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Long Trail NEWS

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The ***Long Trail News*** is published by the Green Mountain Club, a non-profit organization founded in 1910.

THE MISSION OF THE GREEN MOUNTAIN CLUB is to make the Vermont mountains play a larger part in the life of the people by protecting and maintaining the Long Trail System and fostering, through education, the stewardship of Vermont's hiking trails and mountains.

We are committed to ensuring the GMC and Long Trail System are places that are inviting, safe, and open, regardless of age, gender, race, religion, ethnicity, ability, sexual orientation, or socioeconomic status.

The Green Mountain Club and Long Trail System are located on land which is the traditional territory of Indigenous peoples including the Western Abenaki. This land has served as a site of meeting and exchange among Indigenous peoples for thousands of years. We recognize and respect them as the traditional stewards of these lands and waters, whose presence continues to enrich our community. We strive to respect and protect the lands within our use.

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GET IN TOUCH! Email the editor with your feedback at **cmiller@greenmountainclub.org.**

Don Taylor

Dear GMC members,

This year promises to be another very good one for the Green Mountain Club. We are led by an excellent professional staff and very talented volunteers, all dedicated to making the Vermont mountains play a larger part in the life of the people. The field season will add immeasurably to your enjoyment of the Long Trail System, as crews plan to complete relocating the Long Trail on Belvidere Mountain, make repairs to trails damaged in the 2023 floods, and continue to expand land conservation initiatives and the new volunteer trail steward program.

Field work is the core of what we do, but we also are conducting something equally important: a comprehensive review of our organizational governance. Our last comprehensive review was completed in 2017, and organizational changes we've encountered since then make the current review essential.

The governance review is motivated by three primary considerations. First, and perhaps most important, is ensuring that our bylaws adhere to rules, laws, and best practices for our organization.

Second, our board is large (30-plus), making it difficult to have robust participation in board meetings on subjects of truly strategic importance to the club. A smaller, more agile, and more strategically focused board would better serve us.

And third, we need to ensure that our 14 sections are fully aligned with our overall mission, fairly funded, provided with beneficial board oversight, and adequately represented in governance procedures.

The club is in good shape, but we need to make changes to best accomplish our mission and strategic priorities. Undertaking this governance review now is timely and valuable in terms of self-reflection and growth, and it will help ensure we can proactively grow and evolve. By creating the strongest organization possible, we'll be well-equipped to meet the challenges of the Long Trail System now and in the future.

On the next page, you can learn about the changes being proposed to the GMC Bylaws and the process for members to vote on the changes at the 116th annual business meeting on June 13, 2026 in Waterbury Center, VT.

Don Taylor
Board President

FRONT COVER: Volunteer David Hathaway builds puncheon on the Long Trail near the summit of Laraway Mountain. Read more about the use of puncheon and managing the Long Trail's notorious mud pits on page 12. Photo by Lily LaRegina.

Notice of Proposed Bylaw Amendments

Pursuant to Article VII of the Green Mountain Club Bylaws (Amendments and Procedures), the members of the corporation shall have the power to amend the bylaws by two-thirds vote at any meeting of the membership, if notice of the proposed action is given in the call for the upcoming meeting.

GMC's bylaws can be amended by two-thirds vote at a meeting of the membership. Members are hereby notified that the GMC Board of Directors has recommended a set of bylaw amendments for a vote at the annual meeting on June 13, 2026. The amendments affect the following articles of the bylaws:

Article II - Members and their Meetings
Article III - Board of Directors and its Meetings
Article IV - Officers and Executive Director
Article V - Committees
Article VI - Local Sections of Corporation

For a copy of the proposed bylaw changes, please visit: **greenmountainclub.org/2026-bylaw-amendments**

2025 Annual Meeting.

SAVE THE DATE! Annual Meeting is June 13, 2026

JOIN US AT GMC HEADQUARTERS in Waterbury Center for the 116th Annual Meeting.

Information and Registration coming soon at **greenmountainclub.org/annual-meeting**

Vote for GMC's General Directors

At Annual Meeting, two seats will open on GMC's Board of Directors. Directors are elected by members to three-year terms, with a limit of six consecutive years of board service. The Nominating Committee presents the following candidates for approval:

- Delia Clark (first term)
- David McNally (first term)

To meet the candidates and cast your vote, go to **greenmountainclub.org/vote2026**

GMC Director of Conservation Mollie Flanigan reports on the club's land conservation work at the 2025 Annual Meeting.

