

"If They Blow a Hole in The Backbone": Sarah Harmer's Campaign to Protect The Niagara Escarpment

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Abstract: In October 2004, Nelson Aggregate submitted an application to expand Mount Nemo's Burlington Quarry operations. Local singer-songwriter Sarah Harmer led initiatives to protect the region, using her musical platform as a vehicle for environmental advocacy. This essay examines Harmer's activist campaign within the broader geographic and geologic contexts of the public debate that unfolded throughout the region. More specifically, it interrogates how her music and musical practice articulate a strong sense of regional identity and connection to local environmental issues, while also envoicing the symbiotic relationship between human and natural life cycles.

Résumé : En octobre 2004, Nelson Aggregate a soumis une demande visant à étendre les activités d'extraction sur des propriétés adjacentes de la carrière Burlington de Mount Nemo. La chanteuse-compositrice locale Sarah Harmer a mené des initiatives pour protéger la région, en utilisant sa tribune musicale et ses chansons comme véhicule de défense de l'environnement. Cet essai examine la campagne de l'activiste de Harmer dans les contextes géographiques et géologiques plus vastes du débat public qui s'est déroulé dans toute la région. Plus précisément, il interroge comment sa musique et sa pratique musicale articulent un fort sentiment d'identité régionale et de connexion aux problèmes environnementaux locaux, tout en considérant la relation symbiotique entre les cycles humains et les cycles de vie naturels.

In October 2004, Nelson Aggregate Co. submitted an application for a 200-acre limestone quarry operation for below-water-table extraction on Mount Nemo plateau in the middle of the Niagara Escarpment in southwest Ontario.¹ Nelson Aggregate's application sought to expand the existing Burlington Quarry site in order to extend the operation's lifecycle by 20 years. Local residents responded immediately to oppose Nelson's proposed expansion, having already lived with numerous disturbances and pollution issues for more than half a century. Local singer-songwriter Sarah Harmer played a significant

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role in mobilizing the local campaign against Nelson's expansion application. Focusing her efforts on the environmental, ecological, and social issues that have been at the core of this debate since the 1950s, Harmer used her musical platform as a vehicle for environmental protest. In addition to co-founding a not-for-profit organization to centralize local campaign efforts (PERL 2012), she actively participated in public debate, and challenged provincial government by spotlighting unethical behaviour in newspaper opinion pieces (Harmer 2012). Not surprisingly, music played a central role in her campaign whether through songwriting, its presence during a seven-day hiking tour through the Niagara Escarpment, and its deployment for public rallies and fundraisers. Each of Harmer's initiatives communicates the ecological issues at the heart of this debate, and demonstrates a "sense of place" that is firmly rooted between self, society, and the environment.

At the centre of her work was 2005's "Escarpment Blues," a provocative song that contemplated the fate of her rural Mount Nemo childhood home at the prospect of a new quarry blasting through the Niagara Escarpment region. Written in response to Nelson Aggregate's application, Harmer's narrative describes the impact of quarrying on the physical and ecological structures of the Escarpment, while also urging Burlington residents to consider their role in deciding the region's future. The song invokes both the metaphorical language and flexible, unpredictable formal and melodic style for which Harmer is known, conjuring vivid and powerful imagery of the quarry blasting holes in the geological "backbone" – the ecosystem's below-ground water-filtration network – of the Escarpment cliff face. While this evocative language could be interpreted as sensationalist, the narrative's self-reflexive questioning of Mount Nemo's fate is strikingly contemplative and biocentric in tone, as it articulates the interconnected relationship between the community and their surrounding natural environment.² Although her mission emerged from a sense of political urgency, Harmer's musical practice with this song, her hiking tour (and its DVD release), and activist campaign takes a much more romantic line, invoking a sense of nostalgia for the Escarpment landscape of her youth. Indeed, her initiatives reveal a desire to protect the region from further development, while also actively reconstructing the Escarpment's identity as a sacred landscape and ecosystem in which humans and nature can live in harmony.

This paper addresses the role that Sarah Harmer's music, hiking tour, and activist work played in shaping public discourse surrounding Nelson Aggregate's quarry expansion application, a mining practice that has had a significant impact on the well-being of the local community and ecology of the natural environment. Influenced by ecomusicological scholarship,

an intersectional approach to considering the relationship between music, communities, and the environment, I seek to explore how the Canadian singer-songwriter's campaign and musical practice invokes a "sense of place" centred on a what ecological philosopher Arne Naess terms a "deep ecological" understanding of the human-nature relationship. While there might be a tendency to approach narratives of environmental protest through an apocalyptic lens, ecomusicology encourages us to consider instead the ways in which music gives voice to the environment and human-nature relationships, while also engaging local communities to participate in public debate (Guy 2009; Rehding 2011; Stimeling 2012). Scholarship from the fields of cultural geography and ecophilosophy provide a critical framework for addressing the cultural issues at the heart of this ongoing environmental debate, helping to explain how Harmer's musical practice changed public conception of the natural environment. This paper will thus examine the development of Harmer's activist campaign and the broader geographic and geologic contexts of the public debate, and consider the ways the singer-songwriter's music articulates a biocentrism rooted in a deep ecological understanding of the interconnectedness between humans and nature. Interrogating Harmer's environmental work in this manner reveals the evolution of local initiatives to halt quarry expansion, ultimately demonstrating how music and musical practice can draw a community together to affect meaningful, legislative change.

