

## Vermont Survey for Tick-Borne Diseases Cumulative Report, 2015-2019

From 2015 to 2019, the Vermont Agency of Agriculture, Food & Markets (VAAFMM) completed a five-year statewide tick survey in which every town in the state was sampled. Ticks were collected in the spring and fall and tested for five tick-borne pathogens: *Borrelia burgdorferi*, *Anaplasma phagocytophilum*, *Babesia microti*, *Borrelia miyamotoi*, and Deer Tick Virus. A total of 254 towns and gores in Vermont were surveyed (1 town was not sampled), representing nearly all towns in all of Vermont's 14 counties. A single site in each town was chosen by randomly selecting a road from the Vermont Delorme Atlas and then finding the most suitable habitat for ticks on that road. We looked for areas with a field edge, next to a stone wall, adjacent to a forest, or a combination of these characteristics. Four transects of 100 meters each were established and then surveyed for ticks every 10 meters with a 1-m<sup>2</sup> white flannel tick flag gently waved on the ground in front of the surveyor. Ticks were removed from the flag at each 10-meter interval and preserved in vials containing 95% ethyl alcohol. The ticks from the survey were identified to species at the Vermont Agricultural and Environmental Laboratory (VAEL) in Randolph Center and placed individually in vials for molecular testing for diseases. VAEL conducted all tests using RT-PCR testing. The laboratory tested 1,675 blacklegged (deer) ticks (*Ixodes scapularis*) collected within the 5-year survey.

A total of 1,793 ticks were collected, 1,675 blacklegged ticks and 118 American dog ticks. The total amount of ticks per town ranged from 0 to 196, with an average of 6.9 ticks per town.

**Table 1. Results of Tick Testing in Vermont, 2015-2019 (*I. scapularis*, n = 1,675)**

Pathogen	# Infected Ticks	% Infected Ticks
<i>B. burgdorferi</i>	893	53.31
<i>A. phagocytophilum</i>	157	9.37
<i>B. microti</i>	54	3.22
<i>B. miyamotoi</i>	7	0.69
Deer Tick Virus	4	0.41

**Table 2. Coinfection Rates of Ticks, 2015-2019 (*I. scapularis* testing positive for more than one pathogen, n = 1,675)**

Pathogen Co-Infections	# Infected Ticks	% Infected Ticks
<i>B. burgdorferi</i> – <i>A. phagocytophilum</i>	114	6.81
<i>B. burgdorferi</i> – <i>A. phagocytophilum</i> – <i>B. microti</i>	22	1.31
<i>B. burgdorferi</i> – <i>B. microti</i>	13	0.78
<i>A. phagocytophilum</i> – <i>B. microti</i>	11	0.66
<i>B. burgdorferi</i> – <i>B. miyamotoi</i>	3	0.18
<i>B. burgdorferi</i> – Deer Tick Virus	2	0.12
<i>B. burgdorferi</i> – <i>A. phagocytophilum</i> – Deer Tick Virus	1	0.06

Figure 1. Vermont Collection Sites of Blacklegged Ticks (*I. scapularis*), 2015-2019

