Vermont Agricultural Land Use 1880 - 2025

Ryan Patch
Agriculture Climate Policy Manager
Vermont Agency of Agriculture, Food and Markets
Presentation to: Senate Committee on Agriculture
January 15, 2026

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS

The Vermont Statehouse: 1870 – 1880s

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From: State Curator's Office, BGS. Circa 1870 – 1880s Retrieved from: https://curator.vermont.gov/sites/curator/files/styles/slideshow_image_only/public/images/image_only_slides/historic-state-house-780x450.jpg?itok=lXOLbhmj

The Vermont Statehouse: 2023

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From: VAAFM

Vermont's Land Area

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How to Reference Vermont's Land and Water Area

This page contains reference measurements for calculating Vermont physical areas in geographic analyses.

Census 2022 TIGER/Line Geometry

Geography	Total Area			Land Area[3]			Water Area[3]		
	Sq. Mi.[1]	Sq. Km.	Acres[2]	Sq. Mi.[1]	Sq. Km.	Acres[2]	Sq.Mi.[1]	Sq. Km.	Acres[2]
Vermont	9,615	24,903	6,153,746	9,217	23,873	5,899,041	398	1,031	254,705
			100%			96%			4%

Table 1. Source: 2022 TIGER/Line Geodatabase File, U.S. Census Bureau.

Source: https://vcgi.vermont.gov/resources/how-and-education-resources/how-reference-vermonts-land-and-water-area

Vermont Landscape

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Mountainous

Vermont Landscape

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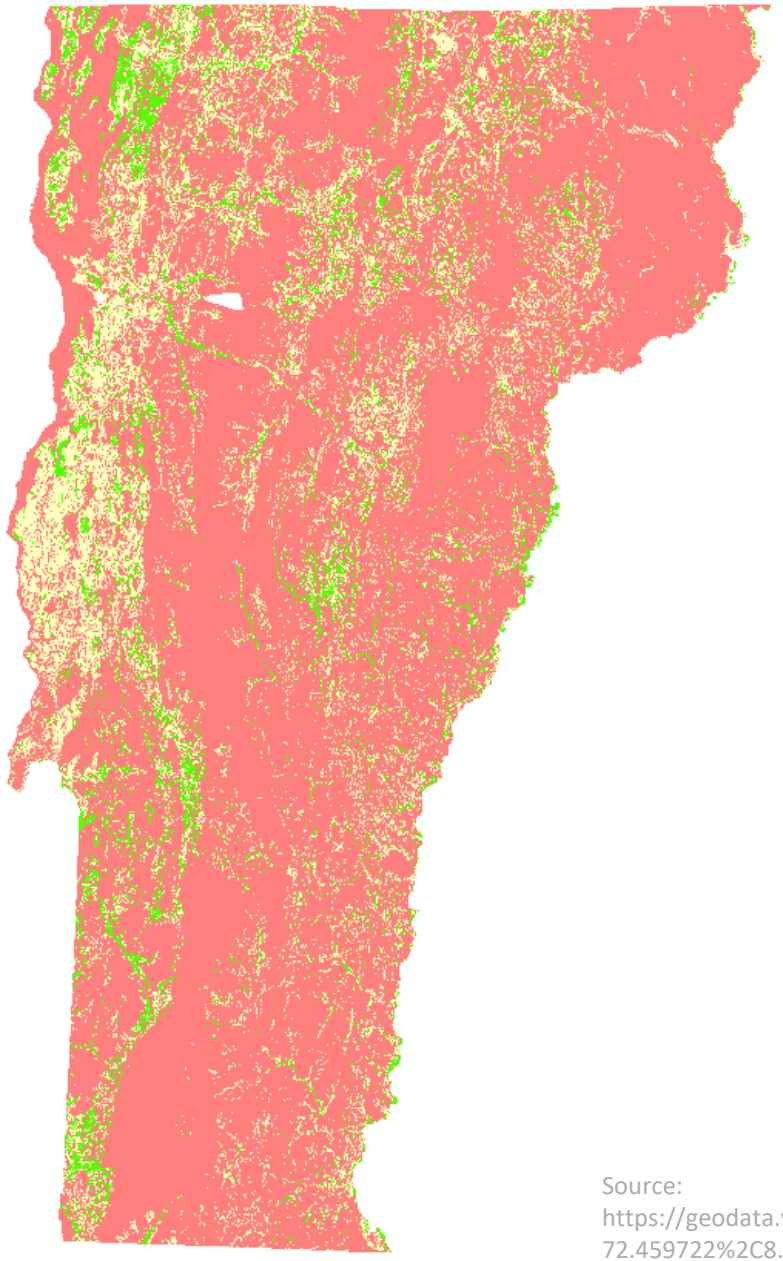
- Mountainous
- Steep (slope >15%)
- Shallow Depth to Bedrock (<20 in)

Vermont Landscape

- Mountainous
- Steep (slope >15%)
- Shallow Depth to Bedrock (<20 in)
- Wet (wetlands & hydric soils)

Vermont Landscape: USDA NRCS-VT Prime Agricultural Soil Ratings

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS



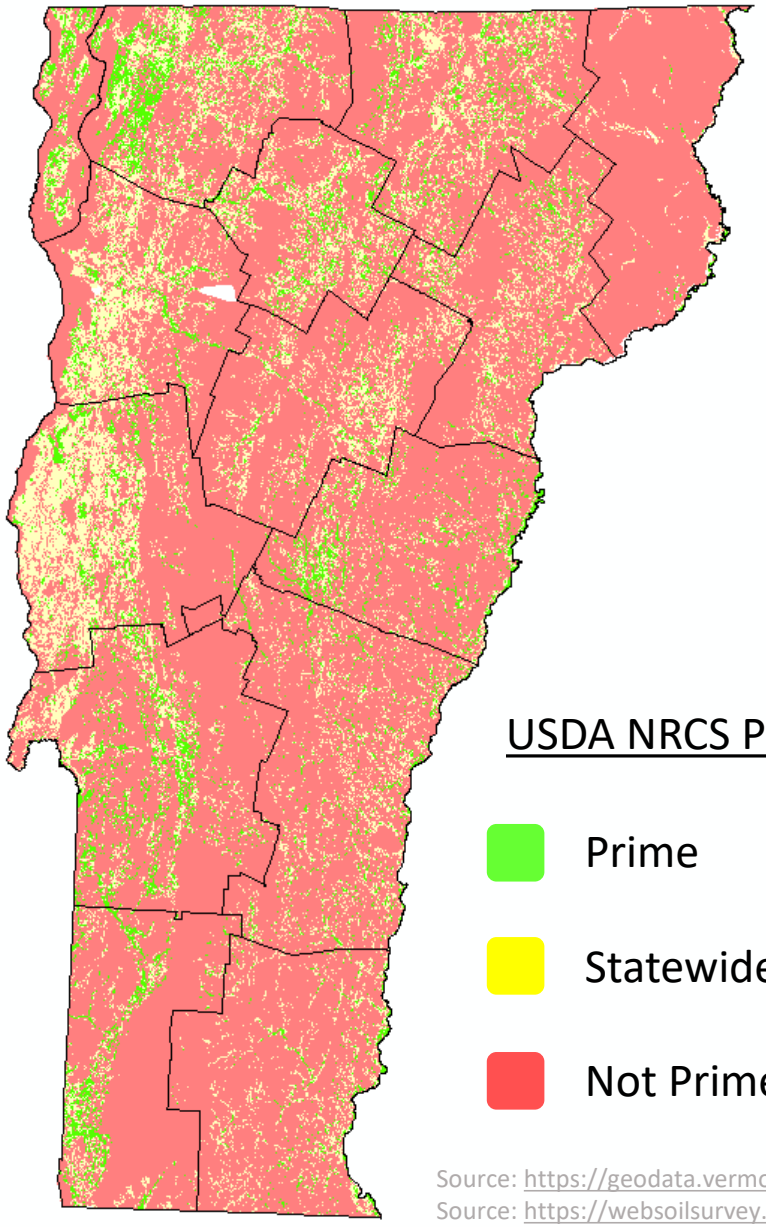
USDA NRCS Prime Ag Soils Rating

- Prime
- Statewide & Local
- Not Prime, Statewide, or Local (NPSL)

Source: https://geodata.vermont.gov/datasets/937b0bac14b24864b1d1f07b63f25905_0/explore?location=43.857653%2C-72.459722%2C8.62

Vermont Landscape: USDA NRCS-VT Prime Agricultural Soil Ratings

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS



	County	Total Acres of Soil & Water	Acres of "All areas are prime farmland"	% total acres prime farmland
1	Addison	516,939	19,141	4%
2	Bennington	433,119	24,162	6%
3	Caledonia	420,101	15,080	4%
4	Chittenden	396,198	19,696	5%
5	Essex	429,359	3,614	1%
6	Franklin	440,776	24,755	6%
7	Grand Isle	126,978	13,109	10%
8	Lamoille	296,400	19,645	7%
9	Orange	442,545	30,119	7%
10	Orleans	462,291	24,521	5%
11	Rutland	604,394	42,932	7%
12	Washington	445,194	8,451	2%
13	Windham	510,962	6,700	1%
14	Windsor	625,310	24,196	4%
	Total	**6,150,565**	**276,121**	**4%**

USDA NRCS Prime Ag Soils Rating

- Prime
- Statewide & Local
- Not Prime, Statewide, or Local (NPSL)

Statewide Soils cover 18.8% of Vermont's land base

Prime & Statewide Soils = 22.8% of VT's Land Base

Source: https://geodata.vermont.gov/datasets/937b0bac14b24864b1d1f07b63f25905_0/explore?location=43.857653%2C-72.459722%2C8.62
Source: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Vermont Landscape: Vermont Agricultural Land Cover 2021 / 2022

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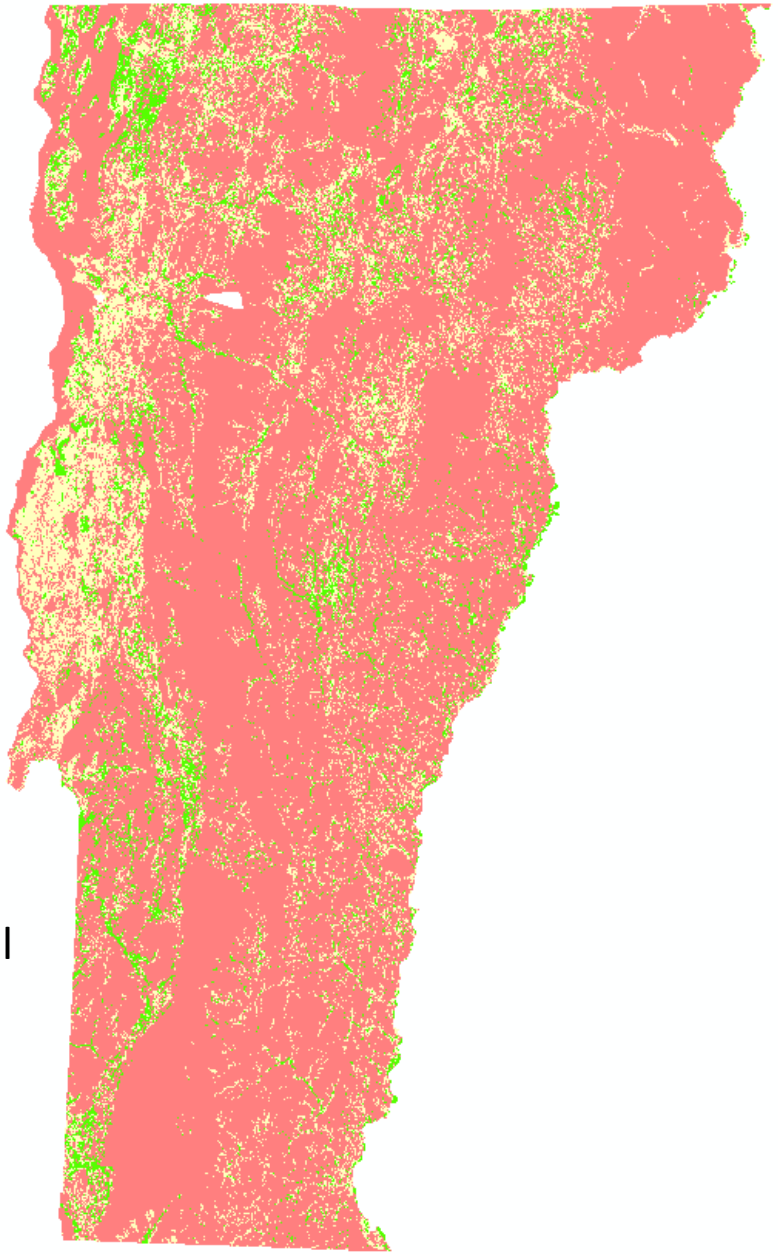
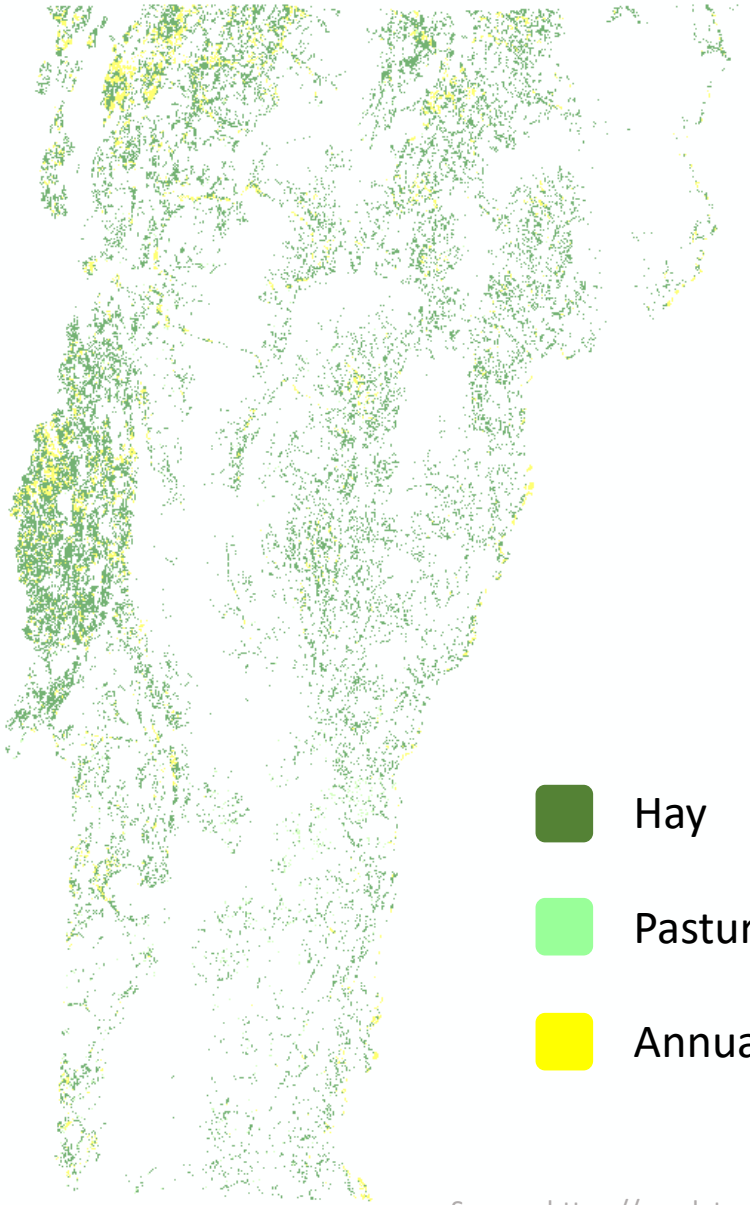


