

Vermont Agriculture 1840 - 2024

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Presentation to: VCSI – Ag Working Group Meeting
February 7, 2024

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The number of 'marketable' trees in the Champlain Valley by 1840.

- **Clearing trees for lumber and potash transformed Vermont.**
- **1791: Vermont exported 2 million pounds of Potash to Great Britain.**
 - **1823 the Champlain Canal was constructed.**
- **Burlington was the 3rd largest lumber port in the U.S. by the mid-1800s.**
- **By the late 19th Century, Vermont was 70% Cleared and 30% forested.**

Source: JAN ALBERS, HANDS ON THE LAND: A HISTORY OF THE VERMONT LANDSCAPE 84 (2000).

Source: History, CITY OF BURLINGTON, VT., <https://www.burlingtonvt.gov/CEDO/History> [<https://perma.cc/K887-HPXV>] (last visited Apr. 1, 2016).

Source: CHARLES W. JOHNSON, THE NATURE OF VERMONT 60 (1998).

From: Mike Winslow, A Natural and Human History of Lake Champlain. VJEL Vol. 17 p. 492

Graph 1

VERMONT FARM TRENDS 1920 - 1975

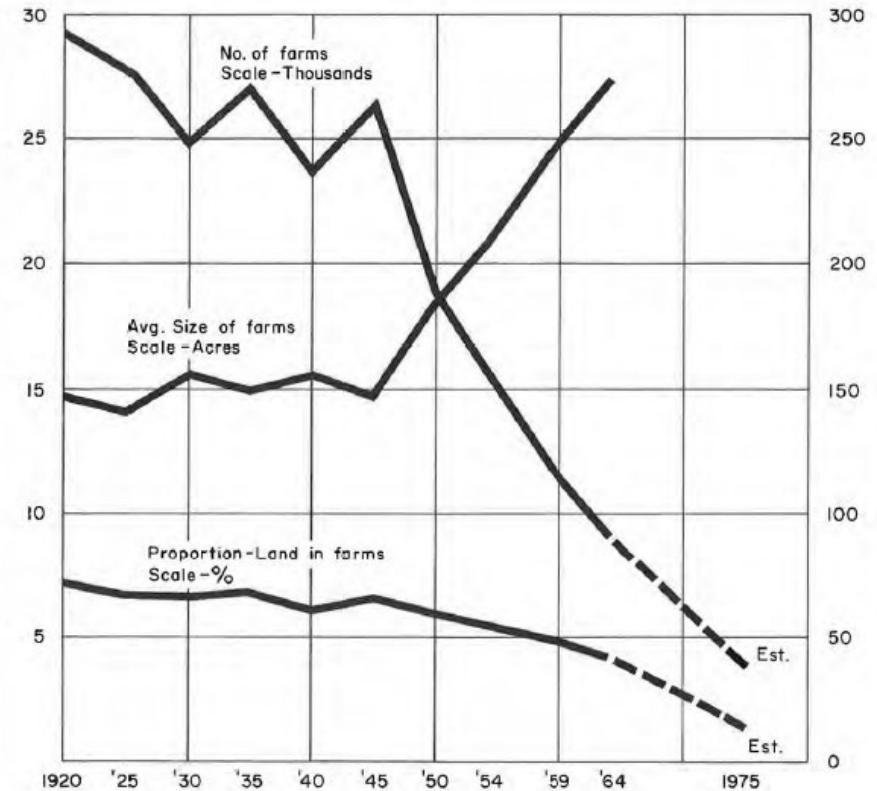


TABLE I

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%

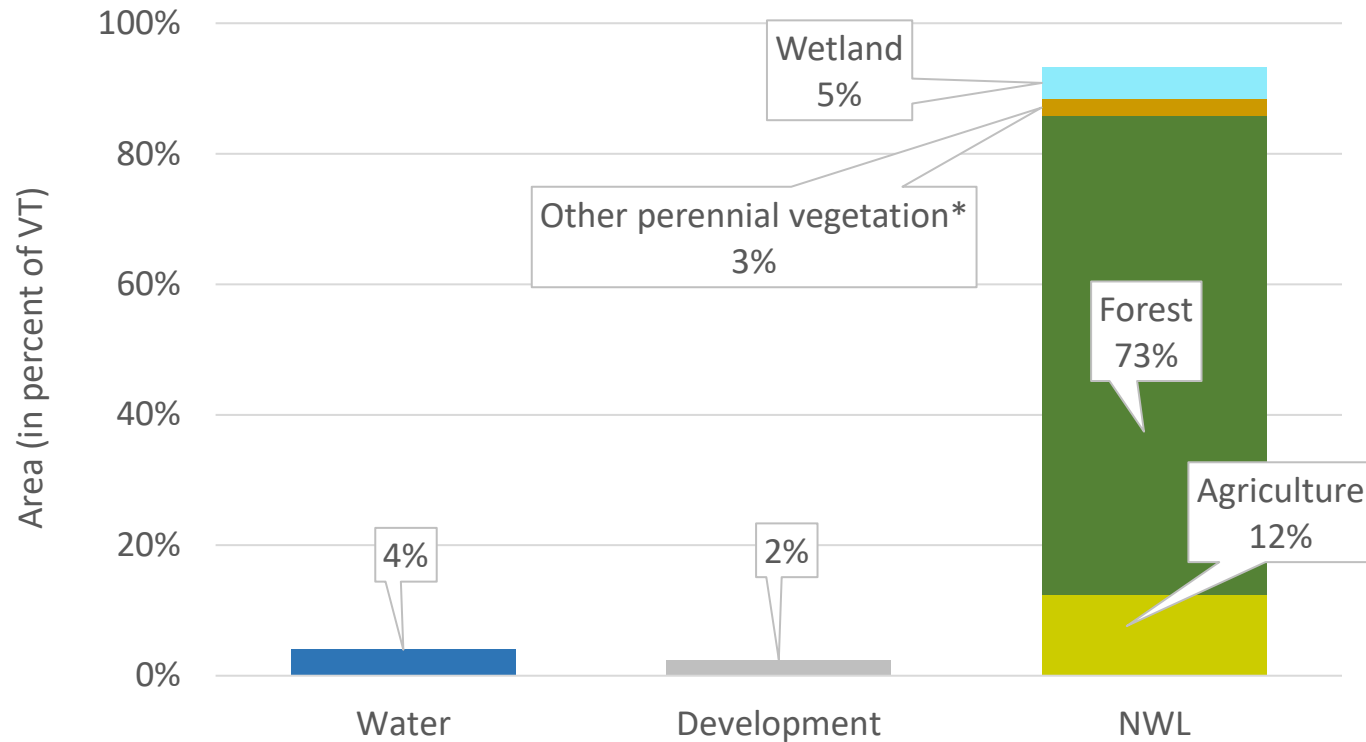
Source: Central Planning Office, Montpelier, Vermont

70% to 16%

Change from Late 1800's open land to Agricultural land in the Champlain Valley by 2012.

