By April 2014, Libby Larsen had written over 500 works. Her catalogue revealed a musical polyglot, a composer fluent in the language of operas and symphonies, choral music and solo songs, traditional chamber works and experimental electronic pieces. She has also written for both brass and symphonic bands. Across the variety of genres, diverse styles, and numerous decades of composing there is, however, a constant thread: nature appears as a recurring source of contemplation and inspiration for Libby Larsen. She has considered seasons and celestial bodies, insects and birds, thunder and lightning, rivers and hills, water and snow, and flowers and gardens in her music. She has noted cardinal directions in *Crowding North*, a set of three pieces for SATB chorus, guitar, flute, oboe, bassoon, and string quartet (2007), and *Far in a Western Brookland*, a song for tenor and piano (2008).¹ Over a twenty-five-year period, Larsen has been inspired by thoughts of the air and skies. Four of her pieces treat that most amorphous of entities: *Up Where the Air Gets Thin* (1985), *The Atmosphere as a Fluid System* (1992), *Touch the Air Softly* (2000), and *Encircling Skies* (2009).² In 2009, she experimented with the idea of musicalizing fragrance as it wafts in the air with her piece *Downwind of Roses in Maine*. Each of Larsen’s compositions reflects a different type and degree of interaction with nature and the larger world, but that said, the ubiquity of nature references in her titles speaks of a woman who is fully

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² The instrumentation for each of the pieces include: *Up Where the Air Gets Thin*: cello and contrabass; *The Atmosphere as a Fluid System*: solo flute, percussion, and string orchestra; *Touch the Air Softly*: SSAA a cappella (text by William Jay Smith); *Encircling Skies*: double choir, full orchestra, full wind ensemble, three marimbas, and three pianos.
cognizant of her enduring place within an ecosystem of the animate and inanimate, and a person unafraid to engage with that all-encompassing enterprise.

Born in Delaware in 1950, Larsen moved to Minnesota when she was three years old. Fitting in easily with the largely Scandinavian population that lives in this upper Midwest state, over the intervening sixty years Larsen has grown to identify thoroughly with her northern U.S. home. She finds the frigid winter air bracing, and the lengthy and deep snow pack a reason to better appreciate the first brave appearance of a crocus in late spring. As she has explained, being deprived of the smells associated with vegetation for so many months of the year only heightens the impact of even the most delicate floral scent when it finally appears. Although Minneapolis in Minnesota is not “north” when compared to Helsinki, Finland, for instance, the harshness of its winters—many feet of annual snowfall, months of hard ground and resulting limited vegetation, frequent high winds, sub-zero temperatures, and monochromatic whiteness of the nearby prairie—creates a similarly inhospitable environment, and Larsen is sensitive to it. As other essayists in this collection have acknowledged, “North” may be less a specific place on the globe and more an abstract idea, or as Meredith Monk observed, a “state of mind.”

And so with the generous “latitude” granted the idea of North, this essay explores a musical work whose programmatic focus is far removed from the Arctic and its environs, as defined by geologists, meteorologists, and atmospheric scientists, but whose setting and the challenges this brings replicate many of the conditions found north of 60 degrees. Larsen’s piece *Up Where the Air Gets Thin*, a duet for string bass and cello, is her contemplation on Sir Edmund Hillary’s 1953 ascent of Mount Everest, and the impact the harsh physical realities of the place would have had on the creation and transmission of sound. Did Larsen harbor goals for the piece that went beyond aesthetic ones when she wrote the work in 1985, thirty-two years after Hillary’s achievement? Or was she merely in a period of her life when snowy places fascinated her? In 1989, Larsen wrote a work for flute, harp, and chamber orchestra titled *Concerto: Cold, Silent Snow*. Sound and cold seemed to be on her mind. The relentless winds, cold temperatures, and hard-packed ground of the world’s tallest peak (29,091 feet...
above sea level) have much in common with true northern climes. In both places, minimal heat means energy is limited and must be conserved. In both places, human movement can be labored and slow, and so are the sounds.