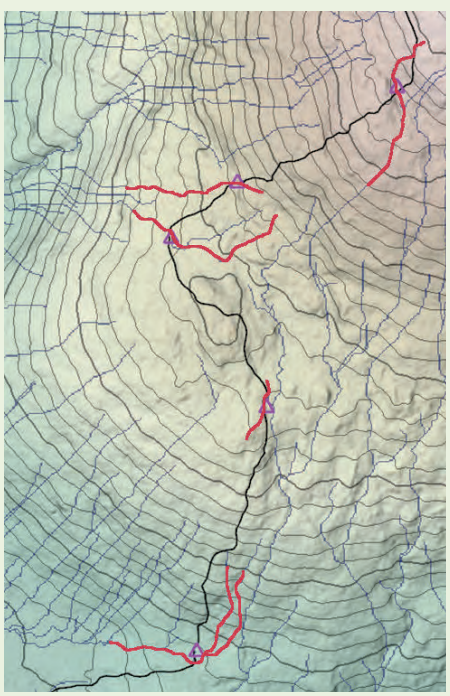
FIRST PHASE OF

GIS Trail Assessment Shows Promising Data Validation

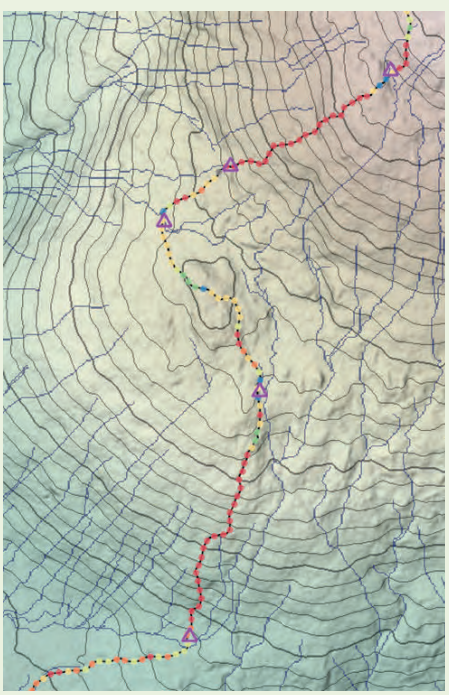
BY KEEGAN TIERNEY

ONE OF THE GREEN MOUNTAIN CLUB'S STRATEGIC PRIORITIES is to bring the Long Trail System up to modern sustainable trail design standards. To help us define the overall scope of work to meet this lofty goal, we first need to understand the current conditions of the entire system, which is why we are building a GIS-based model of the Long Trail System. (You can read more about the details in the Spring *2025 Long Trail News*.)

GMC began work on the GIS modeling project last summer by consulting with Community Geographics, a mapping resource company for public interest groups. We conducted an initial analysis and data visualization to look at features such as soil composition, hydrologic flow, slope, and special ecologic conditions. At the same time, we were capturing trail conditions data by hand for a project with the Appalachian Trail Conservancy (ATC). This project was designed to capture all on-trail sites where conditions were considered deficient (meaning they don't meet sustainable standards, are too steep, are suffering erosion, have been widened or braided, or any other manner of issue), to inventory potential projects for long-term deferred maintenance funding.



Hydrologic accumulation (red lines) correlate to deficient trail sites (purple triangles).



Very steep grades (red dots) correspond to deficient trail sites (purple triangles).

At the end of the season, we were able to compare the sites determined to be deficient through in-person field visits with the GIS-generated modeling sites and received some early confirmation of our modeling that you can see through the maps on this page.

The initial results appear to show a very strong correlation between sites the model has predicted have issues and the points determined to be deficient via field visit. Upon initial review, we found the **two most predictive elements of the model** were **hydrologic accumulation data** — a geographic overlay that predicts where rainwater will flow and accumulate on the landscape before reaching headwaters streams or other tributaries — and **trail slope data**, which indicates how steep the trail is.

◀ Both maps reflect data provided through the modeling process; the purple triangles represent sites that were determined insufficient through field visits. In the first map, the red lines represent hydrologic accumulation. You can see that every time there is a red line that crosses the trail, it was also deemed insufficient via ground truthing, or on-site confirmation. The second map shows us the slope data, with red indicating a very steep slope and green being a more gradual slope that meets our sustainability standards. These maps show that some of the concentrated

red spots which denote a super steep trail also correspond with a deficiency in the trail.

Looking at the field deficiencies through this model helps us do preliminary scoping for field repairs that allows us to address the acute damage (what we can see) while also assessing the contributing factors (what the model shows us).

For example, if data collected in the field shows an eroded section of trail and the model reveals that the slope exceeds sustainable trail standards for 150 feet uphill from the site, we know that in order to address the contributing factors we need to install water diversion (waterbars or grade dips) or slope reduction (check steps, staircases, or re-alignments) along that 150-foot segment.

If the model identifies a hydrologic accumulation line intersecting the trail adjacent to the problem, we can determine where the tread is catching and channelizing water rather than letting it flow across the trail.

Our developing GIS model is already helping us understand the trail conditions in far less time and at a far lower cost, and it gathers many different sources of data into one place for quick post field-visit analysis. We will soon have a completed GIS model for the entire Long Trail (LT) and will complete the data collection done through site visits during the 2026 field season.

It is exciting to know that with a complete field data set and GIS model, we will be able to look at the Long Trail System wholistically and develop a scope of work that fully addresses problem sites and works towards our goal of having the Long Trail System meet modern sustainable trail standards. We are grateful to the Waterwheel Foundation for providing a grant to support this project, and to our members and donors like you, who support the work of GMC to invest strategically in the sustainable future of the LT.

2026 Season Volunteer Opportunities

Monitor Boundary Lines for Land Conservation

Volunteer Corridor Monitors are asked to visit their adopted parcel of GMC-owned land at least twice a year to ensure conservation restrictions are being upheld and to maintain the boundary line. This is a great way to learn map & compass and bushwhacking skills, gain conservation experience, and observe wildlife. Available parcels are in northern Vermont.