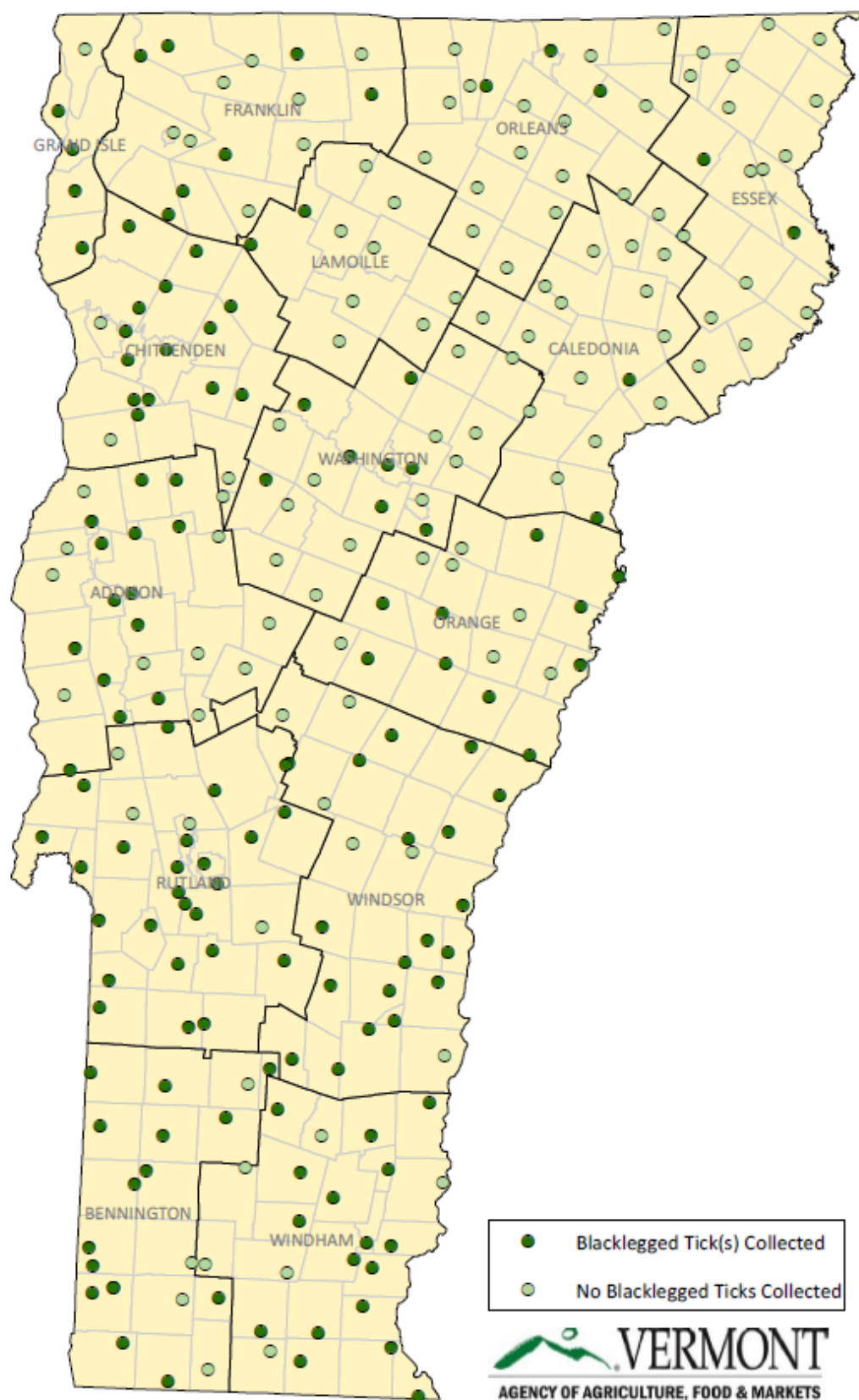
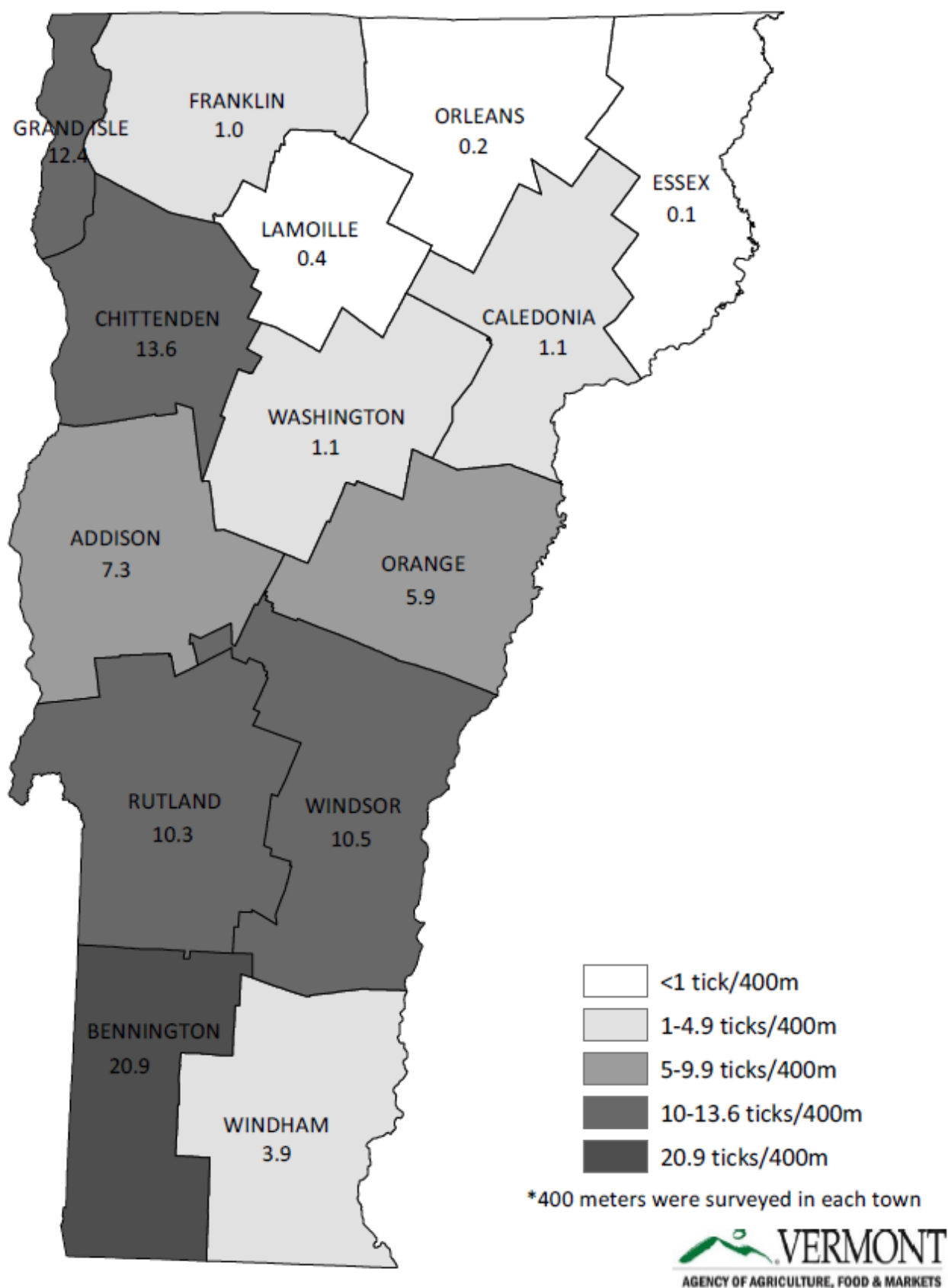


Figure 2. County Densities of Blacklegged Ticks (*I. scapularis*), 2015-2019



**Table 3. Number of *I. scapularis* Positive for Tick-Borne Pathogens by Vermont Town, 2015-2019**

Town	County	# <i>I. scapularis</i> tested	Number and Percent Positive <i>I. scapularis</i> by Pathogen									
			# <i>B. burgdorferi</i>	% <i>B. burgdorferi</i>	# <i>A. phagocytophilum</i>	% <i>A. phagocytophilum</i>	# <i>B. microti</i>	% <i>B. microti</i>	# <i>B. miyamotoi</i>	% <i>B. miyamotoi</i>	# Deer Tick Virus	% Deer Tick Virus
Addison	Addison	0										
Albany	Orleans	0										
Alburgh	Grand Isle	0										
Andover	Windsor	2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Arlington	Bennington	15	11	73.3	2	13.3	0	0.0	0	0.0	0	0.0
Athens	Windham	9	4	44.4	0	0.0	0	0.0	0	0.0	0	0.0
Averill	Essex	0										
Averys Gore	Essex	0										
Bakersfield	Franklin	0										
Baltimore	Windsor	6	6	100.0	1	16.7	0	0.0	0	0.0	1	16.7
Barnard	Windsor	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Barnet	Caledonia	0										
Barre City	Washington	0										
Barre Town	Washington	2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Barton	Orleans	0										
Belvidere	Lamoille	0										
Bennington^	Bennington	214	119	55.6	36	16.8	5	2.3	*	*	*	*
Benson	Rutland	2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Berkshire	Franklin	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Berlin	Washington	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bethel	Windsor	0										
Bloomfield	Essex	0										
Bolton	Chittenden	21	11	52.4	0	0.0	0	0.0	0	0.0	1	4.8
Bradford	Orange	2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Braintree	Orange	0										
Brandon	Rutland	20	14	70.0	0	0.0	0	0.0	0	0.0	0	0.0
Brattleboro	Windham	5	0	0.0	0	0.0	0	0.0	*	*	*	*
Bridgewater	Windsor	0										
Bridport	Addison	11	6	54.5	1	9.1	0	0.0	0	0.0	0	0.0
Brighton	Essex	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bristol	Addison	2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Brookfield	Orange	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Brookline	Windham	6	2	33.3	0	0.0	1	16.7	0	0.0	0	0.0
Brownington	Orleans	0										
Brunswick	Essex	0										
Buels Gore	Chittenden	0										
Burke	Caledonia	0										
Burlington	Chittenden	0										
Cabot	Washington	0										

Table 3 cont.

