

# MAPLE *Mainline*

December 2016

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- Forest Tent Caterpillar Update

The University of Vermont Extension and Vermont Maple Sugar Makers' Association are pleased to announce the 2017 Vermont Maple Conferences on January 21 and 28. There are two new locations for this year's conferences. The January 21 conference will be held in Brattleboro at the School for International Training Graduate Institute and the January 28 conference will be held in Morrisville at Peoples Academy. The all-day conferences will provide you with a wide choice of classes to attend so you may personalize the day to make it the most informative for your sugaring operation.

The program will begin promptly at 8:15 a.m. with opening remarks from VMSMA Executive Director, Matt Gordon. Immediately following the opening remarks, we are pleased to have Associate Professor Michael Lange (Champlain College) presenting a plenary session talk entitled "Cultural Responses to Economic Change in the Maple Industry." According to Associate Professor Lange, "All change leads to disruption; by understanding change in a deeper way, sugarmakers can disrupt the maple industry in ways favorable to their own bottom line, to the health of the maple economy, and to the continued sustainability of the trees, land, and industry."

Following that talk, there will be four class sessions that will focus on six themes, though you are not tied to any particular track; these will include: Maple Science, Sugarbush Health, Marketing/Business Management, Syrup Production, Sap Production, and a "Grab Bag."

We are privileged to have instructors join us from throughout the maple industry. These will include sugarmakers, maple educators, researchers, business leaders, scientists, foresters and natural resource professionals from around the state and region.

The Trade Show of industry vendors will showcase much of the latest equipment in one place for your convenience. This is always a great time to stock up or order your sugaring supplies and see the latest out there for the upcoming season.

These conferences remain one of the top events of the year to hear new, up-to-date information and help you make the most of your maple sugaring season. Please plan to join us. The registration for the Brattleboro and Morrisville conferences is done through VMSMA. Pay close attention to fees, timing and deadlines for each site when you register.

As in the past, the Addison County Sugarmakers Association is also hosting a maple conference. That event is on January 14 in Middlebury at Middlebury High School. The program and registration for the Middlebury conference are specific for that site. More information on page 3 and at: [www.addisoncountytvtmaple.org](http://www.addisoncountytvtmaple.org).

Hope to see you at the conferences!

— UVM Extension Maple Specialists  
George Cook & Mark Isselhardt

**ALL CHANGE LEADS TO DISRUPTION. BY UNDERSTANDING CHANGE IN A DEEPER WAY, SUGARMAKERS CAN DISRUPT THE MAPLE INDUSTRY IN WAYS FAVORABLE TO THEIR OWN BOTTOM LINE, TO THE HEALTH OF THE MAPLE ECONOMY, AND TO THE CONTINUED SUSTAINABILITY OF THE TREES, LAND, AND INDUSTRY.**

— Michael Lange, Associate Professor, Champlain College

Associate Professor Lange presents the plenary sessions *Cultural Responses to Economic Change in the Maple Industry* at the 2017 Maple Conferences on January 21 (Brattleboro) and January 28 (Morrisville).  
Details: pps 2 & 4-5.



**January 21, 2017: School for International Training Graduate Institute**  
1 Kipling Road, Brattleboro, Vt. 05301

**January 28, 2017: Peoples Academy**  
202 Copley Avenue, Morrisville, Vt. 05661

Please pre-register! While some walk-ins are anticipated, to reserve the correct number of meals and to arrange rooms, pre-registration is very much appreciated. Online registration is available through VMSMA: [www.vermontmaple.org/maple-conferences](http://www.vermontmaple.org/maple-conferences)



# VERMONT MAPLE CONFERENCES 2017

The University of Vermont Extension, Addison County Maple Sugarmakers Association and Vermont Maple Sugar Makers Association are pleased to offer the 14<sup>th</sup> annual Vermont Maple Conferences in January 2017. These educational meetings bring together maple producers, scientists, and natural resource professionals to share latest information and research. Conference topics range from forest management, sap collection, syrup production, quality control, to business management and marketing. These events are widely perceived to be among the best educational opportunities for sugarmakers in the United States and Canada.

Three conferences are offered at three locations around the state. Detailed schedules can be found online at the websites listed below. **Registration details and mail-in form on page 7.**



## FROM SUGARBUSH BRIDGES TO MAPLE COTTON CANDY

This year's conferences cover a broad range of topics. Foresters discuss strategies for improving access – such as this lightweight timber bridge (above left) in a Bolton, Vt. sugarbush – and programs to help pay for it. Gary Dean (above right) of Colchester has the technique - do you? Jack Dix and the Guilmette family share tips to making maple cotton candy that's delicious and profitable.

