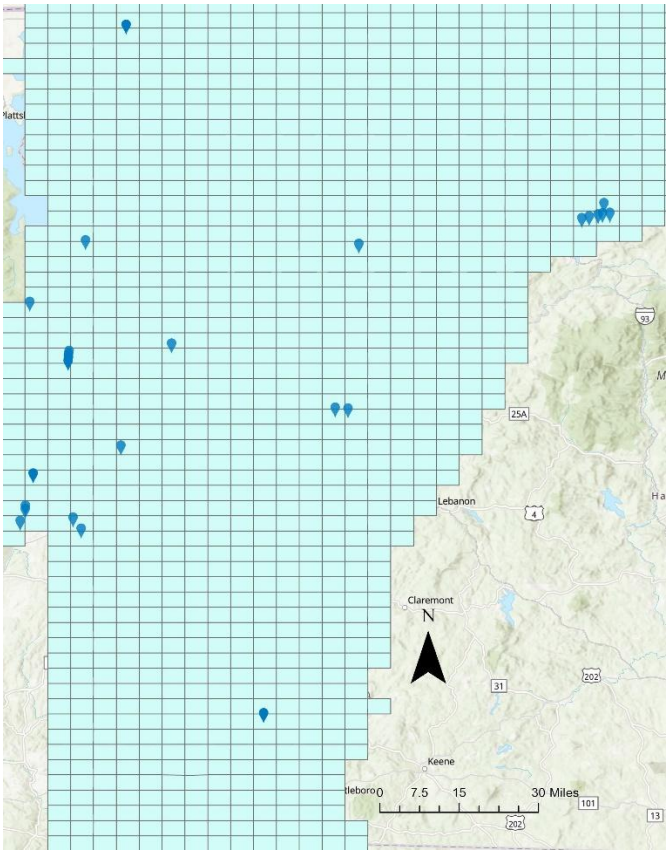
2022 Eastern Whip-poor-will Survey:



Locations of 2022 Eastern Whip-poor-wills in Vermont by Breeding Bird Survey Block

Annual Report to

Vermont Fish & Wildlife Department

VERMONT CENTER FOR ECOSTUDIES
Uniting People and Science for Conservation

Acknowledgements

We would like to thank the Vermont Fish & Wildlife Department for supporting this work. Thanks also to the dedicated team of 2022 volunteers who spent their time scouting during the day, surveying for Whip-poor-wills at night, and recording their data in detail.

Introduction

The Eastern Whip-poor-will (*Antrostomus vociferus*) is a crepuscular and nocturnal aerial insectivore that breeds across eastern North America and overwinters in southern Florida, eastern Mexico, and Central America (Sibley 2003; Skinner et al. 2022). In their breeding range, Eastern whip-poor-wills use dry, low-elevation forests for nesting and diurnal roosting, in addition to nearby open habitats for foraging (Spiller and King 2021). These medium-sized birds primarily feed on moths and beetles (Souza-Cole et al. 2022). Their breeding season generally occurs from late May through early July, with egg-laying timed so that hatching coincides with the full moon phase (Cink 2002). Eggs are laid on the forest floor and incubated for approximately 20 days (Raynor 1941).

Habitat requirements for this species are complex and necessitate a mix of open-understory forests for breeding and rearing young, and large tracts of open land to forage successfully (Hunt 2006). Examples of breeding habitat include forests with dry, nutrient-poor soils such as Pine Barrens and Pine-oak woodlands. Suitable foraging habitats include fields, open wetlands, linear infrastructure rights-of-way, agricultural fields, and recently logged or burned areas (Hunt 2013).

In Vermont, Whip-poor-will records can be found across most of the state but tend to be concentrated along the western and eastern edges of the state at low elevations, and are not typically found in the mid to high elevations of the Green Mountains or in much of the Northeastern Highlands (eBird 2022). In 2011, the State of Vermont Endangered Species Committee formally listed the Eastern whip-poor will as threatened. This listing was based on meeting two required criteria for threatened designations, an estimated fewer than 300 reproducing individuals (females) in the state and an overall decline in the species at the state or regional level.

Project Background

Volunteer Surveys

With concern over the status of Whip-poor-wills in Vermont and the knowledge that traditional bird survey methods such as those used in the Breeding Bird Survey do not adequately represent nocturnal or crepuscular species (Bart et al. 2005), species-specific survey methods have been used to better survey Eastern Whip-poor-wills. Because of this, in 2005, the Northeast Nightjar Survey expanded to Vermont in the form of nocturnal survey

routes. Routes were selected based on the presence of open or edge habitat (National Land Cover Database), well-drained soils, elevations under 1,500', and appropriate forest cover types (Hunt 2006). Each route was established with a series of ten points spaced 0.5 miles apart, with surveyors completing a three-minute count at each point. In 2007, the protocol was updated to its current version, which uses ten six-minute point counts at locations spaced one mile apart (Hunt 2007). Supplemental points are surveyed to assist in the tallying and triangulation of individual whip-poor-wills detected at the original points. Supplemental points are chosen 0.8km (0.5 miles) in each cardinal direction away from the original points.

Whip-poor-will surveys are timed to occur at least 15 minutes after sunset and end no later than 15 minutes before sunrise on waxing and waning moon cycles where there is at least 50% moon face illumination in order to maximize the effect moonlight has on detectability. Whip-poor-will detection probability is approximately 50% when the moon is greater than half full, over two times greater than when the moon is less than 25% full (Wilson and Watts 2006). To further increase the detectability of birds on a given route, surveys are only conducted on clear nights with wind speeds under 8mph and when background noises have no appreciable effect on the surveyor's ability to hear Whip-poor-wills. The survey period varies based on latitude and a start date two weeks after the average arrival date. For 2022, the survey period for southern Vermont extended from May 16th to May 22nd and again from June 7th through the 20th. While in northern Vermont, the survey period ran from June 7th and ended July 20th.

VCE Surveys

For 2022, VCE did not conduct its staff-driven surveys but resumed its role in coordinating volunteer surveys and collecting those data.

Methods

As in previous years, surveys started 20–30 minutes after sunset and continued as long as the moon was visible and the weather was suitable. During the waning moon, surveys began after sunset, continued until dark, then were delayed for varying amounts of time until the moon rose above the horizon. Early morning surveys ended 15 minutes before sunrise. Surveys were not conducted if conditions were windy (wind speed > 8 mph), cloudy (> 50% cloud cover), or rainy. Some points were repeated due to declining weather conditions in the first survey or if a survey ended at a point with a calling Whip-poor-will. If a calling individual was detected just before dawn, moon set, or declining weather, the original point

would be re-surveyed and cluster sampling would begin.

Each point on a given route included a six-minute count, during which time two observers listened and recorded birds independently of one another. At each point, latitude, longitude, wind speed, cloud cover, temperature, and noise were noted. Passing cars were noted during the course of the survey. The survey consisted of listening for one-minute intervals for six minutes, with a compass bearing and qualitative proximity assessment ("very close," "close," "far," or "very far") if a Whip-poor-will was heard. Because Whip-poor-wills are often found in clusters, we used cluster sampling to potentially detect more birds in the vicinity of a detection. If a bird was detected at a point, a supplemental point survey would be completed approximately 0.5 miles away in as many directions as possible. Ideally, there would have been two to three supplemental points available for each original point where a Whip-poor-will was heard; however, this was not always possible due to a lack of roads, impending sunrise or moonset, inclement weather, or time constraints.

If a Whip-poor-will was detected, observers would take a bearing to estimate the location of the individual bird. At the end of each point count, observers would review the quantity and possible location of calling birds and make notes of directions based on the visible landscape at the point. Any detections were mapped along the compass bearing and noted to be approximately 1 km for a "very far" distance code, 0.5 km - 0.75 km for a "far" distance code, and 0.25 km or less for "close" or "very close" distance codes.