CONTACT: Rowan Kamman, rkamman@greenmountainclub.org

Share Hiking Information and Stewardship Guidance

There are three volunteer opportunities to support hikers and visitors to some of our most beloved and vulnerable hiking areas. Shifts are four hours with flexible scheduling.

Barnes Camp Hike Information Specialists share trail suggestions and information about GMC with guests at the Barnes Camp Visitor Center in Stowe. Volunteers are needed on Fridays, Saturdays, and Sundays.

Mount Mansfield Volunteer Trail Stewards share their love and care for the alpine zone with visitors to Vermont's highest peak. Positioned at the top of the Stowe Auto Toll Road, volunteers connect with hikers and drivers and provide information about alpine stewardship.

We will also expand the **trail steward volunteer** model to the **Lincoln Gap Trailhead** this summer. These volunteers will welcome visitors as they begin their hike, and provide information about hiking destinations, low-impact recreation practices, and GMC's work on the Long Trail.

CONTACT: Emily Mosher, emosher@greenmountainclub.org

Contribute to Trail Inventories While You Hike

Planning a Long Trail End-to-End or Side-to-Side trek this summer and up for doing a little data collection along the way? GMC Field Programs staff are taking an inventory of a variety of trail assets and infrastructure on the Long Trail System in 2026. We're seeking a few individuals to use a smartphone app to submit frequent data reports to GMC on their hike. Volunteers are required to attend an orientation meeting with GMC to learn the project parameters.

CONTACT: volunteer@greenmountainclub.org

Side-to-Side Challenge SERVES UP Variety & Views

BY CHLOE MILLER WITH PHILIP WERNER

Philip Werner completed the Side-to-Side challenge in September.

IF YOU'RE LOOKING FOR SOME NEW-TO-YOU TRAILS and to discover little-visited corners of Vermont, the Long Trail (LT) Side-to-Side challenge might be perfect for you.

A cousin of the End-to-End hiking challenge, the Side-to-Side Challenge was born in 2006 after years of hikers informally taking it on. A sub-committee of the board made up of Steve Lightholder, Smith Edwards, and Duncan Wilkie formalized the challenge.

It consists of 88 side trails — 84 that the Green Mountain Club (GMC) manages, and a few we don't, like the Wanderer Trail at Stratton Mountain Ski Resort — and covers 166.1 miles. These trails are mostly blue-blazed and generally extend from a trailhead to the LT itself.

> **"The Green Mountain Trail near South Wallingford had it all; several views, a good climb, and a beautiful flat section with soft trail and fragrant pine."**
>
> **—BECKY SWEM**

There have been just 71 Side-to-Siders to date. Each year, we recognize about one percent of the total number of End-to-Enders, so joining the ranks of the Side-to-Siders places you in elite company.

Many of you are probably well on your way to completing the challenge and may not even know it. Certification is simple — we just ask for the approximate date hiked for each of the 88 side trails, conveniently organized in a digital tracker that includes the divisions used on the Long Trail Map. So grab our latest map and a *Long Trail Guide* for directions and trail descriptions and start plotting some routes to explore side trails that are new to you!

Hiking expert Philip Werner moved to Vermont in a few years ago and began working on his Side-to-Side certification as a way to explore his new home. He completed the challenge in September 2025 and documented his approach to itinerary planning and exploring on his website, **sectionhiker.com**.

Philip first heard about the Side-to-Side Challenge from a friend who had previously worked on a GMC trail crew and had completed it. He recommends using a Side-to-Side list to eliminate some of the endless browsing and choice.

"I'm a list hiker, I love having a list to take some of the guesswork out of where to hike each week," he explains.

Side trails vary widely, from dramatic crawls through caves on Mount Mansfield's rugged ridgeline, to gentle strolls to ponds in southern Vermont. Philip says it's a great way to explore the variety of terrain that Vermont has to offer and keep your hiking experience fresh.

There's no one way to approach the Side-to-Side Challenge. You could do 88 separate day hikes or try to combine multiple trails in a vicinity into one long day's hike or a multi-day backpacking trip. No matter what, you'll be hiking more than the designated 166.1 miles, since there are a few loop options and most trails will be hiked in some sort of out-and-back manner.

"You will drive yourself crazy trying to figure out the optimal route to get as many trail miles as possible," admits Philip.

One strategy is to start with the trails nearest your home, to keep the activation energy low, and build up to trail areas that will require longer drives or nights away from home.

Jake Perkins, who completed the challenge in 2024 offers this approach: "Treat it as a long-term commitment and incorporate the hikes into other experiences in the surrounding woods and towns."

Philip created backpacking routes using GMC's hiking maps for networks of trails on Killington, Camel's Hump, and Mount Mansfield. "They're not traditional backpacking trips, because you're doing a lot of in-and-out, back-and-forth to get to all the trails." For example, over two days in the Killington Area, Philip hiked the following route:

Day One: **Shrewsbury Peak Trail** (3.8 mi.) to LT North (1.8 mi.), then down and back up the **Bucklin Trail** (3.5 mi. Each way, 7.0 mi. Total) before tenting overnight at Cooper Lodge.