## MAPLE SEMINAR

**Saturday, January 14, 2017**  
**Middlebury Union High School**

73 Charles Avenue | Middlebury, Vt.

*Hearty lunch*

Registration Opens: 8:00 a.m.

Welcome: 9:00 a.m.

Sessions: 10:30 a.m. - 4:15 p.m.

Sponsored by Addison County  
Maple Sugarmakers

[www.AddisonCountyVTMaple.org](http://www.AddisonCountyVTMaple.org)

## MAPLE CONFERENCE

**Saturday, January 21, 2017**  
**SIT Graduate Institute**

1 Kipling Road | Brattleboro, Vt.

*Lunch: Harvest chicken, maple-roasted beets,  
salad and maple-frosted apple cupcakes.*

To request a disability-related accommodation to participate in this program, please contact Amanda Voyer at 802-858-9444 by January 3, 2017 so we may assist you.

Registration Opens: 7:30 a.m.

Welcome & Plenary Speaker: 8:15 a.m.

Sessions: 9:45 a.m. - 3:30 p.m.

Sponsored by UVM Extension & Vermont Maple Sugar Makers Association

[www.VermontMaple.org/maple-conferences](http://www.VermontMaple.org/maple-conferences)

## MAPLE CONFERENCE

**Saturday, January 28, 2017**  
**Peoples Academy**

202 Copley Avenue | Morrisville, Vt.

*Lunch: Maple-roasted pork loin, vegetarian  
butternut squash chili and maple cream pie.*

To request a disability-related accommodation to participate in this program, please contact Amanda Voyer at 802-858-9444 by January 3, 2017 so we may assist you.

**Middlebury Union High School**  
73 Charles Avenue,  
Middlebury, Vt

**From South:** Take Rt. 7 North to Middlebury. Turn left onto Charles Avenue at the double traffic light.

**From North:** Take Rt. 7 South to Middlebury, and through the center of town. Turn right onto Charles Avenue at the double traffic light.

**School of International Training**  
World Learning Center, 1 Kipling Road,  
Brattleboro, Vt

**From North or South:** Take I91 to Exit 3 (Brattleboro) to Rt. 5 South. Go south on Rt. 5 to Black Mountain Road on right. Take Black Mountain Road 0.6 miles; keep right at Y onto Kipling Road. to World Learning Center at 1 Kipling Road. Follow "Maple Conference" signs.

**From East or West:** Follow usual routes to Brattleboro to Route 5. Then follow directions above. Note: Exit 3 is on north end of town.

**Peoples Academy**  
202 Copley Avenue, Morrisville, Vt

**From South:** From I89 Exit 10, Waterbury, take Rt. 100 north to Morrisville, 18 miles. Turn right onto Laport Road (Historic Route 100). At intersection, continue straight onto Upper Main Street, then left at Y onto Park Street, then right onto Copley Avenue; PA is at top of hill.

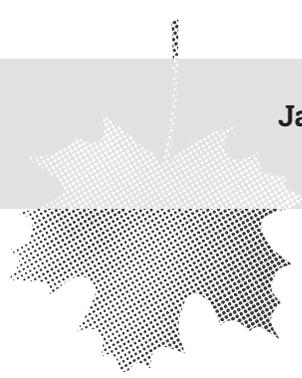
**From North/East:** Take Route 15 west to Morrisville. Turn left onto Route 15A toward village, then left at Elementary School and ballfields to PA.

**From North/West:** Route 15 east to Morrisville; at Morrisville Rotary, take first Exit to Route 100 south; left at light onto Bridge St.; right onto Portland St.; left onto North Main St.; left at Y onto Park St, then right onto Copley Ave., PA is at top of hill.

*Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. University of Vermont Extension, Burlington, Vermont. University of Vermont Extension, and U.S. Department of Agriculture, cooperating, offer education and employment to everyone without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or familial status. Any reference to commercial products, trade names, or brand names is for information only, and no endorsement or approval is intended.*

# MIDDLEBURY MAPLE SEMINAR WORKSHOP DESCRIPTIONS

January 14, 2017 in Middlebury, Vt.



## **Beginning Sugarmakers**

**George Cook, Maple Specialist, UVM Extension**

In this two-part session, George leads beginning sugarmakers from the tree to the sugarhouse, discussing tapping, tubing, filtering basics and other techniques. The second session reviews boiling techniques, best practices when it comes to drawing syrup off, filtering, grading and canning.