- Prime
- Statewide & Local
- Not Prime, Statewide, or Local (NPSL)



- Hay
- Pasture
- Annual Crops

Source: https://geodata.vermont.gov/pages/land-cover

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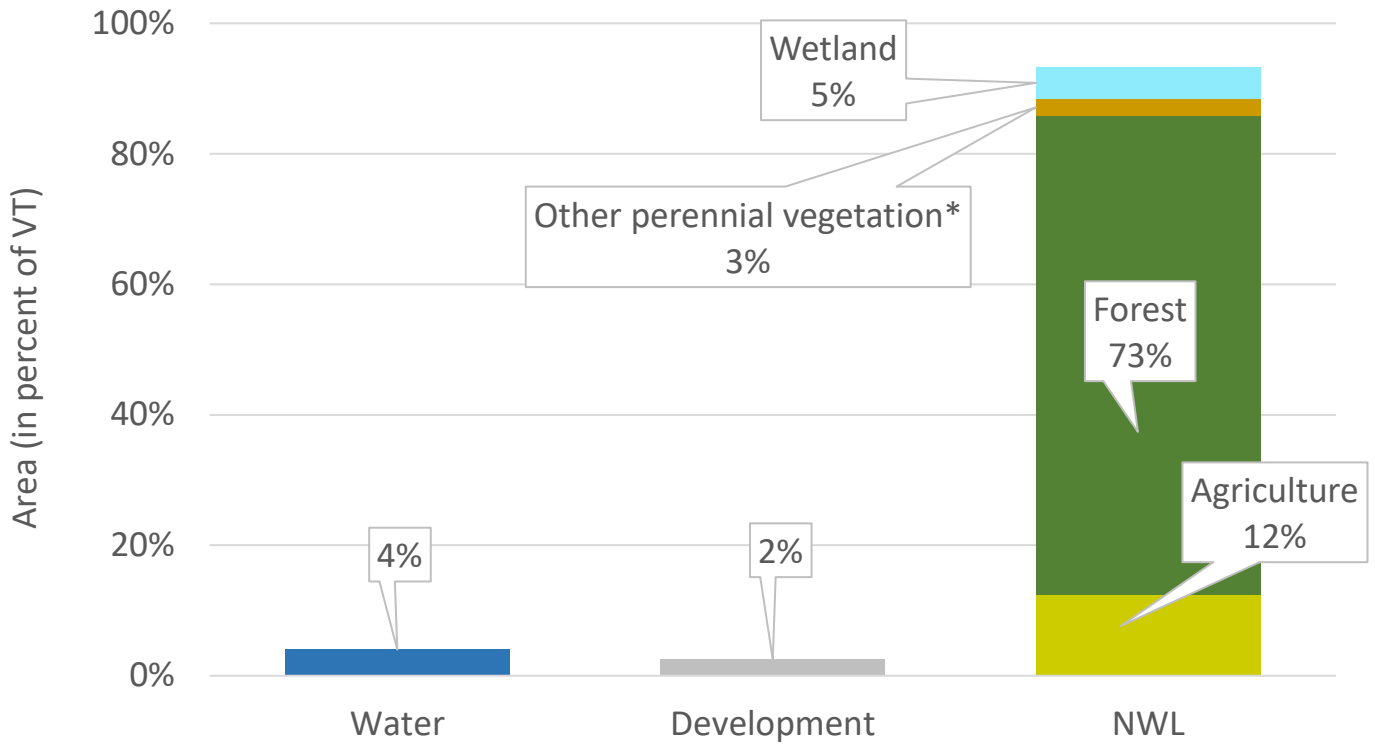
Natural & Working Lands (NWL) cover 94% of Vermont



*Other perennial vegetation includes grasslands, shrub/scrublands, and turf

Data source: 2016 National Land Cover Database; Images courtesy FPR

Agricultural Easements

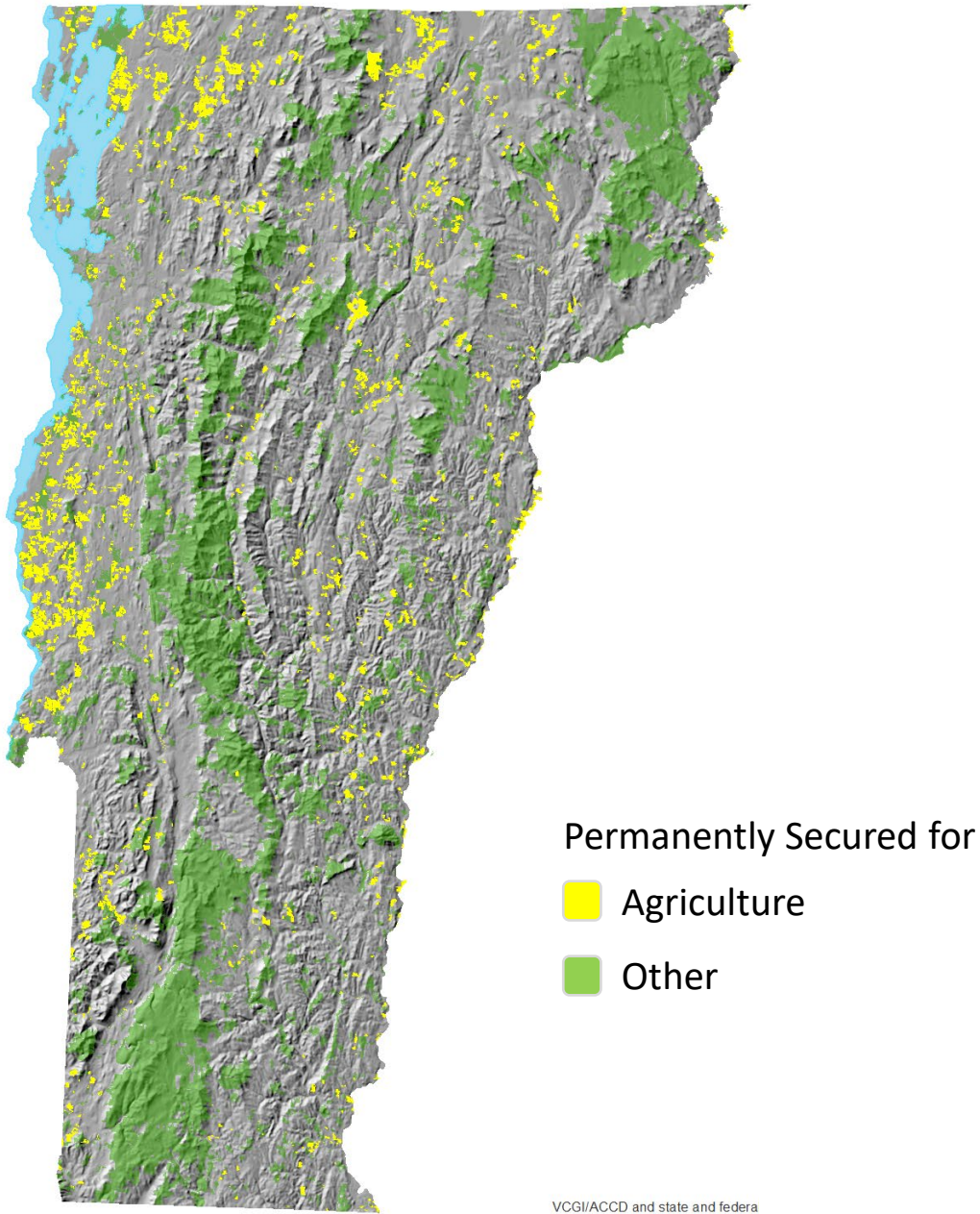
VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS
WATER QUALITY DIVISION

Summary

- **226,623 acres** of Agricultural Easements in Vermont
- “Permanently Secured for Agriculture” (yellow)

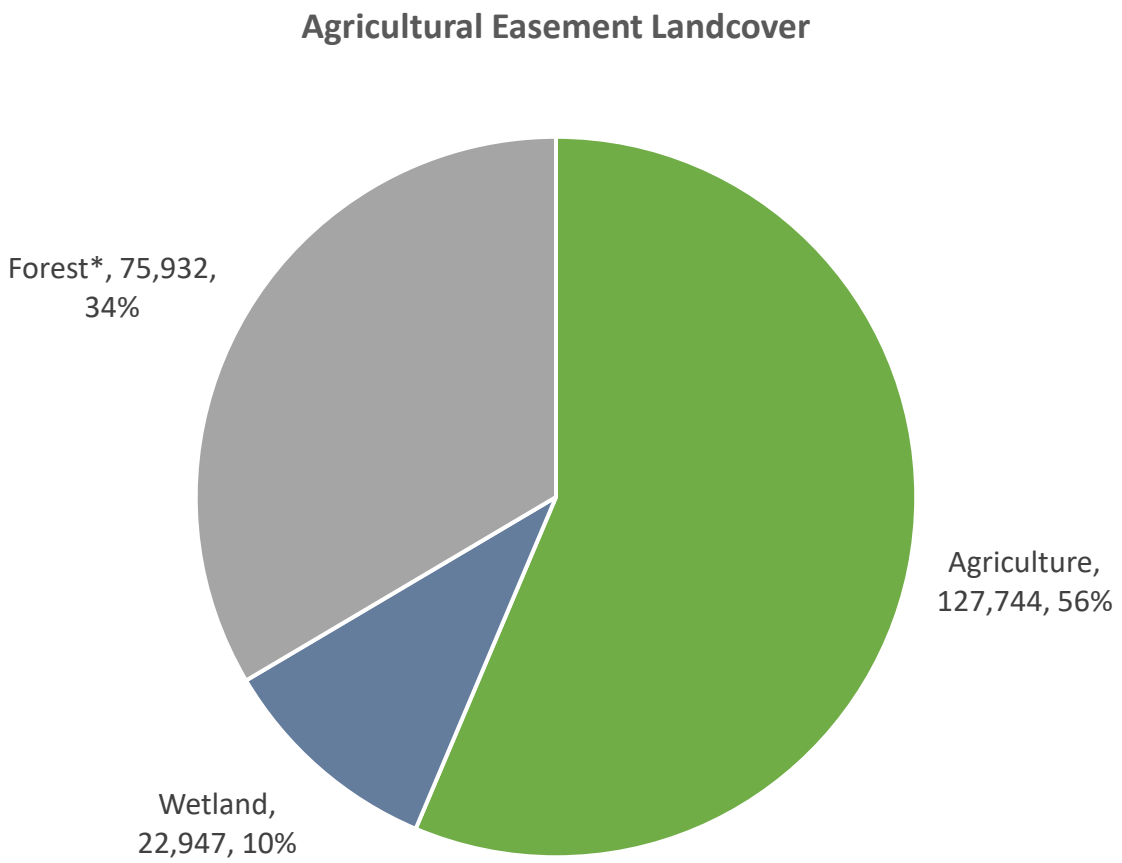
Methods

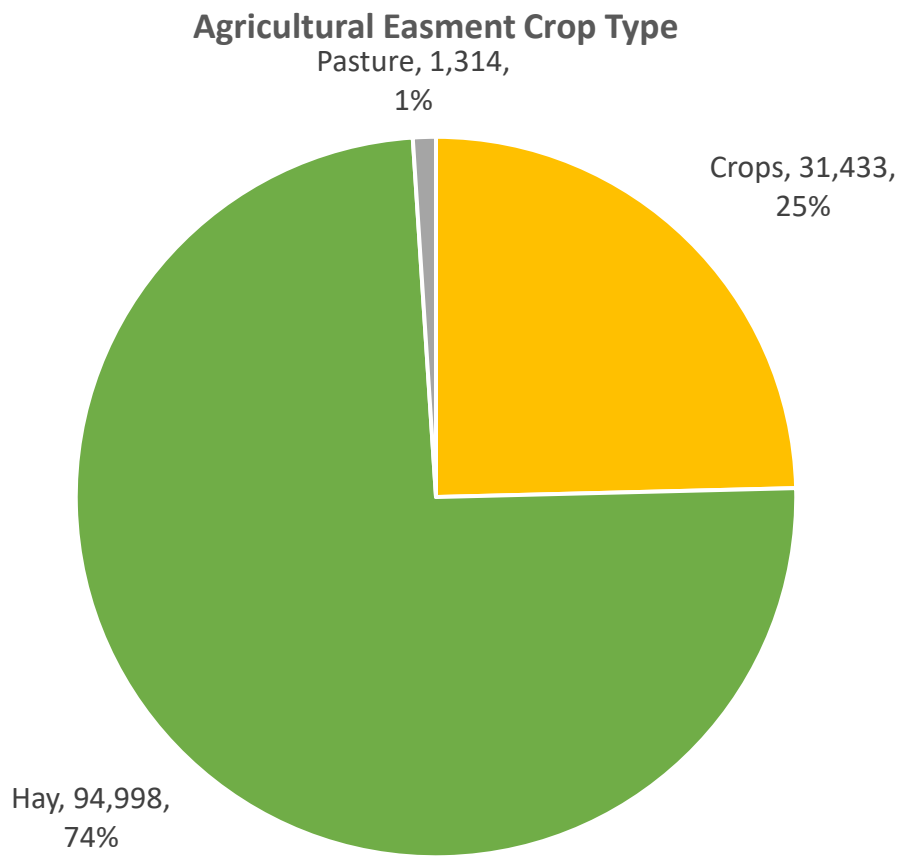
- Agricultural Easements “contain” = area within (acres)
- Geospatial overlay



Agricultural Easements Contain

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS
WATER QUALITY DIVISION





*Forest not geospatially determined, difference from agricultural and wetland landcovers

*Agricultural landcover/crop type from 2016 (UVM Spatial Lab)

Source: How to Reference Vermont's Land and Water Area - https://vcgi.vermont.gov/resources/how-and-education-resources/how-reference-vermonts-land-and-water-area

Agricultural Landbase Trends

1880 - 2022

VERMONT
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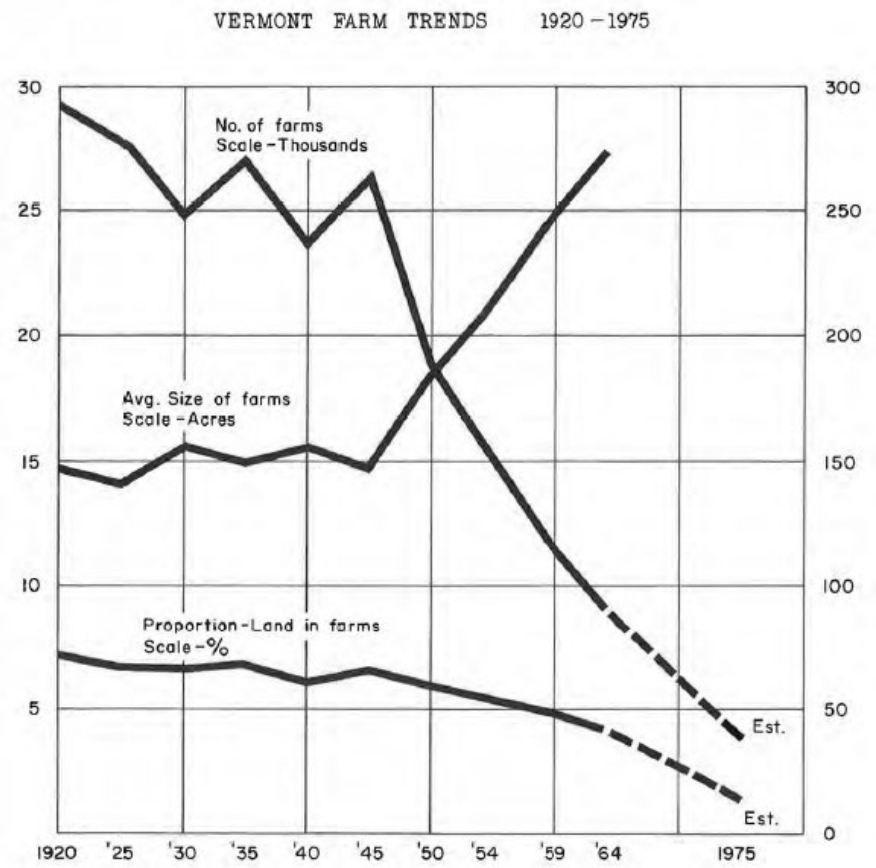
TABLE I TRENDS IN VERMONT FARMING

