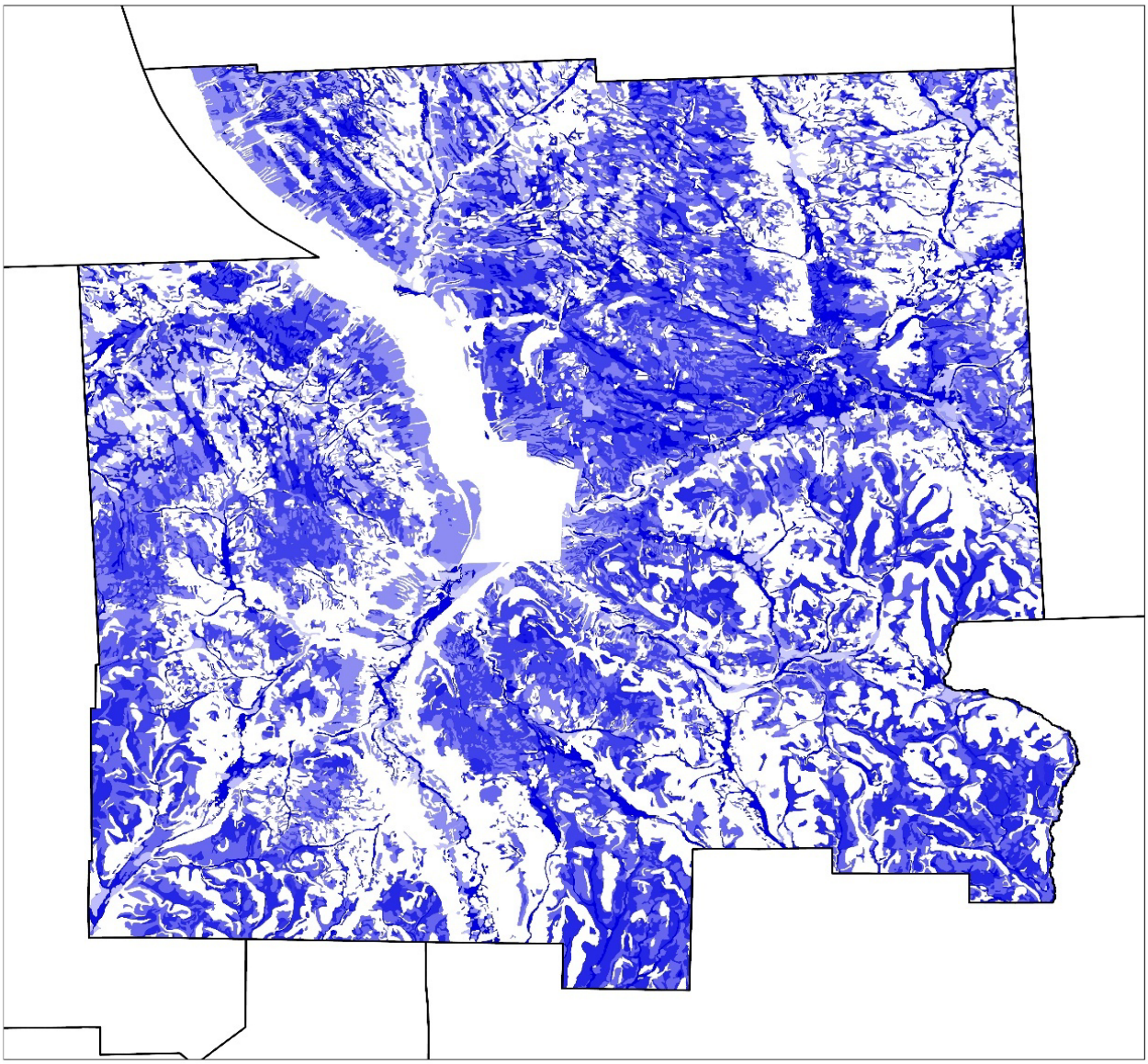
Depth to Restrictive Layer

Tompkins County Soils

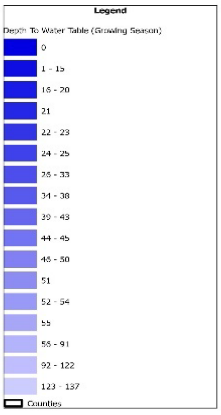
A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. Measured in centimeters.