What about music under such conditions? How does one compose a place where the cold freezes one’s lungs, where the thin atmosphere makes the act of breathing difficult and music making nearly impossible? What happens when temperatures and air density are so low that sound struggles to survive? It is these very conditions that motivate Larsen’s musical exploration of Mount Everest. Never one to shy away from difficulties, physical or mental, with this piece Larsen undertakes her own mountain trek, only this one is of a more imaginative kind. The composer offered a commentary on her piece and the physical conditions that fascinated her:

*Up Where the Air gets Thin,* music takes on new meaning. Sir Edmund Hillary and Tenzing [Norgay] the Sherpa who first reached the top of Mount Everest could not whistle with awe at the view, for it is impossible to whistle above 25,000 feet. Up where the air gets thin lies the acoustic horizon, the elusive line at the extreme range of audibility, where old decaying sound waves tremble and shake into formless echoes of themselves.

Other essayists in this collection have identified a range of qualities associated with music created in cold climates, and *Up Where the Air Gets Thin* shares many of them. Perhaps it is Larsen’s long familiarity with her Minnesota environs and its extreme weather that makes her musical materialization of Mount Everest convincing, and such a natural fit among studies of northern topics.

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7 John Luther Adams has written about his experiences as a composer living in Alaska in many articles. The most concentrated treatment of the topic is his book *Winter Music: Composing the North* (Middletown, CT: Wesleyan University Press, 2004).

8 Sound waves require a minimally dense atmosphere to be transmitted. With no atmosphere outer space is silent. The combination of extremely low temperatures and a less dense atmosphere makes sound transmission at the peak of Mount Everest extremely difficult. Under such conditions it is unlikely anyone would make a sustained effort to create music. See [https://www.topchinatravel.com/mount-everest/the-climate-of-mount-everest.htm](https://www.topchinatravel.com/mount-everest/the-climate-of-mount-everest.htm) for “Mount Everest 4-season weather report” (accessed 26 November, 2019).

9 Libby Larsen is a competitive athlete who has participated in both sailing races and marathons. As a teenager she won numerous regattas. By spring 2014, Larsen has run thirty marathons. She trains for them year round, which means running in freezing temperatures and over and through feet of snow. Climbing Mount Everest, while not something she has ever done or contemplates doing, is not outside her range of thinking, as this piece suggests; she welcomes physical challenges.


11 See this EJM volume’s articles by Marie-Anne Kohl and Árni Heimar Ingólfsson in particular for qualities of quite different musics of northern climes.
Larsen makes maximal use of minimal materials. The six-minute work involves just two instruments in a consistently transparent texture; listeners catch sonic fragments as they crackle in the thin air. Shards of sounds—arpeggiated and scalar passages—swirl before they dissipate ppp like the last whirlpool of flurries in a brief snow squall. There is nothing luxurious or indulgent about this music. For the most part, it is barely there.

The cellist introduces the work with a possibly menacing, full-throated low C that swells from piano to fortissimo in a single bowed gesture, and then moves to the bridge of the instrument and softly sounds the open strings—C-G-D-A. The idea repeats, a throbbing low C followed by an arpeggio, but this time the cellist plays natural harmonics on the open strings. There is more than a little suggestion of wind stirring an Aeolian harp. The sounds seem like some remnant of overtones released from an earlier time, or perhaps floating by from some distant place. The initial C becomes an important grounding pitch for the entire piece as does the circle-of-fifths fragment; both will reappear many times and ultimately close the work as well. Are these Larsen’s “old decaying sound waves” or “formless echoes?” Is this human music? Are humans needed to make this music, or are we hearing the mountain’s own song?