Town	County	# <i>I. scapularis</i> tested	Number and Percent Positive <i>I. scapularis</i> by Pathogen									
			# <i>B. burgdorferi</i>	% <i>B. burgdorferi</i>	# <i>A. phagocytophilum</i>	% <i>A. phagocytophilum</i>	# <i>B. microti</i>	% <i>B. microti</i>	# <i>B. miyamotoi</i>	% <i>B. miyamotoi</i>	# Deer Tick Virus	% Deer Tick Virus
Calais	Washington	0										
Cambridge	Lamoille	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Canaan	Essex	0										
Castleton	Rutland	29	17	58.6	6	20.7	0	0.0	0	0.0	0	0.0
Cavendish	Windsor	15	5	33.3	0	0.0	0	0.0	0	0.0	0	0.0
Charleston	Orleans	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Charlotte	Chittenden	0										
Chelsea	Orange	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chester	Windsor	2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chittenden	Rutland	4	2	50.0	0	0.0	0	0.0	0	0.0	0	0.0
Clarendon^	Rutland	17	9	52.9	0	0.0	0	0.0	0	0.0	0	0.0
Colchester	Chittenden	99	59	59.6	0	0.0	0	0.0	*	*	*	*
Concord	Essex	0										
Corinth	Orange	0										
Cornwall	Addison	10	7	70.0	1	10.0	0	0.0	0	0.0	0	0.0
Coventry	Orleans	0										
Craftsbury	Orleans	0										
Danby	Rutland	4	1	25.0	0	0.0	0	0.0	0	0.0	0	0.0
Danville	Caledonia	0										
Derby	Orleans	0										
Dorset	Bennington	10	7	70.0	3	30.0	0	0.0	0	0.0	0	0.0
Dover	Windham	0										
Dummerston	Windham	1	1	100.0	1	100.0	0	0.0	0	0.0	0	0.0
Duxbury	Washington	0										
East Haven	Essex	0										
East Montpelier	Washington	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Eden	Lamoille	0										
Elmore	Lamoille	0										
Enosburg	Franklin	0										
Essex	Chittenden	6	2	33.3	0	0.0	0	0.0	*	*	*	*
Fair Haven	Rutland	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Fairfax	Franklin	1	1	100.0	0	0.0	0	0.0	*	*	*	*
Fairfield	Franklin	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Fairlee	Orange	5	4	80.0	1	20.0	1	20.0	0	0.0	0	0.0
Fayston	Washington	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ferdinand	Essex	0										
Ferrisburgh	Addison	0										
Fletcher	Franklin	0										
Franklin	Franklin	0										
Georgia	Franklin	5	3	60.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 3 cont.

Town	County	# <i>I. scapularis</i> tested	Number and Percent Positive <i>I. scapularis</i> by Pathogen									
			# <i>B. burgdorferi</i>	% <i>B. burgdorferi</i>	# <i>A. phagocytophilum</i>	% <i>A. phagocytophilum</i>	# <i>B. microti</i>	% <i>B. microti</i>	# <i>B. miyamotoi</i>	% <i>B. miyamotoi</i>	# Deer Tick Virus	% Deer Tick Virus
Glastenbury	Bennington	0										
Glover	Orleans	0										
Goshen	Addison	0										
Grafton	Windham	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Granby	Essex	0										
Grand Isle	Grand Isle	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Granville	Addison	0										
Greensboro	Orleans	0										
Groton	Caledonia	0										
Guildhall	Essex	0										
Guilford	Windham	5	2	40.0	0	0.0	0	0.0	0	0.0	0	0.0
Halifax	Windham	3	2	66.7	0	0.0	0	0.0	0	0.0	0	0.0
Hancock	Addison	0										
Hardwick	Caledonia	0										
Hartford	Windsor	14	7	50.0	0	0.0	0	0.0	0	0.0	0	0.0
Hartland	Windsor	21	17	81.0	3	14.3	0	0.0	*	*	*	*
Highgate	Franklin	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Hinesburg	Chittenden	10	2	20.0	0	0.0	0	0.0	*	*	*	*
Holland	Orleans	0										
Hubbardton	Rutland	0										
Huntington	Chittenden	0										
Hyde Park	Lamoille	0										
Ira	Rutland	16	8	50.0	1	6.3	2	12.5	1	6.3	0	0.0
Irasburg	Orleans	0										
Isle La Motte	Grand Isle	6	6	100.0	0	0.0	0	0.0	*	*	*	*
Jamaica	Windham	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Jay	Orleans	0										
Jericho	Chittenden	19	13	68.4	0	0.0	0	0.0	0	0.0	1	5.3
Johnson	Lamoille	0										
Killington	Rutland	2	0	0.0	1	50.0	2	100.0	0	0.0	0	0.0
Kirby	Caledonia	0										
Landgrove	Bennington	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Leicester	Addison	21	7	33.3	1	4.8	0	0.0	0	0.0	0	0.0
Lemington	Essex	0										
Lewis	Essex	0										
Lincoln	Addison	0										
Londonderry	Windham	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lowell	Orleans	0										
Ludlow	Windsor	6	3	50.0	2	33.3	1	16.7	0	0.0	0	0.0
Lunenburg	Essex	0										



Table 3 cont.

