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Braiding, Widening, and Downslope Creep

Trying to restore overly loved trails below Mount Washington

Laura Waterman



“PERFECT WEATHER FOR THE JOB,” GEORGE LEIGH MALLORY WROTE IN the note he left before departing his high camp for the summit of Mount Everest on June 7, 1924.

Those words go through my head on June 24, 2019, 95 years later, as Dave Govatski drives Ryan Harvey and me up the narrow, twisty Auto Road to the summit of Mount Washington. When we had set off, the temperature was in the 60s. In the summit parking lot, when we arrive, the car thermometer reads 41 degrees. We were aware of the wind on the drive up, though it was hard to tell just how windy it was after we'd left the trees behind. As we get out, Dave advises, “Hold on to the car doors when you open them.” He'd once very nearly had a door ripped off, being remiss in offering this cautionary advice. We step out into gusty winds that rattle our pants and shirts as we dash around to open the trunk, quickly pulling out wind gear and extra layers, hats and gloves. Climate-wise, we are in Labrador.

We are here to walk a mile-long section of the Gulfside Trail that Dave, a retired forester with the U.S. Forest Service and an amateur botanist, has identified as in need of major repair. Ryan and I are along as part of my small nonprofit, the Waterman Fund. The fund works to protect the Northeast's alpine habitat. The problem Dave has identified aligns with the heart of what the fund supports. Ryan, a forester and former trail crew and alpine steward, can aid in assessing the damage and how to repair it. As for me, my late husband, Guy, and I had maintained the Franconia Ridge Trail for eighteen years. We had worked out techniques with the Forest Service and the Appalachian Mountain Club to protect the footpath, as well as communicate the fragility of the tundra landscape to hikers. Our work on the Franconia Ridge began in 1980. In the past few years alpine trails have seen a huge increase in use with consequent damage to the treadway and the plants alongside it.

We are here to observe where hikers are walking and assess the current damage. We are here because our hearts are here, in the wild beauty of this alpine world.

As we begin to walk, I see that Dave, as a botanist, has his eye on the plants. He frequently stops to raise his camera and snap a picture. I notice he is most frequently photographing *diapensia*. This revered inhabitant of the alpine zone is usually past its peak flowering by mid-June, but perhaps

Laura Waterman and Ryan Harvey, left, hike the damaged Gulfside Trail on June 24, 2019. Foot traffic in this popular section of the White Mountain National Forest for many years has trodden rare alpine plants at the edges of the rocky route. DAVID GOVATSKI

because we had such a cold wet spring it is still blooming vigorously: A five-petaled, waxy white flower on a short stem, it emerges from a thick mat or cushion of small dark green leaves. Resilient to subzero temperatures and hurricane-force winds, these cushions cannot withstand hikers' boots. We



Trampling on diapensia at the trail's edge leaves gashes in the fragile environment.

DAVID GOVATSKI

pass places where the soil is broken away, damaged areas caused by the life-threatening combination of foot traffic and heavy rains. *Diapensia* lives in the high mountains around the world, the circumpolar Arctic, but not the Rockies or the Alps. This plant needs year-round humid conditions, not strong summer sun and desiccating drought. As the winds buffet us, I look down on these mats of *diapensia*, one of the most beautiful of the June-flowering plants, flourishing in the thin soils and marvel at the ability of these plant communities to make a home in the windiest, most exposed sites. The plants' cushion has the ability to flatten, thus to accommodate itself to winds that could kill us humans. These plants have been growing here since the glaciers melted away 10,000 years ago. Many of us are concerned about the health of our alpine world and feel the imperative to communicate this story of our alpine vegetation to every hiker who journeys above treeline. I stop walking to look around, feeling a heart-pounding gratitude, once again, to be above treeline and among these plants.

The background buzz from the summit has faded and what we see, mountain ranges rolling out before our eyes, takes over. We are looking down from the great height of Washington's shoulder and far out on vast stretches of wilderness. There are no houses, no buildings. No highways. Not even trees. At our feet lie rocks and the unique vegetation of the alpine tundra. Our vision focuses on the swells of the farther summits of the Presidentials, then beyond, mountains stretch to the skyline, wild, inspiring, with, if you are a hiker, opportunities for a lifetime of exploring. And, if you are not, perhaps it is sufficient to know the existence of such wildness.