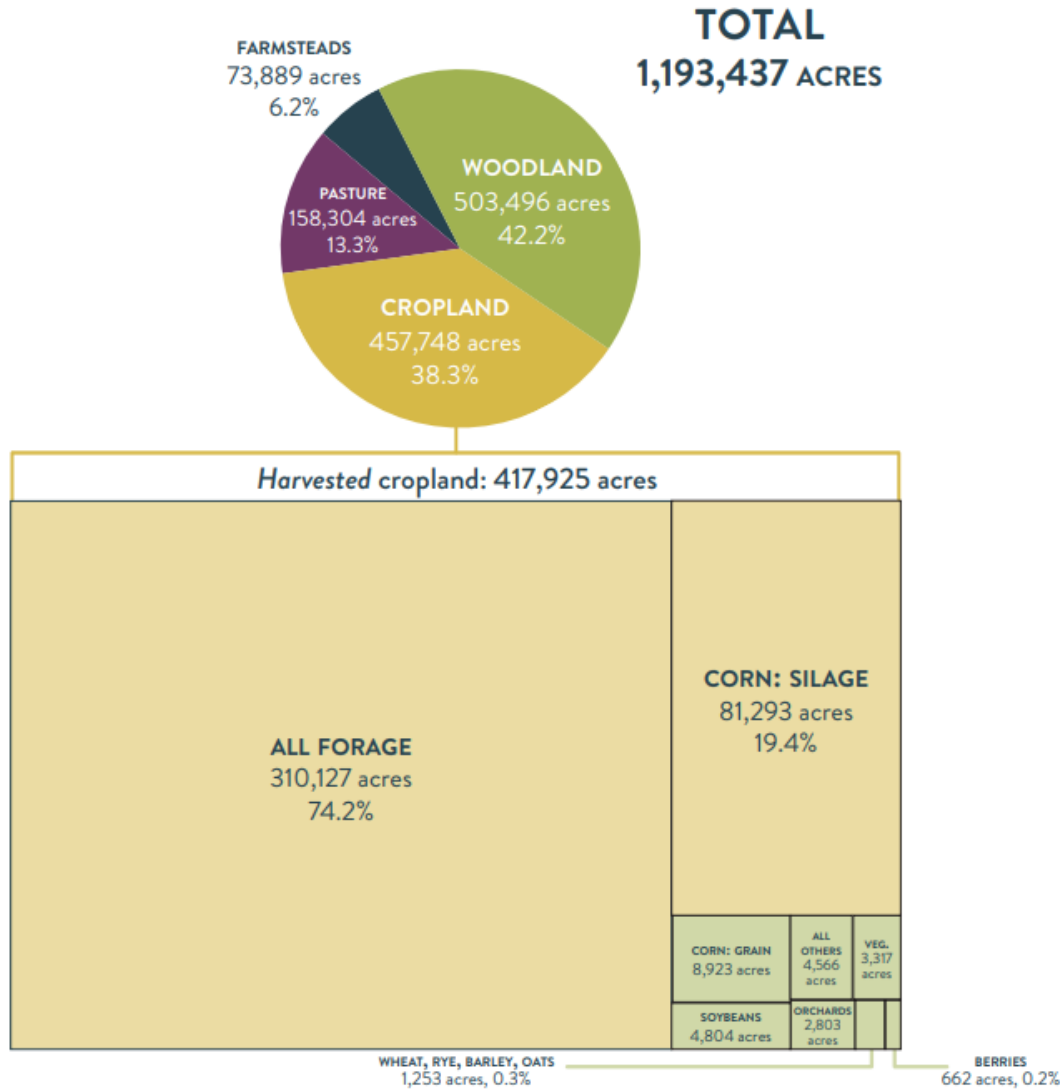


Natural & Working Lands (NWL) cover 94% of Vermont



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

» Land in Agriculture



#1 Vermont had the highest agricultural sales of any New England state, largely due to milk production.

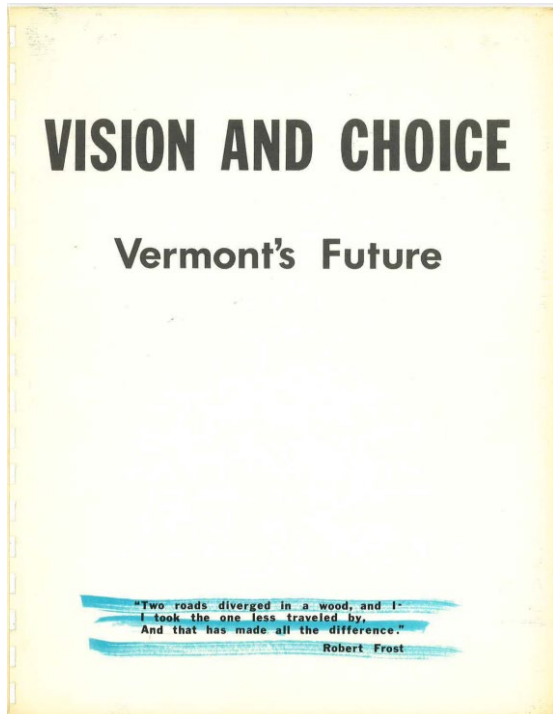
47% In 2021, Vermont produced almost half of the country's maple syrup (1.75 million gallons)

-64% Cropland decreased from 1.3 million acres in 1945 to 458,000 acres in 2017

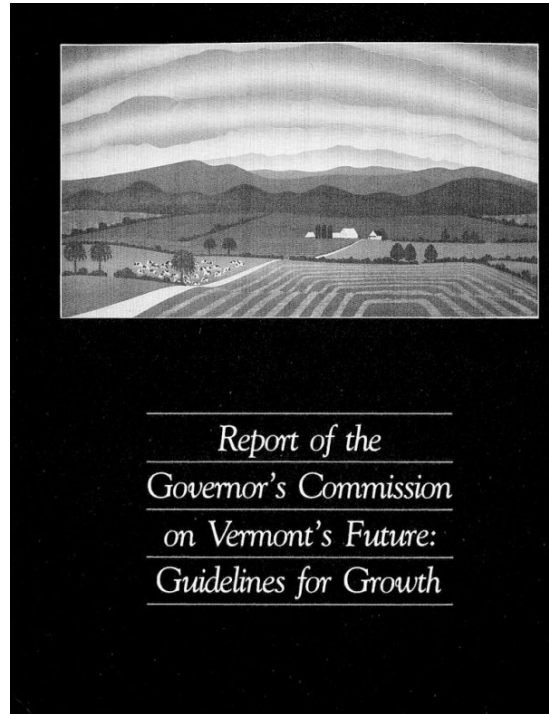
-85% Pastureland decreased from 1.0 million acres in 1945 to 158,000 acres in 2017

Acres for animal feed equaled **93.6% (391,420 acres)** of harvested cropland and 32.8% of total land in agriculture. Boosting vegetable, fruit, and grain production—whether in the open or indoors—is one way Vermont could help the region.

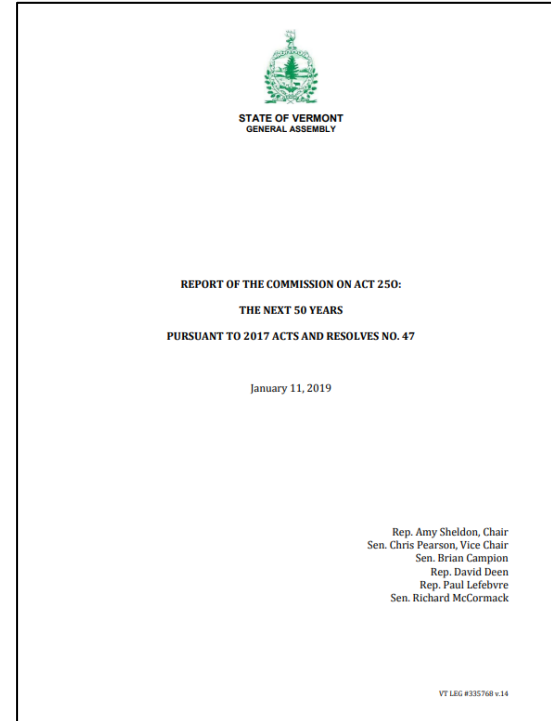
1968



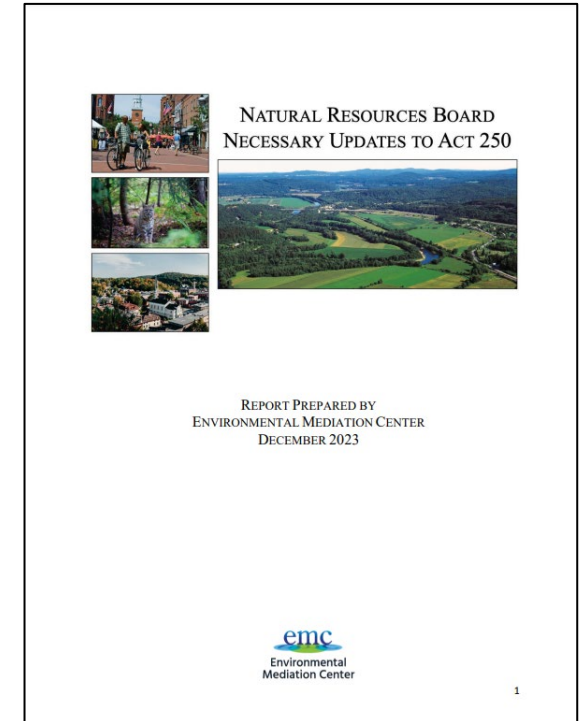
1988



2019



2023



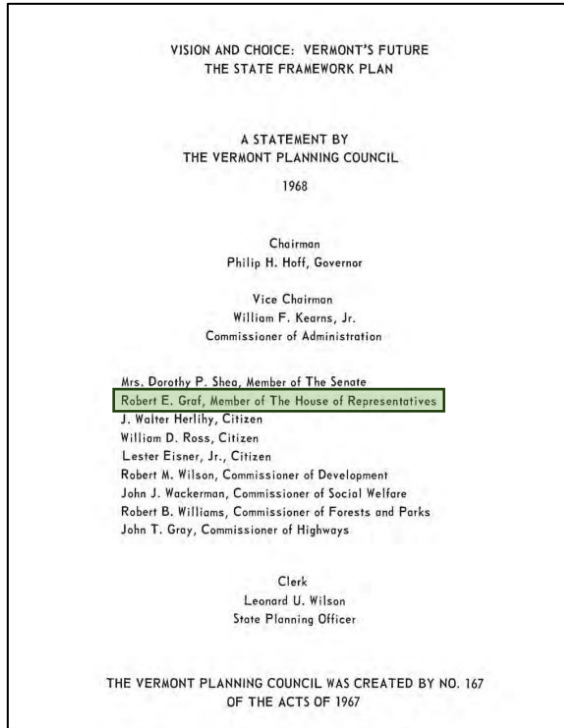
Source: https://outside.vermont.gov/agency/ACCD/ACCD_Web_Docs/CD/CPR/Resources-and-Rules/DHCD-Planning-GovCommission-FutureGuidelines-Growth.pdf