Results and Discussion

Volunteer Surveys

In 2022, volunteers surveyed 12 established Whip-poor-will routes under the conditions and methodology described above. The routes surveyed were, Berkshire, Brandon, Concord, Fair Haven, Georgia Plains, Highgate, Pawlet, Rutland, Salisbury, Snake Mountain, South Tunbridge, and West Haven. Coordinates for each survey point, the number of Whip-poor-wills encountered and route maps are included in the tables and appendices below. Half of the routes (6) had Whip-poor-wills calling during the surveys with a total of 18 singing males across 13 of the 117 total points surveyed (Salisbury has 11 established survey points; 4 of the 10 West Haven points were inaccessible during the survey period). Routes with Whip-poor-wills in 2022 were Brandon, Concord, Fair Haven, Snake Mountain, South Tunbridge, and West Haven. This is consistent with surveys at these sites over the past five years where Whip-poor-will have typically been recorded at the sites with positive identifications in 2022

and not occurring at the remaining six sites.

These counts resulted in an average of 3.67 singing Whip-poor-wills per route with positive identification. The West Haven route consistently outperforms the other established routes in terms of singing Whip-poor-wills by a wide margin and 2022 was no exception. In 2022, six singing Whip-poor-wills were recorded over six points at this site, twice as many birds as the second-highest site for this year. The average number of singing birds in 2022 per ten-point route excluding West Haven was 2.4.

To compile these data, 12 volunteers contributed 53.5 hours of work and over 600 miles of travel to and from sites.

eBird Observations

Thirty-seven Whip-poor-will observations, separate from those recorded by surveys, from across the state were submitted to eBird in the month of June. Search query into eBird data was limited to June in order to capture reported singing birds during peak breeding season. These observations in addition to those routes surveyed this year occurred over 19 Breeding Bird Survey blocks. From 2020-2022, Whip-poor-wills have been documented on 44 different Breeding Bird survey blocks in Vermont, similar to the 2017-2019 (42), and 2014-2016 (41) totals. Observations being limited to 19 blocks in 2022 is likely a result of reduced effort as opposed to signaling a decline in occupancy in the state. As opposed to previous years, 2022 had no VCE surveys, fewer volunteer routes, and a reduction in June eBird observations over the past two years (37 in 2022, 41 in 2021) compared to previous years (159 in 2020, 56 in 2019).

Future Directions

Several strategies should be used moving forward to help improve Whip-poor-will surveys in Vermont.

- Increase contributions from eBird

With 159 contributed observations to eBird during peak breeding season, 2020 stands out as an example of how eBird can be mobilized to collect data on a species not always effectively captured by other survey protocols. An intentional outreach effort aimed at getting birders out in the evenings of June throughout the state to listen for Whip-poor-wills and report their checklists to eBird can go a long way in improving what we know about the distribution of this species in the state, inform the state's population estimate and identify areas for future targeted surveys.

- Improve survey effort at Whip-poor-will “hotspots”

Most Whip-poor-will routes have few if any birds recorded, but some, such as West Haven and Benson have at times had Whip-poor-will abundances several times greater than the average of the other routes in the state. These areas, while reliably having Whip-poor-wills, also have great variability in the number of birds reported. Increasing survey effort at these sites by using trained surveyors over several visits during the breeding season can reduce this variability, improve our confidence in the abundance on site and help refine population estimates.

-Establish new routes

Using observations submitted to eBird, new routes should be established in areas where birds are known to exist but have not been surveyed. This will further improve our confidence in population estimates

-Expand volunteer group

The Whip-poor-will monitoring effort has benefited immensely from a dedicated group of volunteers that adopt routes in Whip-poor-will habitat. As some volunteers have retired routes and new individuals join the group, a concerted effort should be made to fill vacancies and have any newly established routes adopted to maximize the area covered by volunteers during the breeding season

-Consistent and well-planned use of Autonomous Recording Units (ARUs) to document Whip-poor-wills

ARUs have been deployed in the past to increase sampling effort in areas where Whip-poor-wills were expected to be present. As this technology continues to advance, units become cheaper, and analysis quicker and easier, these units have the potential to greatly expand sampling efforts in the state and significantly improve our understanding of this species’ distribution as well as aid in monitoring any future management conducted to benefit Whip-poor-wills and their associated habitat.

Conclusion

The 2022 survey effort reconfirmed Whip-poor-will occupancy along six established routes and failed to identify Whip-poor-wills along six additional routes where Whip-poor-will have not been documented in the recent past. This year also marked the development of a recovery strategy for this species and the 2022 surveys coupled with additional

observations reported to eBird were additions to the previous 11 years of data following the Whip-poor-wills listing as threatened in 2011. These data help to inform the distribution of the species across the state as well as inform a statewide population estimate.

Literature Cited

Cink, Calvin L. 2002. Whip-poor-will (*Caprimulgus vociferus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/620

Hunt, P.D. 2006. An Analysis of Whip-poor-will Habitat Use in the Piscataquog River Watershed: 2003-2005. Report to the Piscataquog Watershed Association. Audubon Society of New Hampshire, Concord.

Hunt, P.D. 2007. Northeast Nightjar Survey: 2007 Summary. Reports to Nuttall Ornithological Club and American Bird Conservancy. Audubon Society of New Hampshire, Concord.

Hunt, P.D. 2013. Habitat use by the Eastern Whip-poor-will (Antrostomus vociferus) in New Hampshire, with recommendations for management. Report to the NH Fish and Game Department, Nongame and Endangered Species Program. New Hampshire Audubon, Concord.

Raynor, G.S. 1941. The Nesting Habits of the Whip-Poor-Will. Bird Banding 12:98-104.

Sibley, David, 2003. The Sibley field guide to birds of eastern North America. New York :Alfred A. Knopf

Skinner, A.A., Ward, M.P., Souza-Cole, I., Wright, J.R., Thompson, F.R., Benson, T.J., Matthews, S.N., Tonra, C.M. 2022. High spatiotemporal overlap in the non-breeding season despite geographically dispersed breeding locations in the eastern whip-poor-will (*Antrostomus vociferous*). Diversity and Distribution. 28:712-726.

Souza-Cole, I.F., Ward, M.P., Mau, R.L., Foster, J.T., Benson, T.J. 2022. Eastern Whip-poor-will abundance declines with urban land cover and increases with moth abundance in the American Midwest. Ornithological Applications. 124: 1-13.

Spiller, K.J., and King, D.I. 2021. Breeding Habitat Associations of Eastern Whip-Poor-Wills in Managed Forests. Journal of Wildlife Management. 85:1009-1016.

Wilson, M.D., and B.D. Watts. 2006. The effect of moonlight on detection of Whip-poor-wills: implications for long-term monitoring strategies. Journal of Field Ornithology. 77: 207-211.

Figure 1: 2022 Documented Whip-poor-will occurrences (eBird and survey route data) and Breeding Bird Survey Blocks in Vermont