In 2019, I am not the regular visitor I once was up here. I hike on lower mountains now. One issue is speed. I cannot hike fast enough to manage, say, a ten-mile round trip that gains 3,000 or 4,000 feet on our steep, rocky, rooty White Mountain trails. So, I had seized on this opportunity to go up with Dave and Ryan by means of the Auto Road. Though I had concerns. Could I keep up? Of course not, but they would keep the pace so that I could. How about those famous winds? I had my hiking poles. My balance was not what it used to be, but I would manage.

My reading, by coincidence, over the last couple of days, had done nothing to quash my apprehensions. Apprehensions that had never crossed my mind when Guy and I were regularly running up and down from the Franconia Ridge. *Appalachia* had arrived in my mailbox and I had been reading the Accidents report. Rather obsessively this time. There is something mesmerizing about accident reports, and I read them with an extra-heightened feeling

of . . . this could be me. I was well aware that the winds in the Presidentials have the final say about what one can manage. Today the wind I am experiencing, if I were trying to weed my garden at home, would cause me to quit, retreat inside, and make a cup of tea. But this is certainly not a strong wind by Mount Washington standards. The three of us can talk without yelling in each other's ear. Our clothing is not excessively rattling. The wind is strong enough, now and then, to set me off-balance, and I am grateful for my poles. Dave and Ryan don't seem affected by it, but they are bigger and younger. It has been many years since I was in a wind this strong, and I realize that my apprehension is gone. I am loving this. This exciting wind! I can sense my physical and mental adjustment as I relearn how to navigate over a rubbly, stony trail. A trail in disrepair. Whenever Dave stops to photograph a plant, I catch up.

We are descending steeply. We are hiking along the precipitous edge of the Great Gulf. The Great Gulf is still a remarkably wild place. It was never logged. The forests rising out of the gulf give no hint of the trails that lead up this steep-walled glacial cirque, most of them built between 1908 and 1910 in a breathtaking spree inspired by Warren Hart. As the AMC councilor of improvements, Hart believed trails could contain adventure in precipitous and rugged ascents. Under his leadership emerged such challenges for today's hiker as the Madison Gulf Trail, Adams Slide Trail (no longer on the map—too steep, too much loose rock, but climbable nonetheless), the Buttress Trail, the Wamsutta Trail, the Six Husbands Trail, and the Great Gulf Trail that shoots straight up the wildly steep headwall itself. (Guy and I had climbed up Warren Hart's Great Gulf Trail from Spaulding Lake, shimmering in the sunlight 2,000 feet below us; we had climbed the gullies on nearby Mount Clay. Thrillingly steep winter ascents with ice axes and crampons.)

To our left are the tracks of the Cog Railway, plainly seen, since here they form a trestle five or six feet above the tundra. In some spots we are close enough to be walking on coal. Only a few years ago the Cog changed to cleaner-burning biodiesel fuel. But chunks of coal, spewed out by the engine, still remain ground into the alpine vegetation. This is not pleasant to see, and for the benefit of tourists the Cog continues to operate one coal-burning engine. We discuss what this coal is doing to the soil these plants receive their nourishment from. Dave tells a story of how a flying spark from the Cog burned a hole through his brand new Gore-Tex jacket. In our view ahead are Mounts Clay, Jefferson, and Adams, forming an arcing curve to our right. Mount Washington is at our backs, its summit buildings dominating the

skyline. We are headed for a spot a mile from the summit, at the junction of the Gulfside and Westside Trails, not far above the col that separates Clay from Washington.

We are not in wilderness. People pass us on their way up Washington's summit cone and go around us on their way down. We are here to observe. Most of them are not walking on the trail, but to either side, on the tundra. They are doing this because the footing is so much easier. Many of these hikers are wearing sneakers or running shoes, so, perhaps, are looking for less jagged footing. Some have on traditional hiking boots.

Ryan, Dave, and I exchange looks that mean this trampling is very hard to watch. It hurts, physically. We feel it deep inside. It's like watching someone get slapped across the face. You clench your teeth, you wince. This trampling on the plants produces that kind of visceral reaction. We feel the pain. Guy and I experienced this on the Franconia Ridge. I hope, I'm sure, every trail worker in the alpine reacts this way when witnessing such damage. Here, where we are standing, the tundra on either side of the trail is worn down to the soil, hardly a plant left. It's hard to fault the hikers for walking on it. The damage has already been done. But we can see hikers skirting farther out. There are enough people up here, going in both directions, that it is easier to leave the trail entirely than dodge around to let people pass.