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

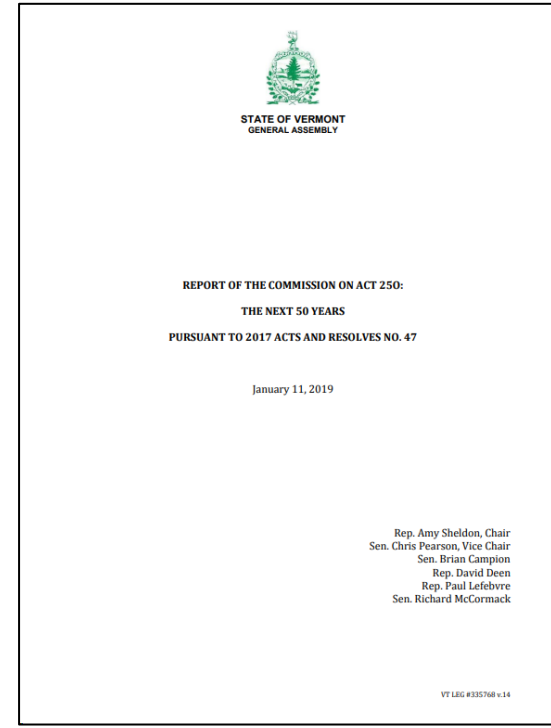
1968



1988



2019



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-Ottawaquechee 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

Xusana Davis/Jay Greene
Kirsten Sultan
Billy Coster
Sabina Haskell
Peter Gill

Vermont State Office of Racial Equity
District 7 Environmental Coordinator
Agency of Natural Resources
Natural Resources Board
Natural Resources Board

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.

Is a farmer

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

To undertake this review, VHCB and ANR convened a working group of experts from state agencies and non-governmental conservation organizations. This group comprised:

- Gannon Osborn – Vermont Department of Forests, Parks, and Recreation
- Katie Michels – Vermont Housing and Conservation Board
- Robert Zaino – Vermont Fish and Wildlife Department
- Gus Goodwin – The Nature Conservancy
- Elizabeth Thompson – Independent Ecologist
- Britt Haselton – Vermont Land Trust
- Rosalind Renfrew – Vermont Fish and Wildlife Department
- Hannah Phillips – Vermont Department of Forests, Parks, and Recreation
- Keith Thompson – Vermont Department of Forests, Parks, and Recreation
- Bill Dell'Isola – Vermont Housing and Conservation Board
- Zack Porter – Standing Trees
- Gunnar Nurme – Vermont Department of Forests, Parks, and Recreation

Is a farm
organization

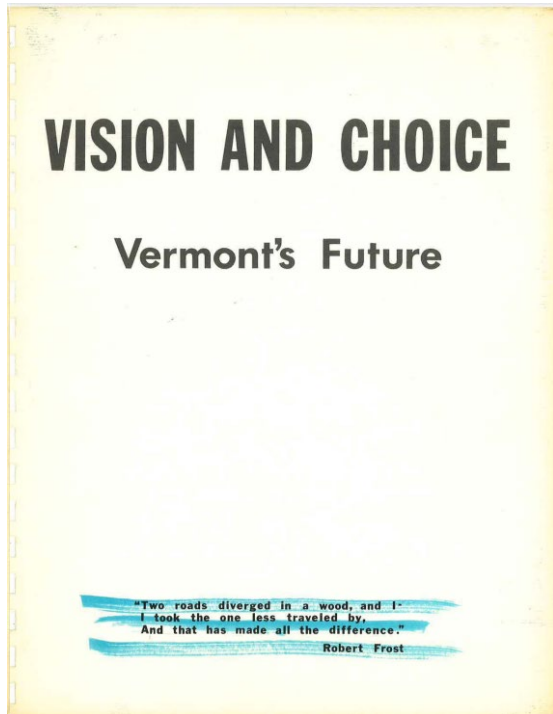
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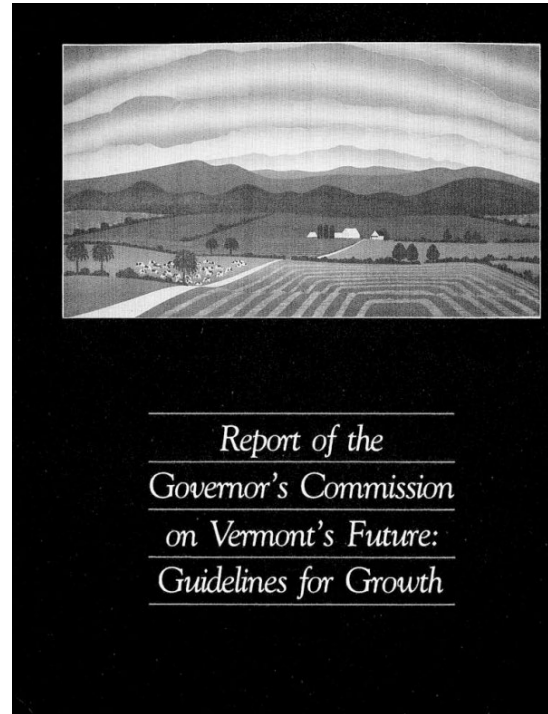
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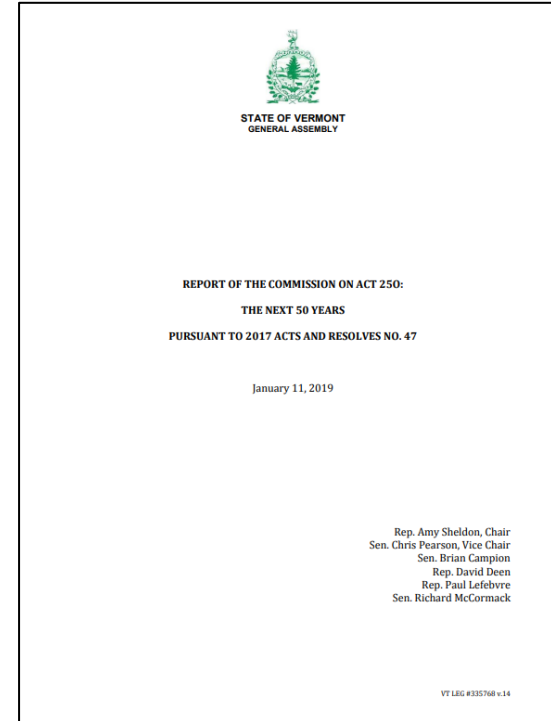
1968