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			# <i>B. burgdorferi</i>	% <i>B. burgdorferi</i>	# <i>A. phagocytophilum</i>	% <i>A. phagocytophilum</i>	# <i>B. microti</i>	% <i>B. microti</i>	# <i>B. miyamotoi</i>	% <i>B. miyamotoi</i>	# Deer Tick Virus	% Deer Tick Virus
Lyndon	Caledonia	0										
Maidstone	Essex	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Manchester	Bennington	9	7	77.8	1	11.1	0	0.0	*	*	*	*
Marlboro	Windham	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Marshfield	Washington	0										
Mendon	Rutland	3	2	66.7	0	0.0	0	0.0	0	0.0	0	0.0
Middlebury	Addison	59	35	59.3	7	11.9	9	15.3	0	0.0	0	0.0
Middlesex	Washington	6	4	66.7	0	0.0	0	0.0	0	0.0	0	0.0
Middletown Springs	Rutland	4	2	50.0	0	0.0	0	0.0	0	0.0	0	0.0
Milton	Chittenden	17	6	35.3	0	0.0	0	0.0	0	0.0	0	0.0
Monkton	Addison	18	12	66.7	0	0.0	0	0.0	0	0.0	0	0.0
Montgomery	Franklin	4	2	50.0	0	0.0	0	0.0	0	0.0	0	0.0
Montpelier	Washington	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Moretown	Washington	0										
Morgan	Orleans	0										
Morristown	Lamoille	0										
Mount Holly	Rutland	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mount Tabor	Rutland	32	12	37.5	8	25.0	8	25.0	0	0.0	0	0.0
New Haven^	Addison	26	11	42.3	2	7.7	2	7.7	0	0.0	0	0.0
Newark	Caledonia	0										
Newbury	Orange	13	7	53.8	0	0.0	0	0.0	0	0.0	0	0.0
Newfane	Windham	19	13	68.4	0	0.0	3	15.8	0	0.0	0	0.0
Newport City	Orleans	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Newport Town	Orleans	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
North Hero	Grand Isle	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Northfield	Washington	0										
Norton	Essex	0										
Norwich	Windsor	9	3	33.3	0	0.0	0	0.0	0	0.0	0	0.0
Orange	Orange	0										
Orwell	Addison	3	2	66.7	0	0.0	0	0.0	0	0.0	0	0.0
Panton	Addison	0										
Pawlet	Rutland	20	11	55.0	6	30.0	6	30.0	1	5.0	0	0.0
Peacham	Caledonia	0										
Peru	Bennington	0										
Pittsfield^	Rutland	7	1	14.3	0	0.0	0	0.0	0	0.0	0	0.0
Pittsford	Rutland	0										
Plainfield	Washington	0										
Plymouth	Windsor	1	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0
Pomfret	Windsor	32	19	59.4	6	18.8	0	0.0	*	*	*	*
Poultney	Rutland	33	12	36.4	3	9.1	3	9.1	0	0.0	0	0.0

Table 3 cont.

Town	County	# <i>I. scapularis</i> tested	Number and Percent Positive <i>I. scapularis</i> by Pathogen									
			# <i>B. burgdorferi</i>	% <i>B. burgdorferi</i>	# <i>A. phagocytophilum</i>	% <i>A. phagocytophilum</i>	# <i>B. microti</i>	% <i>B. microti</i>	# <i>B. miyamotoi</i>	% <i>B. miyamotoi</i>	# Deer Tick Virus	% Deer Tick Virus
Pownal	Bennington	11	7	63.6	1	9.1	0	0.0	0	0.0	0	0.0
Proctor	Rutland	8	3	37.5	0	0.0	0	0.0	0	0.0	0	0.0
Putney	Windham	8	1	12.5	1	12.5	1	12.5	0	0.0	0	0.0
Randolph	Orange	2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Reading	Windsor	53	34	64.2	0	0.0	0	0.0	*	*	*	*
Readsboro	Bennington	0										
Richford	Franklin	0										
Richmond	Chittenden	11	5	45.5	0	0.0	0	0.0	0	0.0	0	0.0
Ripton	Addison	0										
Rochester	Windsor	0										
Rockingham	Windham	9	7	77.8	1	11.1	0	0.0	*	*	*	*
Roxbury	Washington	0										
Royalton	Windsor	26	7	26.9	3	11.5	0	0.0	0	0.0	0	0.0
Rupert	Bennington	44	25	56.8	11	25.0	0	0.0	*	*	*	*
Rutland City	Rutland	35	16	45.7	3	8.6	1	2.9	2	5.7	0	0.0
Rutland Town	Rutland	24	12	50.0	0	0.0	0	0.0	0	0.0	0	0.0
Ryegate	Caledonia	11	6	54.5	0	0.0	0	0.0	0	0.0	0	0.0
Salisbury	Addison	0										
Sandgate	Bennington	15	10	66.7	4	26.7	1	6.7	0	0.0	0	0.0
Searsburg	Bennington	2	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0
Shaftsbury^	Bennington	61	32	52.5	9	14.8	0	0.0	*	*	*	*
Sharon	Windsor	3	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Sheffield	Caledonia	0										
Shelburne	Chittenden	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sheldon	Franklin	0										
Shoreham	Addison	0										
Shrewsbury	Rutland	0										
Somerset	Windham	0										
South Burlington	Chittenden	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0
South Hero	Grand Isle	54	34	63.0	0	0.0	0	0.0	*	*	*	*
Springfield	Windsor	0										
St Albans Town	Franklin	0										
St. Albans City	Franklin	0										
St. George	Chittenden	3	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0
St. Johnsbury	Caledonia	8	3	37.5	1	12.5	0	0.0	0	0.0	0	0.0
Stamford	Bennington	7	2	28.6	1	14.3	0	0.0	0	0.0	0	0.0
Stannard	Caledonia	0										
Starksboro	Addison	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Stockbridge	Windsor	0										
Stowe	Lamoille	0										



Table 3 cont.