Side-to-Siders Anna Gerretson and Owen Rachampbell.

Day Two: **Killington Spur** out-and-back to the summit, LT South (1.8 mi.) to Shrewsbury Peak Trail (again) to the **Black Swamp Trail** (2.1 mi.), and a 1.5 mi. road walk back to his car.

That's a total of 19.5 miles of hiking for three side trails totaling 9.8 miles.

> **"Generally you will find fewer hikers which, for me, is a delight. Also, there's a better chance of seeing Vermont's wildlife because it's quieter with the decrease in foot traffic."**
>
> **—IRA SOLLACE**

For Philip, planning is part of the fun of the challenge. A longtime New Hampshire resident, Philip was contemplating a move to Vermont a few years ago and used the Side-to-Side Challenge to explore the numerous back roads leading to some of the lesser-used trailheads. "Exploring Vermont this way has been thrilling, rekindling the joy I feel when driving down unmarked dirt roads in the middle of nowhere to hike on new trails to new destinations," he says.

Philip had trail highlights from the entire length of the system but he can't name a single favorite.

Trails to ponds and streams, like Little Rock Pond and Griffith Lake, were memorable for their peaceful destinations. The twisty, scrambly Canyon and Cliff Trails on Mansfield are perennial favorites among Side-to-Siders.

George Grzyb, who completed their Side-to-Side in 2022, recommends the Frank Post and Forester's Trails because "they provided for a scenic loop to visit both Tillotson Peak and Belvidere Mountain in a quieter part of the Long Trail System," says George. "There are many opportunities to combine a few side trails and revisit your favorite Long Trail destinations."

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Managing Side Trails

THE GREEN MOUNTAIN CLUB'S (GMC) FIELD PROGRAMS TEAM IS TASKED with managing the entire 500-mile Long Trail System, including 272 miles of the Long Trail (LT), 166 miles of side trails, 45 miles of Appalachian Trail (AT) in Vermont, and more than 20 miles of trails in the Northeast Kingdom. For the most part, a "side trail" is a blue-blazed hiking trail that accesses the LT from a trailhead or other access points. Many of them run east to west to the LT's north-south alignment, though some are loops or run parallel to the LT.

There are 84 blue-blazed trails in GMC's Long Trail System Management Plan, the organization's policy guideline document, and they vary widely from one another. Some rank among the most popular day hikes in the states and see tens of thousands of hikers a year (Think the Burrows and Monroe Trails on Camel's Hump, Deer Leap Trail near Killington, Sunset Ridge Trail to Mansfield's Chin, and the Stratton Pond Trail). Other side trails are little used, relatively obscure to access, and/or not originally designed as a hiking trail, so they can be difficult to maintain.

How much of our work focuses on side trails? Each season we spend at least a few weeks improving one or more side trails in the system. From 2023-2025 we had a full-time crew dedicated to the Burrows Trail restoration. Trail adopters and GMC sections also conduct annual maintenance at least twice a year on every side trail. Often, our decisions on where to invest trail work depend on where funding is available, so busier trails in the National Forest or on state land tend to get the most attention. It's more difficult to justify investing in trails on private land, since there's no guarantee the trail will continue to exist there.

Conserving Our Side Trails

BY MOLLIE FLANIGAN

GMC's Strategic Conservation Plan identifies strategy for protecting Long Trail access trails statewide.

GMC HAS BEEN WORKING TO LEGALLY PROTECT THE LONG TRAIL SYSTEM since 1986, but over the past 40 years, our main focus has been on protecting the footpath of the LT itself. GMC's commitment to protecting the side trails that access the LT has been somewhat unspecified.

There are 35 side trails that are all or partially on private land. Since use and design affect how they are maintained, we had to consider a range of questions as we developed the Strategic Conservation Plan. We systematically reviewed an inventory of all side trails that cross private land and asked questions to help identify land protection targets, like *Does every side trail warrant the resources of land protection? Does it bring sufficient value to the larger network of hiking trails? Would it be better served by a relocation to land that has already been conserved?*

These questions and subsequent research helped winnow down the list of target properties from 55 to 26, and the number of prioritized unprotected trails from 35 to 33. We determined that there were 12.3 miles of unprotected side trails, and that GMC would work on protecting them under our Tier 2 priority for active outreach and land protection:

continued on page 10

Side Trail Project Spotlight: SUCKER BROOK TRAIL

GMC TRAIL CREWS SPENT EIGHT WEEKS in 2024 and 2025 improving the Sucker Brook Trail, a 1.2-mile blue-blazed side trail in the Joseph Battell Wilderness. Because the trail is in a federally-designated wilderness area, it retains a rugged character, and our crews and volunteers must adhere to certain requirements, including the prohibition of mechanized equipment or tools, minimal signage and blazing, and a narrower, more overgrown trail corridor.

The Sucker Brook Trail crosses Sucker Brook via a U.S. Forest Service (USFS)-built bridge, then follows old logging roads east until it intersects with the Long Trail (LT). The Sucker Brook Shelter sits just west of the intersection.