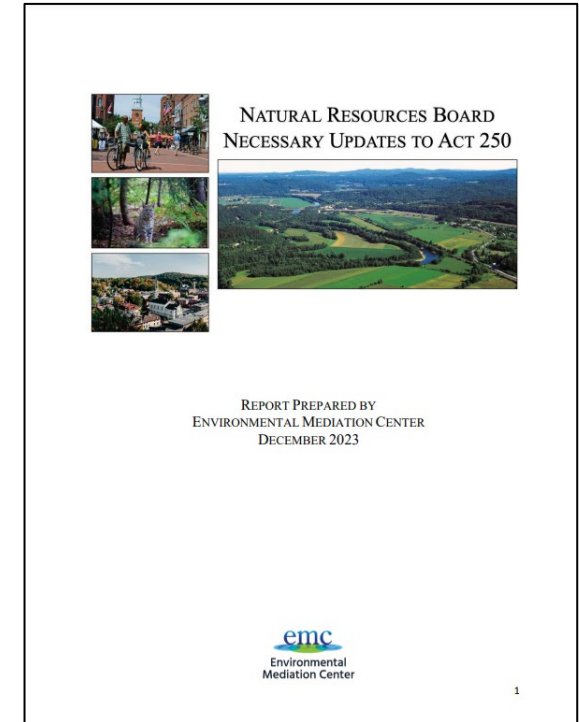
1988



2019



2023



Ag mentions / word:
0.42%

Ag mentions / word:
0.36%
-14.3%

Ag mentions / word:
0.24%
-42.9%

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

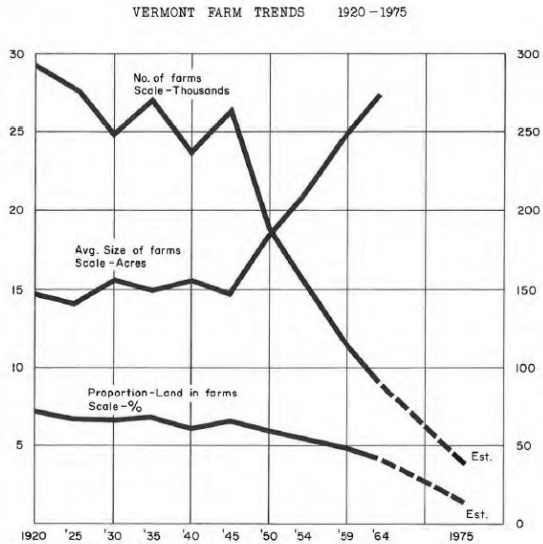
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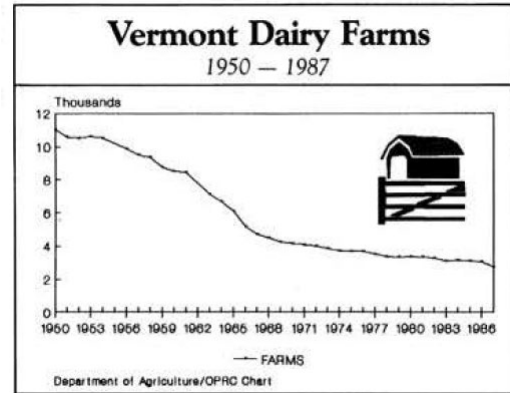
1968

Graph 1

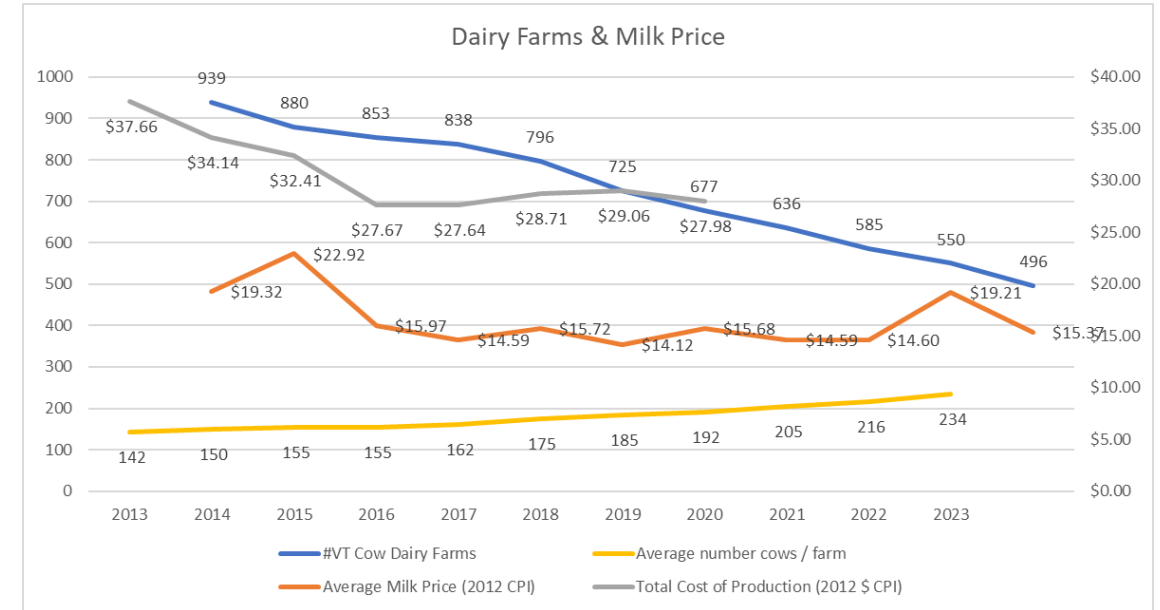


**1968 VT Land in Farms:
43%**

1988

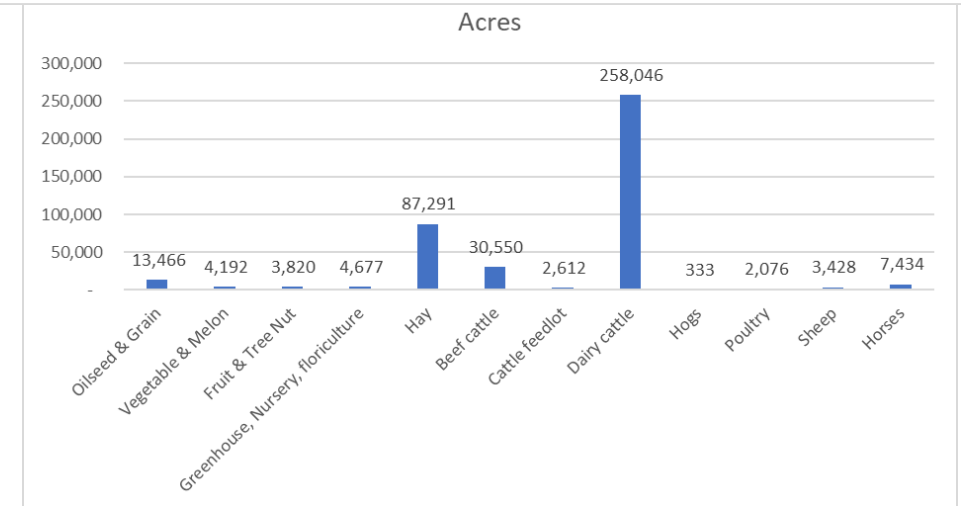


**1988 VT Land in Farms:
24%
-44%**



**2017 VT Land in Farms:
12%
-72%**

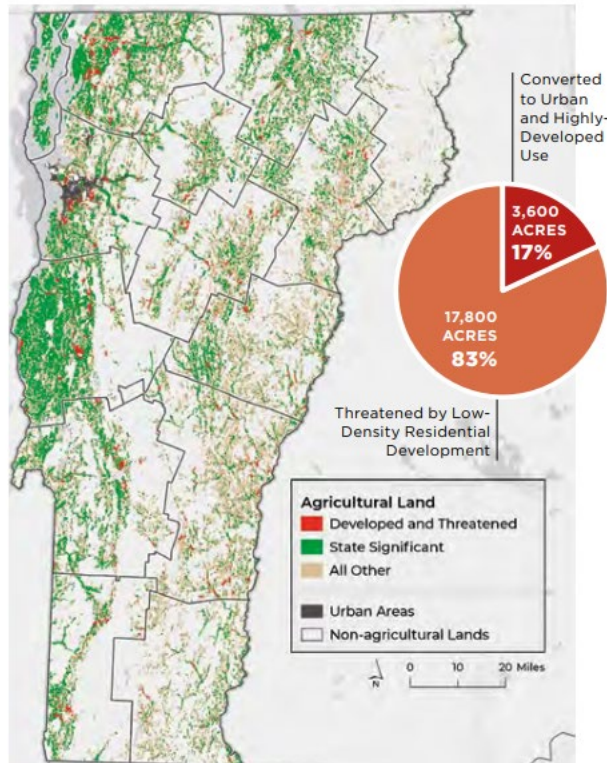
**2024 VT Land in Farms:
?%**



Available data show that, statewide from 2008 to 2018, 83 percent of new residential structures and 60.63 percent of commercial structures were located outside existing centers.⁶⁷ The spread of residential development outside the centers is underscored by map comparisons of Vermont’s population distribution, which show that Vermont’s daytime population is much more concentrated in the centers than its 24-hour population distribution.⁶⁸

Available data also show that, statewide from 2004 to 2016, Vermont lost 147,684 acres or approximately 15 percent of its undeveloped woodland parcels, and 53,406 acres, or 9.3 percent, of its farmland parcels to public ownership or another land classification.⁶⁹ During the same period, the acreage classified as residential use increased by 162,670 acres, or seven percent.⁷⁰