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			# <i>B. burgdorferi</i>	% <i>B. burgdorferi</i>	# <i>A. phagocytophilum</i>	% <i>A. phagocytophilum</i>	# <i>B. microti</i>	% <i>B. microti</i>	# <i>B. miyamotoi</i>	% <i>B. miyamotoi</i>	# Deer Tick Virus	% Deer Tick Virus
Strafford	Orange	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Stratton	Windham	0										
Sudbury	Rutland	0										
Sunderland	Bennington	7	1	14.3	1	14.3	0	0.0	0	0.0	0	0.0
Sutton	Caledonia	0										
Swanton	Franklin	2	1	50.0	0	0.0	0	0.0	*	*	*	*
Thetford	Orange	73	35	47.9	13	17.8	6	8.2	0	0.0	0	0.0
Tinmouth	Rutland	6	4	66.7	2	33.3	0	0.0	1	16.7	1	16.7
Topsham	Orange	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Townshend	Windham	15	8	53.3	3	20.0	1	6.7	0	0.0	0	0.0
Troy	Orleans	0										
Tunbridge	Orange	2	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0
Underhill	Chittenden	16	13	81.3	1	6.3	0	0.0	0	0.0	0	0.0
Vergennes	Addison	2	1	50.0	0	0.0	0	0.0	0	0.0	*	*
Vernon	Windham	2	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0
Vershire	Orange	0										
Victory	Essex	0										
Waitsfield	Washington	0										
Walden	Caledonia	0										
Wallingford	Rutland	3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Waltham	Addison	4	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Wardsboro	Windham	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Warren	Washington	0										
Warren Gore	Essex	0										
Washington	Orange	0										
Waterbury	Washington	9	5	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Waterford	Caledonia	0										
Waterville	Lamoille	3	1	33.3	0	0.0	0	0.0	0	0.0	0	0.0
Weathersfield	Windsor	21	12	57.1	2	9.5	0	0.0	*	*	*	*
Wells	Rutland	11	9	81.8	2	18.2	0	0.0	0	0.0	0	0.0
West Fairlee	Orange	0										
West Haven	Rutland	6	5	83.3	1	16.7	0	0.0	0	0.0	0	0.0
West Rutland	Rutland	22	12	54.5	2	9.1	0	0.0	0	0.0	0	0.0
West Windsor	Windsor	8	4	50.0	0	0.0	0	0.0	1	12.5	*	*
Westfield	Orleans	0										
Westford	Chittenden	26	16	61.5	0	0.0	0	0.0	0	0.0	0	0.0
Westminster	Windham	0										
Westmore	Orleans	0										
Weston	Windsor	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Weybridge	Addison	16	9	56.3	1	6.3	0	0.0	0	0.0	*	*

Table 3 cont.

Town	County	# <i>I. scapularis</i> tested	Number and Percent Positive <i>I. scapularis</i> by Pathogen									
			# <i>B. burgdorferi</i>	% <i>B. burgdorferi</i>	# <i>A. phagocytophilum</i>	% <i>A. phagocytophilum</i>	# <i>B. microti</i>	% <i>B. microti</i>	# <i>B. miyamotoi</i>	% <i>B. miyamotoi</i>	# Deer Tick Virus	% Deer Tick Virus
Wheelock	Caledonia	0										
Whiting	Addison	2	2	100.0	0	0.0	1	50.0	0	0.0	*	*
Whitingham	Windham	0										
Williamstown	Orange	0										
Williston	Chittenden	10	6	60.0	0	0.0	0	0.0	*	*	*	*
Wilmington	Windham	1	0	0.0	0	0.0	0	0.0	*	*	*	*
Windham	Windham	0										
Windsor	Windsor	10	4	40.0	0	0.0	0	0.0	1	10.0	*	*
Winhall	Bennington	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Winooski	Chittenden	4	1	25.0	0	0.0	0	0.0	0	0.0	0	0.0
Wolcott	Lamoille	0										
Woodbury	Washington	0										
Woodford	Bennington	0										
Woodstock	Windsor	0										
Worcester	Washington	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL		1675	893	53.3	157	9.4	54	3.2	7	0.69	4	0.41

\*=not tested for this pathogen

^=more than one site visit

Numbers represent the number of blacklegged ticks that tested positively from that town. The percentage is the number of ticks that tested positive for the pathogen in that town over the total number of blacklegged ticks that were tested from that town. A (0) means that the blacklegged ticks collected from that town tested negative for the pathogen. Blank spaces represent towns where no blacklegged ticks were collected, thus no testing was done.

Figure 3. Vermont Collection Sites Positive for *B. burgdorferi* (Lyme disease)