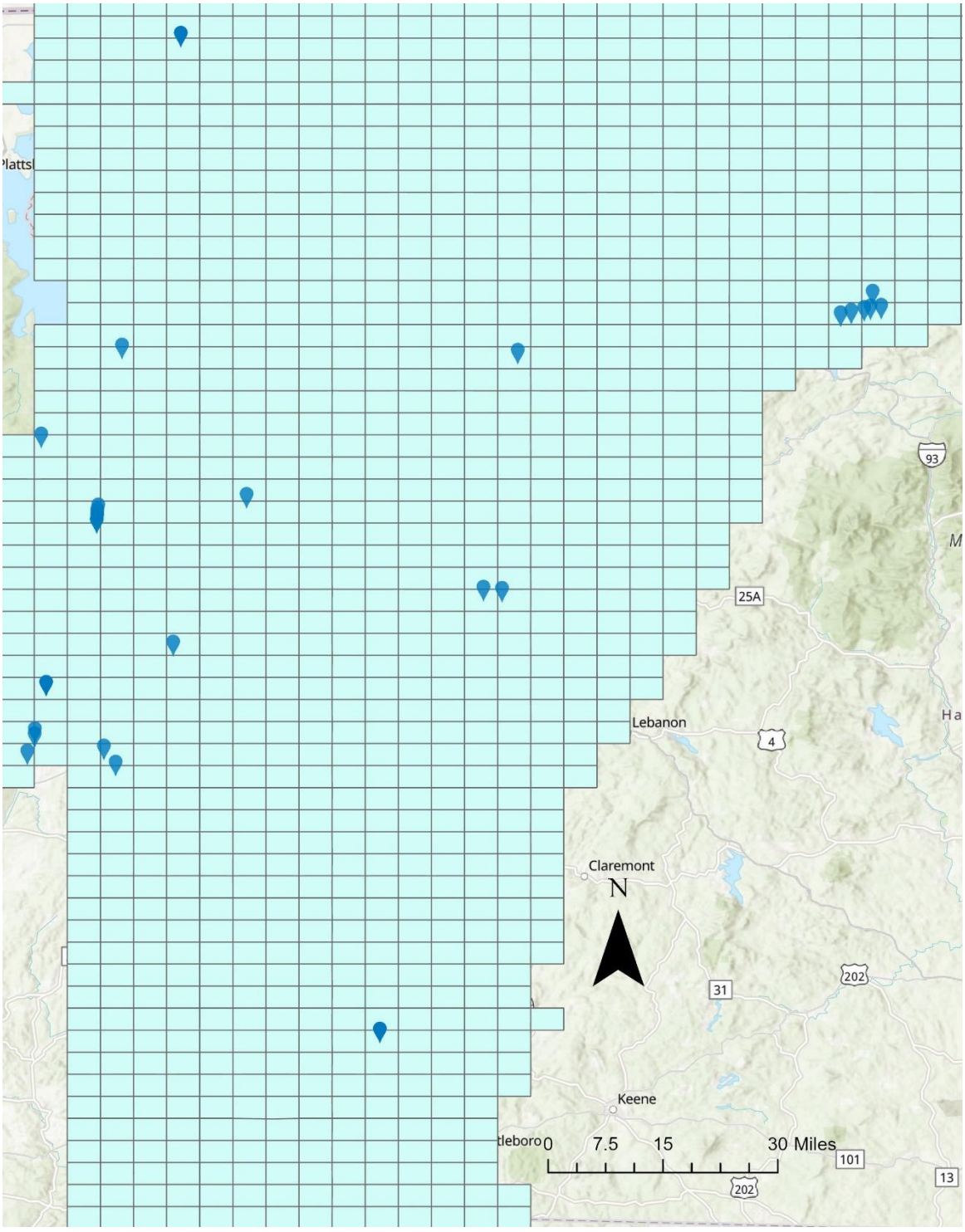


Table 1: 2022 Whip-poor-will survey point locations and number of observations

Point ID	Lat	Long	# EWPW
Berk_1	45.0067	-72.7736	0
Berk_2	44.9925	-72.7768	0
Berk_3	44.9781	-72.7754	0
Berk_4	44.9638	-72.7733	0
Berk_5	44.9496	-72.7714	0
Berk_6	44.936	-72.7711	0
Berk_7	44.934	-72.779	0
Berk_8	44.923	-72.7967	0
Berk_9	44.9149	-72.7913	0
Berk_10	44.918	-72.7713	0
Bran_1	43.79629	-73.0952	0
Bran_2	43.78946	-73.1122	1
Bran_3	43.7831	-73.1294	0
Bran_4	43.78428	-73.1463	0
Bran_5	43.78581	-73.1607	0
Bran_6	43.78304	-73.1797	0
Bran_7	43.79208	-73.192	0
Bran_8	43.79659	-73.2056	0
Bran_9	43.79008	-73.2182	0
Bran_10	43.77613	-73.2142	0
Conc_1	44.42691	-71.888	0
Conc_2	44.41528	-71.89	0
Conc_3	44.40463	-71.8785	0

Conc_4	44.40145	-71.8616	0
Conc_5	44.41151	-71.8518	1
Conc_6	44.41634	-71.8318	1
Conc_7	44.42007	-71.8137	0
Conc_8	44.4246	-71.7955	1
Conc_9	44.42583	-71.7752	2
Conc_10	44.42573	-71.7555	0
FaHa_1	43.59285	-73.243	1
FaHa_2	43.5786	-73.2427	0
FaHa_3	43.56586	-73.2368	0
FaHa_4	43.56242	-73.2209	1
FaHa_5	43.55438	-73.2118	0
FaHa_6	43.54073	-73.2132	0
FaHa_7	43.52843	-73.2043	0
FaHa_8	43.52642	-73.1897	0
FaHa_9	43.51618	-73.1778	0
FaHa_10	43.5067	-73.1712	0
Georg_1	44.72571	-73.1306	0
Georg_2	44.72308	-73.1507	0
Georg_3	44.71781	-73.1651	0
Georg_4	44.70472	-73.1597	0
Georg_5	44.69037	-73.162	0
Georg_6	44.67625	-73.1625	0
Georg_7	44.6644	-73.1668	0

Georg_8	44.6623	-73.1829	0
Georg_9	44.65402	-73.1943	0
Georg_10	44.63917	-73.1958	0
High_1	44.9357	-73.094	0
High_2	44.92527	-73.0992	0
High_3	44.93101	-73.1107	0
High_4	44.94524	-73.1134	0
High_5	44.95839	-73.1038	0
High_6	44.95524	-73.0924	0
High_7	44.9494	-73.0787	0
High_8	44.95839	-73.0623	0
High_9	44.96756	-73.0495	0
High_10	44.97078	-73.0303	0
Pawl_1	43.41491	-73.1318	0
Pawl_2	43.41079	-73.1492	0
Pawl_3	43.39837	-73.1497	0
Pawl_4	43.39066	-73.1384	0
Pawl_5	43.37927	-73.1413	0
Pawl_6	43.36606	-73.1459	0
Pawl_7	43.35331	-73.1528	0
Pawl_8	43.34286	-73.16	0
Pawl_9	43.33071	-73.1513	0
Pawl_10	43.31714	-73.1496	0
Rutl_1	43.58615	-72.9516	0

Rutl_2	43.57156	-72.9514	0
Rutl_3	43.5577	-72.9453	0
Rutl_4	43.54392	-72.9391	0
Rutl_5	43.53026	-72.9327	0
Rutl_6	43.52403	-72.9425	0
Rutl_7	43.51793	-72.96	0
Rutl_8	43.52312	-72.973	0
Rutl_9	43.53197	-72.9824	0
Rutl_10	43.54576	-72.9834	0
Sali_1	43.91204	-73.1206	0
Sali_2	43.90909	-73.1409	0
Sali_3	43.89887	-73.1501	0
Sali_4	43.88498	-73.1459	0
Sali_5	43.87506	-73.1595	0
Sali_6	43.86589	-73.1476	0
Sali_7	43.85469	-73.1529	0
Sali_8	43.85093	-73.1699	0
Sali_9	43.83643	-73.1718	0
Sali_10	43.82266	-73.1799	0
Sali_11	43.81221	-73.1708	0
SnMo_1	43.99398	-73.2526	0
SnMo_2	44.00664	-73.2543	0
SnMo_3	44.02059	-73.2565	1
SnMo_4	44.03522	-73.2556	1

SnMo_5	44.04844	-73.2536	1
SnMo_6	44.0623	-73.2591	0
SnMo_7	44.07578	-73.2546	0
SnMo_8	44.08655	-73.245	0
SnMo_9	44.09882	-73.2466	0
SnMo_10	44.11247	-73.2413	0
STun_1	43.81391	-72.5029	0
STun_2	43.81796	-72.4858	0
STun_3	43.83019	-72.4754	0
STun_4	43.84281	-72.4669	0
STun_5	43.85678	-72.4638	0
STun_6	43.86532	-72.4789	0
STun_7	43.86472	-72.4968	0
STun_8	43.87639	-72.5036	0
STun_9	43.88223	-72.5169	0
STun_10	43.89304	-72.5263	1
WeHa_1	43.65	-73.3926	0
WeHa_2	43.63704	-73.3905	0
WeHa_3	43.62756	-73.3763	0
WeHa_4	43.61605	-73.3739	3
WeHa_5	43.60431	-73.3737	N/A
WeHa_6	43.59401	-73.3826	NA
WeHa_7	43.58354	-73.3876	3
WeHa_8	43.57444	-73.3912	N/A