## **Size Correctly from the Start!**

**Clayton Christie, Engineer, Maple Expert Solutions**

RO performance is directly tied to quality of sap, hours of operating, and proper maintenance. Incorrect sizing RO's from the start can lead to a miserable and frustrating experience. Correctly sizing RO's can and will greatly reduce operating costs, increase productivity, and also increase sleep. The downward spiral of RO performance is a slippery slope and very difficult to come back from during the season.

## **Moving Sap – Roundtable Discussion**

**Moe Rheäume, Moderator**

Ladders, spiders, lifters and more! Defy gravity and move your sap up hill to your mainline, gathering tank or sugarhouse. Learn which set-up may work the best for you in your woods! Visuals will be supplied. Be prepared to ask questions and challenge the panel.

## **Flavor of Syrup from Ultra-High RO Processing** **Abby van den Berg, Research Assistant Professor, UVM Proctor Maple Research Center**

Recently new reverse osmosis systems capable of concentrating sap to very high levels, > 30° Brix, have been introduced. This technology has the potential to provide significant additional gains in processing efficiency and profitability, but the potential impacts on flavor are currently unknown. Results of research conducted to address this question and investigate the flavor produced from sap concentrated to high levels by RO will be presented.

## **Effective Tubing Design & Set-Up**

**JR Sloan**

How to get the best out of your tubing set-up. From mainlines to drops, learn the best practices of how to set up an efficient tubing/vacuum system. Get tips whether your woods are flat, steep or somewhere in between.

## **Sugarhouse Certification**

**Marc Paquette, Vt. Agency of Agriculture, Food and Markets**

Let Marc help you navigate the FDA and State regulations and dispel the confusion. Learn how to become certified, whether your operation is large or small. Suggestions on how to make your operation certifiable and the steps owners need to take to be certified.

## **Continued 3/16" Tubing Research**

**Tim Wilmot, Researcher, Dominion and Grimm, Inc.; Retired Maple Specialist, UVM Extension**

Research with sap collection systems using 3/16" tubing has shown that the smaller diameter tubing can outperform standard 5/16" tubing in many arrangements that take advantage of natural vacuum generated on sloping land. Recent research has also shown that 3/16" may provide some advantages of 5/16" systems in pumped systems. This presentation will review some of the more recent experiments related to these new sap collection systems.

## **Evaporating Profits**

**Mark Cannella, Farm Business Specialist, UVM Extension and Dave Folino, Addison County Sugarmaker**

These two guys may help you keep your profits from evaporating! A short session on maple economics, an understanding of which might become increasingly important in the next few years as production surges. Mark and Dave present detailed financial analysis and practical experience to promote forward-thinking business management. Mark runs the UVM Maple Benchmark Program working with producers to provide complete and detailed cost of production analysis for their businesses. Mark will present observations on financial performance for producers from 2,500-50,000 taps, and discuss the impact on business decisions. Dave has been a maple producer and business manager for many years. He and his wife, Sue, tap 15,000 trees in Starksboro. He has an MBA and gets his hands dirty. He combines years of practical experience with an understanding of the importance of economics in making smart business decisions.

## **What is that Sugarbush Worth?**

**Alyth Hescocock, Certified Real Estate Appraiser, Yankee Farm Credit**

Have you ever wondered how the value of a sugarbush is determined? In this session, we will define and explain some different types of values most commonly encountered, discuss widely accepted appraisal techniques and summarize the process followed to arrive at a property's value. This session is designed to provide you with the tools to analyze the factors which influence the value of a sugarbush and to read and understand an appraisal report.

## **Is Tapping Below the Lateral Line a Good Idea?**

**Abby van den Berg, Research Assistant Professor, UVM Proctor Maple Research Center**

Sometimes maple producers have to tap below the lateral line in order to find good (non-compartmentalized) wood, or because of tubing position. Studies at UVM PMRC looked at how tapping below the lateral line affects sap yields. The results might surprise you!

## **An Inside Look at Maple Finances**

**Mark Cannella, Farm Business Specialist, UVM Extension**

The Maple Business Benchmark has completed one year of detailed financial analysis with Vt. maple operations, ranging from 3,000 to 20,000 taps. This session with share results on investment requirements, cost of production and profitability. Attendees will see how the benchmark program provides analysis to support business decisions like adjusting prices to cover costs, evaluating new investments and managing expenses.