Silence is as much a presence as are the opening surreal sounds: four rests, two of them with fermatas, appear within the first twenty seconds. Larsen allows us to hear the fullness of the open space, “the presence of stillness.” With no meter to govern the passage of musical time and just cycling fifths for pitches, listeners are caught in a kind of static but uncharted sonic world; they are unmoored in rhythmic and harmonic space, an apt musicalization, perhaps, of a climber’s experience at the peak of Mount Everest where the thin air means that disorientation is common (and often deadly). From the beginning of the work, the combination of soft sul ponticello playing (near the bridge), and natural harmonics creates an eerie effect.

Music example 1: m.1

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12 See Adams, Winter Music, 140, where he observes: “Silence is not the absence of sound. It is the presence of stillness.”
A tremolo, a triplet whole-tone turn, and then a four-note whole-tone scale fragment in the contrabass—A-flat, B-flat, C, D in measures 2 through 4—all played sul ponticello, reinforce the otherworldliness of this soundscape and place. The bass is high in its range; it sounds raw; the music shivers. We hear the cold. Additionally, the sustained F# of the cello against the recycling C in the contrabass conveys centuries of unsettling if not expressive connotations associated with the tritone interval.¹³

Musical example 2: mm. 2-4

At measure 6, the arpeggiated, germinal pitch material returns. But rather than merely repeat the original cycling sounds, at measure 7, Larsen introduces new pitch areas and extends the whole-tone scale downward by a note to G-flat. She explores additional articulations as well. Starting at measure 8, listeners hear glistening specks of sound buoyed on a variety of pizzicato (plucking) articulations, trills and tremolos. Where previously the cellist had played sul ponticello with the center of the bow, Larsen has the instrumentalist move à la pointe (to the tip) of the bow creating a sound that is even thinner and more ghostly. We discover that Mount Everest is not only enormous, imposing, majestic and awe-inspiring, but also fragile, and Larsen conveys that quality in her music. There is something vulnerable and perishable about these sounds.

¹³ The tritone, or augmented fourth, has been associated with restlessness, instability, and danger since the medieval period in Western music practice. While its dissonance was acknowledged to be expressive, through much of the common practice era the interval was avoided because of its harmonic ambiguity and residual associations. For centuries it was identified as diabolus in musica (the devil in music).
Although Larsen introduces a few more pitches and articulations over the course of the work, by the end of the first minute of music she has given listeners all the materials they will need to explore the thin-air atmosphere with her. Larsen strips her music to its essentials: like an experienced climber, the composer packs only what she needs. Both are effective, in part, because of their efficiency. A few examples of Larsen’s musical economy should make the point. At measure 18, the cello takes up the turning figure and pitches of the contrabass first heard at measure 2, and at measure 19, the whole-tone fragment begun at measure 3 is completed. At measure 49, save for a change in meter, which is hardly noticeable given the absence of any audible sense of large-scale rhythm or drive in the work, the music returns to the pitches and gestures heard beginning at measure 2. The same whole-tone/natural-minor hybrid scale heard at measure 47 returns at measure 71; it is a variation of the original whole-tone fragment heard at measure 3, the one that had been expanded at measure 19. Entire passages return with minor adjustments.

Larsen employs *glissando* and *jeté gliss* starting at measure 30. Smearing the sounds in a quick descent or ascent (*glissando*) and rapidly bouncing the upper half of the bow while descending through a series of pitches (*jeté gliss*) are established special effects bowing techniques. Sounds slide and pop through the air and are hard to identify or discriminate from each other. Both techniques excite the sensation of movement, and both create washes of sound, although a *jeté gliss* has a more crystalline quality to it, a result of the brief space that exists between each of the bow bounces.

Larsen’s composerly economy is analogous to her environmental advocacy, which includes diligent recycling practices.

Like chromatic scales, whole-tone scales resist the idea of “completion.” Their symmetry makes them never-ending. I use the word “completed” here to mean that all possible pitches of that particular whole-tone scale have been sounded.