WeHa_9	43.57286	-73.4038	N/A
WeHa_10	43.58232	-73.4197	0

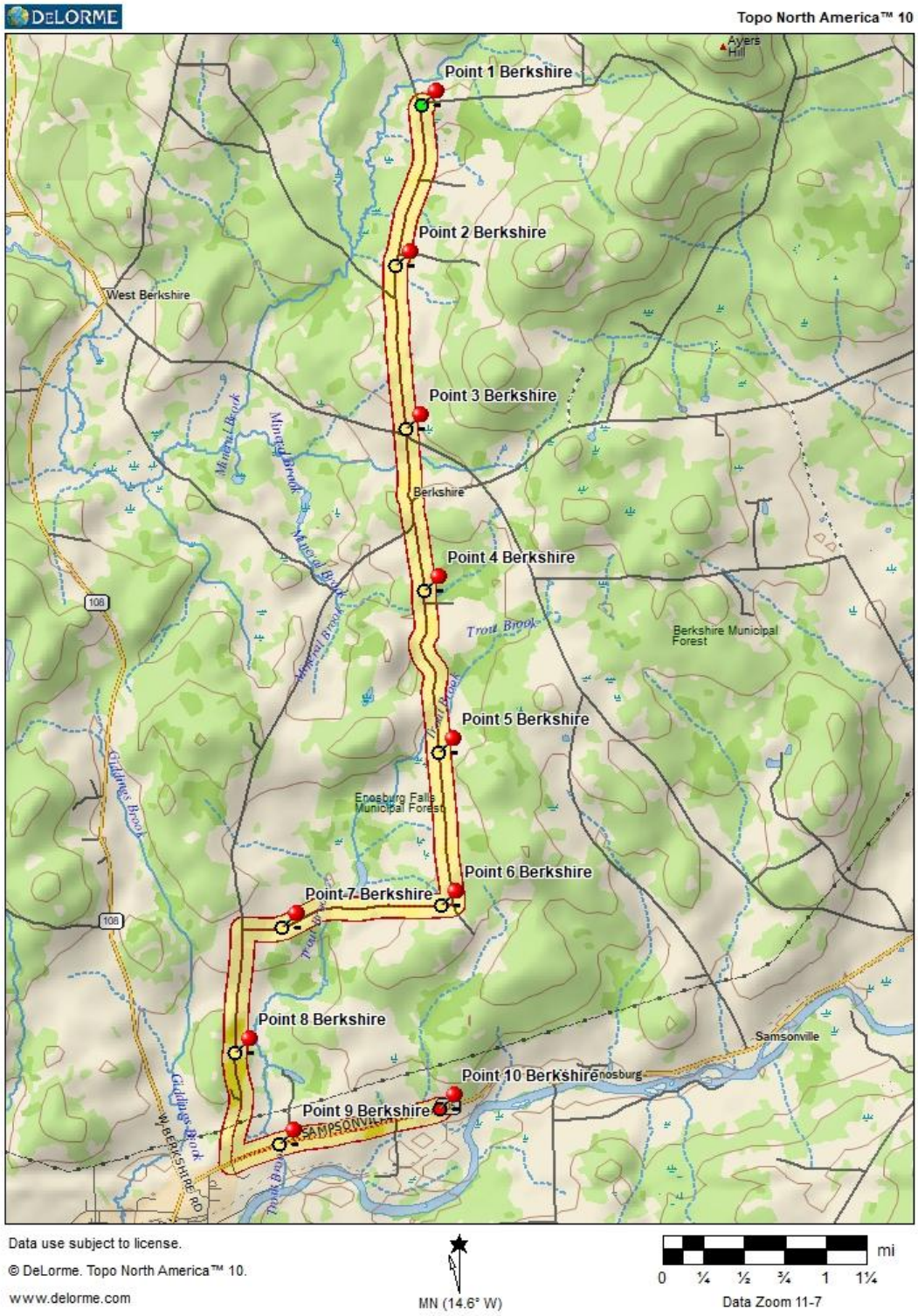
Table 2: June 2022 eBird Whip-poor-will observation locations

Location	Lat	Long	Date
Lake Road, Benson (Home)	43.71318	-73.3521	6/1/22
Snake Mtn. Rd. Weybridge	44.02973	-73.2556	6/2/22
1603 Lime Kiln Rd, Charlotte	44.35059	-73.2089	6/3/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/3/22
Snake Mtn. Rd. Weybridge	44.02973	-73.2556	6/5/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/5/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/6/22
County Rd, South Lincoln	44.0684	-72.9736	6/8/22
Leonard Hill Road, Concord Corners	44.42158	-71.8073	6/8/22
Rt. 2 at Beach Drive	44.45239	-71.7914	6/8/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/9/22
Snake Mtn. Rd. Weybridge	44.02973	-73.2556	6/10/22
Tunbridge	43.89087	-72.4912	6/10/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/10/22
Anderson House	43.05789	-72.7219	6/10/22
Button Bay State Park	44.18245	-73.3614	6/11/22
Franklin Co. State Airport IBA	44.9398	-73.0978	6/11/22
Franklin Co. State Airport IBA	44.9398	-73.0978	6/11/22
Franklin Co. State Airport IBA	44.9398	-73.0978	6/11/22
Franklin Co. State Airport IBA	44.9398	-73.0978	6/11/22
Anderson House	43.05789	-72.7219	6/11/22
Anderson House	43.05789	-72.7219	6/12/22

Lake Road, Benson (Home)	43.71318	-73.3521	6/13/22
Frizzle Mountain	44.34087	-72.4616	6/13/22
Snake Mtn. Rd. Weybridge	44.02973	-73.2556	6/14/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/14/22
Cogman Road / Ghost Hollow Road	43.6254	-73.3733	6/15/22
Anderson House	43.05789	-72.7219	6/17/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/18/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/20/22
Anderson House	43.05789	-72.7219	6/23/22
Snake Mtn. Rd. Weybridge	44.02973	-73.2556	6/26/22
Owl and Whip-poor-will listening location north of barn.	44.04051	-73.2553	6/26/22
Snake Mtn. Road intersection with Forrest Road.	44.02133	-73.2565	6/26/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/26/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/28/22
Lake Road, Benson (Home)	43.71318	-73.3521	6/29/22

Appendix: Survey Route Location Maps

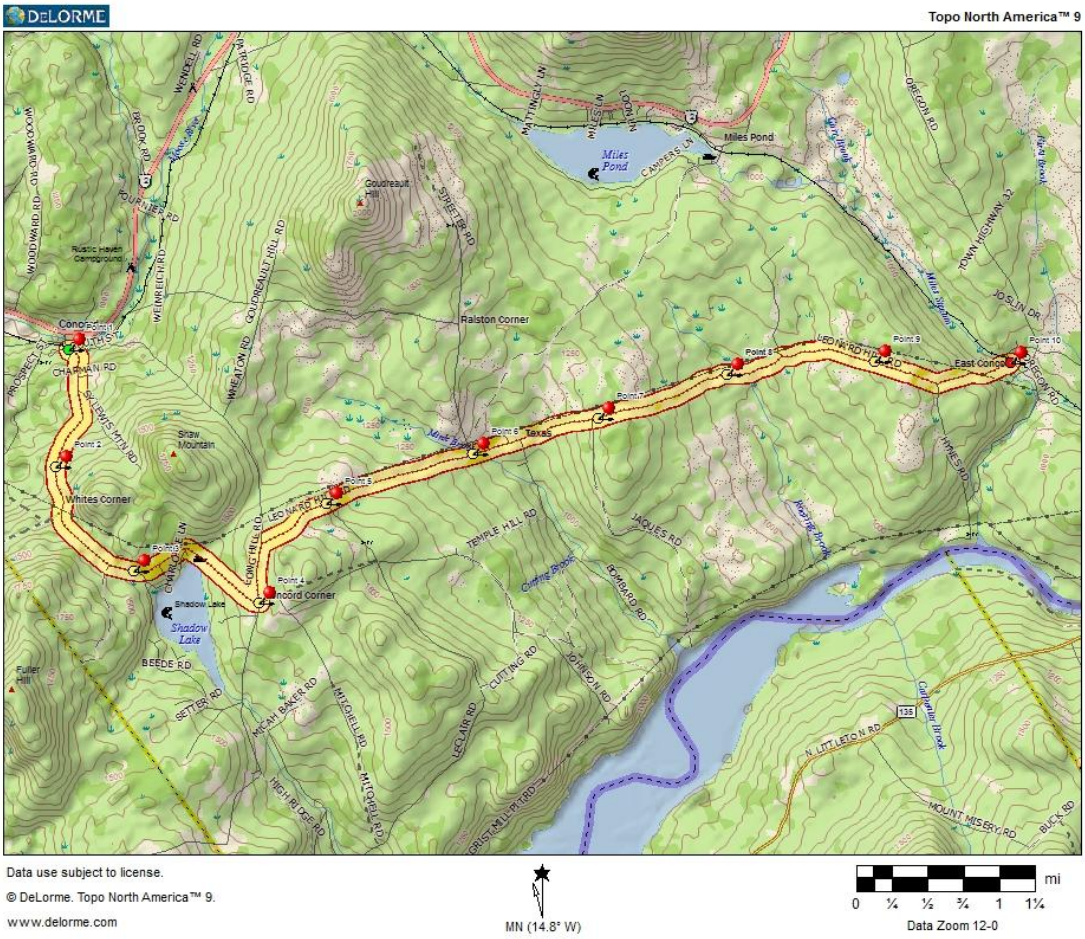
Berkshire:



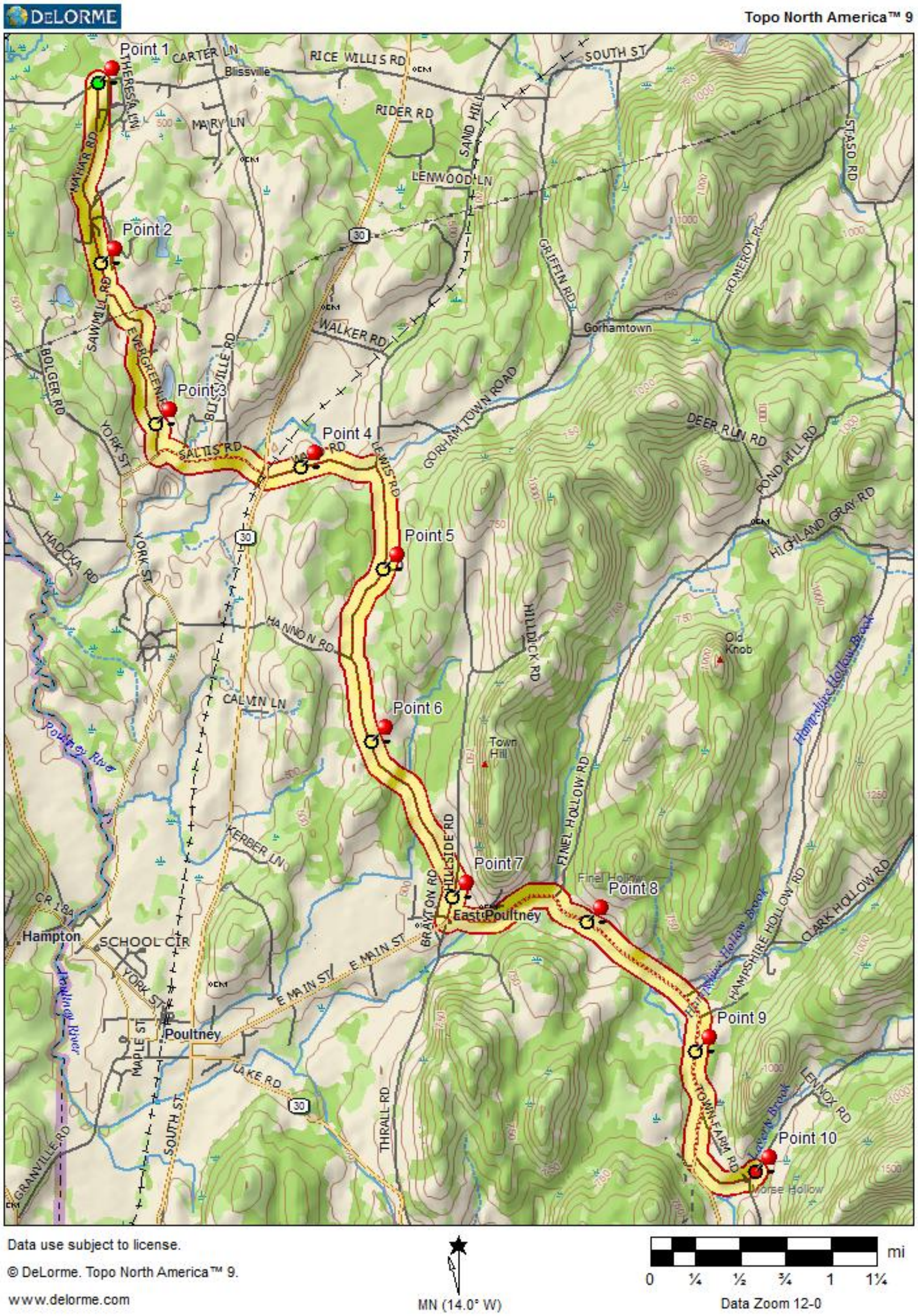
Brandon:


DELORME
Topo North America™ 9
Sudbury
Point 8
Point 7
Point 6
Point 5
Point 4
Point 3
Point 2
Point 9
Point 10
Hyde Manor
Signal Hill
Woodchuck Hill
Spooner Hill
Story Hill
Miller Hill
Bald Hill
Brandon Swamp
Brandon Swamp Wildlife Management Area
Long Swamp
Huff Pond
Burr Pond
Hinkum Pond
High Pond
Stiles Mountain
Stiles Hill
Seager Hill
Castle Hill
Mount Pleasant
Smoke Rise Campground
FIDDLE HILL RD
SETH WARNER MEMORIAL HWY
WILLIAMS LN
CHAMPLAIN ST
STEINBERG RD
ROBERT WOOD RD
ADAMS RD
LOVERS LN
WALNUT ST
BURR POND RD
LONG SWAMP RD
WILLOW BROOK RD
TOWN HIGHWAY NINE
HACK'S SAWMILL RD
HIGH POND RD
HORTON RD
ELLA DEAN RD
INDIAN SPRINGS DR
COBB HILL RD
WALKER GRV
KAPTAN RD
APPLESEED RD
Willow Brook
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
MN (14.0° W)
mi
0 ¼ ½ ¾ 1 1¼
Data Zoom 12-0