VERMONT



» Projected Changes in Land in Agriculture, Business as Usual Scenario

TOTAL

1,193,437 ACRES EXISTING ACREAGE
 -41,200 ACRES BUSINESS AS USUAL SCENARIO

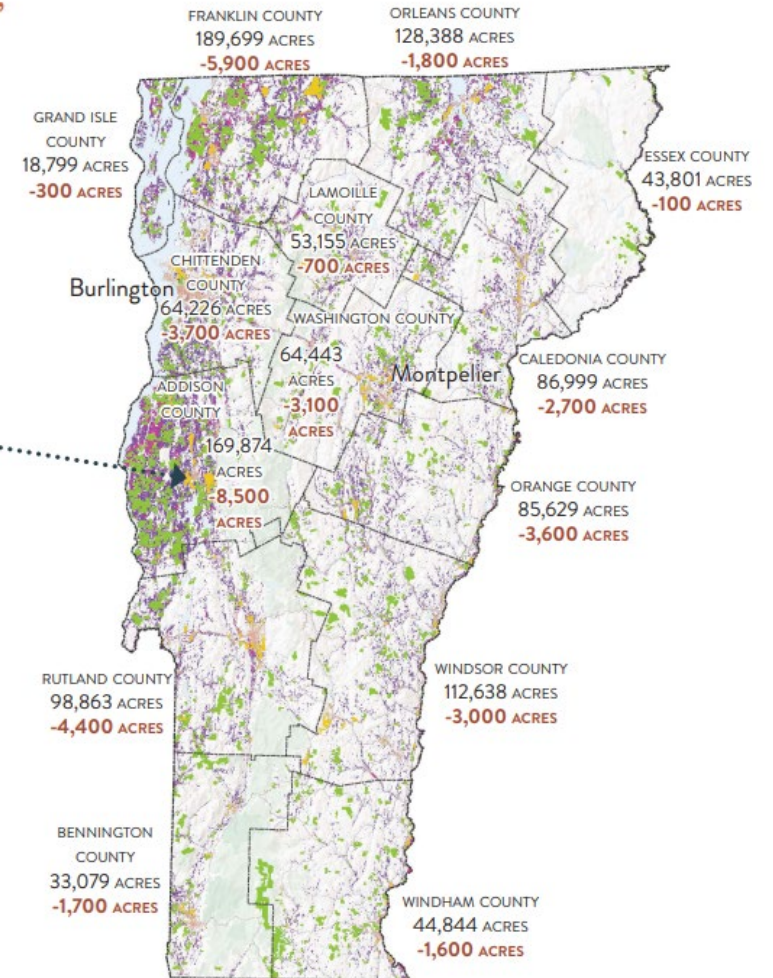
LAND USES

- CULTIVATED CROPS
- PASTURE/HAY
- EASEMENT
- DEVELOPED LAND
- PROJECTED URBAN AND HIGHLY DEVELOPED AND LOW-DENSITY RESIDENTIAL

An analysis from the American Farmland Trust (AFT) estimates that Vermont could lose an additional **41,200 acres** by 2040 under a “Business as Usual” development scenario and **61,800 acres** under a “Runaway Sprawl” scenario.

AFT projects that **Addison, Franklin, and Rutland** counties will experience the biggest decreases in land in agriculture.

Source: American Farmland Trust, [Farms Under Threat 2040: Choosing an Abundant Future](#)



20.5% Vermont has the highest percentage of agricultural land as a percentage of total land area, 20.5%, of any state in New England, but only a small percentage of agricultural land is used for crops to directly feed people.

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.

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

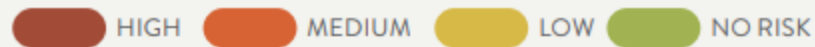
The Steering Committee recognizes that Vermont is facing a housing crisis in addition to the global climate crisis. The Steering Committee believes that facilitating the development of new housing while ensuring that we are maintaining our rural working lands and ecologically important natural resources 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.

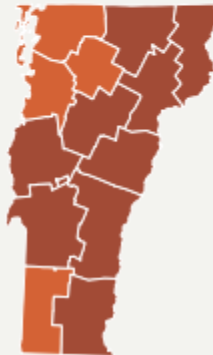
» Projected Climate Risks



EXTREME RAIN



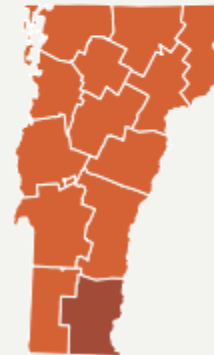
Annual precipitation and extreme precipitation events in Vermont have been above average in recent years.



HURRICANES



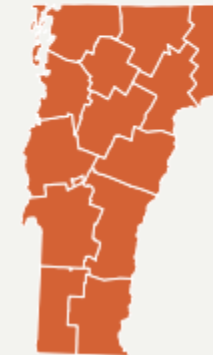
Hurricanes Irene (2011), Floyd (1999), and Gloria (1985), were all billion-dollar disasters that impacted Vermont.



WATER STRESS



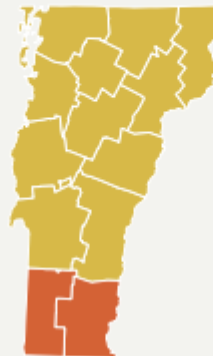
Vermont has experienced more abnormally dry days during the past 10 years than it did in the early 2000s.



WILDFIRE



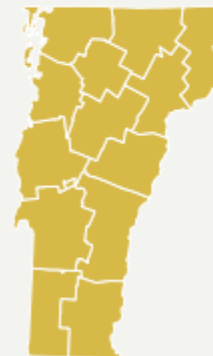
Large wildfires are not very common in Vermont, but 200-400 small fires (1.5-2 acres) occur per year.



HEAT STRESS



Temperatures have risen about 3.0°F since the beginning of the 20th century, resulting in warmer nights, shorter freeze-free seasons, and longer growing seasons.



SEA LEVEL RISE



With no ocean coastline, Vermont is spared the direct impacts of sea level rise.

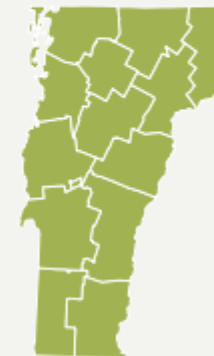
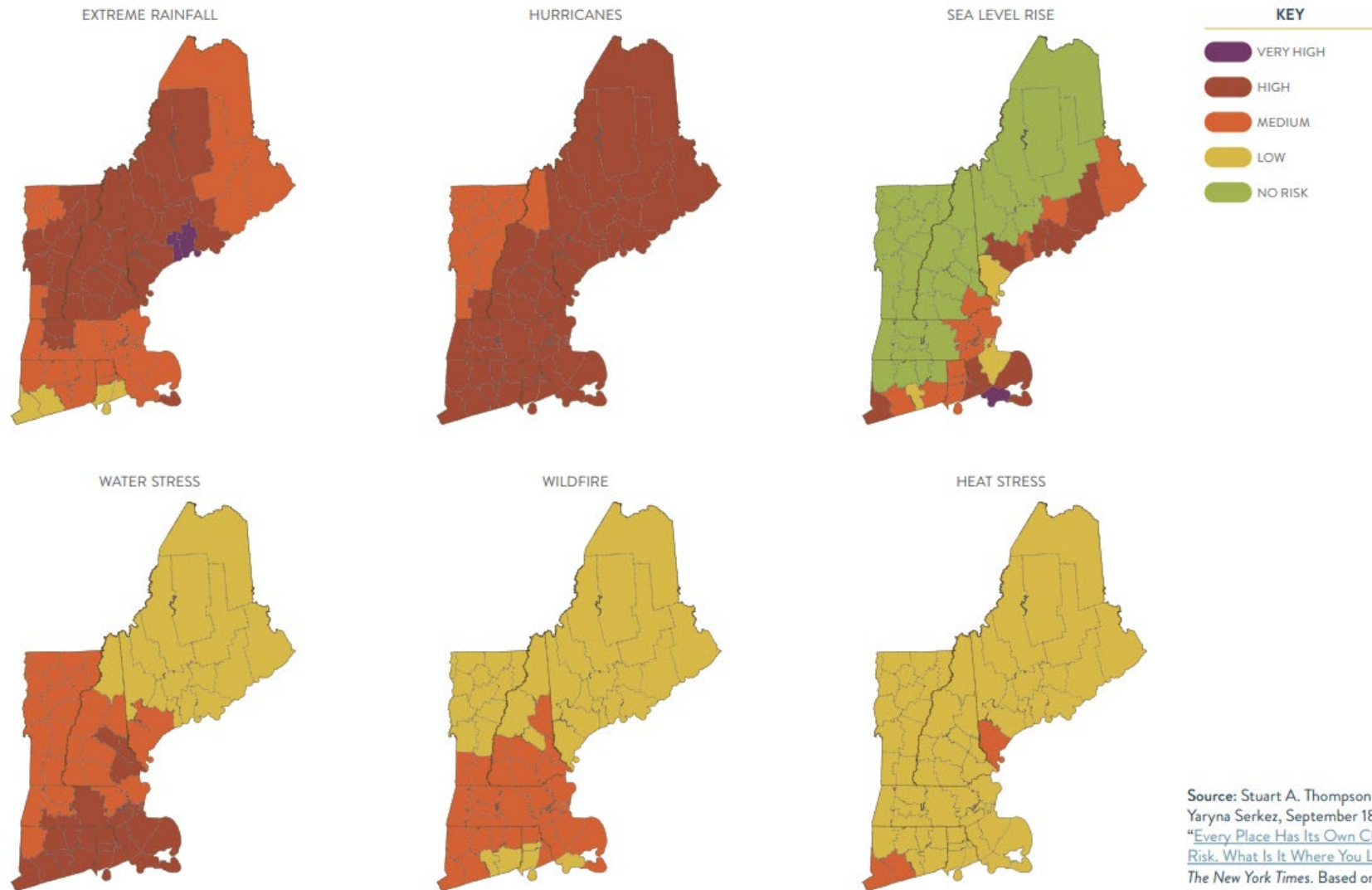


FIGURE 6: Projected Climate Change Risks by New England County



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.