Depth to Water Table (During Growing Season)

Tompkins County Soils

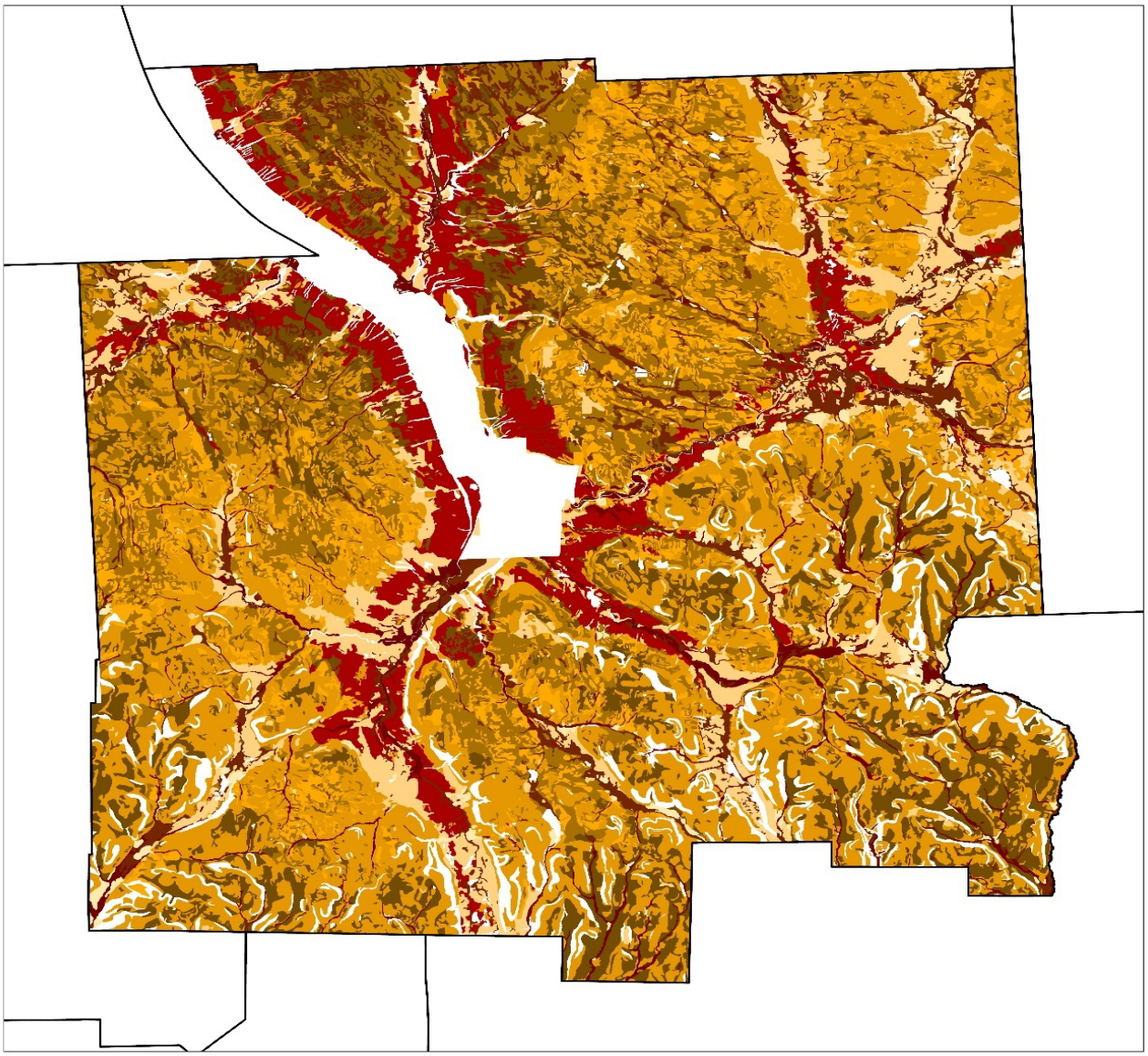


"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.



K Factor

Tompkins County Soils



Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.