YEAR	NUMBER	AVERAGE SIZE OF FARMS PER ACRE	PROPORTION OF LAND IN FARMS
1850	29,763	139	71%
1860	31,556	136	73%
1870	33,827	134	78%
1880	35,522	138	84%
1890	32,573	135	75%
1900	33,104	143	81%
1910	32,709	143	80%
1920	29,075	146	72%
1925	27,786	141	67%
1930	24,898	156	67%
1935	27,061	149	69%
1940	23,582	156	62%
1945	26,490	148	66%
1950	19,043	185	59%
1954	15,981	208	56%
1959	12,099	243	50%
1964	9,247	273	43%

Source: Central Planning Office, Montpelier, Vermont

* * * *

Graph 1



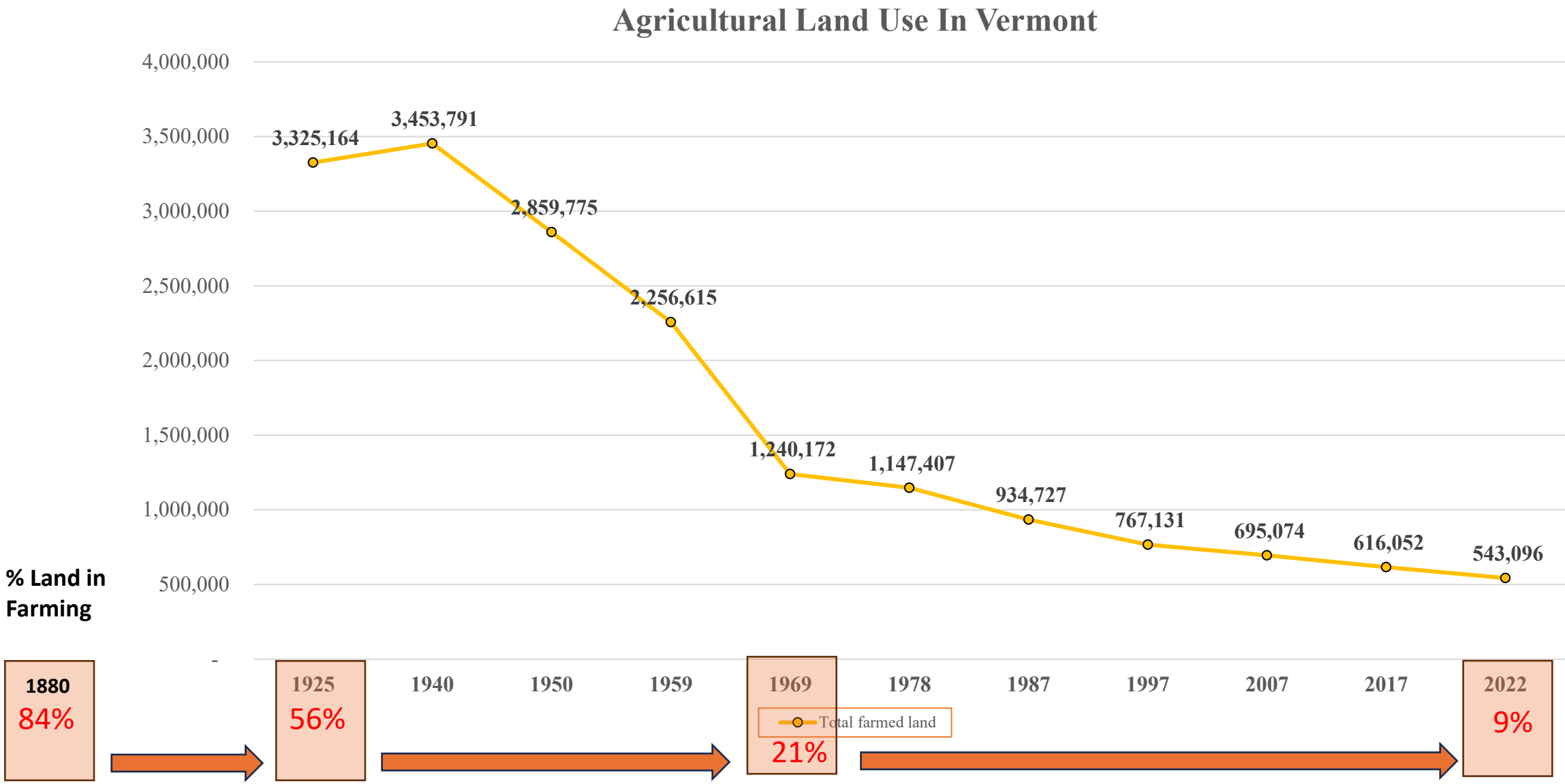
1880: 35,000 Farms; 84% of Vermont's Land Area in Farms

% Land in Farms
# of Farms

Size of farms

Source: https://outside.vermont.gov/agency/ACCD/ACCD_Web_Docs/CD/CPR/Resources-and-Rules/DHCD-Planning-VisionChoice-FutureStateFramework-1968.pdf

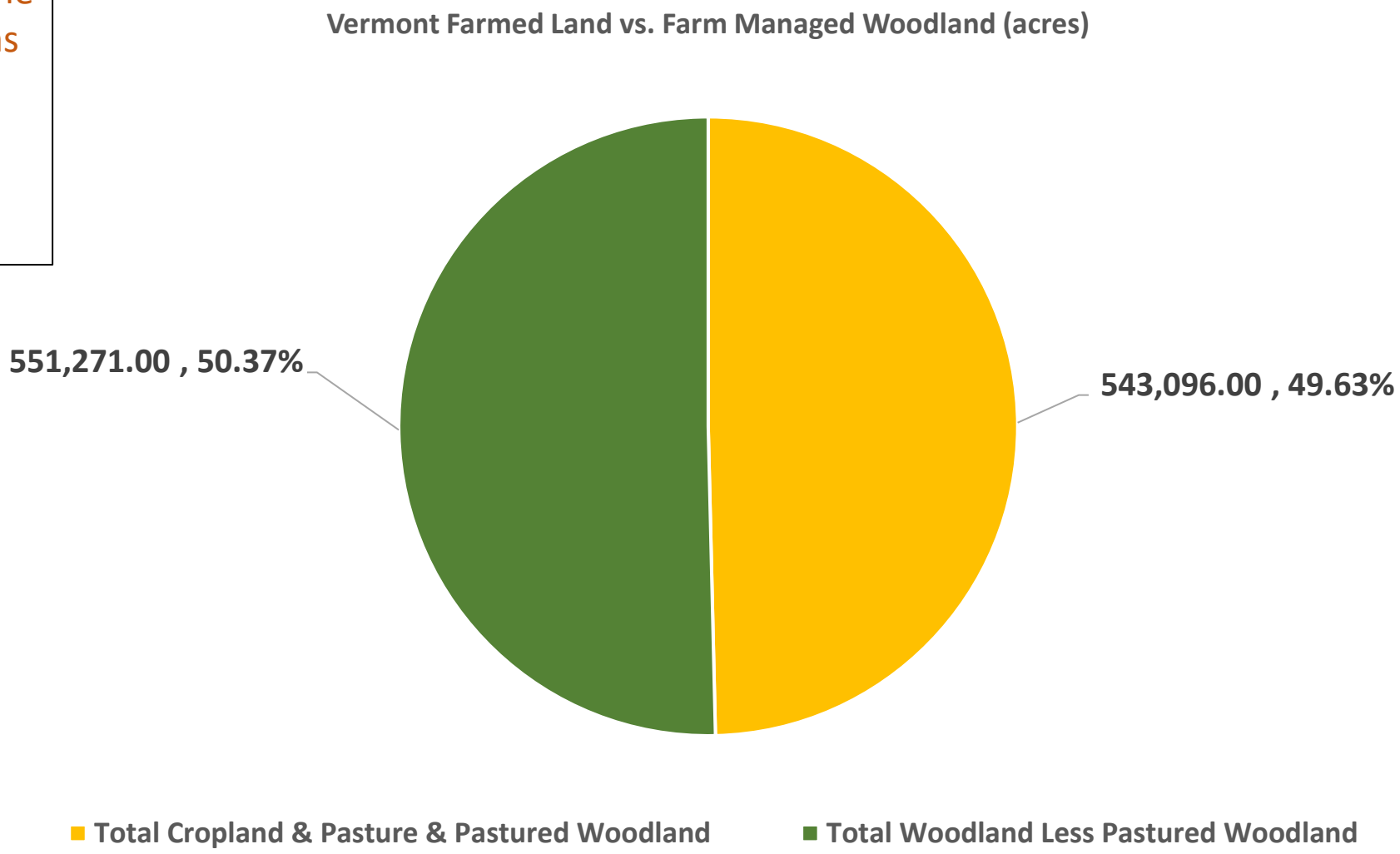
VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS



Data source: 1925 - 2022 USDA NASS Ag Census, Vermont
Data source: https://vcgi.vermont.gov/resources/how-and-education-resources/how-reference-vermonts-land-and-water-area (5,899,041 acres of Land in VT)

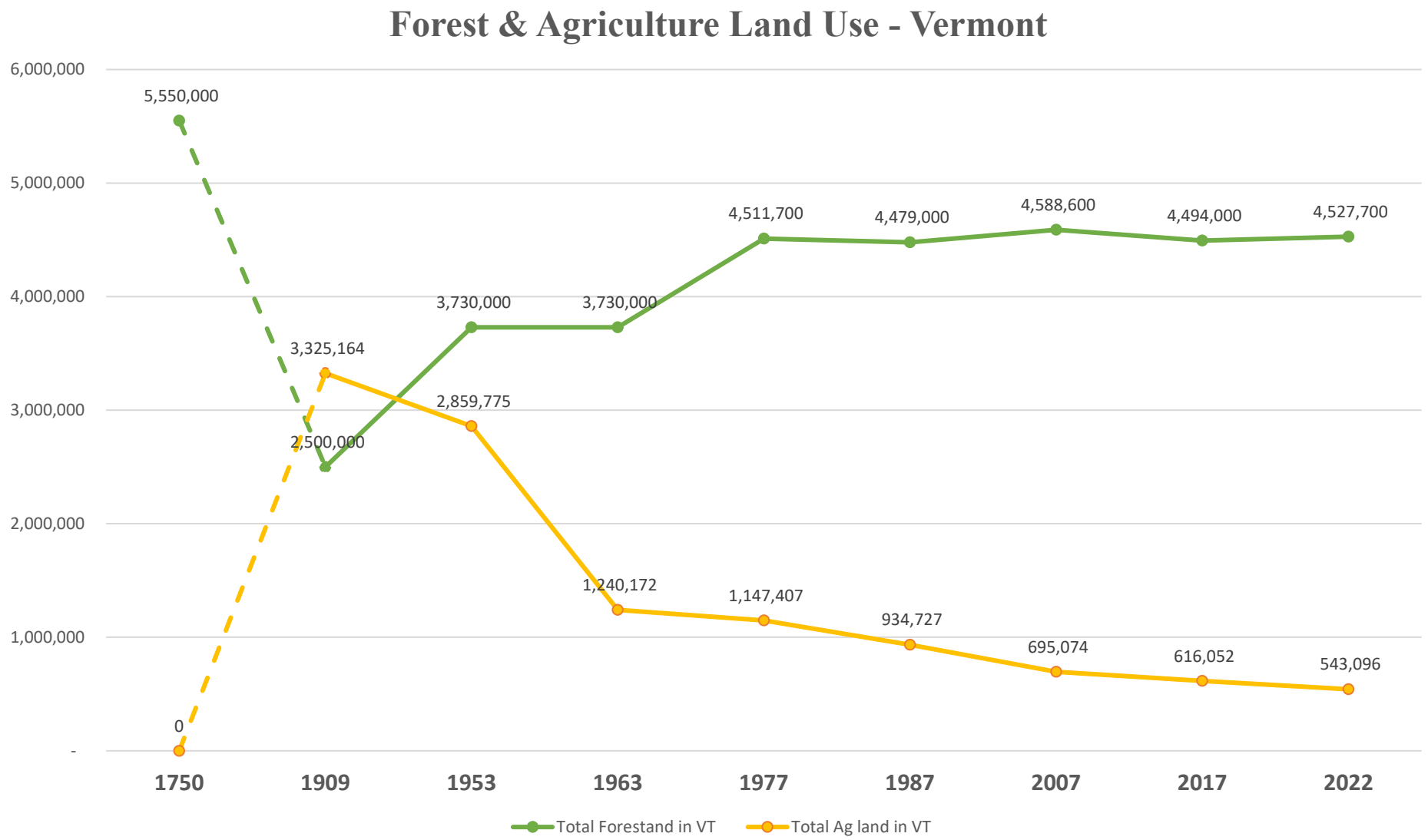
Ag Land Management:

For the first time in the modern census, farms in Vermont manage more forest than agricultural land.