We have been able to target this side trail for some general upgrades and improvement in recent years thanks to a funding opportunity from the USFS. The North Country National Scenic Trail (NCNST), which ran from North Dakota to the Crown Point Bridge on Lake Champlain, was extended into Vermont by an Act of Congress in 2019. The trail alignment was co-located with existing trail infrastructure where possible, including the entire Sucker Brook Trail and the LT south to Maine Junction. With this authorization, GMC and the USFS targeted funding to complete critical upgrades to the Sucker Brook Trail.

Crews worked on a staircase from the shelter to the water source; re-treaded some small sections to improve drainage and muddiness; engineered a large turnpike over a particularly marshy section of the trail; and built short staircases on either side of three small stream crossings suffering from erosion.

More work on the Sucker Brook Trail, as well as improving and cutting new connected NCNST tread, is slated to take place in the coming years.

BEFORE: The Sucker Brook Trail follows old logging roads and is prone to muddiness.

AFTER: GMC crews added a durable turnpike to raise and dry the footpath.

EXPLORING the Side Trails

Continued from page 7: Side to Side Challenge

In addition to GMC's hiking maps, including the online Avenza versions, Philip swears by a road atlas. "You can't rely on Google or Apple Maps for this challenge," he says.

> **"I loved the logistics puzzle as a solo hiker and sometimes self-shuttled between trailheads with a bicycle and car."**
>
> **—LIZ FORD**

Having a hiking buddy and dropping a second car somewhere can eliminate the number of out-and-back hikes necessary.

"I think more people should pursue the Side-to-Side list. It's an on-ramp to the Long Trail itself; it's a great way to stay connected to the trails after an End-to-End, and it can be very family-friendly and flexible since it doesn't follow a traditional thru-hike structure," Philip concludes.

Ready to try the Side-to-Side Challenge? Download the tracker, grab the latest map, and get to hiking! **Greenmountainclub.org/side-to-side**

Continued from page 8: Conserving our Side Trails

TIER 1 land conservation projects include Long Trail and Appalachian Trail treadway

TIER 2 parcels host side trails and trail infrastructure (shelters and privies)

The Land Conservation Program began proactively researching and reaching out to side trail landowners in 2025. GMC has a long history of landowner outreach and relationship building with LT landowners, but much less so with side trail landowners, and the difference was immediately evident. Each LT landowner has a thick file of correspondence, field visits, and negotiations going back 30 to 40 years. In contrast, most of side trail landowners have a very thin project file, if they have one at all. That means our work over the last year started from an introductory stage of property research and relationship building.

When making this initial outreach, it is the job of program staff to listen, learn, find common ground, and offer a trail protection scenario that aligns with the landowner's needs, goals, and plans for the property. These conversations sometimes yield an immediate opportunity if the landowner is in a position to decide the future of the property. However, in most cases, it's the beginning of long-term relationship building and dialogue that may lead to a land protection opportunity when the time is right for the landowner. An outright land purchase is GMC's most desired form of conservation, but we also work with landowners on conservation or trail right-of-way easements that secure the route of the trail forever while the landowner retains ownership.

Although legal protection for the entire Long Trail System is GMC's goal, it is still private landowners who make the whole system possible today. Since the very beginning in 1910, the LT, and many other trail networks statewide, have been made possible thanks to the generosity of private landowners. We are immensely grateful to all who graciously open their land to the hiking public.

Do you know a landowner or private parcel of land that hosts a side trail and want to help? Get in touch with Mollie Flanigan at **mflanigan@greenmountainclub.org** to see if you can help steward our relationship building.

"Thru"-Hiking the Side Trails

Ephraim, 13, hiked many side trails alone, while his parents' friend, Kalmia, camped with him each night

AS INTREPID SIDE-TO-SIDERS DISCOVER, logistics and transportation are a key element of hiking the Long Trail's side trails. After thru hiking the Long Trail in 2022 at age 12, Ephraim "Bucksnort" Maciejowski, now 15, set his sights on the Side-to-Side Challenge. He'd already done most of the trails around Camel's Hump, Mount Mansfield, and farther north, so he took a creative approach to reducing time on the road: he turned most of the rest of the side trails into a thru-hike.

With Kalmia, a trusted adult, Ephraim set out in July, hiking the Long Trail south from Appalachian Gap. When he reached the Sunnyside Trail, he hiked it down to its junction with the Stark Mountain Trail, followed that to its trailhead at Mad River Glen Ski Area — then turned around and hiked back up to continue south on the LT. He did the same with the Battell Trail, then hiked down the Cooley Glen Trail and back up the Emily Proctor Trail (convenient, as they share a trailhead).

Ephraim checked off every other unfinished blue-blazed side trail the same way, all the way to the Broad Brook Trail, the southernmost side trail. He also bushwhacked to a few lesser peaks, like Farr Peak and Bloodroot Mountain, working on the Vermont 3,000-Footers list.

Kalmia stayed on the Long Trail, and camped at shelters each night with Ephraim. Since many shelters sit at side trail junctions, Ephraim could leave his backpack and run such side trails with just the essentials in a hydration vest.

Naturally he skipped side trails he'd done before, like Jerusalem and Bucklin. He also skipped a stretch of the LT in the vicinity of Clarendon, since there are no designated side trails between White Rocks National Recreation Area and the Killington-Coolidge Range.