Music example 3: mm. 7–13.
Larsen’s thin-aired, spectral atmosphere holds throughout the piece with the exception of a single, brief *forte* passage that coalesces at measure 28. The composer varies materials that she had previously introduced—tremolos, trills, triplet turns, open-string arpeggios, and whole-tone passages—and exposes the underlying 4/4 meter; she lets the instruments cut loose. Larsen instructs the cellist to play “robustly.” In the previous measure the instrumentalist had been told to play *arco* (drawing the bow across the strings in a common position on the bow and the string). The contrast in sound between playing *sul ponticello*, which was the previous instruction to the cellist, and *arco* makes the change in mood that happens at measure 28 all the more dramatic.
With a series of \textit{fp} punches on each tremolo-ed beat of the contrabass in measures 31 and 32, the two instruments join in a frenzied, “robust” dance. The contrabass alternates between F# and C, the tritone interval that Larsen had introduced at measure 2. For just a few seconds Mount Everest stomps and thrashes. Listeners are left to imagine the cause of the agitation: A sudden gale-force gust? A disorienting white-out? Anger over what is happening to its snow cap? Perhaps the mountain just needed to dance? Whatever the cause of the disturbance, the rhythmically charged moment passes quickly and the piece (and place?) regains its equilibrium. Listeners are returned to the more chimerical, timeless soundscape that characterized the majority of the work; the piece ends with a tritone evaporating on the edge of our acoustic horizon.

More than sixty years have passed since Hillary and Tenzing scaled Mount Everest. A spate of celebrations in spring 2013 commemorating their achievement threw a spotlight on what has now become something of a common occurrence.\footnote{See the story by Chelynne Renouard titled “Mount Everest: The world's highest traffic jam” that appeared in the \textit{Deseret News} (28 May, 2013). Renouard quoted \textit{National Geographic}, “18 percent of summit attempts in 1990 were successful. By 2012, summit attempts jumped to a 56 percent success rate. In the spring of 2012, 547 people were able to reach the top of Mount Everest successfully. More than 6,000 successful summits have been recorded since 1953.” See http://www.deseretnews.com/article/865580766/Mount-Everest-The-worlds-highest-traffic-jam.html (accessed 1 November, 2019).} Climbing to the peak is now a “bucket list” activity for
Numerous articles and posts have detailed the exploits and dangers associated with thousands of tourists tramping the various trails and the controversy surrounding a proposal to install a ladder at “Hillary’s Step” to speed up the rate at which climbers can descend a particularly rocky patch close to the peak. But more important are the articles that focus on the impact climate change has had on the world’s tallest mountain. Given the severity of the changes described here, one wonders whether Hillary and Tenzing would recognize the topography they once traversed so slowly and painstakingly.

Reporting on findings presented at a 2013 conference of international geoscientists, Meredith Bennett-Smith observed: “For years scientists have worried about the impact of climate change in the invaluable Himalayan region. Recent research seems to confirm worries that a warming world is melting one of the Earth’s most iconic, not to mention tallest, summits: Mount Everest.” She continued: “The research was presented this week during a conference co-sponsored by the American Geophysical Union (AGU) in Cancun, Mexico. Co-authored by Sudeep Thakuri of the Graduate School of Earth, Environment, and Biodiversity at the University of Milan in Italy, the study says glaciers on Mount Everest have decreased by 13 percent over the past 50 years, while the snowline has shifted upward several hundred feet.” A press release from the AGU offered additional statistics taken from Thakuri’s research:

- The snowline has shifted upward by 180 meters (590 feet) . . . Glaciers smaller than one square kilometer are disappearing the fastest and have experienced a 43 percent decrease in surface area since the 1960s.
- Because the glaciers are melting faster than they are replenished by ice and snow, they are revealing