While we're observing these hikers, Ryan brings up the question of climate change. Is the treeline creeping higher as the planet warms, thus adding to the pressures on the alpine vegetation? Dave's reply could seem reassuring if the changes in our climate weren't such a real threat. Mount Washington's summit temperatures, kept by the observatory since the 1930s, though trending toward warming, do not exhibit a statistically significant change. We ask why. Dave explains that thermal inversions and a high incidence of cloud fog may explain the summit's resistance to climate warming. But, he hastens to add, the same does not hold true for Pinkham Notch at the mountain's foot, or the nearby valleys. They are warming.

All too frequently the Cog rumbles by. It sounds like a real train, and it has a whistle that sounds like a real train's whistle, too. I surprise myself by waving to whoever might be looking out of the windows. Ryan and Dave wave too. The windows appear shut, cutting these tourists off from fresh air and this alpine world that we are standing in. The train, we admit, has its charm. What's not to love about the Cog, so much a part of the mountain's history? It's composed of one car for the tourists, and an engine that appears too small—too toylike—to be doing the heavy work up such a steep incline. But



The edge of the Great Gulf, a monstrous glacial carving that appears as an enormous, forested green hole. DAVID GOVATSKI

the Cog has been toting people up and down for the past 150 years. Mount Washington's summit is accessible to anyone by the Cog Railway to the west and the Auto Road to the east. I'm glad that toy train has cleaned up its act. (Although with the trade-off of coal for diesel, hikers on the mountain are left with an upsurge of engine noise.)

Many hikers turn their noses up at the tourists who choose to ride and not to walk. It's a silly, snobby attitude by hikers and climbers that I bought into for many years. It gives a meaningless feeling of superiority. When Guy and I began maintaining the Franconia Ridge Trail and had the opportunity to interact with our fellow hikers—often newcomers, many with questions when they saw us building a cairn or scraping out a water bar—that interaction often opened a pathway to a conversation about this alpine world that could become their world to care for too.

I know that what is going on in the small space of Mount Washington's summit is, in part, an effort to show people something beautiful and worth protecting.

I know that in the summit buildings there are signs about being good mountain stewards—not littering, not picking or treading on the alpine plants. There is a museum with displays on the geology, the botany, meteorological data on the lowest and highest temperatures, great storms of snow or rain, how frost feathers form, and how many have died since the first death in the Presidentials in 1851. It's all in an attempt to stir wonder and arouse appreciation—even awe—for the natural world: the world outside the plate-glass windows. If Mount Washington and the Presidential Range can generate awe as seen by those standing behind this comfort zone, that could well be the first step to expanding horizons.

So, while Ryan, Dave, and I are not in wilderness, we are in the wild. We stop, for a moment, to savor it. We talk about wilderness, how we would define it. It's a place with few to no people, it's difficult to access, there are no human-made structures. When you enter it, you're on your own. You must be self-reliant and well prepared. We talk about what wild means to us. Right now we are surrounded by it. The Great Gulf spreads itself out before us, emanating wildness. As do the summits that form the gulf. These summits are pure rock, no soil, or very little. Guy and I knew, and marveled over, a diminutive birch that clung to a toehold just below the tip-top of Mount Adams. Is it still there? Could it have survived the trampling of recent years?

These Presidentials' summits are hard to walk on—just great stone heaps. Mount Washington is often called the Rock Pile. The footing can be tricky, dangerous to ankles and knees. Mountains are indifferent to humans. And beautiful beyond belief. Washington's summit is accessible to everyone—a sacrificed wilderness—where, it is my hope, those who visit can see beyond the buildings into the heart of wild. Now, as Dave, Ryan, and I stand on the edge of the Great Gulf, I feel as if I'm really seeing this monstrous glacial carving for the first time. Its size, by our eastern mountain standards, is enormous; it's a gaping, forested green hole. The Great Gulf dwarfs all other features on Washington, even the ravines to the east, Tuckerman and Huntington. The Gulf is deeper, larger, certainly more isolated than Tuckerman and Huntington ravines, and because of this, demands much more commitment to climb out of, to reach its rim. I look into the Gulf with fresh eyes. My perspective has changed. All the years I was actively climbing, I took such a scene for granted: It was just a part of my climbing life. I had no ledge on which to stand to see it otherwise. Today, because I haven't stood on this spot in a long time, I bring with me an overlay, or perhaps a foundation, of history. Not

only a greater appreciation of the magnificent trail building that opened the Great Gulf to people, but my own history of climbs here, mostly in winter and mostly with Guy.