In two weeks and 300 miles of hiking, Ephraim finished 38 of the 41 side trails south of Appalachian Gap. In September he circled back to the Hedgehog Brook Trail and the Beane Trail for a couple of day hikes to complete the challenge at age 14.

Ephraim's approach shows there's no one right way to tackle the side trails. Do them one at a time on leisurely weekends? Knock them all out in one continuous effort? You decide!

Ephraim completed half of his side trails in one continuous thru-hike.

TRAIL TALK

Mud Pits & Puncheon

BY LORNE CURRIER, VOLUNTEER & EDUCATION COORDINATOR

Deberming, or removing the raised edge of a mudpit with a hoe (or your foot!) so that water can drain, is the first step to alleviating mud.

IF YOU'VE HIKED ON THE LONG TRAIL (LT), you're probably familiar with some of its notorious mud pits that require wide, precarious steps over a few random logs that dot the surface of the mud puddle or sacrificing your mostly dry socks to tread directly through the ankle-deep sludge.

Mud management is part of the Green Mountain Club's (GMC) trail work, and while we'd love to eliminate all mud on the Long Trail System, that's a Sisyphean goal. Instead, we improve drainage where we can, install bridging or tread-hardening measures on perpetual mud pits, and try to educate the hiking public on how their approach to mud impacts the overall trail and landscape health.

So this mud season, learn more about the mechanics of mud and mud-abating measures on the trail, and why those DIY logs aren't the solution you might think they are.

Why is Vermont Muddy

Vermont is sometimes called "Vermud" by Appalachian Trail hikers, and GMC's familiar refrain to stay off fragile, high-elevation trails during the spring mud season is well known. With impacts from climate change, mud season conditions are now possible in any month of the year.

What causes Vermont's notorious mud and mud season?

- Soils at high elevations in Vermont are shallow and often on top of impermeable bedrock.
- Vermont's rocky soils have a higher percentage of clay minerals than surrounding states. Clay minerals absorb water and have very low permeability, preventing drainage.
- Soil still frozen from winter does not allow snowmelt and spring rains to percolate deeper, creating the saturated, messy top layer known as mud. High snow and cold winters like this one often result in longer, later mud seasons and a muddier hiking season overall.
- Last but not least, much of the Long Trail System was built over a century ago, without the impacts of climate change and a fraction of the hikers we see today. Those trails were built either too steep or too flat, traveling through susceptible soils with poor drainage.

How GMC Manages Mud

When assessing chronic mud pits, we look at where the water is coming from and any opportunity to exit the water. Preventing water from reaching the mud pit in the first place is the best option, and we can achieve this by installing drainage structures above it or relocating to a drier route.

Draining the mud pit, often through de-berming (removing the raised lip on the downslope side of the pit) or a drain, is the second-best option.

If for some reason neither of those options make sense, we consider a relocation or "harden" the trail, either via rock work or puncheon.

Relocation decisions are dependent on many factors, primarily length and severity of the mud pit and other trail layout issues, protected land corridors, and terrain options for a sustainable relocation. The recent southern terminus relocation is designed to move the trail up to a sidehill and alleviate some of the mud issues there.

Hardening the trail involves reconstructing the tread using features such as turnpikes or step stones, often combined with drainage improvements. These rockwork solutions are durable and effective, but they require significant time, cost, and skilled labor.

Puncheon: When it Works and When it Doesn't

Puncheon is a common (and visible) solution to perpetually muddy areas, because compared to rockwork, it is quicker and easier to install. Puncheon in New England, sometimes referred to as bog bridging, typically adheres to this definition: "a single-or double-plank tread surface resting directly on mud sleepers, cribbing or piles."

Most GMC puncheon is built out of eastern hemlock, which is fairly rot-resistant. We sometimes use more expensive, but more durable, black locust or cedar, or we fell trees from the surrounding area, usually red spruce or balsam fir, to create and install native puncheon.

GMC considers multiple factors when deciding if puncheon is the correct solution for a muddy piece of trail. Puncheon is fairly low-skill and fast to install, so GMC can work with volunteer service groups, section volunteers, or individual adopters to install puncheon. An efficient crew can build about 100 feet of puncheon in a day, and it starts working immediately.

But puncheon isn't all sunshine and rainbows. The lumber is heavy and expensive, and packing it into the worksite is the biggest limiting factor. It also doesn't last forever. Well-built puncheon ideally lasts 10-12 years, but that can vary, and the staff time and expenses add up over the decades.

Puncheon should only be installed in flat terrain, as sloped puncheon quickly becomes slippery and dangerous for the hiker. Trails that flood regularly are also not suitable candidates for puncheon as floodwaters can dislodge the boards. Ideally, puncheon begins and ends with durable tread, transporting the hiker across the muddy trail; placing 20 feet of puncheon in the center or at either end of a 100-foot mud pit doesn't resolve the problem.

Good puncheon is sturdy with no bounce and no sag in the middle. GMC uses stringers that are 3"x8" and sills that are 6"x6", so that puncheon is sturdy and settles in the ground. GMC uses a sledgehammer to drive galvanized 8" spikes through the stringers and into the sills. There should be a half-inch gap between stringers that allows water to drain but isn't so large that a foot or trekking pole could get caught between them.