18 According to Merriam Webster’s online dictionary, a bucket list is “a list of things that one has not done before but wants to do before dying.” See http://www.merriam-webster.com/dictionary/bucket%20list (accessed 1 November, 2019).
19 Alan Arnette, an expert climber who has scaled Everest four times since 2002, and who regularly reports on Mount Everest’s climbing season blogged about the issue in his post dated 28 May, 2013: “Ladder on the Hillary Step: A Bad Idea,” “The Hillary Step at 28,750 feet is a short section of moderate rock climbing. It is the last obstacle before reaching the summit. The Step itself is about 40 feet high at an angle of 45 to 60 degrees. For all climbing Sherpas and most climbers, it is a simple obstacle easily climbed using the ropes installed. The suggestion is to put a ladder on the Hillary Step to only aid climbers descending, but it is entirely unclear how that would ever be managed. I do not support a ladder on the Hillary Step in any form. Climbing at the Hillary Step is fundamental and climbers should have this level of basic rock climbing skills before coming to Everest.” http://www.alanarnette.com/blog/2013/05/28/everest-2013-ladder-on-the-hillary-step-a-bad-idea/ (accessed 1 November, 2019).
20 The conference was held May 14-17, 2013. For Bennett-Smith’s story see The Huffington Post, “Mount Everest Melting: Climate Change Likely to Blame, Say Researchers.” https://www.huffpost.com/entry/mount-everest-melting-climate-change_n_3285971?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer/site=AQAAACFwDhvtxduumxBjia_FP-FWawFJFrm44JElZgq5DaCBPwbrs10YK4GAKjZzBOX7tuKq1jPGL_mA4kVvygAxXLDnNvbi8vLij8Lw5G_XKwZyxeqL1pz8ymM-nbеР8AOvkqq5KGNmv1_b_oHBii8xtTFcy9mpmrMork_XzsTv-hbXS3_ Posted 16 May, 2013 (accessed 1 November, 2019).
rocks and debris that were previously hidden deep under the ice. These debris-covered sections of the glaciers have increased by about 17 percent since the 1960s, according to Thakuri. The ends of the glaciers have also retreated by an average of 400 meters since 1962, his team found.\textsuperscript{21}

Data gathered at the Nepal Climate Observatory stations and Nepal’s Department of Hydrology and Meteorology showed alarming increases in temperature to accompany the decreases in precipitation: “The researchers found that the Everest region has undergone a 0.6 degree Celsius (1.08 degrees Fahrenheit) increase in temperature and 100 millimeter (3.9 inches) decrease in precipitation during the pre-monsoon and winter months since 1992.”\textsuperscript{22}

The disappearance of the snow cap in the Himalayan region has dire consequences, as Thakuri explained: “The Himalayan glaciers and ice caps are considered a water tower for Asia since they store and supply water downstream during the dry season. Downstream populations are dependent on the melt water for agriculture, drinking, and power production.”\textsuperscript{23} Is Everest a bell weather? Should we be listening to the mountain?

Within two weeks of the May 2013 AGU conference and press release, an article appeared in the New York Times that pointed to the threat glacial melt was posing to a small tourist town in Switzerland. It seems that mountains just half the height of Everest were undergoing their own transformations, and the culprit is climate change. On May 29, John Tagliabue reported on the situation in his article “As Glaciers Melt, Alpine Mountains Lose Their Glue, Threatening Swiss Village”.\textsuperscript{24} Grindelwald, a picturesque Alpine village was contending with possible flooding, rockslides, mountainsides falling away, and economic distress, all the result of global warming. The impetus for his story was the recollection of an event that had occurred in June 2006 when a local “school principal and mountain guide, Marco Bomio, attended a religious service on a high mountain meadow to mark the founding of a local guide group.” While Bomio thought he was witnessing a snow avalanche, he was instead seeing “rock dust: part of the mountain had come down.” Tagliabue situated Grindelwald:

Grindelwald, population 3,800, lies in the foothills of a wall of Alpine peaks, rising to more than 13,000 feet. It is also home to two of Switzerland’s largest glaciers, the Upper and Lower Grindelwald Glaciers, which for millennia have snaked their way through Alpine gorges toward the town.