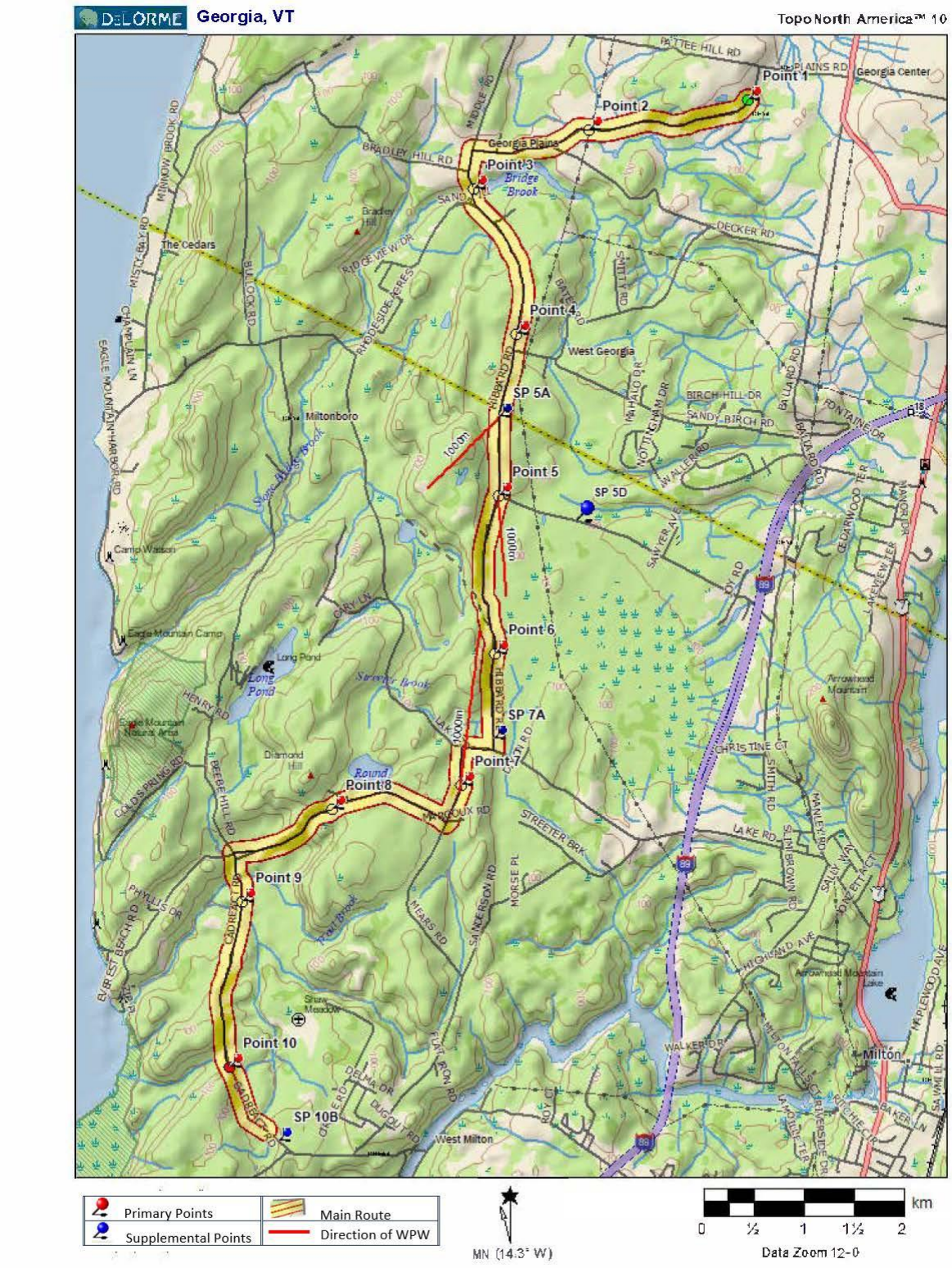
Concord:


DeLORME
Topo North America™ 9
Miles Pond
Goudreault Hill
Rustic Haven Campground
Ralston Corner
Point 8
Point 9
Point 10
East Concord
Point 7
Point 6
Texas
Point 5
Point 2
Shaw Mountain
Whites Corner
Point 1
Concord Corner
Shadow Lake
Fuller Hill
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
MN (14.8° W)
mi
0 ¼ ½ ¾ 1 1¼
Data Zoom 12-0

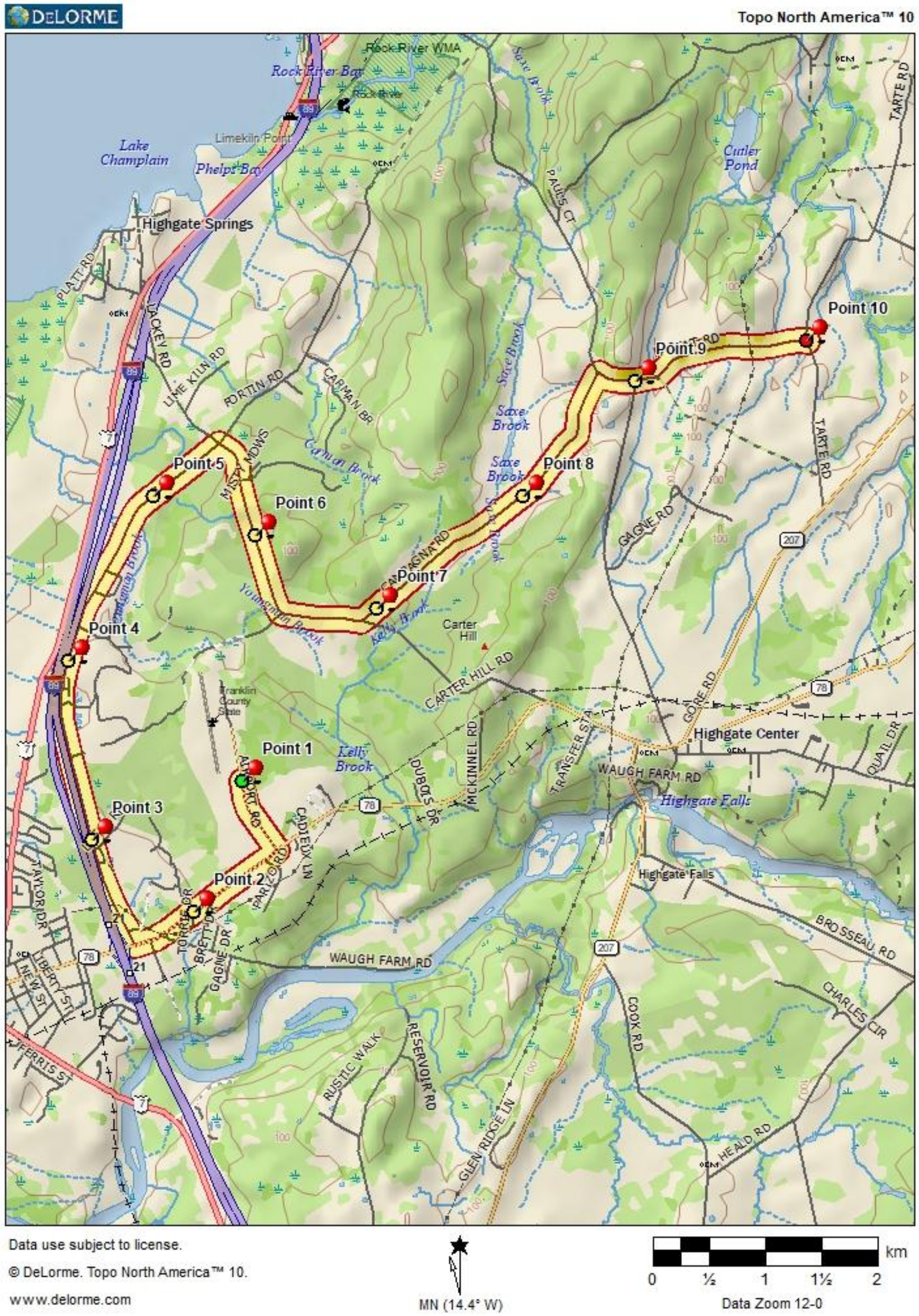
Fair Haven:


DELORME
Topo North America™ 9
Point 1
Point 2
Point 3
Point 4
Point 5
Point 6
Point 7
Point 8
Point 9
Point 10
Blissville
Gorhamtown
East Poultney
Hampton
Poultney
Old Knob
Town Hill
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
MN (14.0° W)
0 ¼ ½ ¾ 1 1¼ mi
Data Zoom 12-0