Can the 6 New England states provide 30% of their food from regional farms and fisheries by 2030?

Volume 2



Could the six New England states meet a goal of supplying 30% of the region's food by 2030?



COULD MEET

30%
OF SERVINGS

FOR A POPULATION GROWING FROM

15.3 TO **15.6**
MILLION MILLION






THIS WOULD REQUIRE MAXIMIZING USE OF

401,000
EXISTING UNDERUTILIZED
ACRES

+

588,000
ADDITIONAL ACRES OF
CLEARED LAND

» New England Regional Self-Reliance for Major Food Groups

	 GRAINS	 VEGETABLES	 FRUITS	 DAIRY	 PROTEINS
Servings	1.6%	28.3%	8.7%	50.0%	3.2%
Calories	1.7%	41.0%	6.9%	47.4%	2.6%

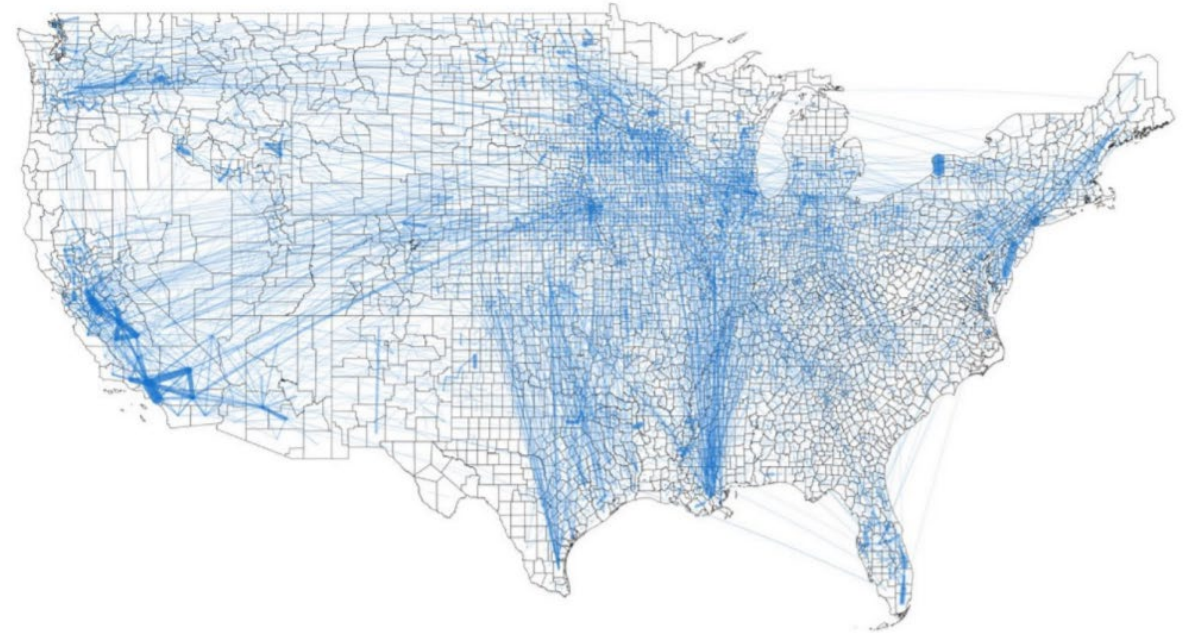
Source: [Volume 2: Estimating Production for 30% Regional Self-Reliance](#). Note: vegetables consists of a significant amount of calorie-dense potatoes grown in Maine; dairy includes a significant amount of production in Vermont.

What to call climate change where you live

Intensity shows risk level from low (lighter) to very high (darker)