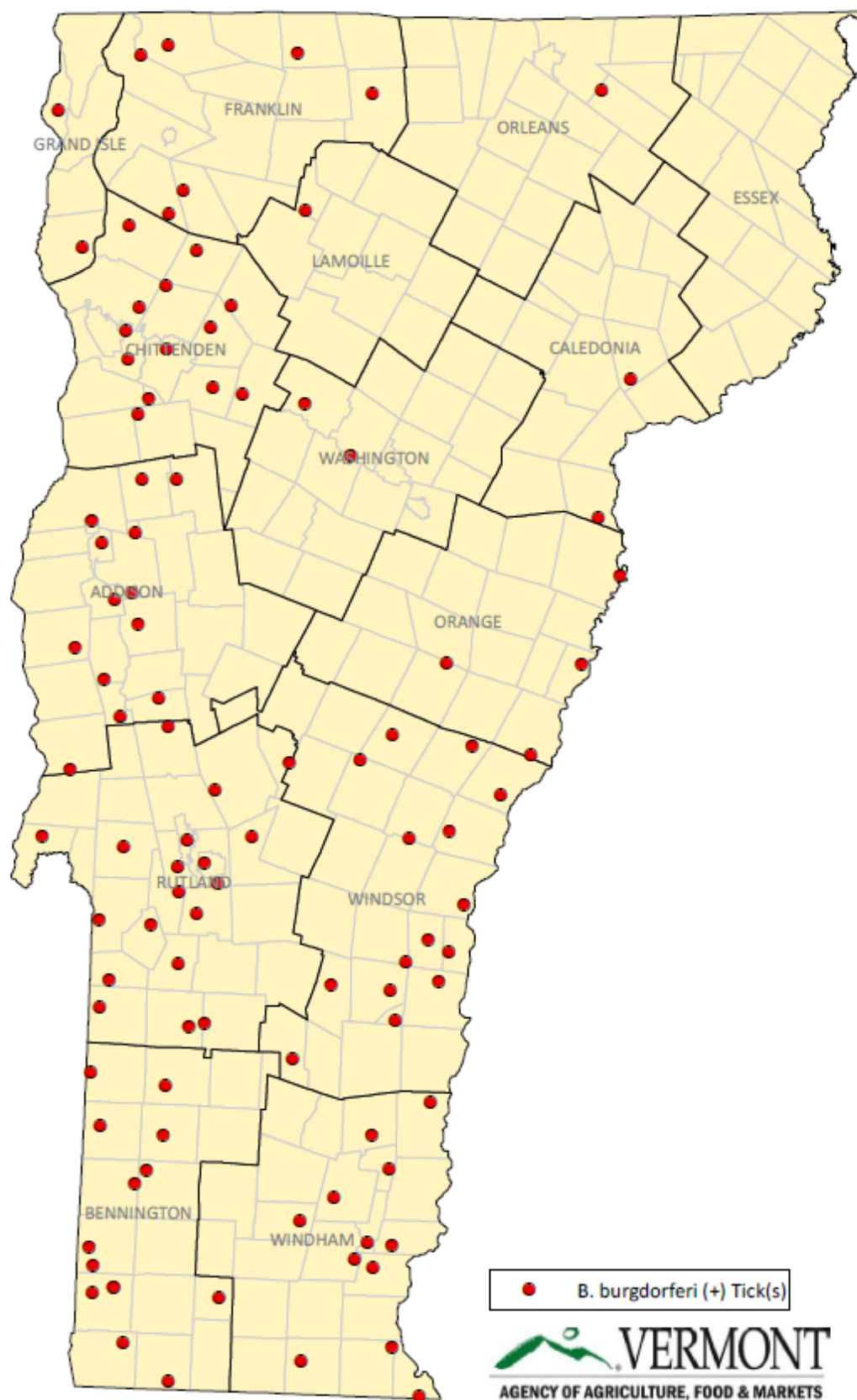


Figure 4. Vermont Collection Sites Positive for *A. phagocytophilum* (Anaplasmosis)

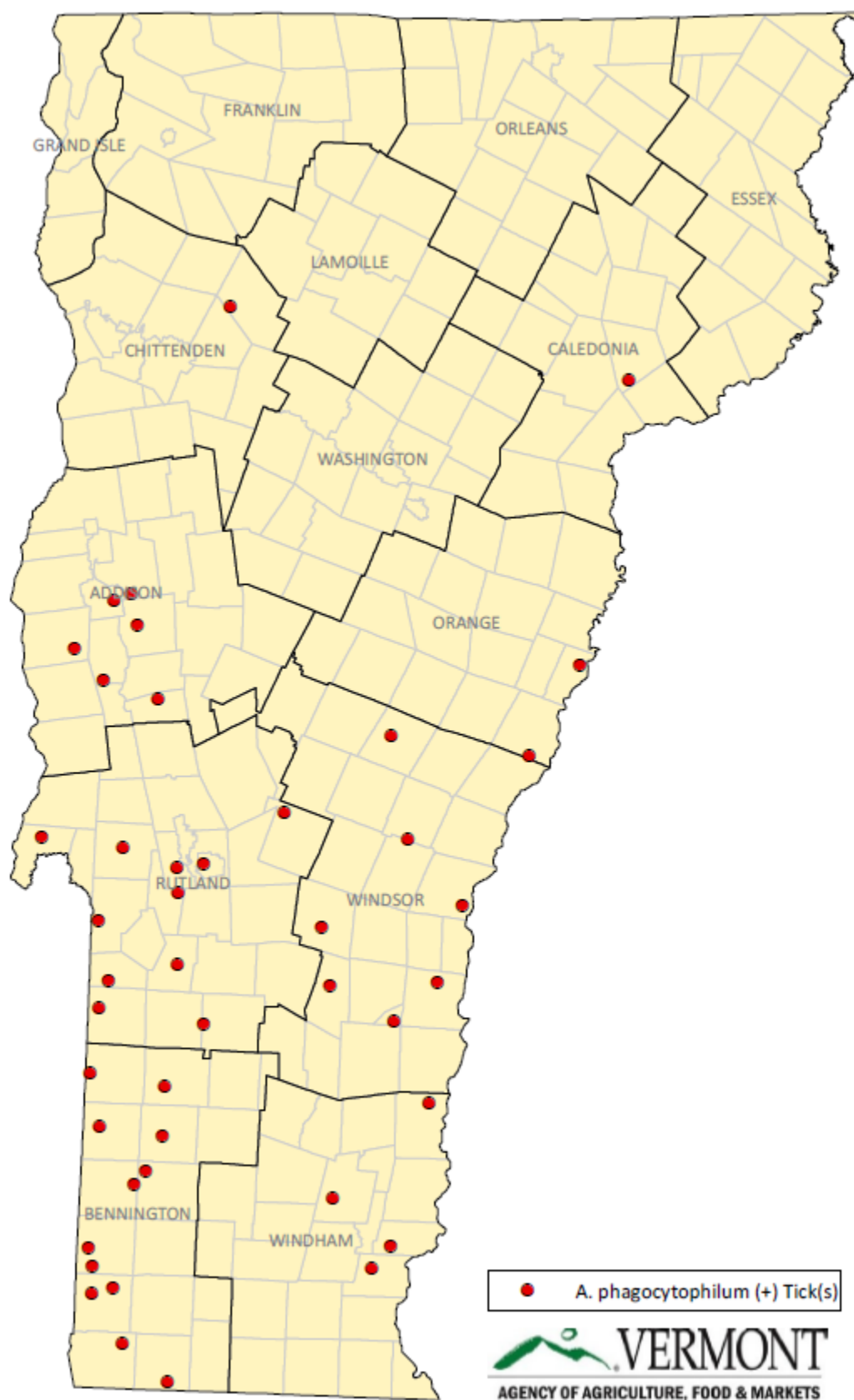


Figure 5. Vermont Collection Sites Positive for *B. microti* (Babesiosis)