## **Managing for a Healthy Sugarbush in a Changing Climate**

**Chris Olson, Addison County Forester, Vt FP&R**

In a changing climate forests are under a multitude of stressors, which can be baffling and overwhelming to a land owner. Understanding these stressors and incorporating adaptive management strategies into forest planning will help mitigate negative impacts of a changing climate and maintain a resilient and healthy forest.

**Don't forget to bring your hydrometers to be checked!**

# BRATTLEBORO & MORRISVILLE MAPLE CONFERENCES

## WORKSHOP DESCRIPTIONS

January 21, 2017 in Brattleboro, Vt.

January 28, 2017 in Morrisville, Vt.

### **PLENARY Cultural Responses to Economic Change in the Maple Industry (B, M)** *Michael Lange, Associate Professor, Champlain College*

This talk looks at a host of changes taking place in the maple industry, within Vermont and across the maple-producing region, and explores how an interdisciplinary, integrative approach can help maple producers understand and react to the changes. All change leads to disruption; by understanding change in a deeper way, sugarmakers can disrupt the maple industry in ways favorable to their own bottom line, to the health of the maple economy, and to the continued sustainability of the trees, land, and industry.

Michael Lange, PhD, is a professor at Champlain College in Burlington. As an anthropologist and folklorist, he has studied cultural identity in several places and cultures, including Scotland, Norway, Morocco, China, and the U.S. His most recent work involves understanding the cultural meanings of maple sugaring in Vermont.

### **Invasives in the Sugarbush (B, M)** *Nancy Patch, Grand Isle/Franklin County Forester, Vt FP&R (B); Rick Dyer, Lamoille County Forester, Vt FP&R (M)*

Why should sugarmakers should be concerned about invasive species? This presentation will review invasive species to be on the watch for, and include a discussion of the various tools and techniques available for conducting control work.

### **Tapping Effects and Compartmentalization (B)** *Bill Guenther, Windham County Forester, Vt. FP&R*

This workshop will discuss tree tapping effects and compartmentalization. Bill will focus his talk on the work of the late Dr. Alex Shigo, a U.S. Forest Service pathologist who studied what happens on the inside of a tree when it is wounded (tapped). He will have samples visually showing what the tapping impacts are and how to minimize them. In addition, he will also discuss the Asian Longhorned Beetle (ALB), covering basic identification, life cycle, traits and why it is important to have knowledge of this invasive insect. Currently there are no ALBs Vermont, and it is critical to keep it that way, as this insect could cause devastating harm to the maple industry.

### **Improving Water Quality and Soil Health in the Sugarbush (and How to Pay for It) (B, M)**

*Rick Dyer, Lamoille County Forester, Vt. FP&R*

This presentation will discuss how soil and water quality affect sugarbushes; discuss the need for maintaining and improving water quality; review of water quality regulations and how they can address soil and water quality issues; and review the NRCS cost-share program.

### **Forest Tent Caterpillar Update (B, M)** *Jim Edsen, Forest Health Program, Vt. FP&R, (B); Joshua Halman, Forest Health Specialist, Vt. FP&R (M)*

2016 saw populations of this native insect rise to the level of an outbreak in some parts of Vermont. This presentation will discuss the extent of the outbreak statewide as well the insect's biology, life cycle, detection and potential for control.

### **Maple Profitability Past, Present and Future (B, M)**

*Betsy Miller, Farm Management Educator, UVM Extension (B); Mark Cannella, Farm Business Specialist, UVM Extension (M)*

This presentation will discuss the difference between financial success in one year and economic viability over the numerous years of a maple enterprise. Several key business topics facing producers and the broader industry will be identified and discussed. The session will draw on data from financial benchmarking with commercial producers in Vermont, market trends, industry considerations and strategic business planning themes coming from maple business owners.

### **Intro to Beginning Sugarmaking - Beginners & Small-Scale Producers (B, M)** *George Cook, UVM Extension Maple Specialist and experienced small-scale producer*

Everything from identifying and tapping crop trees through boiling and packaging your syrup. Special emphasis on tapping, including 3/16"; putting your syrup up for home use for marketing; and entering syrup at your local fair. Anyone can enter prize-winning syrup!

### **Tubing for Beginners (B, M)**

*George Cook, Maple Specialist, UVM Extension and Glen Goodrich, Goodrich Maple Farm*

Looking for the basics of tubing layout and installation: 3/16", 5/16", mainlines, fittings ...how's it all work? This is a 2-session workshop with discussion/PowerPoint, plus an opportunity for hands-on work with tubing, tubing tools, fittings, etc. Troubleshooting and practical issues you run into. Learn what works ... what doesn't.