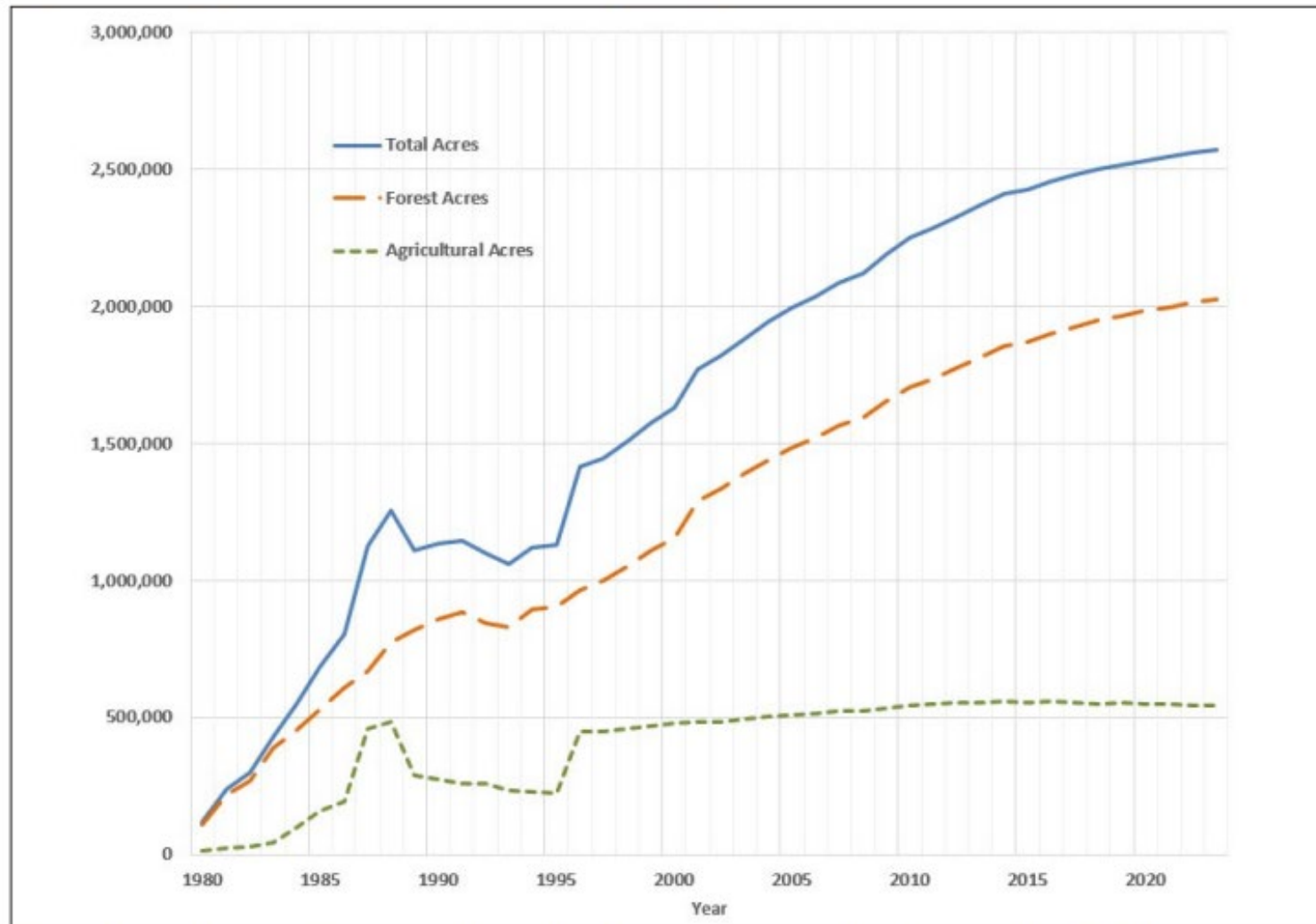
Food Flows: Downscaled to All Counties



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>

Figure 1: Acreage Enrolled in Current Use Program by Year

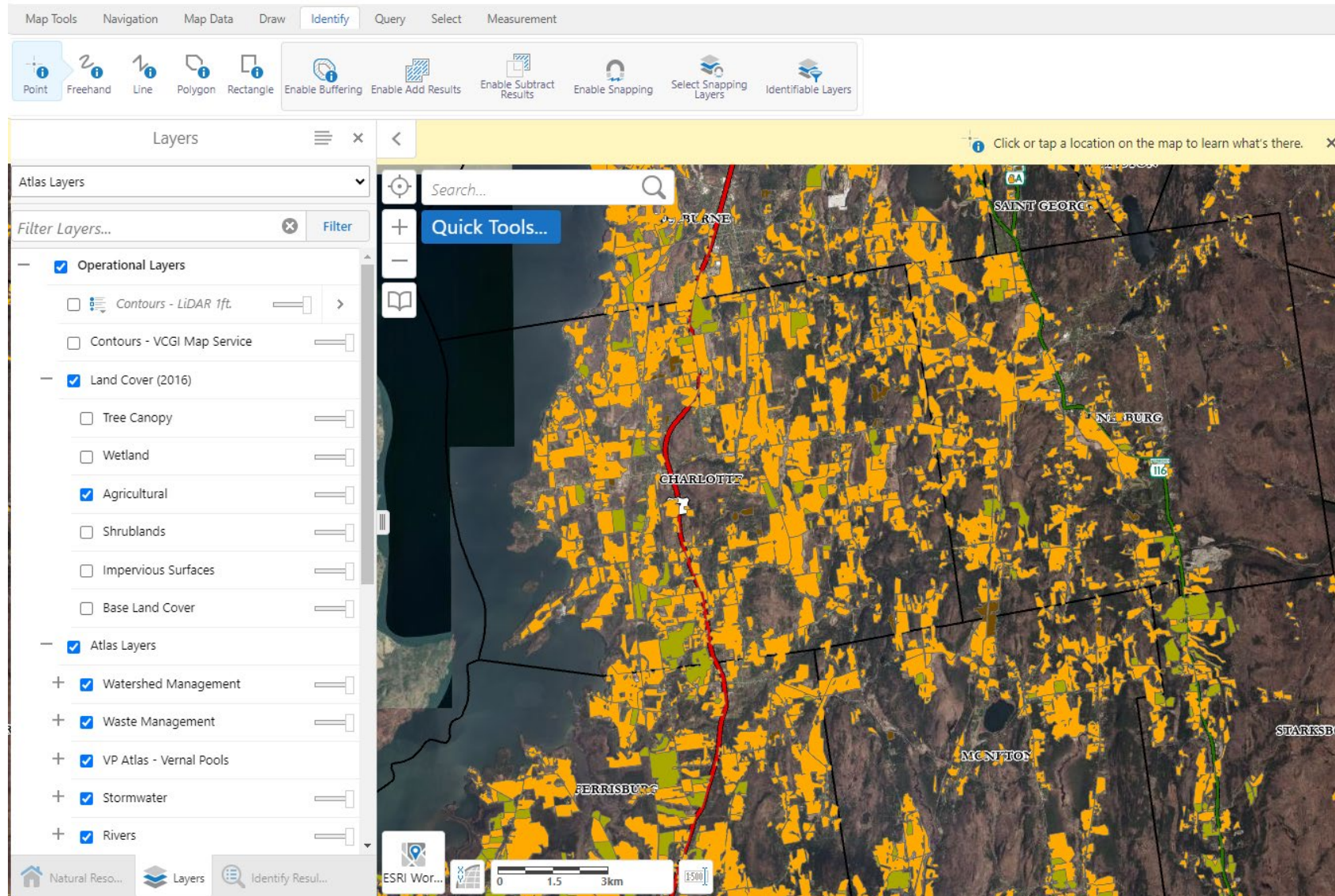


The underlying data for Figure 1 is included with the supplemental digital data provided with this report.

Table 11: Annual Current Use Enrollment

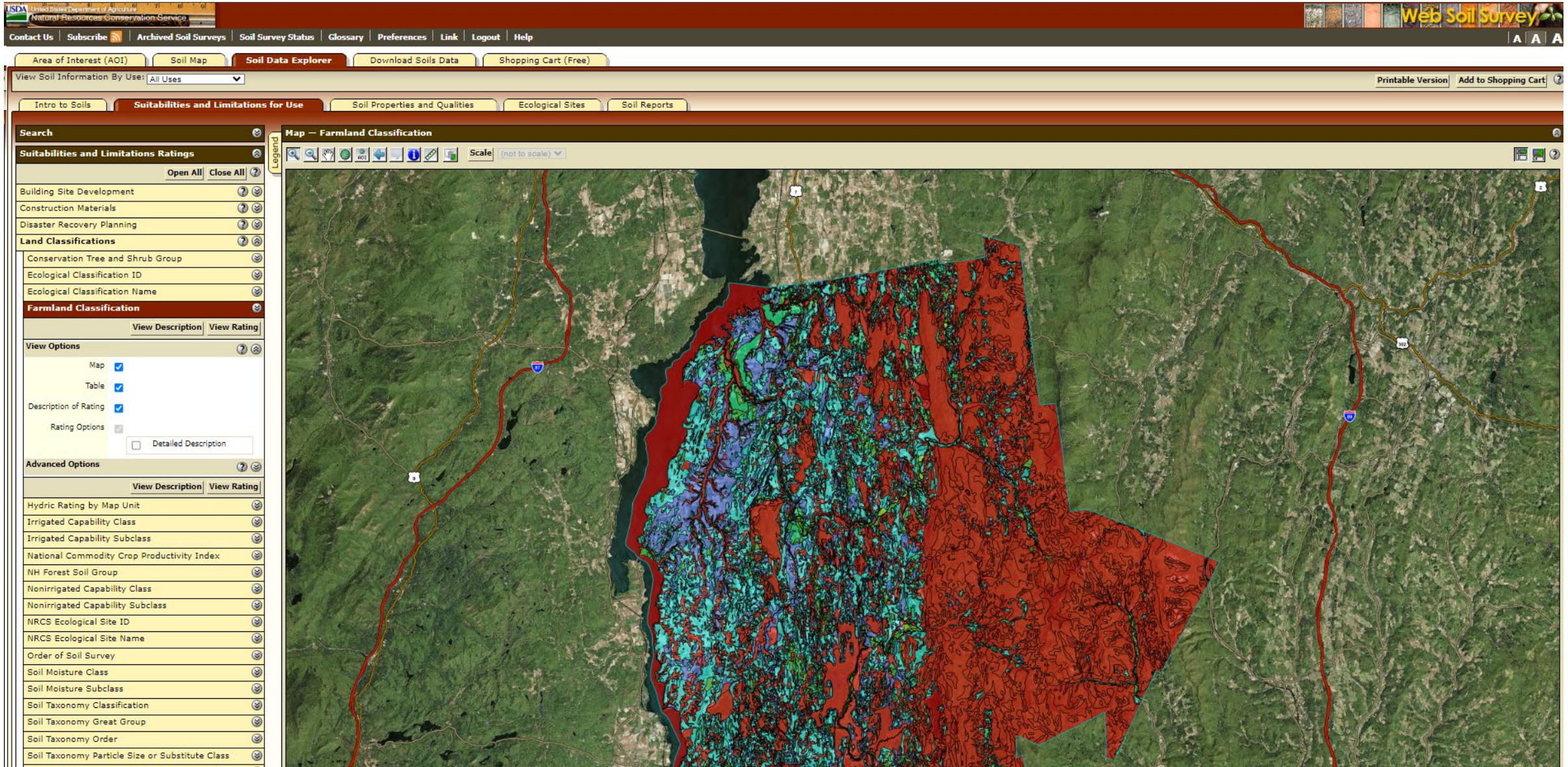
Tax Year	Parcels	Owners	Agricultural Acres	Forest Acres	Total Acres
2023	19,606	16,097	543,200	2,025,316	2,568,516
2022	19,535	15,954	545,477	2,014,163	2,559,641
2021	19,415	15,840	547,617	1,996,378	2,543,995
2020	19,258	15,669	547,019	1,984,714	2,531,733
2019	19,086	15,490	551,230	1,966,681	2,517,911
2018	18,910	15,307	549,319	1,949,198	2,498,517
2017	18,723	15,147	553,372	1,926,499	2,479,871
2016	18,457	14,905	556,489	1,900,188	2,456,636
2015	18,154	14,653	554,078	1,872,070	2,426,149
2014	18,020	14,553	558,320	1,853,765	2,412,096
2013	17,647	14,246	555,234	1,814,585	2,369,819
2012	17,190	13,831	551,055	1,776,153	2,327,208

Most recent land cover dataset



Source: <https://anmaps.vermont.gov/websites/anra5/>

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



The screenshot displays the USDA Web Soil Survey interface. At the top, there is a navigation bar with links for 'Contact Us', 'Subscribe', 'Archived Soil Surveys', 'Soil Survey Status', 'Glossary', 'Preferences', 'Link', 'Logout', and 'Help'. Below this is a secondary navigation bar with 'Area of Interest (AOI)', 'Soil Map', 'Soil Data Explorer', 'Download Soils Data', and 'Shopping Cart (Free)'. The main content area is titled 'View Soil Information By Use: All Uses' and includes a 'Printable Version' and 'Add to Shopping Cart' link. The central map is titled 'Map - Farmland Classification' and shows a satellite-style map with a large, irregularly shaped area highlighted in red, indicating farmland. This area is overlaid with various colored patterns representing different soil classifications. To the left of the map is a 'Search' panel with several expandable sections: 'Suitabilities and Limitations Ratings' (with 'Open All' and 'Close All' buttons), 'Land Classifications', and 'Farmland Classification'. The 'Farmland Classification' section is currently expanded, showing 'View Description' and 'View Rating' buttons. Below this are 'View Options' (Map, Table, Description of Rating, Rating Options) and 'Advanced Options' (Hydric Rating by Map Unit, Irrigated Capability Class, etc.). The map itself includes a legend, a scale bar (not to scale), and standard map navigation tools.