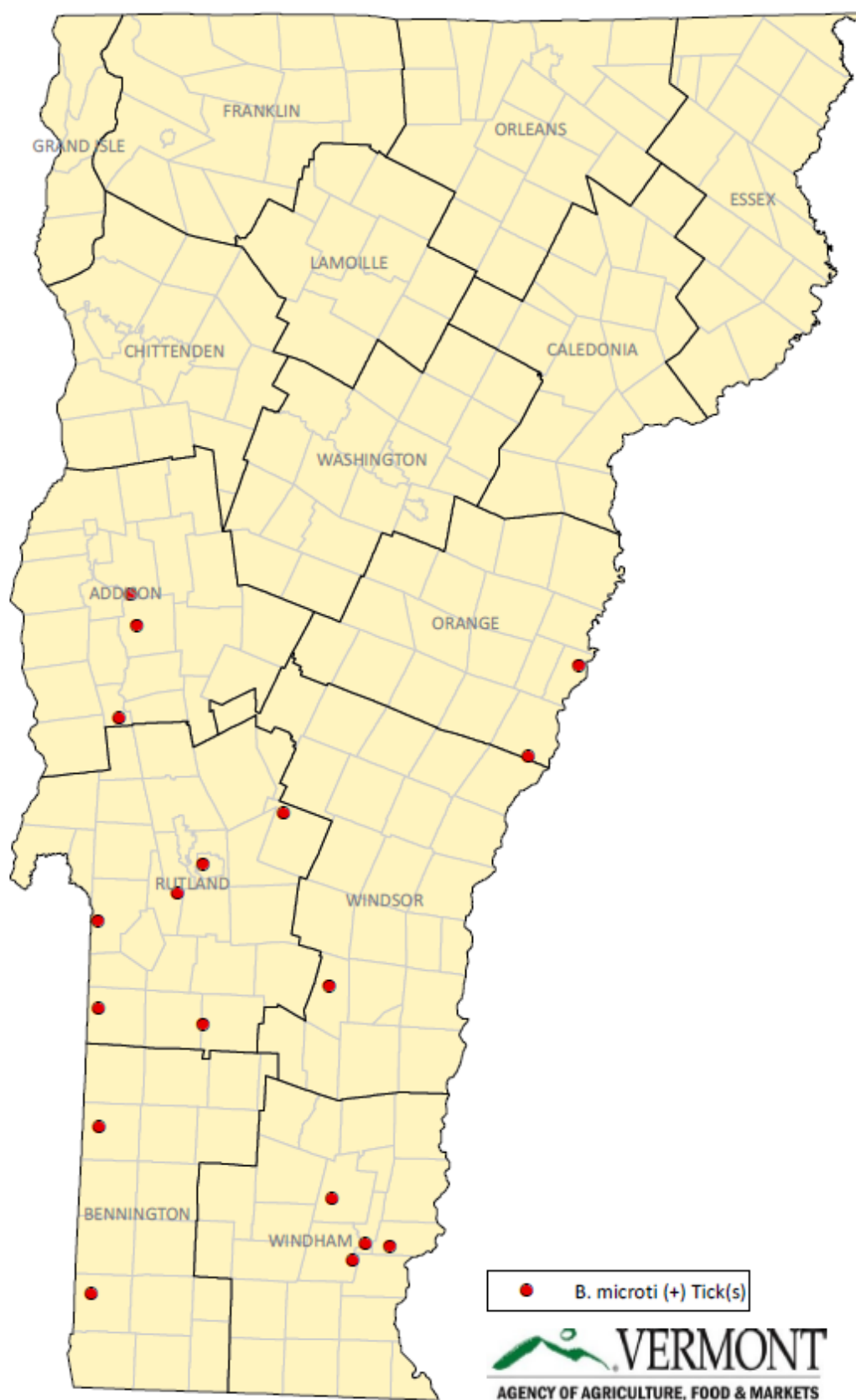


Figure 6. Vermont Collection Sites Positive for *B. miyamotoi* (*B. miyamotoi* disease)