### **State of the Maple Market (B, M)** *Bascom's, Butternut Mountain Farm*

What is the state of the industry? Where are bulk prices headed? How will the increase in the Québec quota impact the world supply of syrup? Bring your questions for this panel of industry leaders.

### **Boiling High Brix Concentrate (B, M)** *Glen Goodrich, Goodrich Maple Farm*

New RO's are now on the market that allow producers to concentrate sap higher than previously possible. Are there equipment or operational changes that have to be made in the boiling process to avoid problems in syrup production?

### **Filtering Basics (B, M)** *Mark Isselhardt, Maple Specialist, UVM Extension*

Filtering syrup can be one of the most frustrating aspects of sugaring regardless of the size of operation. This presentation will cover the basics of filtering maple syrup with cloth cone and flat filters as well as pressure filters (canister and plate filter presses).

### **Managing for a Healthy Sugarbush in a Changing Climate (B, M)**

*Nancy Patch, Grand Isle/Franklin County Forester, Vt. FP&R (B); Jared Nunery, Orleans County Forester, Vt. FP&R (M)*

In a changing climate our forests are under a multitude of stressors, which can be baffling and overwhelming to a land owner. Understanding these stressors and incorporating adaptive management strategies into forest management planning will help to mitigate negative impacts of a changing climate on forests. This talk will discuss these stressors and management strategies for maintaining a resilient and healthy forest.

Not all presentations will be offered in both locations.

**(B)** = Offered in Brattleboro only    **(M)** = Offered in Morrisville only    **(B,M)** = Offered in both locations

### **What is that Sugarbush Worth? (B, M)**

*Bob Guay, Manager of Appraisal Services, Yankee Farm Credit*

Have you ever wondered how the value of a sugarbush is determined? We will define and explain some different types of values most commonly encountered, discuss widely accepted appraisal techniques, and summarize the process followed to arrive at a property's value. This session is designed to provide you with the tools to analyze the factors which influence the value of a sugarbush and to read and understand an appraisal report. Rob manages Appraisal Services at Yankee Farm Credit, a cooperative agricultural lender headquartered in Williston, Vt. He also operates a 6,500 -tap maple operation in West Chazy, N.Y. with his family.

### **Relation Between Maple Syrup Flavor and Evaporation (M)**

*Joël Boutin, Agricultural Technician, CETTA*

How we work in the sugarhouse has a big impact on the final product. Conservation of the sap, sanitation of tubing, and intensity of the heat predetermine the flavor of the syrup. This talk will draw from 20 years of experience advising CETTA (a group of over 200 maple producers in Québec).

### **Identifying Off-Flavors in Maple Syrup (B, M)**

*Henry Marckres, Chief of Consumer Protection, Vermont Agency of Agriculture, Foods and Markets*

In the absence of a range of samples to taste from, many producers have difficulty determining what constitutes an off-flavored syrup, and what may have caused the syrup to be defective. Henry will provide samples of a variety of off-flavored syrups and discuss the circumstances that cause these problems.

### **Expanding into Retail Sales: Before You Leap (B, M)**

*Mary Peabody, Community & Economic Development Specialist, UVM Extension*

Are you thinking about adding retail to your sales strategy? We'll discuss the current retail trends, the pros and cons of various retail outlets and some of the things you should consider before you set up sales. Bring your questions.

### **Inside 'Big Maple': Lessons Learned From Running a Large Maple Operation (M)**

*Dean Parent, Manager, Runamok Maple, Cambridge, Vt.*

The number of very large maple operations has increased significantly in the last 10 years. As the manager of one of the largest operations (~85,000 taps) in northern Vermont, Dean Parent will share his experiences, many of which are relevant to producers of all sizes, with respect to everything from the importance of a maintaining and guiding a good crew, installing and maintaining a tubing system to efficiently producing a quality product in a profitable manner.

### **Maple Cotton Candy 101 (B, M)**

*Jack Dix and Joyce, Mike and Ethan Guilmette*

Whether it's at a fair or farmers market, maple cotton candy is always a hit with consumers. Learn all the details about how to make a quality, attractive product while minimizing costly repairs and loss of income from downtime.