Source: https://www.nass.usda.gov/Publications/AgCensus/2022/Full_Report/Volume_1,_Chapter_1_State_Level/Vermont/

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS



From: USDA NASS Ag Census; USDA Forest Service

VERMONT
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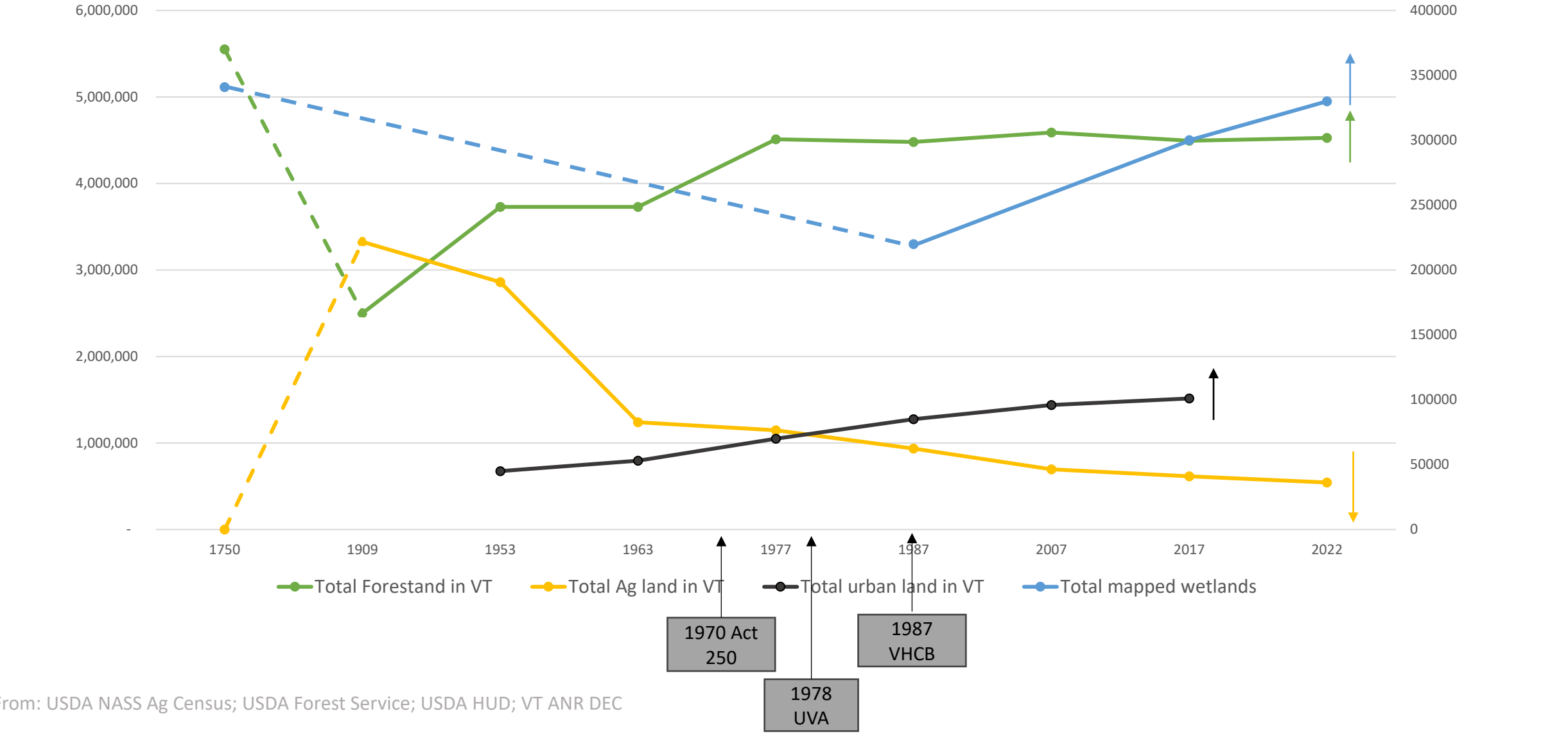
Vermont Land Use Change Over Time

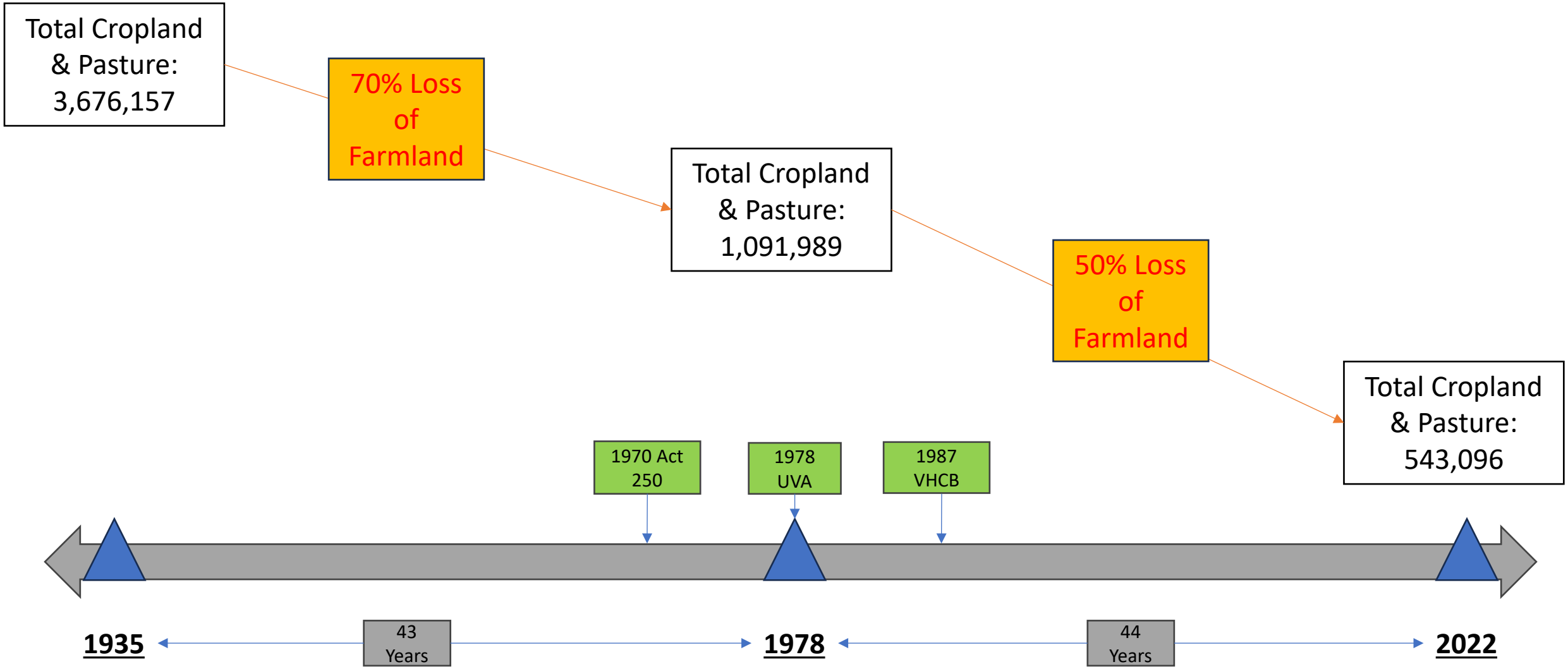


From: USDA NASS Ag Census; USDA Forest Service; USDA HUD; VT ANR DEC

Vermont Conversations on Protecting Farmland:
1968 - 2023

Vermont Ag Land Use Over Time

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS

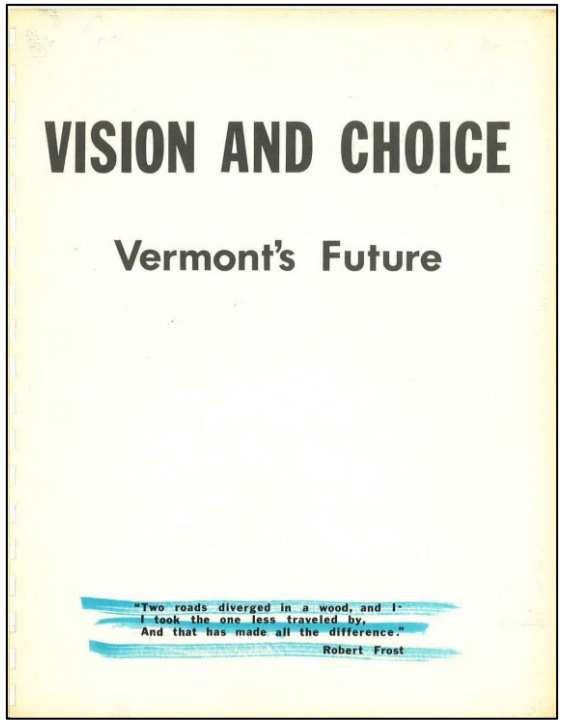


Data source: https://tax.vermont.gov/sites/tax/files/documents/RP-1295-2024.pdf
Data source: https://outside.vermont.gov/agency/ACCD/ACCD_Web_Docs/CD/CPR/Resources-and-Rules/DHCD-Planning-VisionChoice-FutureStateFramework-1968.pdf

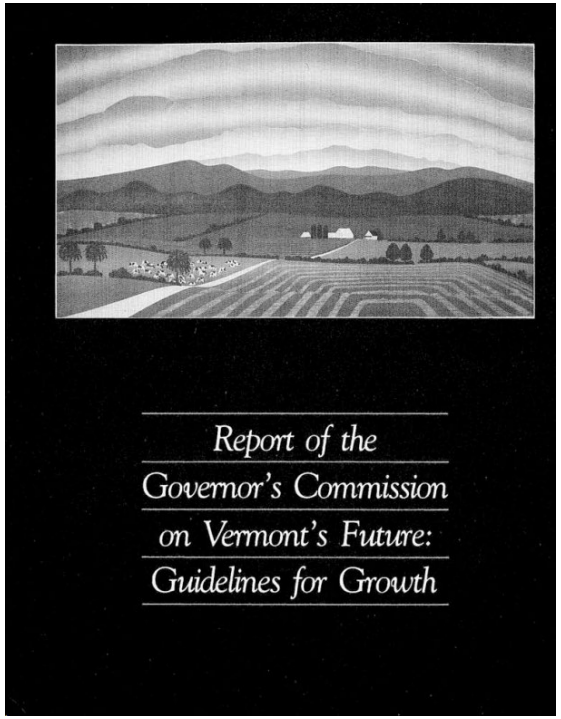
Act 250 reports through the years

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS

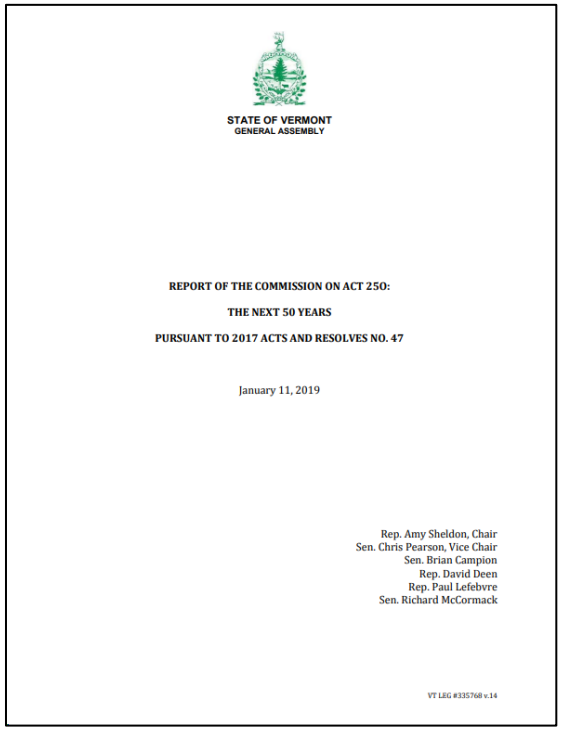
1968



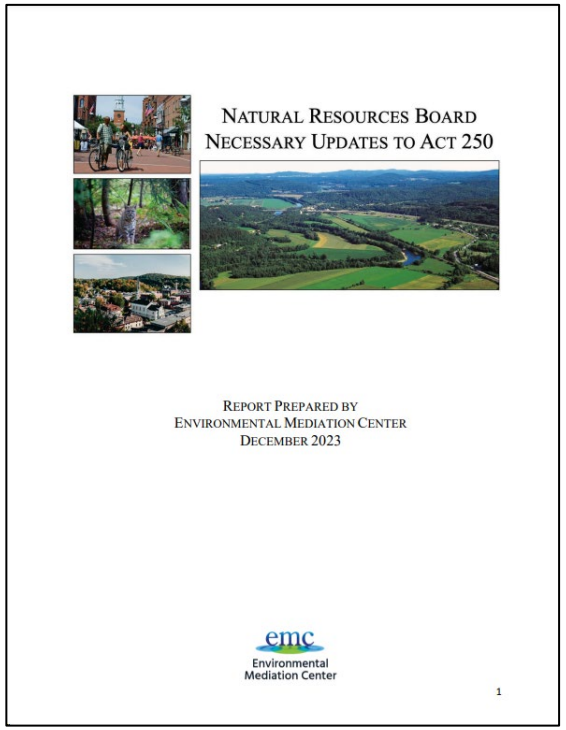
1988



2019



2023

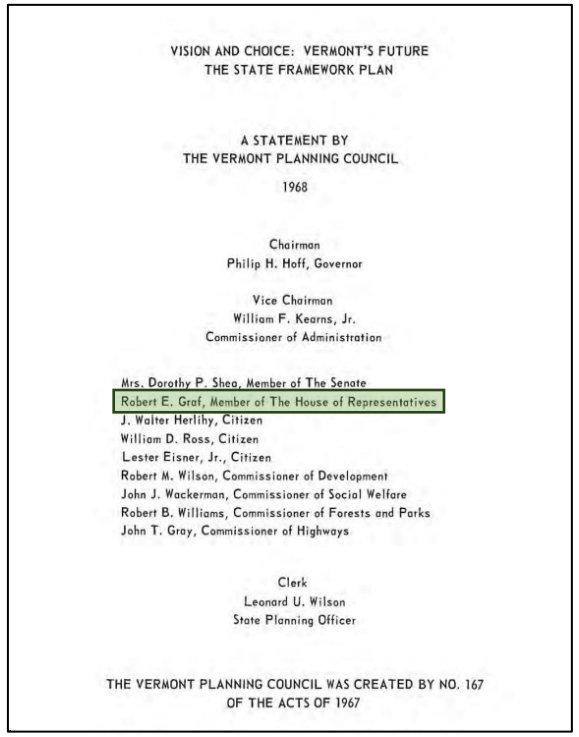


Source: https://outside.vermont.gov/agency/ACCD/ACCD_Web_Docs/CD/CPR/Resources-and-Rules/DHCD-Planning-GovCommission-FutureGuidelines-Growth.pdf
Source: https://outside.vermont.gov/agency/ACCD/ACCD_Web_Docs/CD/CPR/Resources-and-Rules/DHCD-Planning-VisionChoice-FutureStateFramework-1968.pdf
Source: https://legislature.vermont.gov/Documents/2018/WorkGroups/Act250/Final%20Report/W~Ellen%20Czajkowski~Commission%20on%20Act%20250%20Final%20Report~1-11-2019.pdf
Source: https://nrb.vermont.gov/sites/nrb/files/documents/NRB_Necessary_Updates_to_Act_250_Study_Report_FINAL.pdf

Act 250 reports through the years

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS

1968



VISION AND CHOICE: VERMONT'S FUTURE
THE STATE FRAMEWORK PLAN

A STATEMENT BY
THE VERMONT PLANNING COUNCIL
1968

Chairman
Philip H. Hoff, Governor

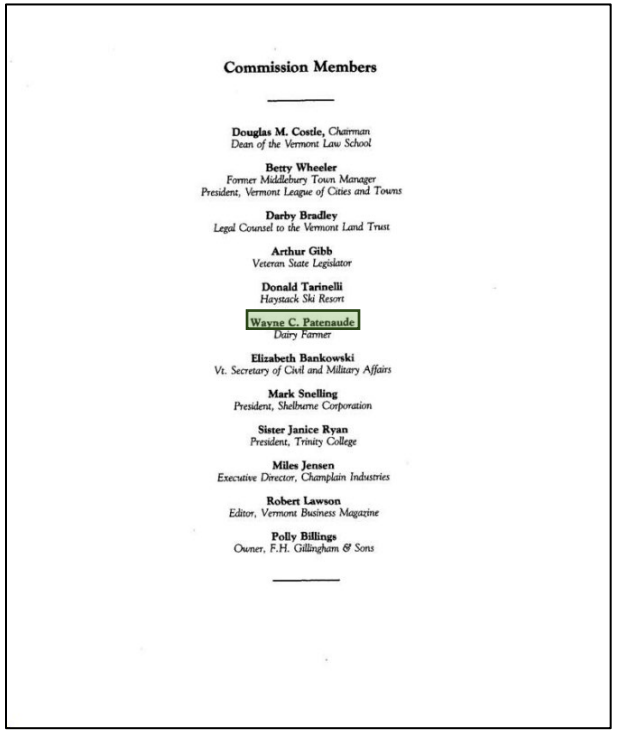
Vice Chairman
William F. Kearns, Jr.
Commissioner of Administration

Mrs. Dorothy P. Shea, Member of The Senate
Robert E. Graf, Member of The House of Representatives
J. Walter Herlihy, Citizen
William D. Ross, Citizen
Lester Eisner, Jr., Citizen
Robert M. Wilson, Commissioner of Development
John J. Wackerman, Commissioner of Social Welfare
Robert B. Williams, Commissioner of Forests and Parks
John T. Gray, Commissioner of Highways