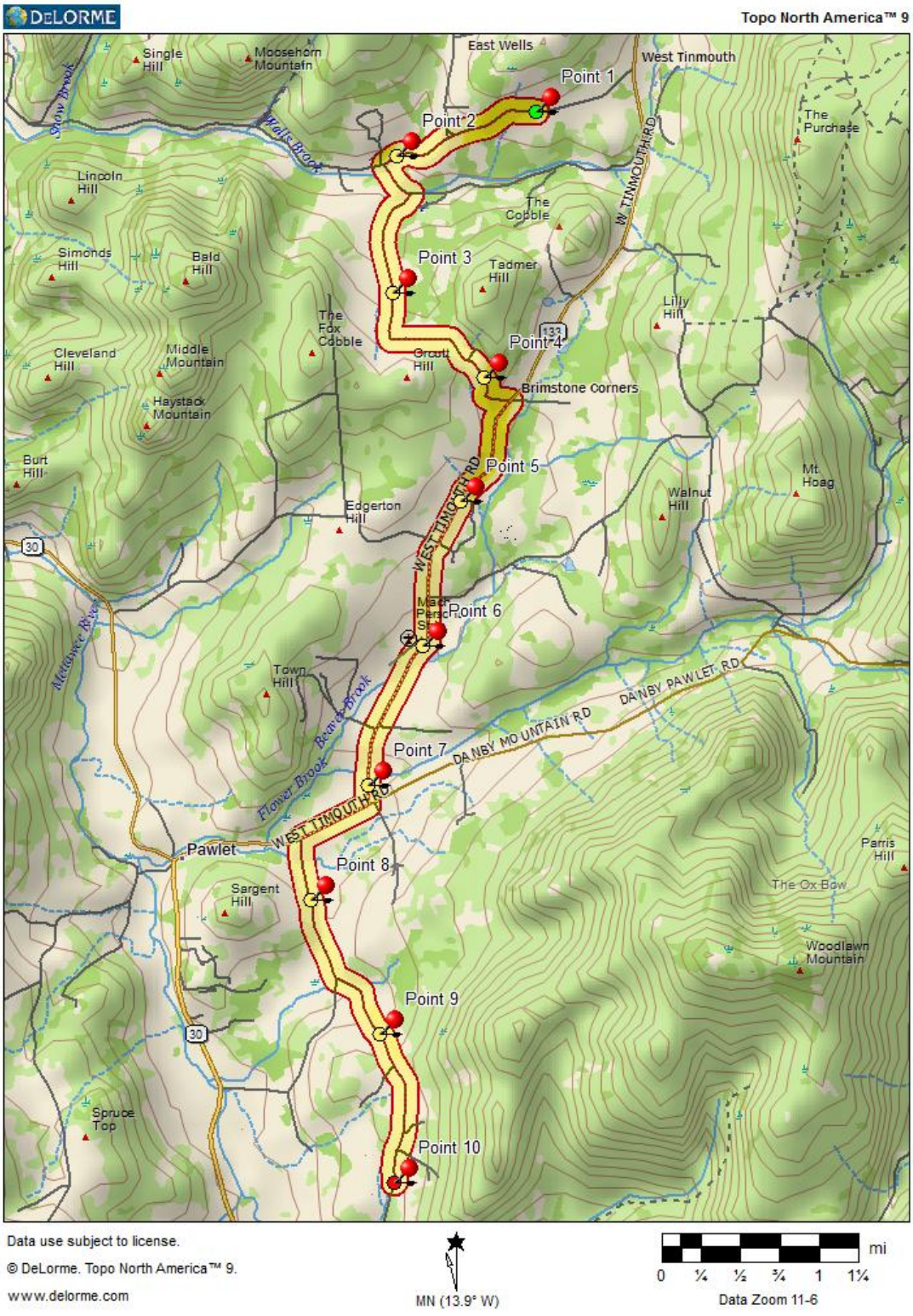
Georgia:


DeLORME
Georgia, VT
Topo North America™ 10
Point 1
Point 2
Point 3
Point 4
Point 5
Point 6
Point 7
Point 8
Point 9
Point 10
SP 5A
SP 5D
SP 7A
SP 10B
Georgia Center
Georgia Plains
West Georgia
Miltonboro
West Milton
Milton
Bridge Brook
Long Pond
Round Pond
Primary Points
Supplemental Points
Main Route
Direction of WPW
MN (14.3° W)
km
0 ½ 1 1½ 2
Data Zoom 12-0

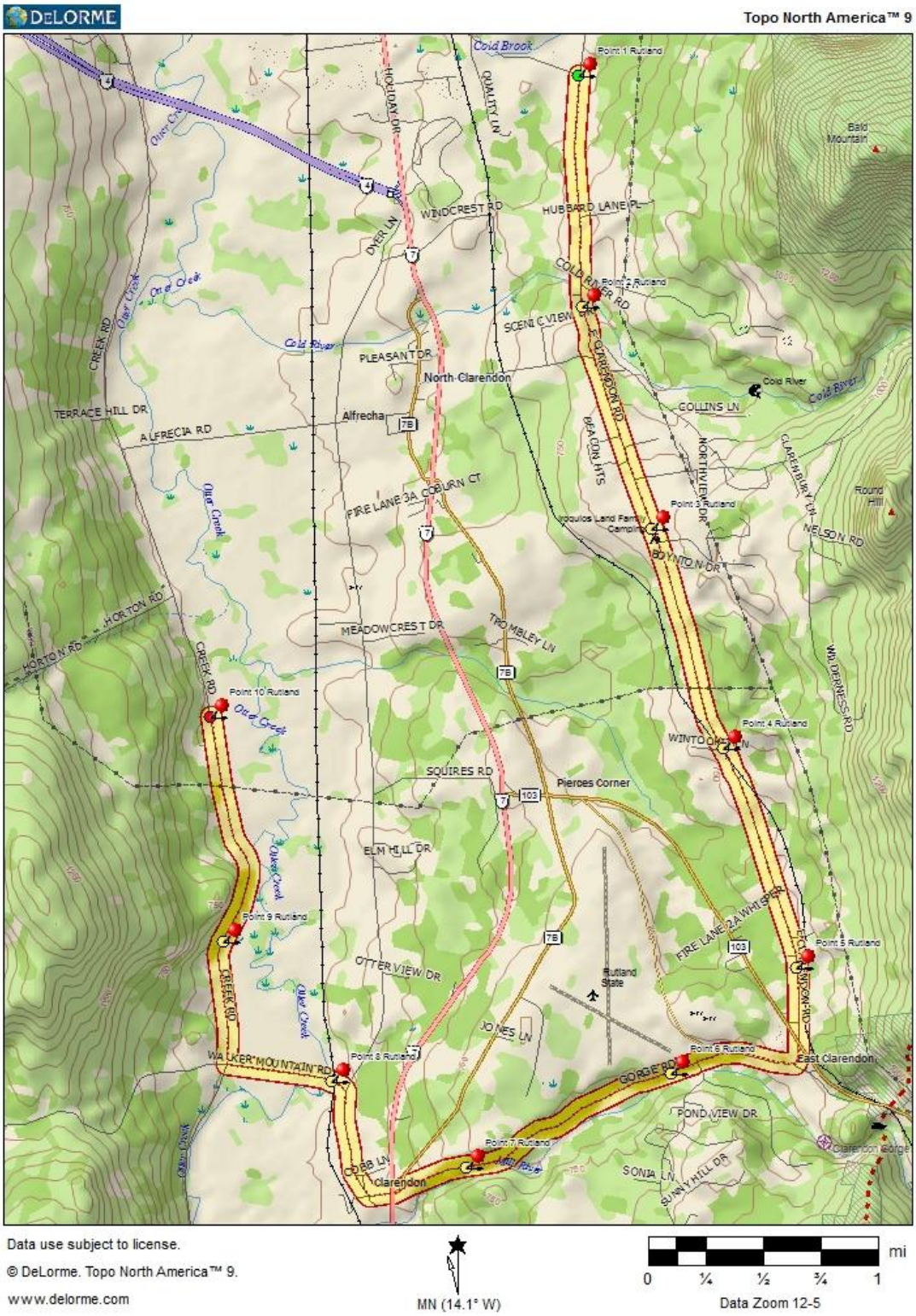
Highgate:


DELORME
Topo North America™ 10
Lake Champlain
Phelps Bay
Rock River Bay
Rock River WMA
Limekiln Point
Highgate Springs
Cutler Pond
Point 1
Point 2
Point 3
Point 4
Point 5
Point 6
Point 7
Point 8
Point 9
Point 10
Carter Hill
CARTER HILL RD
Highgate Center
WAUGH FARM RD
Highgate Falls
Kelly Brook
Saxe Brook
BROSSEAU RD
CHARLES CIR
COOK RD
HEALD RD
RESERVOIR RD
RUSTIC WALK
GLEN RIDGE LN
TARTE RD
GAGNE RD
GORE RD
QUAIL DR
DUBOIS DR
MCKINNEL RD
CADIEUX LN
LACKEY RD
LIME KILN RD
FORTIN RD
CARMAN BR
PLATT RD
TAYLOR DR
LIBERTY ST
NEW ST
FERRIS ST
Data use subject to license.
© DeLorme. Topo North America™ 10.
www.delorme.com
MN (14.4° W)
0
½
1
1½
2
km
Data Zoom 12-0