### **Drought Stress and Maple Tree Health (M)**

*Heidi Asbjornsen, Associate Professor, UNH*

This talk will discuss the preliminary results from two ongoing research projects focused on assessing the response of northern forest tree species (including red maple and sugar maple) to historical climate variability (using tree rings) and extreme drought events (using both experimental manipulations and the summer 2016 drought). The talk will also explore the implications of this research for the syrup production industry in New England.

### **Flavor of Syrup from Ultra-High Reverse Osmosis Processing (B)**

*Abby van den Berg, Ph.D., Research Assistant Professor, UVM Proctor Maple Research Center*

Recently, new reverse osmosis systems capable of concentrating sap to very high levels, > 30° Brix, have been introduced. This technology has the potential to provide significant additional gains in processing efficiency and profitability, but the potential impacts on syrup flavor are currently unknown. Results of research conducted to address this question and investigate the flavor of syrup produced from sap concentrated to high levels by reverse osmosis will be presented.

### **Birch Sap Collection - Taphole Wounds and Timing of Tapping (B)**

*Abby van den Berg, Research Assistant Professor, UVM Proctor Maple Research Center*

Results of research that examined internal wound size from tapholes in birch trees, and the timing of tapping birch trees to obtain the best sap yields will be presented.

### **Intro to 3/16" Tubing Systems (B, M)**

*Tim Wilmot, Researcher, Dominion and Grimm, Inc.; Retired Maple Specialist, UVM Extension*

Research with sap collection systems has shown that smaller diameter 3/16" tubing can outperform standard 5/16" tubing in many arrangements that take advantage of natural vacuum generated on sloping land. This presentation will introduce proper use of 3/16" tubing in an all-gravity collection system. We will discuss setting up lines efficiently to maximize vacuum on a variety of slopes, as well as maintenance and leak detection.

### **Hybrid 3/16" Tubing Systems (B, M)**

*Tim Wilmot, Researcher, Dominion and Grimm, Inc.; Retired Maple Specialist, UVM Extension*

The second presentation on 3/16" tubing will cover recent research. For producers using pumps, 3/16" tubing may provide advantages over 5/16" systems in a "hybrid" system that combines both natural vacuum and vacuum from the pump to achieve the highest vacuum at the taphole. This presentation will also cover maintenance and leak detection issues.

### **Chainsaw Safety and Woods Work in the Sugarbush (B, M)**

*Al Sands, Northeast Woodlands Training*

From thinning to clearing lines a chainsaw just as essential for the sugarmaker as a tubing tool. Learn about how "Game of Logging" techniques can help make this work safer and more efficient.

### **Tapping Below the Lateral Line: A Strategy for Sustainability? (M)**

*Mark Isselhardt, Maple Specialist, UVM Extension*

Maple producers sometimes have to decide whether to tap below the lateral line, either because of tubing location, or to find an area of undamaged wood. How does tapping below the lateral affect your sap yield? This talk will include data from two years' worth of research.

# 2016 VERMONT MAPLE HEALTH HIGHLIGHTS

Reported by the Vermont Department of Forests, Parks, and Recreation

December, 2016

Populations of the native **Forest Tent Caterpillar (FTC)** (*Malacosoma disstria*) exploded, especially in north-central and northeastern Vermont, but the insects were observed statewide. Defoliation was mapped on 24,278 acres. Maps can be seen in more detail on the *ANR Natural Resources Atlas*. The "Forest Tent Caterpillar (2016)" layer under the "Forests, Parks and Recreation" theme; users should keep in mind they were hand-sketched by aerial observers at over 100 mph.

A new leaflet, the *VT FPR Forest Tent Caterpillar Update* describes the current status of forest tent caterpillar and provides management information. Dry conditions will be a factor in tree recovery. Trees respond to defoliation by producing a second flush of leaves. In 2016 these were often small; sometimes they wilted and trees attempted a third flush. Dry conditions almost certainly affected carbohydrate production, and will reduce wood growth, taphole closure, and foliage density next year. Prevent avoidable stress in defoliated stands by delaying thinning 1-3 years, using conservative tapping rates, and limiting vehicle use near crop trees.

Defoliation is expected to be more widespread in 2017. Moth catches have increased in all but one of our trap locations. By request, the Department of Forests, Parks, and Recreation will conduct winter egg mass surveys in sugarbushes to indicate the risk of defoliation next year, or you can do it yourself. Where the risk is high, consider making arrangements to have the sugarbush sprayed in May. If you may

be interested in participating in a state-coordinated spray program, contact the Vermont Department of Forests, Parks, and Recreation as soon as possible to request an egg mass survey. The deadline to sign up is February 15, 2017. A state-coordinated project would use a certified-organic biological insecticide. Areas to be sprayed would need to be actively tapped, at least 10 acres and more-or-less rectangular. The cost to landowners will be unknown until details are finalized.