Clerk
Leonard U. Wilson
State Planning Officer

THE VERMONT PLANNING COUNCIL WAS CREATED BY NO. 167
OF THE ACTS OF 1967

1988



Commission Members

Douglas M. Costle, *Chairman*
Dean of the Vermont Law School

Betty Wheeler
Former Middlebury Town Manager
President, Vermont League of Cities and Towns

Darby Bradley
Legal Counsel to the Vermont Land Trust

Arthur Gibb
Veteran State Legislator

Donald Tarinelli
Haystack Ski Resort

Wayne C. Patenaude
Dairy Farmer

Elizabeth Bankowski
Vt. Secretary of Civil and Military Affairs

Mark Snelling
President, Shelburne Corporation

Sister Janice Ryan
President, Trinity College

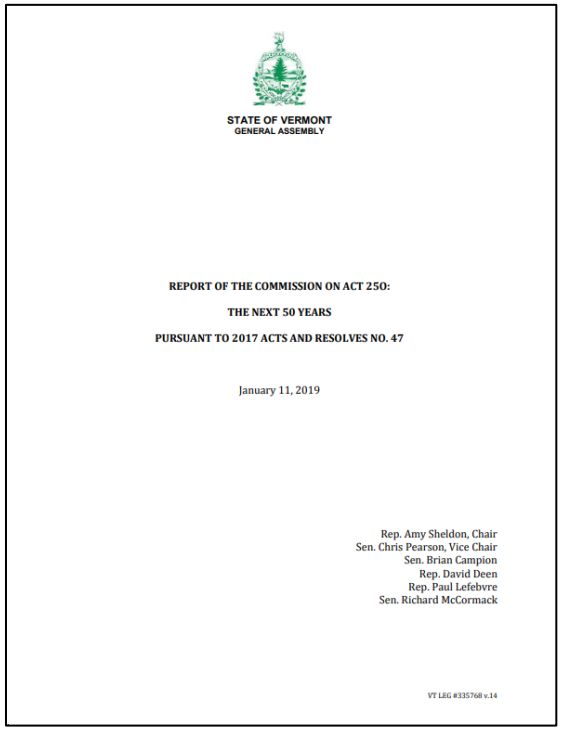
Miles Jensen
Executive Director, Champlain Industries

Robert Lawson
Editor, Vermont Business Magazine

Polly Billings
Owner, F.H. Gillingham & Sons

Elizabeth Bankowski, VT Secretary of Civil and Military Affairs and Chief of Staff to Governor Kunin; Polly Billings, owner of F.H. Gillingham & Sons, a general store; Darby Bradley, Legal Counsel to the Vermont Land Trust and former Chair, Vermont Environmental Board; Arthur Gibb, a banking and investment counsel who served in the VT General Assembly for 24 years and was instrumental in the creation of Act 250; Miles Jensen, Executive Director of Champlain Industries; Robert Lawson, Editor of Vermont Business Magazine; Wayne C. Patenaude, a St. Johnsbury dairy farmer; Sister Janice Ryan, President of Trinity College; Mark Snelling, President of Shelburne Corporation, a manufacturer of ski accessories; Donald Tarinelli, principal owner of Haystack Ski Resort; Betty Wheeler, Middlebury Town Manager and President, Vermont League of Cities and Towns.

2019



STATE OF VERMONT
GENERAL ASSEMBLY

REPORT OF THE COMMISSION ON ACT 250:

THE NEXT 50 YEARS

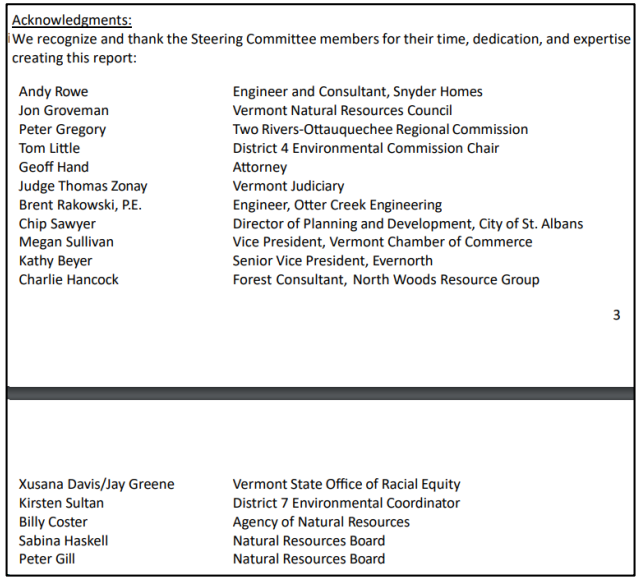
PURSUANT TO 2017 ACTS AND RESOLVES NO. 47

January 11, 2019

Rep. Amy Sheldon, Chair
Sen. Chris Pearson, Vice Chair
Sen. Brian Campion
Rep. David Deen
Rep. Paul Lefebvre
Sen. Richard McCormack

VT LEG #335768 v.14

2023



Acknowledgments:
We recognize and thank the Steering Committee members for their time, dedication, and expertise creating this report:

Andy Rowe	Engineer and Consultant, Snyder Homes
Jon Groveman	Vermont Natural Resources Council
Peter Gregory	Two Rivers-Ottauquechee Regional Commission
Tom Little	District 4 Environmental Commission Chair
Geoff Hand	Attorney
Judge Thomas Zonay	Vermont Judiciary
Brent Rakowski, P.E.	Engineer, Otter Creek Engineering
Chip Sawyer	Director of Planning and Development, City of St. Albans
Megan Sullivan	Vice President, Vermont Chamber of Commerce
Kathy Beyer	Senior Vice President, Evernorth
Charlie Hancock	Forest Consultant, North Woods Resource Group

3

Xusana Davis/Jay Greene	Vermont State Office of Racial Equity
Kirsten Sultan	District 7 Environmental Coordinator
Billy Coster	Agency of Natural Resources
Sabina Haskell	Natural Resources Board
Peter Gill	Natural Resources Board

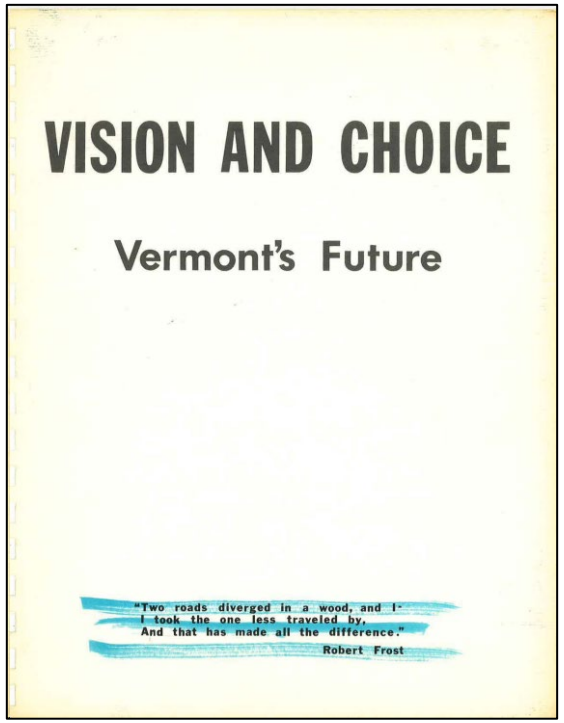
Farmer Member

Source: https://outside.vermont.gov/agency/ACCD/ACCD_Web_Docs/CD/CPR/Resources-and-Rules/DHCD-Planning-GovCommission-FutureGuidelines-Growth.pdf
Source: https://outside.vermont.gov/agency/ACCD/ACCD_Web_Docs/CD/CPR/Resources-and-Rules/DHCD-Planning-VisionChoice-FutureStateFramework-1968.pdf
Source: https://legislature.vermont.gov/Documents/2018/WorkGroups/Act250/Final%20Report/W~Ellen%20Czajkowski~Commission%20on%20Act%20250%20Final%20Report~1-11-2019.pdf
Source: https://nrb.vermont.gov/sites/nrb/files/documents/NRB_Necessary_Updates_to_Act_250_Study_Report_FINAL.pdf

Act 250 reports through the years

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS

1968



Ag mentions / word:
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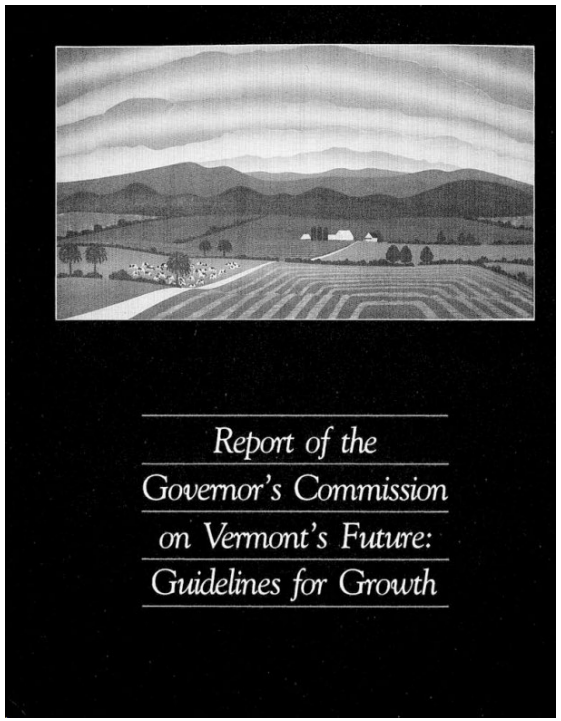
1988



Ag mentions / word:
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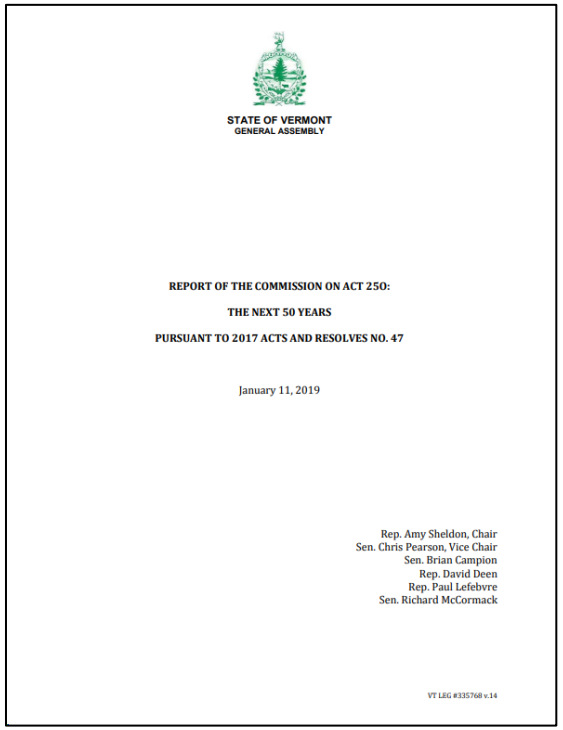
-14.3%

2019



Ag mentions / word:
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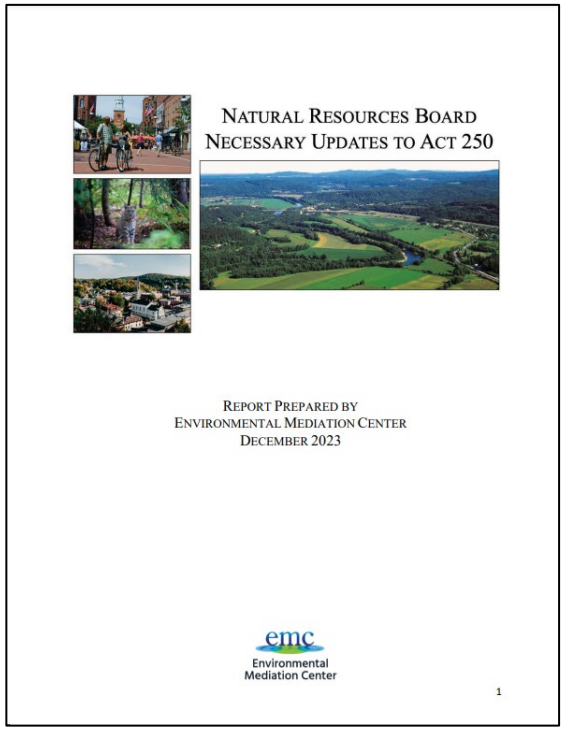
-42.9%

2023



Ag mentions / word:
0.10%
-76.2%

	1968	1988	2019	2023
agriculture*	17	34	32	6
farm*	34	22	36	5
dairy*	3	21	0	0
food*	0	6	1	0
word count	12,805	21,620	28,256	11,471
ag related words	54	77	68	11
word count	12,805	21,620	28,256	11,471
ag / word	0.42%	0.36%	0.24%	0.10%

Source: https://outside.vermont.gov/agency/ACCD/ACCD_Web_Docs/CD/CPR/Resources-and-Rules/DHCD-Planning-GovCommission-FutureGuidelines-Growth.pdf
Source: https://outside.vermont.gov/agency/ACCD/ACCD_Web_Docs/CD/CPR/Resources-and-Rules/DHCD-Planning-VisionChoice-FutureStateFramework-1968.pdf
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Source: https://nrb.vermont.gov/sites/nrb/files/documents/NRB_Necessary_Updates_to_Act_250_Study_Report_FINAL.pdf

Examples of the perspective on agriculture from each report

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS

With Farmers On The Committee

1968

The commitment to a framework for organizing the expanding population and resources of the State could accomplish many specific objectives. It would:

- attract outside industrial and recreational investment
- reassure present investors and semi-residents of protection
- preserve the State's agricultural and forest base
- provide choice of urban, suburban and rural living throughout Vermont
- Preserve essential community life in the State
- foster rural area development on the concentration and space preservation concept that is classic to Vermont
- balance political concerns and mitigate against urban-suburban rural polarization
- Provide the setting for establishment of new towns and planned expansion of satellite villages
- promote local control and initiative within guidelines of a State consensus built on a balance of benefits from State incentives and investments.

1988

All of the recommendations were based on four broad goals that spring from Vermont values:

1. To maintain a sense of community.
2. To support our agricultural heritage — the working landscape.
3. To protect environmental quality.
4. To provide opportunity for all Vermonters to obtain a quality job, a good education and decent, affordable housing.

Future policies and planning at the local, regional and state levels must be guided by these goals.

Vs.

Without Farmers On The Committee

2019

1. Charge

Act 47, Sec. 2 (e)(2)(C)(ii) – "Whether the criteria support development in areas designated under 24 V.S.A. chapter 76A, and preserve rural areas, farms, and forests outside those areas."

Vs.

- The repeal of the exemption for farming, logging, and forestry below 2,500 feet when these occur in areas that have been designated as critical resource areas.

2023

The Steering Committee recognizes that Vermont is facing a housing crisis in addition to the global climate crisis. The Steering Committee believes that facilitating the development of new housing while ensuring that we are maintaining our rural working lands and ecologically important natural resources are not mutually exclusive goals. In fact, exempting designated areas from Act 250 jurisdiction to increase the state's housing stock, advance equity and diversity through affordable and workforce housing, and thus expand economic development opportunities while protecting rural lands and natural resources are the basis for these recommendations.

wildlife, and agricultural soils and local government capacity to service new development. The longstanding vision of Act 250 has been to support compact development surrounded by forests and open lands, including farms and forestry operations.

Vs.