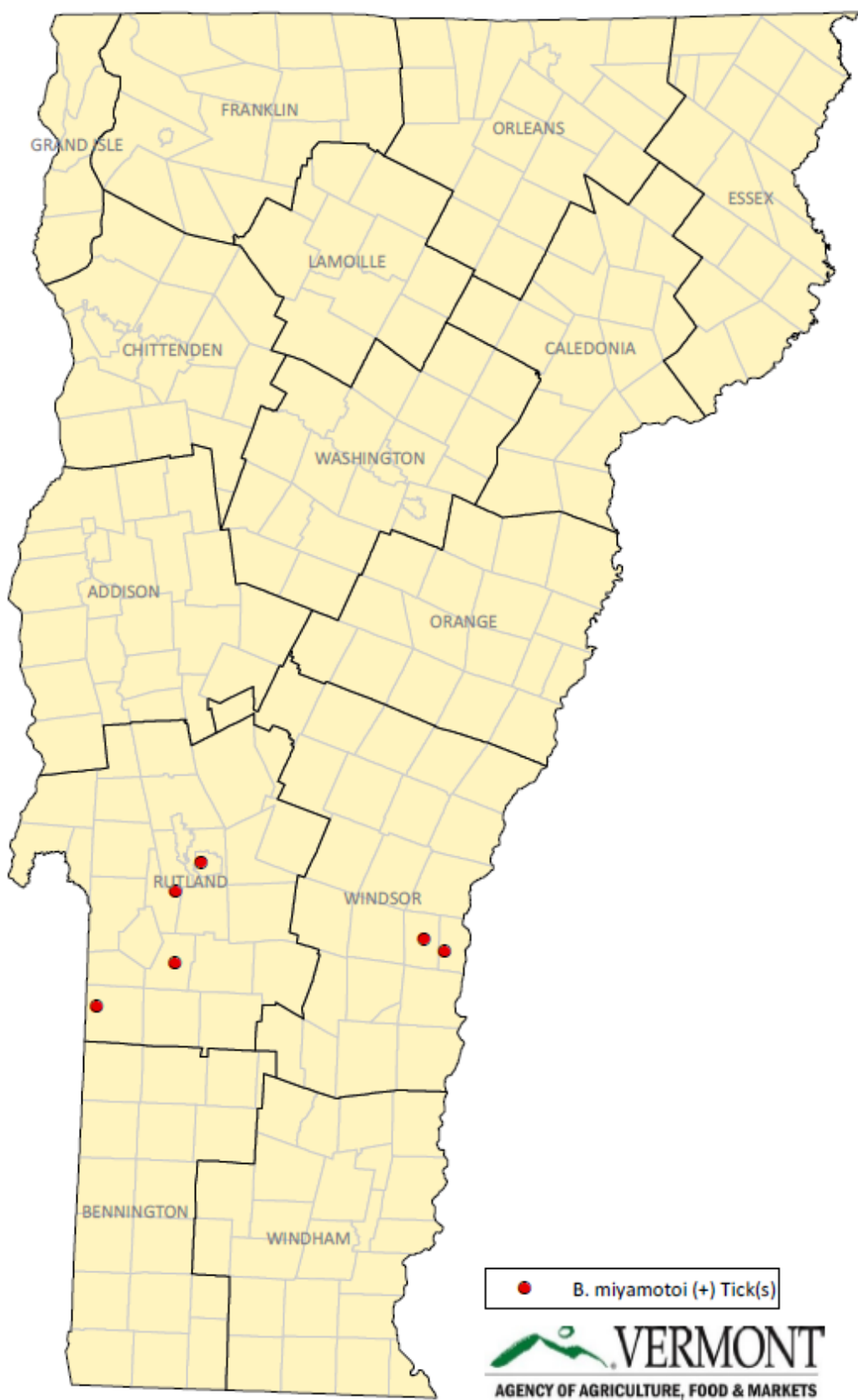
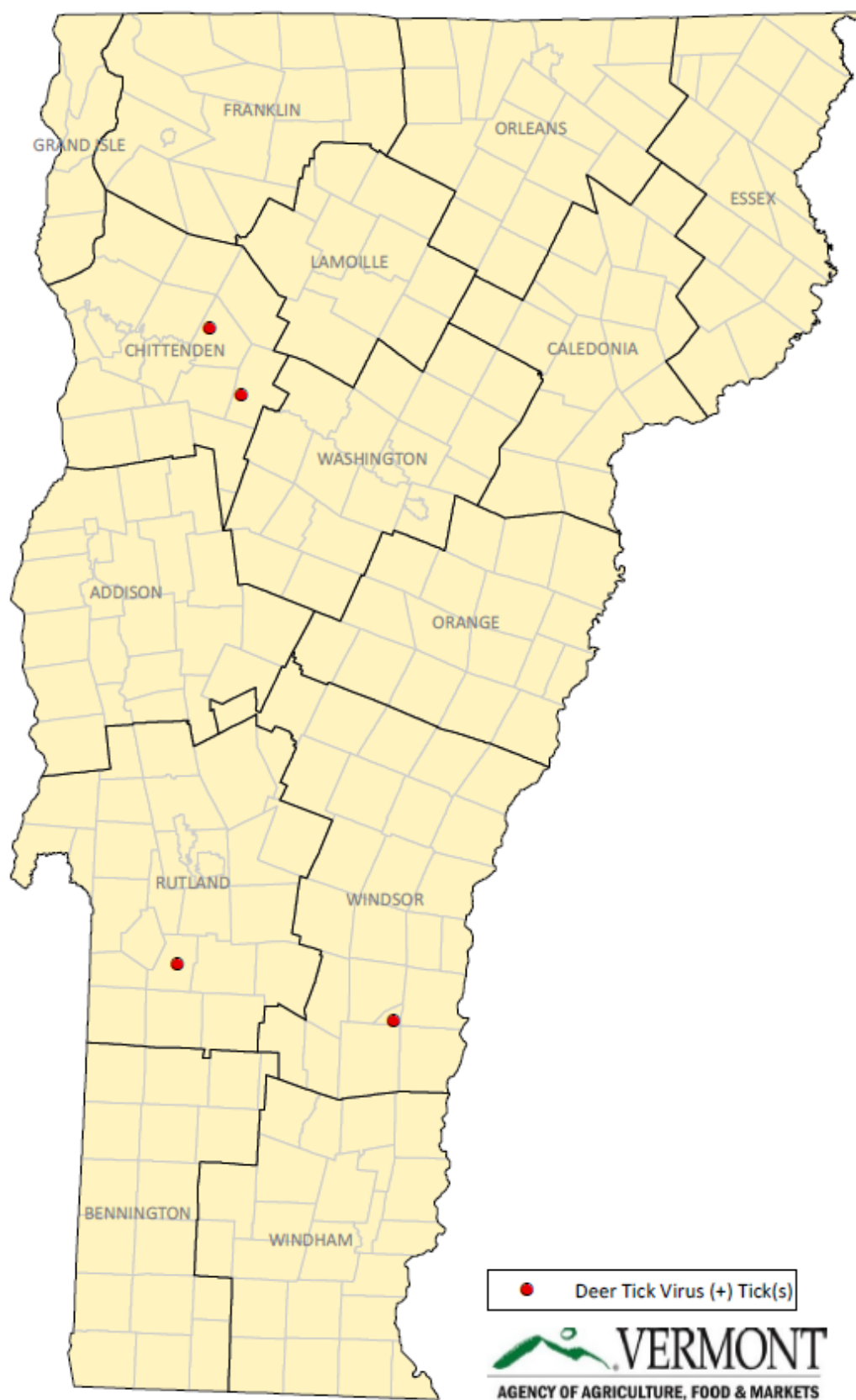




Figure 7. Vermont Collection Sites Positive for Deer Tick Virus (Powassan virus lineage 2)



## Conclusions

As of 2020, VAAFM is engaged in the second leg of our 5-year statewide density and pathogen prevalence study. We will continue sampling all towns in Vermont in the next 5 years and compare results with those found in this report to begin to analyze scientifically the dynamics of tick abundance and distribution, pathogenicity, and phenology in the state of Vermont.

The best way to prevent tickborne diseases is to prevent tick bites.

- Avoid areas where ticks live
- Use an EPA-registered insect repellent
- Wear long sleeves and pants
- Tuck pants into socks
- Do a thorough tick check of your body after being outside
- Shower immediately after being outside
- Put clothes into a dryer for 20 min on high after being outside
- Promptly remove any ticks attached to your body using tweezers
- Watch for any symptoms of illness following a tick being attached to your body

For more information about ticks in Vermont, please visit our website: [Agriculture.Vermont.gov](https://Agriculture.Vermont.gov) or the Vermont Department of Health's website: [HealthVermont.gov/disease-control/tickborne-diseases](https://HealthVermont.gov/disease-control/tickborne-diseases).