The path Dave, Ryan, and I are on, the Gulfside Trail, was constructed by J. Rayner Edmands in 1890 to 1891. It extends throughout the Northern Presidentials, connecting the cols of Madison, Adams, Jefferson, Clay, and Washington. The trail is entirely above treeline. It does not go over the peaks but involves long, slanting, gradual grades, most suited to Edmands's conception of path making. It is among the most heavily traveled trails in the White Mountains, and therefore in the East. It is part of the Appalachian Trail.

An astronomer with the Harvard Observatory, Edmands, possessor of an intense, tightly wound nature, was called by some "a high-strung organism." His brand of trail construction was unique in a region where Hart and his sort made trails that went straight up, steepness and rocks be damned. Edmands made paths that slid along the contours to avoid steepness. He constructed graded, smooth, well-manicured footways, suitable for ladies in their long skirts. His wife was a semi-invalid, and he applied the principles that he saw in Colorado, where graded trails were used for pack animals, to make the Presidentials more accessible to his wife. Or that was one reason given for the kinds of paths he built. Perhaps what drove this painstaking and conscientious man was imposing order in the chaos of the boulder fields above treeline, discarding angular and sharp pointed rocks, selecting large flat specimens, like paving stones, to form a stable and level treadway. To me, Edmands's deliberate care speaks to a deep love of his home mountains, and a strong desire to share them with others in hopes that they would come to value them too. At the time, the White Mountains were being heavily logged and there were no laws in place to control this threat. His Gulfside Trail, built 130 years ago, is under threat today from heavy use.

Dave, Ryan, and I, along with other hikers, are walking on a historic trail. Not unusual in the White Mountains where most of our footpaths were in place before the Second World War, but all the more reason to pay attention to the condition of a footway that causes hikers to abandon the path for the easier footing of the tundra. To put what we are witnessing in the language of trail workers, this is a badly eroded trail in need of rehabilitation, definition, and stabilization. We are walking on a trail that exhibits excessive widening, braiding, and downslope creep. In other words, the trail has spilled out of its original bed. Dave and Ryan use a tape measure to find that the impacted area ranges from 25 to 33 feet wide. Most trails are constructed to a standard

of 4 feet. Braiding occurs when hikers bypass the official trail to create parallel trails. Downslope creep refers to the trail tread gradually creeping down the slope over time. This is common on steep sidehill slopes where the footing is difficult, forcing the hiker downward. Some of the trail braiding is recent. We can tell because organic soil is still present and the soil compaction appears moderate. But other areas have lost most or all of the organic soil and the alpine vegetation is damaged or lost. This is the kind of work the Waterman Fund supports, and we request, as we do with all our grants, that ethical and educational components be incorporated into the work. This is our way of making sure the word gets spread about our own human impacts on the mountain landscape we love.

WE HAVE ARRIVED AT THE JUNCTION WHERE THE GULFSIDE MEETS THE Westside Trail, our end point, a mile below the summit. It is midday, and the number of hikers coming up and going down has thickened. We pay attention to where they are walking; mostly it is not on the trail, but if it is, we find ourselves stepping aside to let them pass. We want them to stay on the trail and not walk around us off the barely discernable treadway that has often caused us to stop, confused as to the location of Edmands's footpath. The flat paving rocks are still there, but no longer continuously connected. Years of the combination of boot traffic and heavy rains have upheaved both rocks and soil. I think of the ancient city of Troy, buried under the cities of other civilizations. Even Edmands's carefully placed cairns are either missing or no longer in line with the historic pathway, perhaps because of the changes in the treadway itself due to human use. Whatever the reason, a misplaced cairn can cause hikers to tramp through the alpine vegetation, taking them further off trail. (All along, Dave has pointed out the occasional rare species.) In whiteout conditions poorly aligned cairns set up a dangerous situation, a scenario for a lost hiker. Yet, it is heartening to the three of us that the foundation of Edmands's work, in places, remains. We assure ourselves that it will be possible to restore this great piece of path making.