Pawlet:


DeLORME
Topo North America™ 9
East Wells
West Tinmouth
Point 1
Point 2
Point 3
Point 4
Point 5
Point 6
Point 7
Point 8
Point 9
Point 10
Brimstone Corners
W TINMOUTH RD
WEST TINMOUTH RD
DANBY MOUNTAIN RD
DANBY PAWLET RD
Pawlet
Single Hill
Moosehorn Mountain
Lincoln Hill
Simonds Hill
Bald Hill
Cleveland Hill
Middle Mountain
Haystack Mountain
Burt Hill
The Fox Cobble
Grout Hill
Tadmer Hill
The Cobble
Lilly Hill
The Purchase
Mt. Hoag
Walnut Hill
Edgerton Hill
Town Hill
Sargent Hill
Parris Hill
The Ox Bow
Woodlawn Mountain
Spruce Top
Slow Brook
Wells Brook
Beaver Brook
Flower Brook
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
MN (13.9° W)
mi
0 ¼ ½ ¾ 1 1¼
Data Zoom 11-6

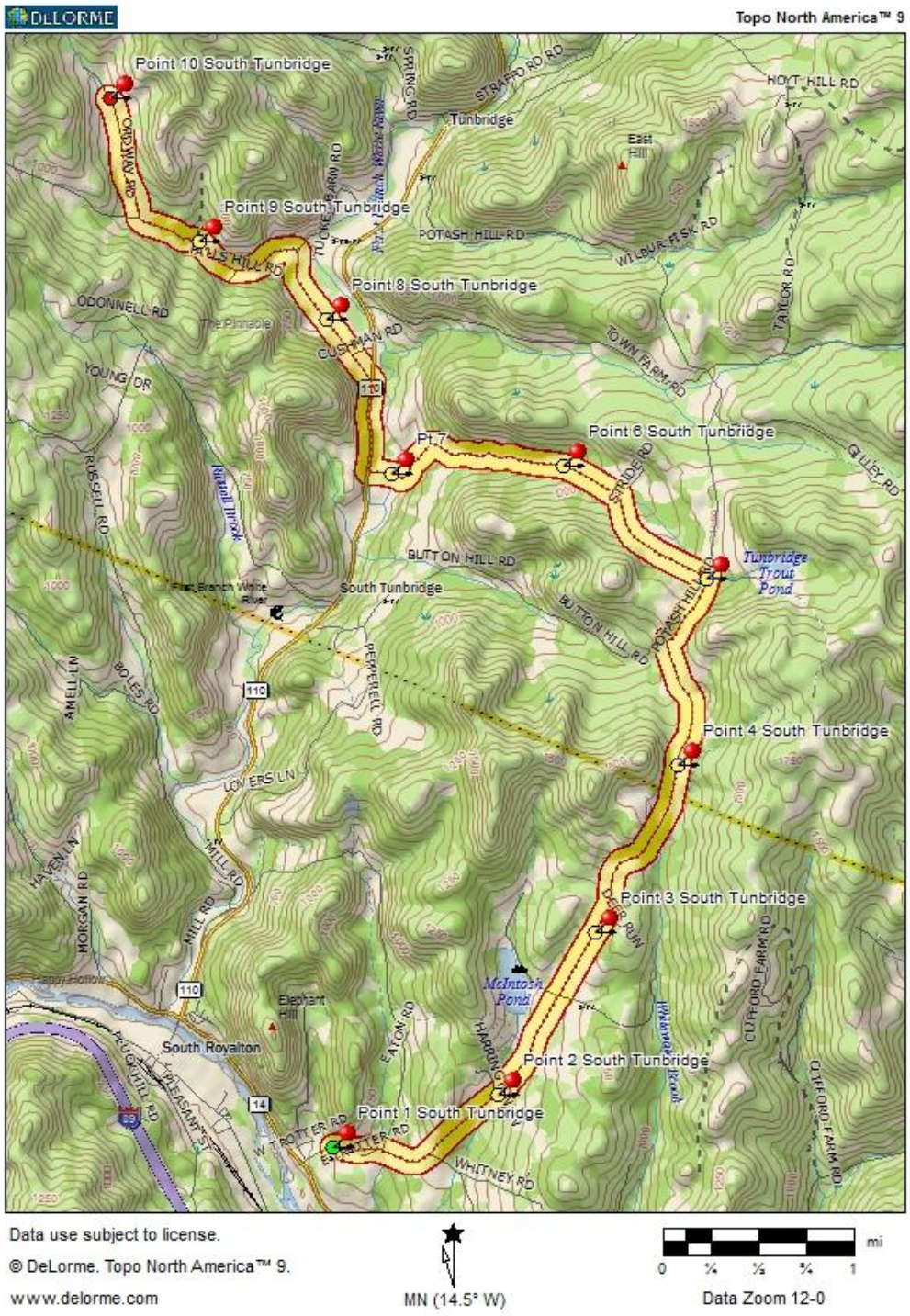
Rutland:


DeLORME
Topo North America™ 9
Point 1 Rutland
Point 2 Rutland
Point 3 Rutland
Point 4 Rutland
Point 5 Rutland
Point 6 Rutland
Point 7 Rutland
Point 8 Rutland
Point 9 Rutland
Point 10 Rutland
Cold Brook
Otter Creek
Cold River
Bald Mountain
HOLIDAY DR
QUALITY LN
WINDCREST RD
HUBBARD LANE PL
OVER LN
COLD RIVER RD
SCENIC VIEW
PLEASANT DR
North Clarendon
TERRACE HILL DR
ALFRECIA RD
Alfrecha
GOLLINS LN
NORTHVIEW DR
CLARENBURY LN
NELSON RD
Round Hill
FIRE LANE 3A COBURN CT
BOYNTON DR
MEADOWCREST DR
TROMBLEY LN
HORTON RD
WILDERNESS RD
WINTOOKA LN
SQUIRES RD
Pierces Corner
ELM HILL DR
FIRE LANE 2A WHISPER
OTTER VIEW DR
Rutland State
JONES LN
WALKER MOUNTAIN RD
GORGE RD
East Clarendon
POND VIEW DR
Clarendon Gorge
SONIA LN
SUNNYHILL DR
Clarendon
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
MN (14.1° W)
0 ¼ ½ ¾ 1 mi
Data Zoom 12-5

Salisbury:


DeLORME
Topo North America™ 9
Salisbury Station
Point 1 Salisbury
Point 2 Salisbury
Point 3 Salisbury
Point 4 Salisbury
Point 5 Salisbury
Point 6 Salisbury
Point 7 Salisbury
Leicester Junction
Point 8 Salisbury
Point 9 Salisbury
Point 10 Salisbury
Point 11 Salisbury
Lake Dunmore
Salisbury Swamp
Whiting Swamp
Whiting
East Shoreham
Leicester
Fernville
Satans Kingdom
Forest Dale
Bradbury State Park
Country Village Campground
Brandon Swamp
Mount Pleasant
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
MN (14.1° W)
0 ½ 1 1½ 2 mi
Data Zoom 11-3

South Tunbridge:



West Haven:


DeLORME
Topo North America™ 9
The Narrows
Barret Bay
Button Marsh
Pettis Rd
Cogman Creek
West Haven
Point 1 West Haven
Adirondack Fish Tales Etc
Maple Bend
Kline Hill
Maple Bend Island
Fish Hill
Point 2 West Haven
Chubbs Dock
Taconic Range
Cogman Creek
Hubbardton River
Point 3 West Haven
Point 4 West Haven
Snody Dock
Bald Mountain
Point 5 West Haven
East Bay
Drowned Lands
Point 6 West Haven
Warner Hill
Austin
Point 7 West Haven
Point 10 West Haven
Head Of Lake Champlain
Point 8 West Haven
Finch Marsh
The Elbow
Fish Hill
22
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
MN (14.0° W)
mi
0 ¼ ½ ¾ 1 1¼
Data Zoom 11-6