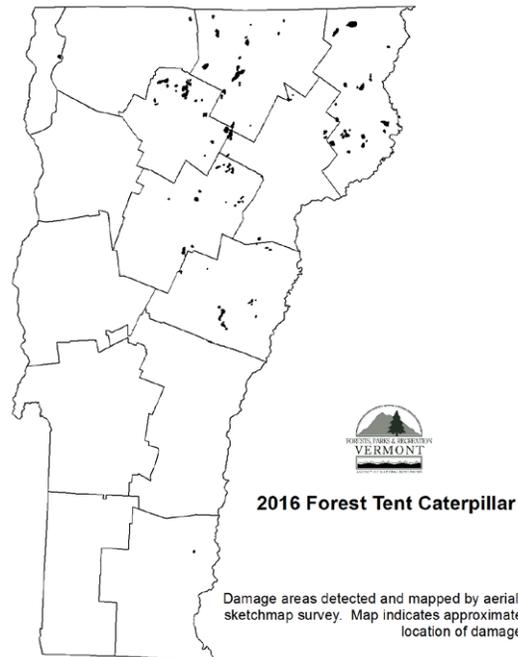
## Other Maple Health Information

By mid-summer, symptoms of **drought**, including early color on sugar and red maple became noticeable, and was mapped on 7,924 acres. Despite (or perhaps because of) drought conditions (see August Update), fall foliage was excellent in some areas, with red maple living up to its name.

Other **maple defoliators** observed in 2016 included maple webworm which often lays eggs in leaves rolled by pupating forest tent caterpillars. There were also reports of significant populations of maple leafcutter and lesser levels of injury by maple trumpet skeletonizer and pear thrips.

Asian longhorned beetle is not known to occur in Vermont, and none were caught in the traps deployed in 15 high risk locations within the state. In Worcester County, Mass., the quarantine boundary remains the same. Eradication work continues there, and on Long Island, near Toronto, and in southwestern Ohio.

To reduce the risk of spreading Asian longhorned beetle and other wood-borne pests,



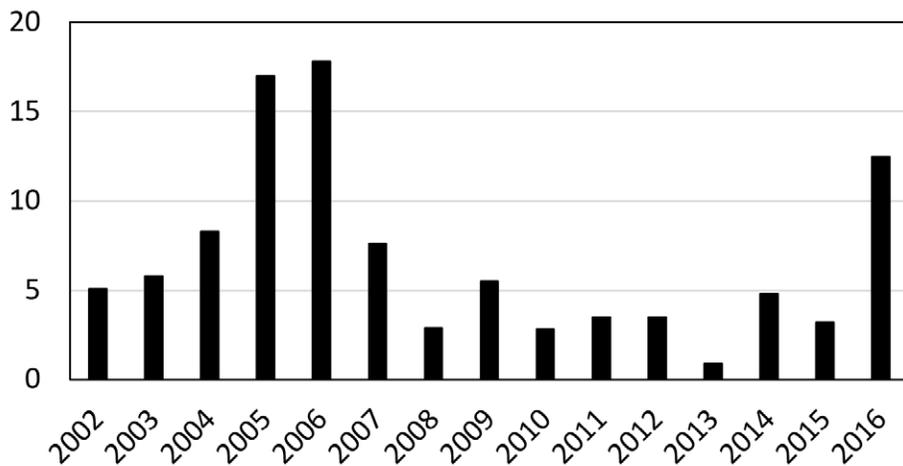
(above) Forest tent caterpillar defoliation was widespread in north-central and northeastern Vermont, but was observed in scattered locations throughout Vermont.

Vermont's Firewood Rule went into effect on May 1, 2016. Firewood cannot be brought into Vermont unless it is treated to the highest USDA standard, which kills Asian longhorned beetle. Firewood is defined as wood processed for burning and less than 48 inches in length.

The number of forest tent caterpillar moths caught in 2016 increased dramatically from the previous year, indicating that defoliation will be more widespread in 2017.

**For additional Vermont forest health information, visit [fpr.vermont.gov](http://fpr.vermont.gov). To receive literature by mail, for assistance in identifying pests or on-site evaluations, or further details, contact the Forest Biology Lab at 802-879-5687 or your County Forester.**

### Moths Per Trap



(left) The number of forest tent caterpillar moths caught in 2016 increased dramatically from the previous year, indicating that defoliation will be more widespread in 2017.