We turn around now and head back over our tracks, up toward the summit. I am last in line, Dave leading, Ryan between us. We move along at a comfortable pace, close together.

A middle-aged man with a girl who looks to be not more than 7 or 8 is coming down toward us. There is room here for them to pass, so we don't step aside. But the man stops—a sudden stop—right in front of me. I stop, too, in surprise. He is no one I recognize. He fixes me with his brown eyes, claps

his hands twice, and shouts, "Good for you!" This feels friendly and positive, but I have no idea what his meaning is and my face must show this because he says, again in a loud voice that conveys his excitement or perhaps approval: "You are keeping right on the heels of your two sons!" I'm so startled by this outburst I just resume walking. This whole interchange takes seconds; I barely break stride. I hope, out of my innate tendency to be polite, I smiled at him. Mostly I am trying to process what he has just said. Ryan, who can't have missed that loud voice, peers around and gives me a slow smile. Which I return. I could be, I smile to myself, the oldest person on Washington today. Kind of silly, but there's no doubt my reaction to be so singled out is definitely mixed: an interesting reality check of how I appear to others compared with how I feel.

COUNTLESS HIKERS, CLIMBERS, AND LOVERS OF MOUNTAIN SCENERY HAVE been active for decades to protect the range from excessive development, despoliation, or being loved to destruction by an overflow of trampling hikers.

The latest threat to Mount Washington's alpine zone has come from the Mount Washington Railway Company, and its owner Wayne Presby. The MWRC owns a 99-foot wide tract of land on which it operates the Cog. Presby wants to erect a 35-room "luxury" lodge that he would situate above the steep slopes of the Great Gulf headwall at 5,600 feet. The building, square in the alpine zone, would dominate this landscape on the west side of Mount Washington. It would loom to greet anyone climbing up Warren Hart's great headwall trail. Hikers crossing the range would see a massive structure where no building should ever be. Presby's Skyline Lodge would irreparably harm the alpine tundra, this Northeast's mountain landscape that harbors numerous rare plants, insect species, and birds such as the American pipit. This ecology is too vital to lose. Too precious. There is a butterfly, the White Mountain fritillary, whose entire worldwide range is limited solely to the Presidentials alpine zone.

When the climbing community learned of Presby's plan, they moved into immediate action, forming a Protect Mount Washington campaign, raising money, and collecting signatures in an online petition. For these young climbers, many with international reputations, the Presidentials are sacred ground. They cut their teeth on these precipitous slopes and in this wild mountain weather, judged excellent training for loftier mountains. They are fiercely loyal to this alpine zone that makes up less than 1 percent of New

Hampshire's land base,* and for the very reason of its rarity, they are willing to go all out to save it from development of any kind.

Dave, Ryan, and I talk, as we head toward the summit, about Presby's "luxury" hotel, the outrage of it, the harm to the alpine vegetation, the false sense of safety such a building will cause by its very presence. Where we have walked today, we would scarcely have been out of sight of the 25,000 square-foot building. We would have been all too aware of the Cog bringing up hotel guests, and those guests walking around on the tundra. Presby's "luxury" hotel will dominate and banish any sense of wildness.

Mount Washington and its satellite mountains will weather this storm, too. Stewardship of this mountain landscape is in the blood of those who love and climb in them. They are home. It's easy to become fiercely protective of one's home. A good thing, because such threats will never go away. So, the torch is passed along as we continue to safeguard this mountain glory that's just on the other side of our back door.

LAURA WATERMAN is a writer, climber, former homesteader, and conservationist. She lives in East Corinth, Vermont. She writes often for this journal. Her many books include the novel *Starvation Shore* (University of Wisconsin Press, 2019); the memoir of her life with Guy Waterman, *Losing the Garden* (Shoemaker and Hoard, 2006); and the classic mountain history *Forest and Crag* (originally published by the Appalachian Mountain Club, latest edition from the State University of New York Press, 2019). This essay is part of a forthcoming collection. She thanks Rebecca Oreskes, Ryan Harvey, and David Govatski for their assistance.

* New Hampshire's alpine is generally defined as being above 4,400 feet in elevation. The three figures often quoted to describe alpine are that it includes 8 square miles, 4,000 acres, and less than 1 percent of the state's land base. If krummholz, considered a subalpine, is included, the figure is still a fraction of 1 percent.