Recommendation: Enact the provisions in H.128 reducing the agricultural soils mitigation ratio for forest processing enterprises to 1:1, which is the same ratio that industrial parks need to provide.

Review of the Economic Output of Vermont's Private Industry

2020 - 2024

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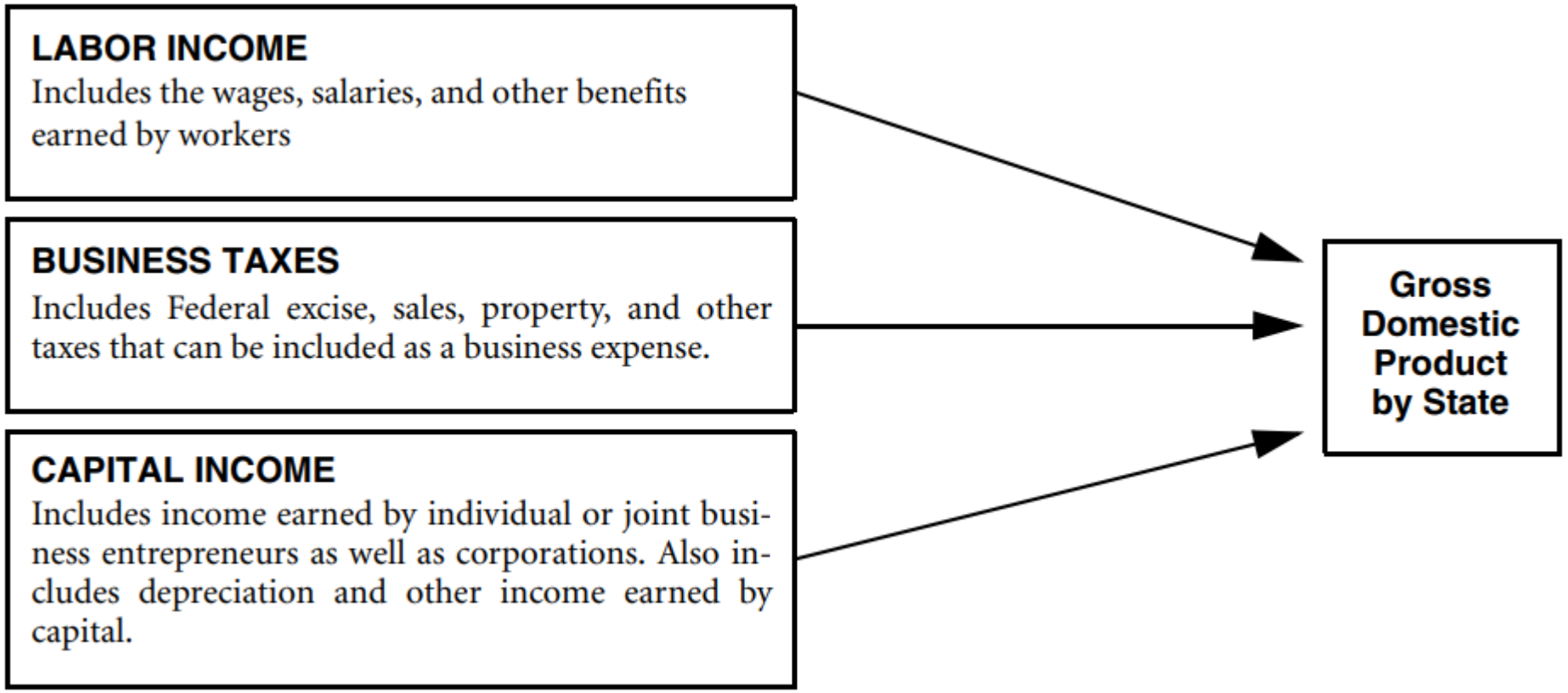
Gross Domestic Product: is the total **market value** of all **final goods** and services produced in an economy in a one-year period.

Real Gross Domestic Product: is the total amount of goods and services produced, adjusted for price-level changes (inflation)

What BEA Uses to Calculate State GDP



***GDP Does Not:**

- Reflect the distribution of income in the State
- Count the production of goods or services in the domicile [e.g. child care, cooking meals, driving to work]
- Count informal or unpaid labor

Source: U.S. Bureau of Economic Analysis, "SAGDP9 Real GDP by state 1" (accessed Wednesday, January 14, 2026)
Source: https://www.bea.gov/sites/default/files/methodologies/0417_GDP_by_State_Methodology.pdf
Source: Colander, D. "Macroeconomics 9e." McGraw-Hill/Irwin (2013)
Source: Reuss, A. "Real World Macro 41e." Economic Affairs Bureau (2024)

Vermont's Private Industry Economy: 2000 - 2024

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SAGDP9 Real GDP by state 1

(millions of chained 2017 dollars)

Bureau of Economic Analysis

Rank	Description	2024	% of rGDP 2024
1	Finance, insurance, real estate, rental, and leasing	6660.2	21%
2	Professional and business services	5121.9	16%
3	Educational services, health care, and social assistance	4971.8	16%
4	Retail trade	3125.2	10%
5	Manufacturing	2638	8%
6	Arts, entertainment, recreation, accommodation, and food services	2537.9	8%
7	Wholesale trade	1465.4	5%
8	Information	1389.9	4%
9	Construction	1161	4%
10	Utilities	857	3%
11	Other services (except government and government enterprises)	723.5	2%
12	Transportation and warehousing	560.2	2%
13	Agriculture, forestry, fishing and hunting	422.7	1%
14	Mining, quarrying, and oil and gas extraction	186.9	1%

VT Agriculture = #13 of 14

Source: U.S. Bureau of Economic Analysis, "SAGDP9 Real GDP by state 1" (accessed Wednesday, January 14, 2026).
Source: Colander, D. "Macroeconomics 9e" McGraw-Hill/Irwin (2013)

Vermont's Private Industry Economy: 2000 - 2024

VERMONT
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SAGDP9 Real GDP by state 1

(millions of chained 2017 dollars)

Bureau of Economic Analysis

Rank	Description	2024	% Growth since 2000
1	**Finance, insurance, real estate, rental, and leasing**	**6660.2**	**48%**
1a	*Finance and Insurance*	*1753.7*	*34%*
1b	*Real estate and rental and leasing*	*4908.4*	*53%*
2	**Professional and business services**	**5121.9**	**169%**
2a	*Professional scientific & technical services*	*3466.1*	162%
2b	*Management of companies and enterprises*	*376.9*	-16%
2c	*Administrative and support and waste management and remediation services*	*1283.1*	694%
3	**Educational services, health care, and social assistance**	**4971.8**	**77%**
3a	*Educational Services*	*825*	8%
3b	*Health care and social assistance*	*4150.2*	101%
13	**Agriculture, forestry, fishing and hunting**	**422.7**	**10%**
13a	*Farms*	*331.9*	8%
13b	*Forestry, fishing, and related activities*	*93.6*	14%

Source: U.S. Bureau of Economic Analysis, "SAGDP9 Real GDP by state 1" (accessed Wednesday, January 14, 2026).

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Goods = physical goods (e.g. food or timber)
Services = activities done for others (e.g. lawyers / consultants)

SAGDP9 Real GDP by state 1
(millions of chained 2017 dollars)
Bureau of Economic Analysis

Description	2000	2024	% Increase in Output
Private goods-producing industries (a)	4303	4439.2	3%
Private services-providing industries (b)	16506.3	27184.2	65%

(a) The private goods-producing industries consist of: agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; construction; and manufacturing.

(b) The private services-producing industries consist of: utilities; wholesale trade; retail trade; transportation and warehousing, excluding Postal Service; information; finance and insurance; real estate, rental, and leasing; professional, scientific, and technical services; management of companies; administrative and support and waste management and remediation services; educational services; health care and social assistance; arts, entertainment, and recreation; accommodation and food services; and other services (except government and government enterprises).

Source: U.S. Bureau of Economic Analysis, "SAGDP9 Real GDP by state 1" (accessed Wednesday, January 14, 2026).
Source: Colander, D. "Macroeconomics 9e" McGraw-Hill/Irwin (2013)

Climate Change and Vermont Agricultural Land Use

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Vermont is Getting Warmer and Wetter: Climate Change Study

The Green Mountain State has warmed nearly 2°F, with a 21% jump in precipitation

Key findings

Climate change is here – and impacting communities across Vermont.

Vermont is getting warmer. Winters are warming more quickly. Snow season is getting shorter.

Vermont is getting wett Heavy rain events happe more often, contributing more flooding and wate quality problems.

Multiple, complex impacts could lead to surprises.

Climate impacts and risks will increase without action.

Dig in to learn more...

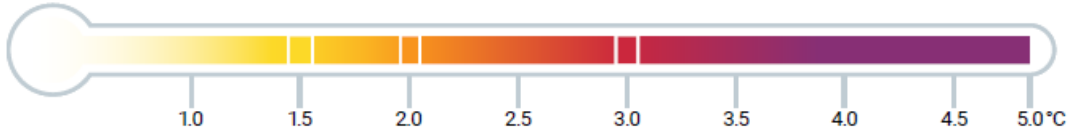
Source: The Vermont Climate Assessment 2021. Burlington, Vermont: Gund Institute for Environment at the University of Vermont. On the web: https://vtclimate.org

UNEP Emissions Gap Report (2024)

Emissions Gap Report 2024: No more hot air ... please!

Figure ES.4 Projections of global warming under the pledge-based scenarios assessed

Peak warming over the twenty-first century (°C) relative to pre-industrial levels



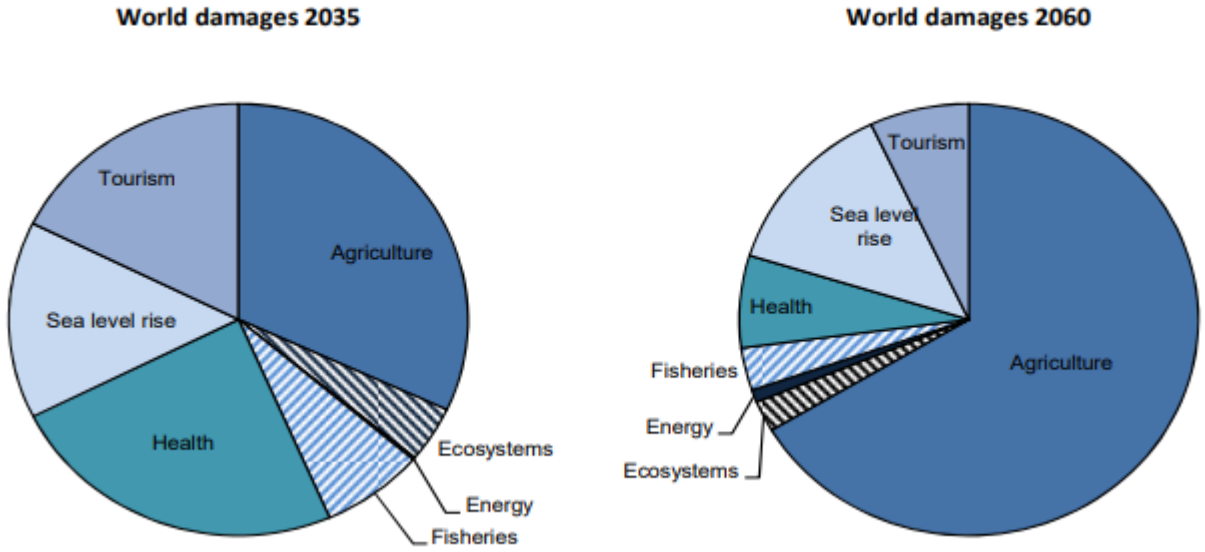
Likelihood of warming exceeding a specific temperature limit (%)

Scenarios	1.5°C	2°C	3°C
Current policies continuing	100% (85–100%)	97% (28–100%)	37% (1–80%)
Unconditional NDCs continuing	100% (86–100%)	94% (28–100%)	22% (1–75%)
Conditional NDCs continuing	100% (77–100%)	79% (19–100%)	10% (0–69%)
Conditional NDCs + all net-zero pledges	77% (64–97%)	20% (64–97%)	0% (0–6%)

Source: https://www.unep.org/resources/emissions-gap-report-2024

An OECD study reports: Global agriculture projected to absorb 2/3 of all climate change costs by 2060.

B. **Shares of global economic (GDP) impact of climate change (central projection)**



Source: Braconier, H., G. Nicoletti and B. Westmore (2014), "Policy Challenges for the Next 50 Years", Organization for Economic Cooperation and Development (OECD) Economic Policy Papers, No. 9, OECD Publishing, Paris, https://doi.org/10.1787/5jz18gs5fckf-en.

“Vermont in top 10 states with most federal disaster declarations, new study says”[1]

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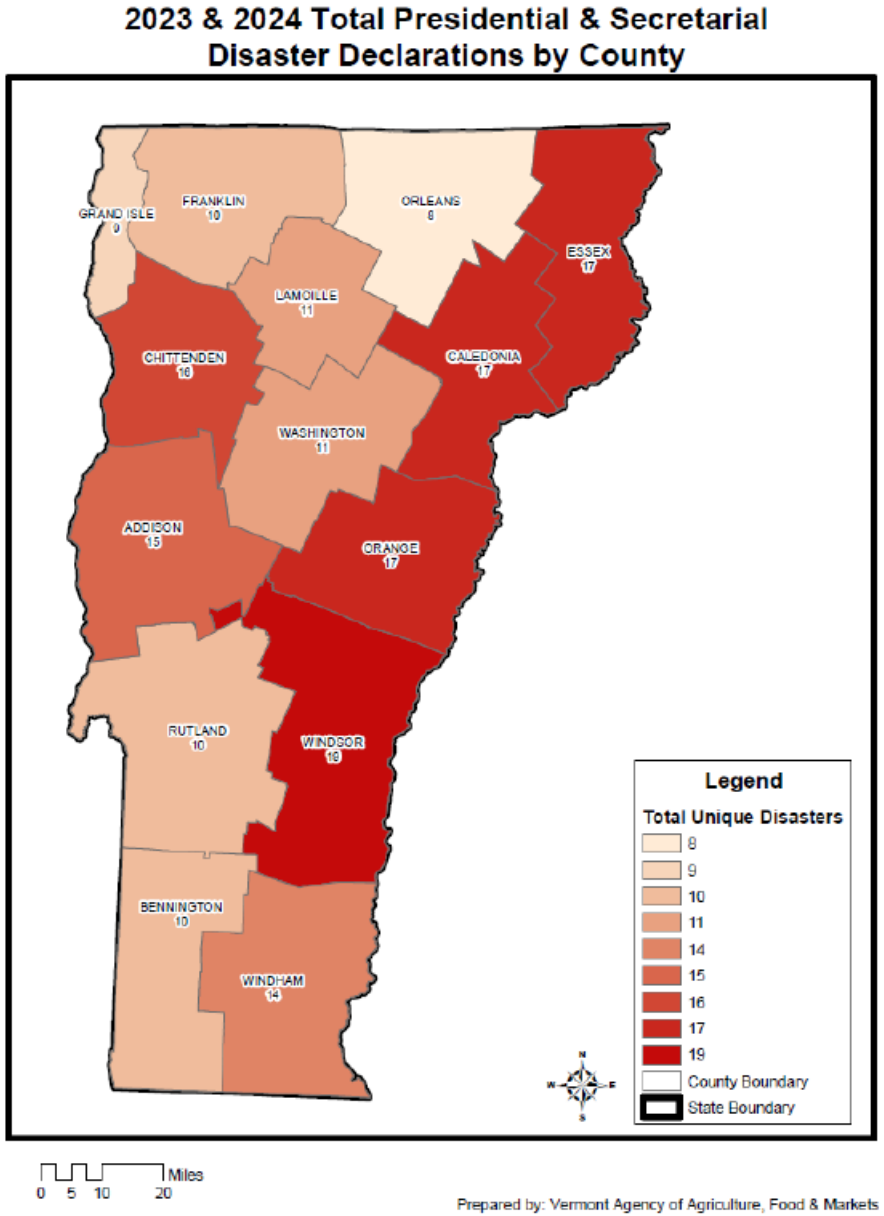
VT 2023 & 2024: 28 unique USDA disaster declarations