PHOTO BY KATE SONGER

Your membership dues at work: native puncheon installed on Laraway Mountain.

PHOTO BY LORNE CURRIER

Putting logs or other organic matter in a mudpit will actually worsen the problem over time.

Mud Season Hiking Reminder

Though mud-season-like conditions can occur in any month of the year, Vermont's official mud season generally runs from snowmelt to Memorial Day Weekend. High-elevation trails on state land are closed, and we ask for your cooperation in giving the saturated soils time to dry out by avoiding all high-elevation trails. Lower elevations, durable-surface trails, and dirt roads make great alternatives this time of year. More information at **greenmountainclub.org/mud-season**

Why DIY Fixes Don't Work

Hikers may see logs, bark, or brush added (usually by other hikers) to a mudpit to create a drier stepping surface. While it may be a very temporary fix, it can make the problem worse in the long run. Adding these items to the trail can dam up natural drainage in the pit, and that extra organic matter eventually decomposes and acts as a sponge, soaking up moisture and creating more mud in the long run. Rather than cobbling together a temporary fix, we kindly ask you to instead report the pit to GMC and walk right through the center of the pit to avoid widening it.

Despite GMC's commitment to a durable and sustainable Long Trail System, it's unlikely the club will resolve every mud pit on the 500-mile system — it's just not practical or possible. So next time you come across a muddy stretch of trail, appreciate the heavy snowfalls, unique soils and ruggedness of the LT that created it in the first place. Look for a berm you can kick out to drain the pit, and traipse directly through the mud to avoid worsening the issue.

CONSERVING

Vermont's Bats

BY CHLOE MILLER &
ALYSSA BENNETT, SMALL MAMMALS BIOLOGIST,
VT FISH AND WILDLIFE

BATS ARE A CRITICAL COMPONENT OF HEALTHY ECOSYSTEMS and can be found throughout Vermont, both at home and out on the trail. But they face threats and require careful conservation to help their populations stabilize and hopefully recover.

All of Vermont's bats are insectivores, eating up to half their body weight in insects per day. Their prey includes pests, such as mosquitoes, forest tent caterpillar moths, and cucumber beetles. This ecosystem service is worth billions of dollars annually to U.S. farmers in reduced insecticides cost and crop losses.

About Vermont's Bats

Vermont has nine species of bat, five of which are endangered or threatened. They are either cave bats, which hibernate for the winter, or migratory bats, which fly south to warmer climates:

CAVE BATS

- Big brown bat
- Little brown bat (state endangered)
- Indiana bat (federally and state endangered)
- Tri-colored bat (state endangered, federally proposed endangered)
- Northern long-eared bat (federally endangered and state endangered)
- Eastern small-footed bat (state threatened)

MIGRATORY BATS

- Silver-haired bat
- Hoary bat
- Eastern red bat

Vermont's cave bats are threatened or endangered, due to the spread of White-nose Syndrome.

Bats live 20 to 30 years and have low reproductive rates; most of Vermont's endangered bat species produce only one pup per season. Thus, protecting existing bat populations and their habitats is crucial to their survival and productivity.

White-nose Syndrome (WNS) has eliminated more than 5.7 million bats in the northeastern United States in just the first five years after its discovery in 2006, and the disease continues to spread. It has affected all six of Vermont's cave bat species, especially the little brown bat, tricolored, and northern long-eared bat (northern myotis), whose populations declined over 90 percent between 2008 and 2010.

Over the last decade, the 10 percent of little brown bats that survived WNS appear to be rapidly evolving to cope with the disease. Unfortunately, northern long-eared bats have become increasingly rare. Declines approach 99 percent across their range, with increasing concerns that this species could disappear from Vermont. The northern long-eared bat is both state and federally endangered and we continue the race against time to prevent their possible extinction.

Bats on the Trail

Most forestland, streams, and wetlands provide suitable habitat for bats, so it's very likely you've hiked through bat habitat on the Long Trail System. Both cave and migratory bat species can be found roosting in trees during spring, summer and fall. Cave bats seek cool and dark places called hibernacula to wait out the winter. We know of at least 30 caves and mines in Vermont used as winter hibernacula for cave bats.

Cave bats emerge from their hibernacula in spring and set up maternity colonies in a summer range. These can be attics, barns, or bat houses; dead or decaying trees; or rocky cliffs and slopes.

Bats are most often seen on warm summer nights, with temperatures above 50 degrees and no major wind or precipitation. They're most easily observed from sunset through dusk, when they first leave the roost to feed.

Vermont bats benefit from keeping a variety of large diameter trees on the landscape. Saw timber-sized or older trees are the most desirable roosts (see photo below). Live shagbark hickory and black locust trees, their bark filled with hospitable crevices, are well-documented bat roosts in Vermont.

Bat habitat must also have sufficient water sources and foraging opportunities; hardwoods are marginally better than softwoods for foraging. Northern long-eared bats can be found at higher elevations within the Green Mountains, while hoary and eastern red bats are known to migrate along mountain ridgelines in the spring and fall.