4.5% of Vermont is a prime farmland soil

	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%

Prime Soil Classifications		
Category	Acres	%
State Area	6,150,337	100%
State Water (Lakes & Ponds)	249,585	4%
State Land	5,900,752	96%
Prime	277,959	4.71%
Prime (b)	72,356	1.23%
Prime (f)	27,476	0.47%
Statewide	694,513	11.77%
Statewide (a)	25,530	0.43%
Statewide (b)	234,263	3.97%
Statewide (c)	4,791	0.08%
Local	6,485	0.11%
Local (b)	867	0.01%
Not rated	9,324	0.16%
NPSL	4,547,188	77.06%
Mapped Prime, Statewide or Locally Important: Subtotal	1,344,240	22.78%

Act 250 – Critical Resource Areas

	State Land		CRA	Agricultural Land		CRA	Farmsteads		CRA	Farmsteads		CRA
	Acres	%	%	Acres	%	%	Acres	%	%	#	%	%
Category Total	5,889,063	100%		657,998	100%		9,218	100%		1,263	100%	
Critical Resource Area	3,883,340	66%	100%	257,898	39%	100%	2,281	25%	100%	836	66%	100%
River Corridors	205,531	3%	5%	34,690	5%	13%	295	3%	13%	143	11%	17%
Wetlands	1,328,282	23%	34%	175,741	27%	68%	1,743	19%	76%	653	52%	78%
Wetlands (Class I & II)	291,919	5%		22,014	3%		230	2%		255	20%	
Hydric Soils	1,034,740	18%		153,678	23%		1,513	16%		560	44%	
Elevation (2000 ft)	708,154	12%	18%	3,826	1%	1%	0	0%	0%	0	0%	0%
Slope & Shallow Bedrock	1,642,995	28%	42%	43,690	7%	17%	243	3%	11%	279	22%	33%
DEM Slope (15%)	2,844,544	48%		106,651	16%							
Shallow Bedrock (20 in)	2,455,521	42%		115,246	18%							

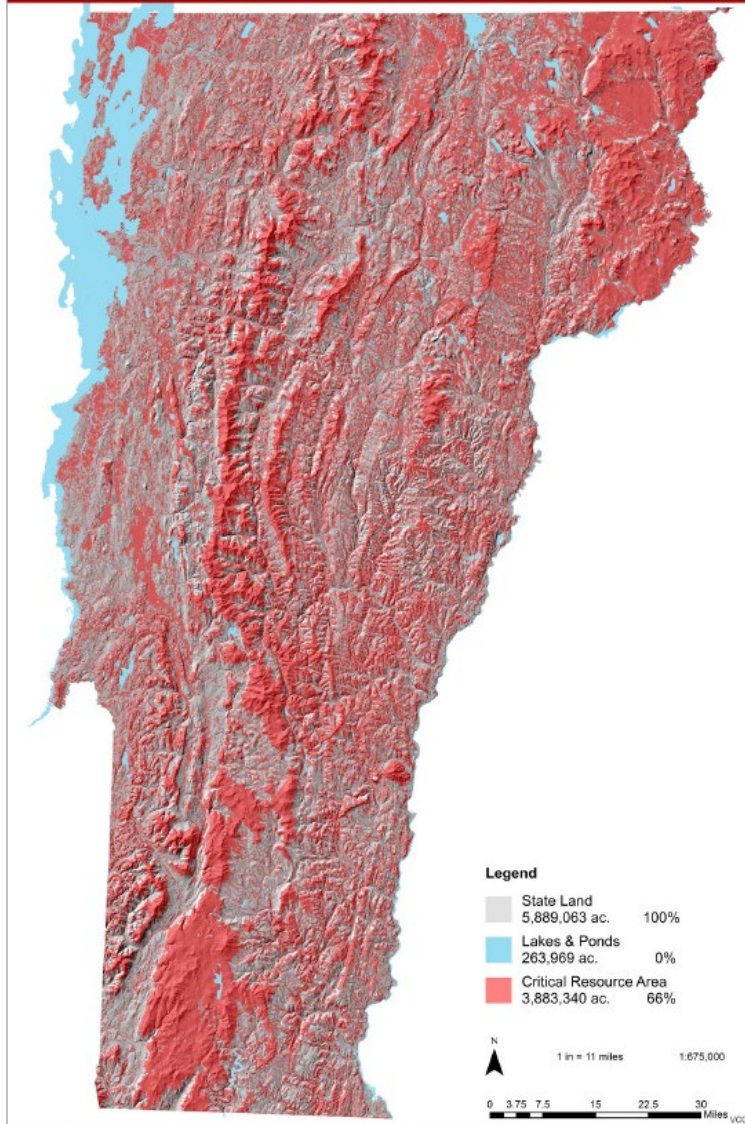
Key Points:

Adding Hydric Soils to the CRA increases area across the State from 48% to 66%, and agricultural land that is within CRA from 16% to 39%.

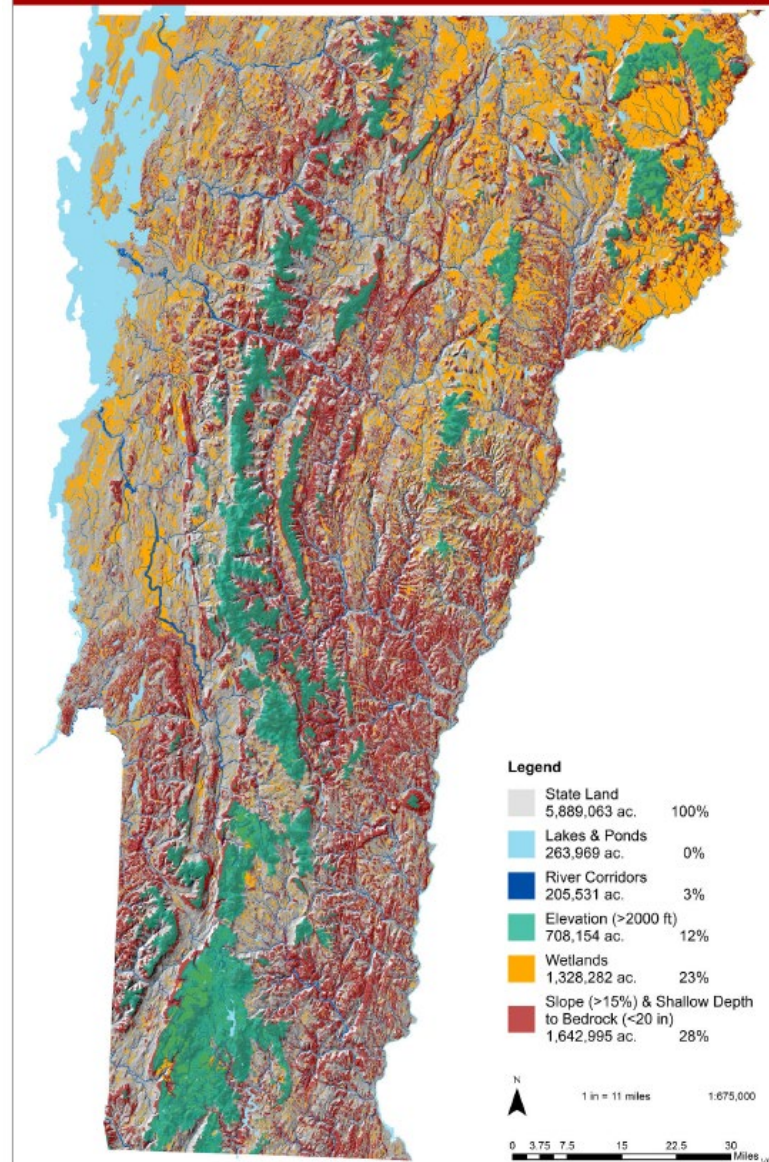
No farmsteads (acreage or points) are at or above an elevation of 2000 ft.

Slope and Shallow Bedrock is the largest component of the CRA across the State, but Wetland is the largest component across agricultural land and farmsteads.

Act 250 Proposed Critical Resource Area



Act 250 Proposed Critical Resource Area



Act 250 Proposed Critical Resource Area