Types of Disasters Declared:

1. Severe Storm, Tornadoes, and Flooding;
2. Remnants of Tropical Storm Debby,
3. Severe Storm, Flooding, and Mudslides
4. Severe Winter Storms;
5. Severe Storms and Flooding;
6. Flash Flooding;
7. Hail and High Winds from Severe Storms;
8. Freeze and Frost;
9. Freeze;
10. Flooding and Excessive Rain;
11. Excessive Rain and Flash Flooding;
12. Excessive Rain;
13. Extreme Freeze;
14. Tornado and Excessive Rain;
15. Flooding and Excessive Moisture



Source: VAAFM & USDA

1. https://vtdigger.org/2024/07/29/vermont-in-top-10-states-with-most-federal-disaster-declarations-new-study-says/

Projected Vermont Climate Risks

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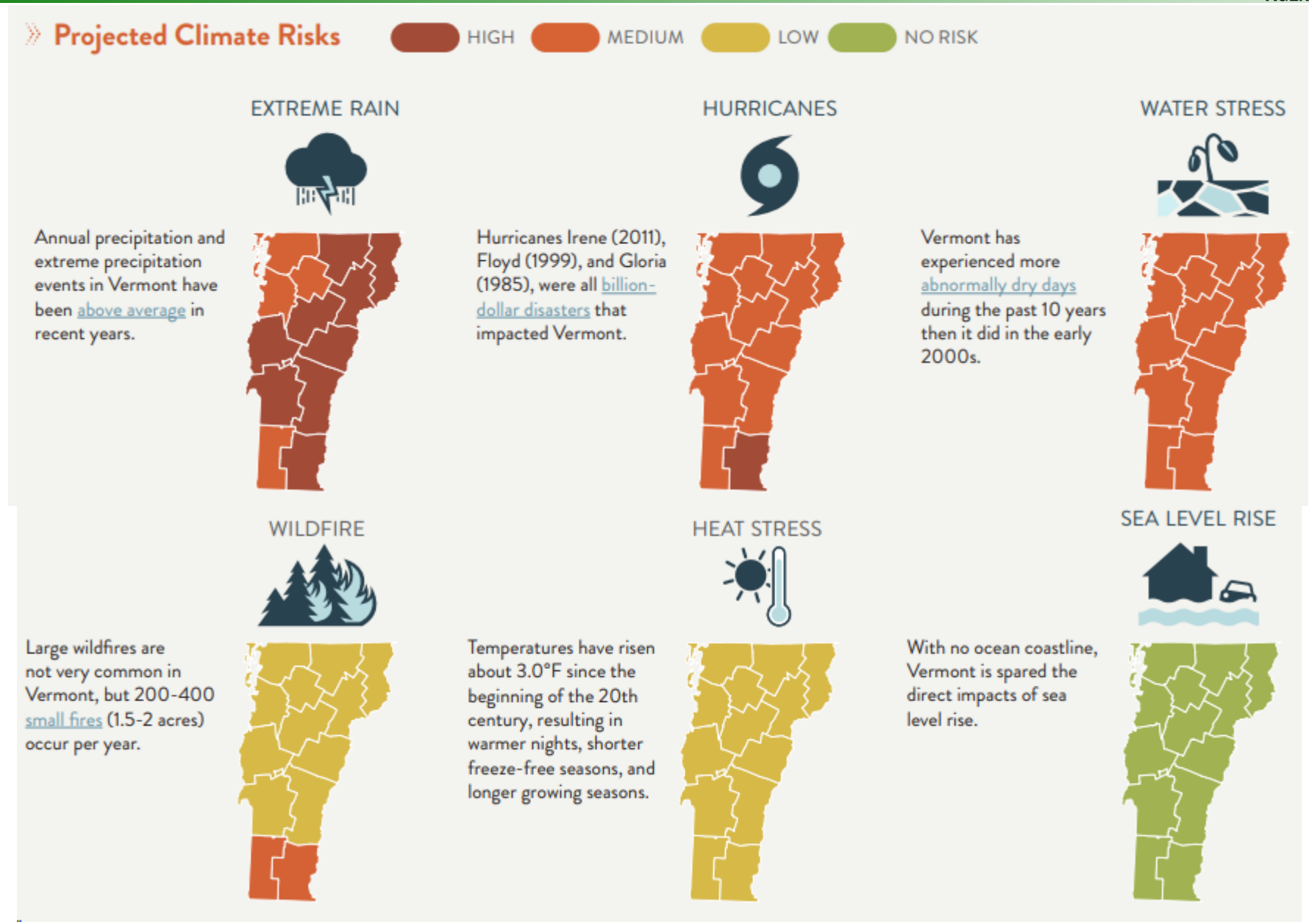

Source: https://nefoodsystemplanners.org/wp-content/uploads/NEFNE-VERMONT-State-Brief.pdf

National and Vermont Climate Impacts

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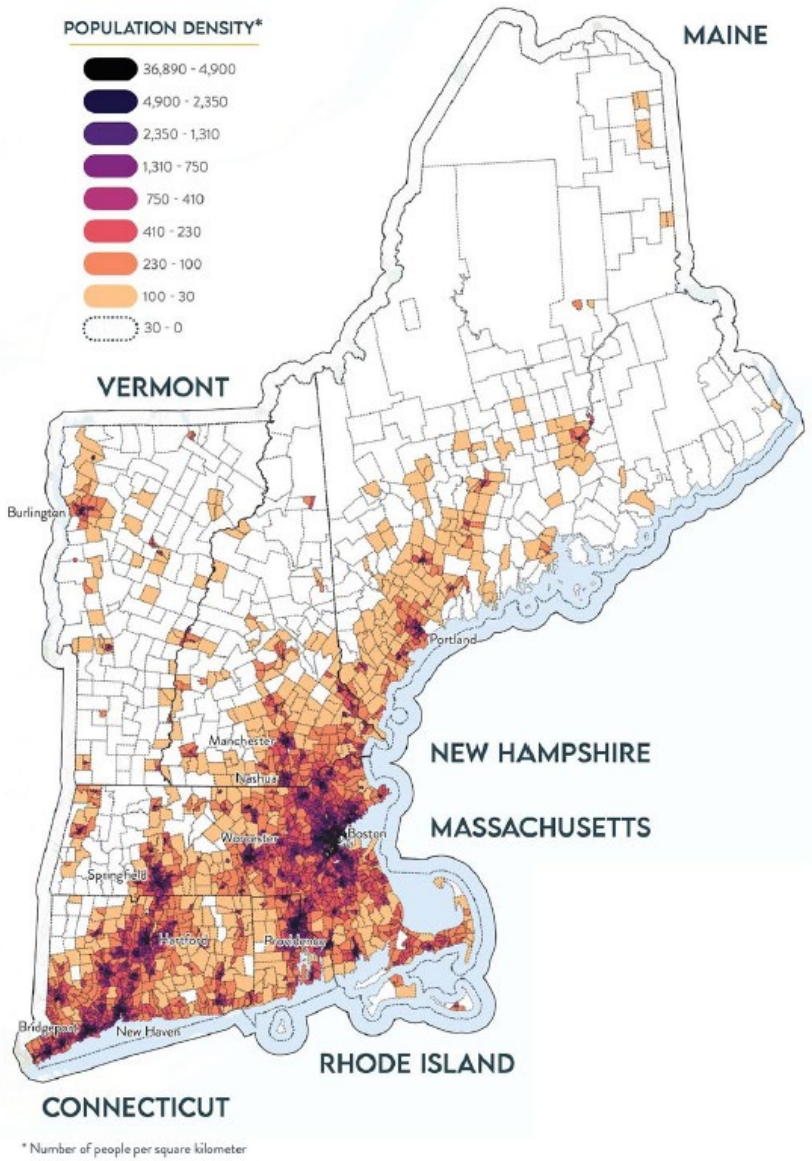
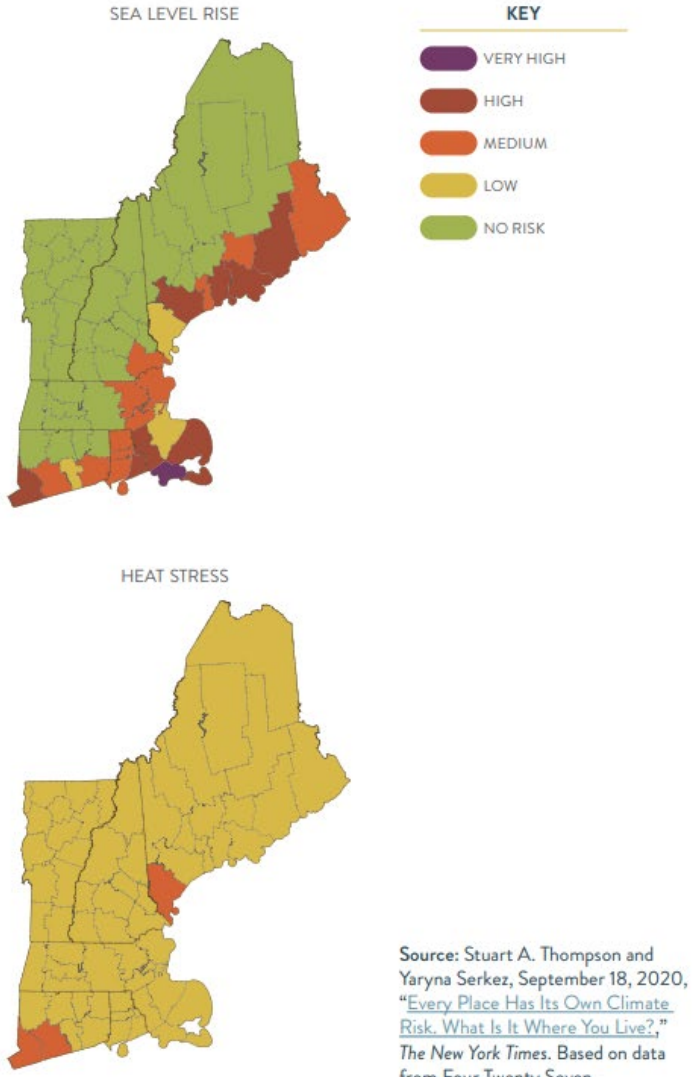
FIGURE 3: New England Population Density by Town/City

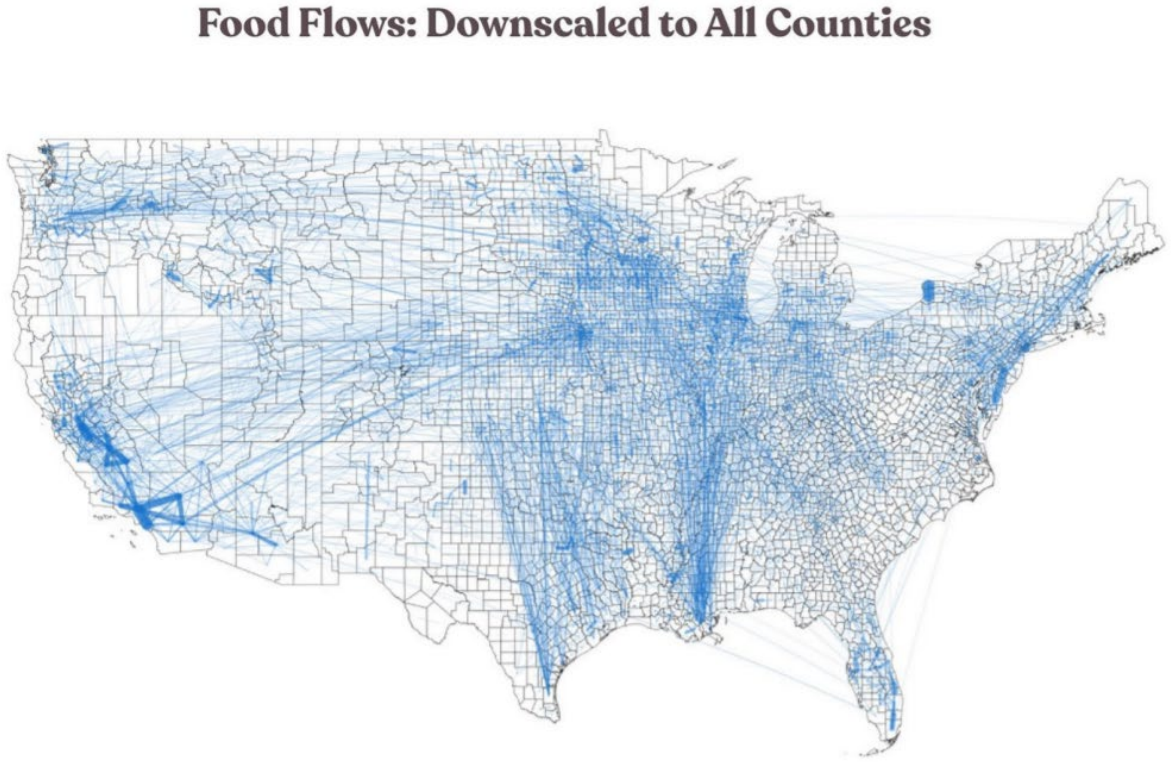




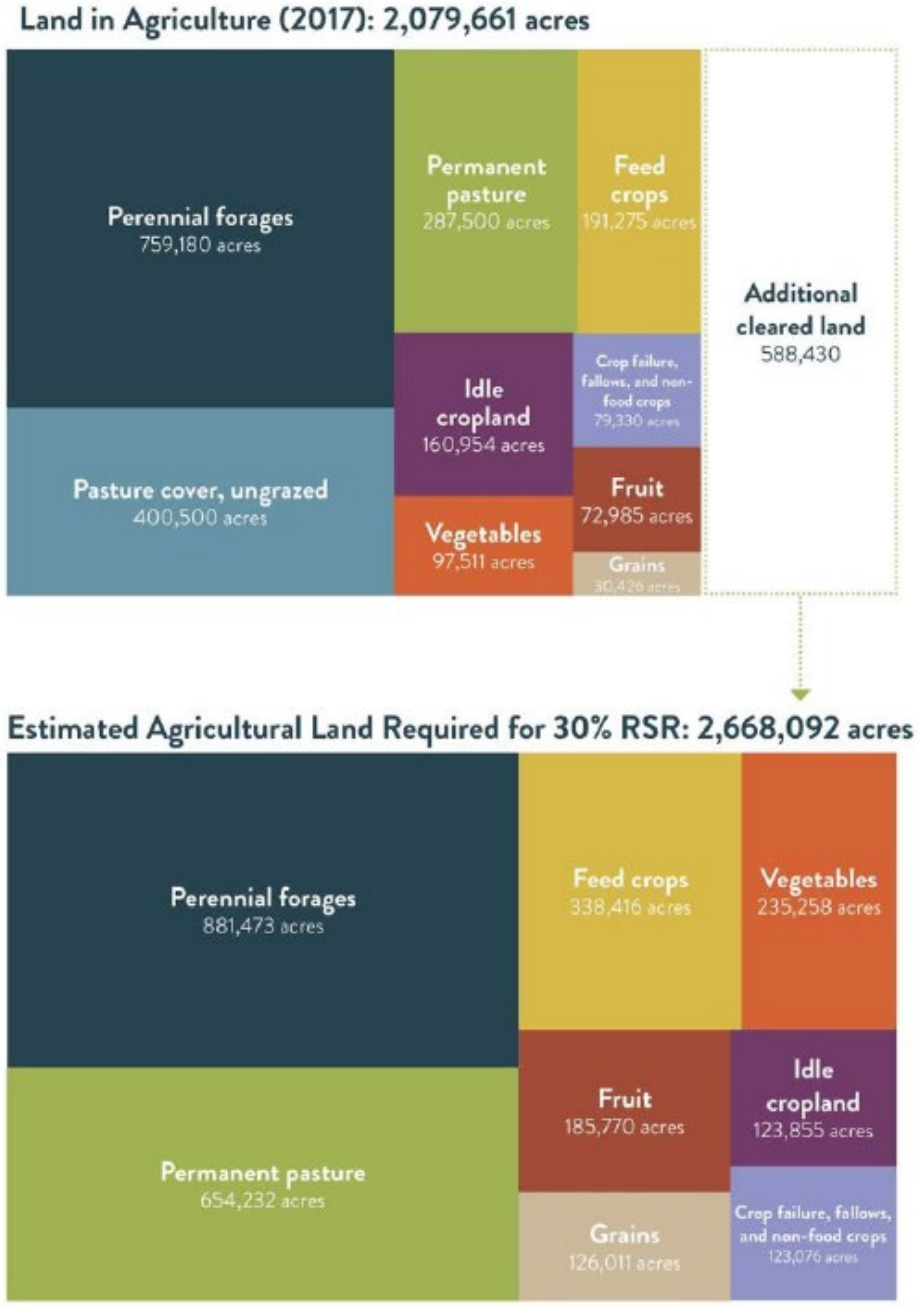
Source: Stuart A. Thompson and Yaryna Serkez, September 18, 2020, "Every Place Has Its Own Climate Risk. What Is It Where You Live?," *The New York Times*. Based on data from Four Twenty Seven.