Bats at Home

Bats, mostly the big brown and little brown bat, often roost in Vermont homes, and are especially visible in the summer when young bats are first learning to fly. They often roost in attics, chimneys, eaves, and barns. For more information on bats at home and the small yet serious risk posed by rabies, visit the Fish and Wildlife Bats website or contact them to report an at-home roost. There are many ways to provide suitable habitat for bats – and get their pest-reducing benefits – without having them as roommates. Learn more at: **vtfishandwildlife.com/learn-more/living-with-wildlife/got-bats**

For more about bat conservation, watch a recording of Alyssa's presentation at GMC on YouTube ▶

PHOTO BY LILY LAREGINA

Alyssa Bennett (right) talks to GMC member Phil Hazen about bat conservation during GMC's Winter Speaker Series in February.

GMC'S WORK TO

Protect Bat Habitat

PHOTO COURTESY ALYSSA BENNETT

A typical bat roosting tree.

THE NORTHERN LONG-EARED BAT has rapidly become one of the rarest bat species in Vermont. It roosts in the cavities, crevices, and peeling bark of live, dead and decaying trees. When GMC sought a suitable relocation for the Long Trail just north of Route 118, we encountered a forest suitable for northern long-eared bat habitat.

This species is a colonial rooster, so a significant percentage of their population may roost in a single tree, and cutting a roosting tree could have devastating impacts on the species' health, especially when pregnant females or flightless young are present.

Alyssa Bennett, the Vermont Department of Fish and Wildlife's small mammals biologist, met with GMC field staff for training on the Short Trail in Waterbury Center on how to identify potential northern long-eared bat roosting trees to ensure our relocation won't disturb any.

Staff looked for dead or decaying trees with plenty of loose bark, crevices and cavities, and concave surfaces that could provide a home for anywhere from one to a dozen northern long-eared bats. Now when we cut the rest of the trail relocation in Eden this summer, we can avoid disturbing the bat population. We have also improved our staff's ability to navigate the project planning and permitting process from now on.

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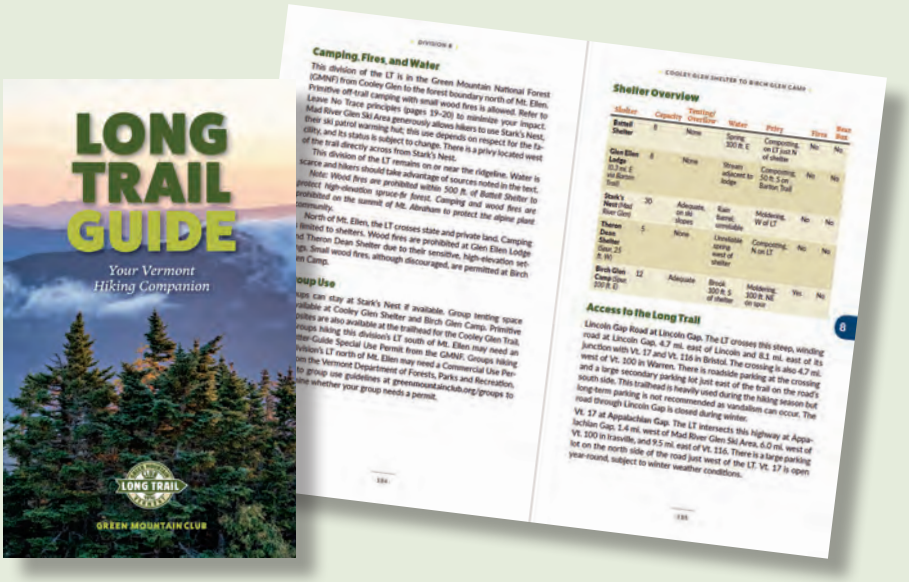
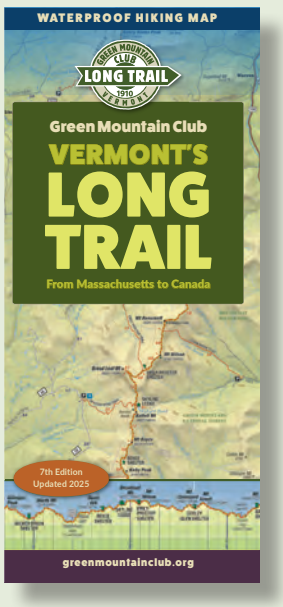
Get Adventure Ready with GMC's Lastest

GUIDE & MAP





PLANNING A TRIP ON THE LONG TRAIL THIS SUMMER, or ready to start tackling the Side-to-Side challenge? Get prepared and stay equipped on trail this season with the latest *Long Trail Guide* (2025) and Long Trail Map (2025).

Both publications are recently updated to reflect the latest trail changes. From the **detailed driving and trail descriptions** of the *Long Trail Guide* to the **convenient mileage markers** and surrounding area depictions on the map, GMC's publications are the most comprehensive resources available for hiking and exploring Vermont's mountains.

Members get 20% off their purchase, all the time, and your purchase supports GMC's work on the trail. Order online at **store.greenmountainclub.org** for quick shipping or in-store pickup at the Waterbury Center Visitor Center.

Own a gear shop, bookstore, or other small business? Also available at wholesale. Contact Emily Mosher, **emosher@greenmountainclub.org** for more information.