Maple Seminar

**Saturday, January 14, 2017**

**Middlebury Union High School**

73 Charles Avenue | Middlebury, VT 05753

To request a disability-related accommodation to participate in this program, please contact Moe Rheume at 802-989-0915 by January 3, 2017 so we may assist you.

Registration Opens: 8:00 a.m.

Sessions Begin: 9:00 a.m.

Sponsored by Addison County Maple Sugarmakers

Name/Org \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

Attendee Name(s) \_\_\_\_\_

# Attendees if postmarked by January 7 \_\_\_\_\_ x \$25= \_\_\_\_\_

# Attendees \_\_\_\_\_ x \$10= \_\_\_\_\_ includes lunch

**Total \$:** \_\_\_\_\_ inserting only

**Register by Mail:  
Make checks payable to ACSMA**

Mail to: 598 Browns Road | Lincoln, VT 05443

**More Information**

**Moe Rheume**, ACSMA President, (802) 352-9333

**Barb Rainville**, Sec/Treasurer, (802) 453-5797

**www.AddisonCountyVTMaple.org**

Maple Conference

**Saturday, January 21, 2017**

**SIT Graduate Institute**

1 Kipling Road | Brattleboro, VT 05301

To request a disability-related accommodation to participate in this program, please contact Amanda Voyer at 802-858-9444 by January 3, 2017 so we may assist you.

Registration Opens: 7:30 a.m.

Welcome & Plenary Speaker: 8:15 a.m.

Sessions: 9:45 a.m. - 3:30 p.m.

Sponsored by UVM Extension and the Vermont Maple Sugar Makers Association

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

Attendee Name(s) \_\_\_\_\_

# VMSMA Members \_\_\_\_\_ x \$10= \_\_\_\_\_

# Non-Members \_\_\_\_\_ x \$40= \_\_\_\_\_

# Youth \_\_\_\_\_ x \$5= \_\_\_\_\_

# Meals \_\_\_\_\_ x \$15= \_\_\_\_\_

**Total \$:** \_\_\_\_\_

**Register by Mail:  
Make checks payable to VMSMA**

Register Online: [www.VermontMaple.org/maple-conferences](http://www.VermontMaple.org/maple-conferences) save stamps & staff time!  
& Mail to 189 Vermont Route 15 | Jericho, VT 05465

**Register with Credit Card:**

Card # \_\_\_\_\_ / \_\_\_\_\_

Exp Date (mm/yy) \_\_\_\_\_ / \_\_\_\_\_ CIV# \_\_\_\_\_

Signature \_\_\_\_\_

Total to Charge \$: \_\_\_\_\_

Maple Conference

**Saturday, January 28, 2017**

**People's Academy**

202 Copley Avenue | Morrisville, VT 05661

To request a disability-related accommodation to participate in this program, please contact Amanda Voyer at 802-858-9444 by January 3, 2017 so we may assist you.

Registration Opens: 7:30 a.m.

Welcome & Plenary Speaker: 8:15 a.m.

Sessions: 9:45 a.m. - 3:30 p.m.

Sponsored by UVM Extension and the Vermont Maple Sugar Makers Association

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

Attendee Name(s) \_\_\_\_\_

# VMSMA Members \_\_\_\_\_ x \$10= \_\_\_\_\_

# Non-Members \_\_\_\_\_ x \$40= \_\_\_\_\_

# Youth \_\_\_\_\_ x \$5= \_\_\_\_\_

# Meals \_\_\_\_\_ x \$15= \_\_\_\_\_

**Total \$:** \_\_\_\_\_

**Register Online: [www.VermontMaple.org/maple-conferences](http://www.VermontMaple.org/maple-conferences) save stamps & staff time!**

**Register with Credit Card:**

Card # \_\_\_\_\_ / \_\_\_\_\_

Exp Date (mm/yy) \_\_\_\_\_ / \_\_\_\_\_ CIV# \_\_\_\_\_

Signature \_\_\_\_\_

Total to Charge \$: \_\_\_\_\_



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**EXTENSION**

*UVM Extension helps individuals  
and communities put research-  
based knowledge to work.*

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Barre, Vt. 05641

Photo: Umbrella Hill Maple,  
Hyde Park, Vt.

**MAPLE** *Mainline*  
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