Source: https://nefoodsystemplanners.org/wp-content/uploads/NEFNE_Common-Food-System-Challenges.pdf

National and Vermont Climate Impacts



Source: Ellen Kahler, VSJF Presentation to House Agriculture: https://legislature.vermont.gov/Documents/2022/WorkGroups/House%20Agriculture/Food%20Security/W~Ellen%20Kahler~New%20England%20Feeding%20New%20England-%20Cultivating%20a%20Reliable%20Food%20Supply~1-26-2021.pdf



NEW ENGLAND FEEDING NEW ENGLAND

To achieve 30% regional production available for consumption (in servings), **400,000** in existing underutilized cropland and **590,000** in new cropland would need to be brought into production.

2022 USDA Ag Census Vermont:
543,096 acres of land used for farming

Source: https://nefoodsystemplanners.org/wp-content/uploads/NEFNE_Executive-Summary.pdf
Source: https://nefoodsystemplanners.org/wp-content/uploads/NEFNE-VERMONT-State-Brief.pdf

Farmland Lost to Development

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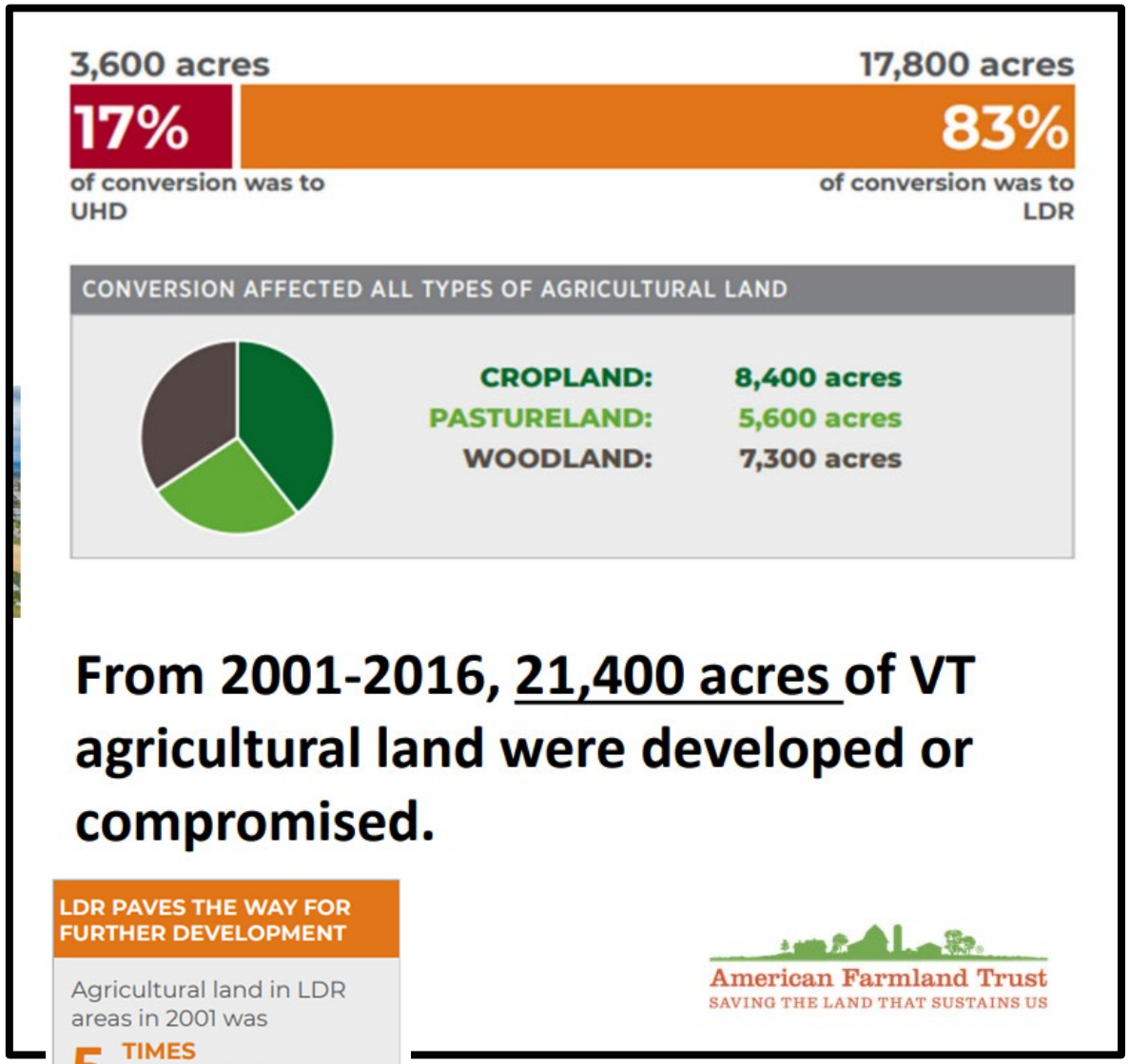
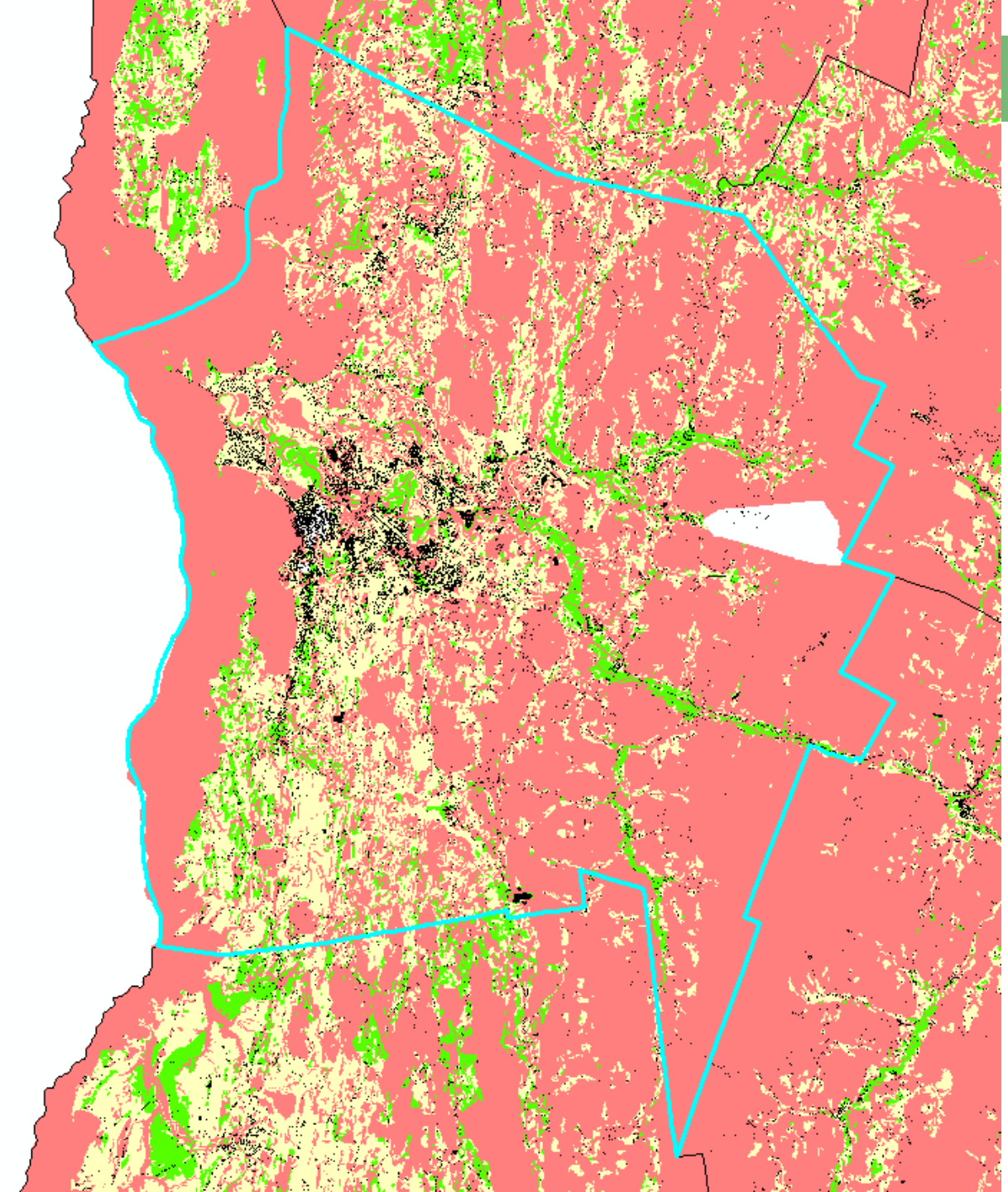


2002 – 2017 USDA NASS Ag Census - Vermont

2002 Total Cropland & Pasture : 710,853 acres
2017 Total Cropland & Pasture : 616,052 acres
Total Cropland & Pasture Lost: **94,801 acres**

21,400 acres is 22.5% of 94,801 acres

Source: https://www.vtfarmtoplate.com/sites/default/files/2025-12/Farmland%20Conversion%20Slides.pdf
Source: Data source: 2002 - 2017 USDA NASS Ag Census, Vermont



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69% of all roads, infrastructure, and housing in Chittenden County, Vermont have been constructed on Prime and Statewide soils of agricultural importance.

Legend

- Prime
- Statewide & Local
- Not Prime, Statewide, or Local (NPSL)
- Buildings, Roads, Railroads, Impervious

Source: Spatial analysis performed by VAAFM using VCGI Data Layers; Base Land Cover, Impervious Surfaces, Agriculturally Important Soil Units, County Boundaries

Agricultural Ecological Services

2016 - 2024

UVM estimates of soil carbon sequestration potential in Vermont farm fields

Estimate of realistic potential for soil carbon sequestration in top 1 foot of agricultural soils in Vermont:

Sequestration of 937,494 MT of CO_2-e, annually

The same as removing 200,000 cars from the road

https://uvmd10.drup2.uvm.edu/d10-files/documents/2024-06/Soil_carbon_and_sequestration_2022_Research_brief.pdf

PES in Vermont: Local outcomes

Field Practices

493,160 Acres of Conservation Practices Implemented

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WATER QUALITY DIVISION

Source: https://app.powerbigov.us/view?r=eyJrIjoiNzkyNWFhNTMtNTAyNy00M2IyLWE5NzMtMzVmZGZmZGM4OWMwIiwidCI6IjIwYjQ5MzNiLWJhYWQtNDMzYy05YzAyLTcwZWRjYzc1NTljNiJ9

Methods for Growing Crops have different environmental outcomes

Management:

Full width tillage
No Nutrient Management
No Field specific conservation practices

Avg. P reduction	USDA COMET ERCs:
0.42 kg/ac/yr	0.15 tons CO_2e/ac/yr
0.51 kg/ac/yr	0.19 tons CO_2e/ac/yr
0.06 kg/ac/yr	0.37 tons CO_2e/ac/yr
0.47 kg/ac/yr	0.74 tons CO_2e/ac/yr
0.33 kg/ac/yr	0.22 tons CO_2e/ac/yr

Source: https://comet-planner.com

PES in Vermont: Local outcomes

Emissions Reductions

Net emissions (balance of emissions released & removed from atmosphere) based on acres of practices implemented by VAAFM funding programs. Estimated using USDA COMET-Planner model. **Net sequestration removes more carbon than greenhouse gases (GHG) emitted.**

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WATER QUALITY DIVISION

- Min/Max values vary based on possible management scenarios of practice implementation.
- Units are net metric tons (MT) of carbon dioxide equivalents (CO_2e) per year, which allow different greenhouses to be compared.

The 86,000 MTs of CO_2-e net sequestered in agricultural soils and biomass represent:

The same climate cooling effect as removing 16,000 fossil-fuel powered passenger vehicles from the road.

Vermonters have only registered 15,000 passenger BEVs during this same time period.

Source: VAAFM Ag WQ Reporting Dashboard:
https://app.powerbigov.us/view?r=eyJrIjoiNzkyNWFhNTMtNTAyNy00M2IyLWE5NzMtMzVmZGZmZGM4OWMwIiwidCI6IjIwYjQ5MzNiLWJhYWQtNDMzYy05YzAyLTcwZWRjYzc1NTljNiJ9
Source: EPA https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle
Source: DEC https://dec.vermont.gov/air-quality/mobile-sources/zero-emission-vehicles

94% of Vermont farmers believe they have the knowledge and technical skill to enhance soil health on their farm, yet only 58% of farmers have the financial capacity to do so.

Source: VT PES Technical Research Report #3: Results of the Farmer Conservation & Payment for Ecosystem Services Survey; https://agriculture.vermont.gov/sites/agriculture/files/doc_library/3.%20Farmer%20PES%20Survey%20Results_%20VT%20PES%20Task%203a%20Report.pdf

In Closing

Summary

VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS

1. **Vermont is losing farms & farmland.**

2. **Prime & Statewide Agricultural Soils are a finite and shrinking resource.**

3. **Current land protection efforts are slowing, but not reversing, the loss of farmland trend in VT.**

4. **Farms need to be economically viable to keep producing food year on year.**

5. **To meet NEFNE's 30x30 vision for regional food production, Vermont would need to double its current acerage of land in active farming by 2030 to take New England from 21% regional production to 30% regional production.**

6. **Farms in Vermont do provide positive ecosystem services for Vermont through the growing of food & crops, including: clean water, carbon sequestration in soils, and stewarding and improving biodiversity.**

7. **Farmers in Vermont care and are motivated to address climate change – but Vermont is losing its farms at an alarming rate.**