\textsuperscript{22} Ibid.
\textsuperscript{23} Ibid.
He explained:

With global warming, the glaciers are melting. Once stretching to the edge of town, they now end high in the mountains. Moreover, their greenish glacial water is forming lakes. In summer, when the melting accelerates, floodwaters threaten the area. . . . the warming reduces the effect of permafrost that once acted as a sort of glue binding together the mass of the mountains. On that day in 2006, a chunk of the Eiger [a 13,025-foot mountain] amounting to about 900,000 cubic yards fell from the east face, causing the cloud of rock dust that startled Mr. Bomio and friends.25

Tagliabue reported on a tunnel that was built in 2010 to direct potential flood waters away from Grindelwald. According to a popular small inn keeper, Ruth Meier, whose establishment is close by, prior to the tunnel, “in July and August, it sounded like battle tanks coming down. . . . you could hear the stones rolling.”26 As in the Himalayas, the retreat of glaciers has been documented in the Swiss tourist village. According to Tagliabue, “glaciers like those around Grindelwald have receded by about 650 feet” over the past century. Quoting “Hans-Rudolf Keusen, a geologist . . . ‘in the last 30 years the average temperature in the Alps has risen by one and a half degrees’.”27 But many people in Switzerland refuse to be cowed by the potentially devastating impacts of global warming. As Tagliabue reports, “Tour guides like Mr. Bomio are even profiting from the results of global warming, organizing ‘warming tours’ to explain its effects using local developments as examples.”28 Putting the best face on a catastrophe-in-waiting, Grindelwald’s town secretary, Herbert Zurbrügg assured Tagliabue, “I think we can say we have the situation under control. There is no fear. We are in a fortunate situation, yet, you never know”.29

You never know, indeed. Regardless of Swiss ingenuity applied to meeting their particular challenges, it is clear that the present trajectory of increasing temperatures, receding glaciers, diminishing snowpack, and decreasing rainfall is real and cannot be sustained without dire results on human and non-human populations. And that is the case regardless of who or what caused the current conditions.

How might a warming earth and changes in the atmosphere recontextualize Libby Larsen’s piece for twenty-first-century listeners? Does Up Where the Air Gets Thin become the musical equivalent

25 Ibid.
26 Ibid.
27 Ibid.
28 Ibid.
29 Ibid.
of a nineteenth-century tintype, a recording of how Mount Everest would have sounded in an earlier
time, before full-time litter patrols removed human-discarded debris, when its summit was still deeply
packed with snow rather than gridlocked lines of climbers, and its peak still pierced the edge of the
acoustic horizon?

Will the dissolution of its glacial glue stimulate rock slides whose sounds rival “battle tanks
coming down”? Will the thought of a more garrulous Everest diminish its allure for a composer who
in an interview confided that she requires “large blocks of uninterrupted time. The ideal working
situation is a quiet moment away.” As challenging as Everest was and remains, the quiet stillness that
Larsen imagined is likely no more. Beyond the cacophony caused by loosened rock plummeting down
ravines, disappearing snow packs will take with them the muting effects they afforded. Echoes
bouncing off once sound-absorbing mountain sides will introduce new voices from distant places.
Although the mountain never offered a safe cocoon, or a natural refuge or retreat like that envisioned
in much art, literature, and poetry through the early twentieth century, it would have offered
“uninterrupted time,” in fact seemingly unmeasured time, and a version of the stillness that Larsen
craves. Even at 29,000 feet, however, there’s no getting away.

Global warming and the full complement of climatological changes that result, may impact an
aspect of our lives that few scientists or musicologists have talked about, and that is the sound of a
degrees-warmer world. For a composer who is a consummate listener, one can only imagine that the
prospect is obvious and the consequences dire.

30 Ibid.
31 Cynthia Green, “Interview with Composer Libby Larsen”, International League of Women Composers Journal (June
32 See Árni Ingólfsson’s discussion of Björk in relation to Carolyn Merchant’s ideas as expressed in chapter one
1–41. Describing Renaissance poetry and art Merchant observed: “Here nature was a refuge from the ills and
anxieties of urban life through a return to an unblemished Golden Age. Depicted as a garden, a rural landscape,
or a peaceful fertile scene, nature was a calm, kindly female, giving of her bounty.”