Music, Place, and Protest

Cultural geography, ecophilosophy, and ecomusicology offer valuable models for interrogating the ways in which music of environmental protest represents, characterizes, and/or responds to, cultural, physical, and natural environments of place. The 1970s was a decade of profound discussion on the relationship between humans and their surrounding environment. In his seminal work, *Topophilia*, cultural geographer Yi-Fu Tuan argued that individuals and communities ascribe meaning to place based on their cultural needs and lived experiences (1974: 93). He speaks of an individual's "affective bond" with the material environment – one's "sense of place" – a concept that accounts for the intangible and unconscious associations that individuals and communities feel about place and setting (Tuan 1974: 4; see also Stimeling 2012: 3).

While cultural geographers focused on human-nature relationships from the perspective of experience in the world, ecophilosophers were at the

same time reflecting on ecological relationships between all living organisms in the world's ecosystem. This "deep ecology" movement, defined in the writing of Norwegian philosopher Arne Naess (1973), developed out of a growing discontent for a human-centred approach to understanding the relationship between humans and the environment. Naess criticized this approach (which he termed "shallow ecology") for its "humans-first" (or anthropocentric) value system that suggests humans are somehow superior to and independent from their natural surroundings – a system in which humans assume a managerial role for the world. The problem with this perspective, as Naess argues, is that environmental crises are approached with "Band-Aid" solutions that prioritize the reduction of pollution in order to ensure future availability of natural resources for the health and economic prosperity of the industrialized world (1973: 95). Not only do such superficial solutions ultimately result in the recurrence of the problems they are meant to solve, they also assume that the health of the natural world is only important insofar as it satisfies human needs and wants. Naess instead advocates for a "deep ecology" approach to understanding the human-nature relationship, promoting a platform of "biospherical egalitarianism" (or biocentrism) in which all beings (humans *and* nature) have an equal right to exist and to flourish (95; Naess 1989: 189). Recognizing that all living organisms have intrinsic value in the world's ecosystem, the deep ecology movement articulated a platform for wilderness and biodiversity preservation and "treading lightly" on the planet (Barry 2002: 118-19).³ Harmer's musical language and activist rhetoric echoes Naess's deep ecological platform and understanding of the interconnected relationship between humans and their surrounding environment. Indeed, each of her initiatives sought to articulate the value of all living organisms in the Escarpment ecosystem.

Ecomusicological discourse has demonstrated the ways in which lyrics, musical conventions, and performance practices both reflect and affect contemporary attitudes toward the environment (Guy 2009; Stimeling 2012). Scholarship in this field has interrogated how music is used to mobilize public debate. Recent articles by both Stimeling (2012) and Watson (2016) offer a framework for examining the community-building powers of popular song, considering the role that lyrics, music, and (in Watson) music video play in shaping regional discourse surrounding fossil fuel extraction processes in Central Appalachia and Alberta, respectively. Integral to both studies is the idea that popular musicians invoke elements of regional musical heritage and musical styles (Stimeling 2012: 19; Watson 2016: 53), or even instrumentation and recording techniques (Watson 2016: 59, 71) to respond to and protest changes in their natural world. By analyzing how specific compositional

techniques are employed in a way that captures a geographic place, these studies demonstrate the power of musical style and gesture to evoke personal relationships with and understandings of local environment, culture, and history (Stimeling 2012: 4; Watson 2016: 58-59). My work here extends this discussion to consider not just music but a musician's broader activist campaign, examining how Harmer's musical practice (including songwriting and touring) helped shape her environmental platform. Harmer's discourse does not just protest Nelson's Burlington Quarry expansion application; rather, her musical practice establishes a strong sense of regional identity and connection to local environmental issues, invoking powerful verbal, musical, and visual language to describe the impact of quarrying. Perhaps most importantly, the article considers the ways in which Harmer continuously uses music and rhetoric to give voice to the symbiotic relationship between the life cycles of humans and nature.

Geography, Geology, and Industry on the Niagara Escarpment

As Patano and Sandberg (2005: 26) have observed, "rural areas change in response to social, economic and political factors." These changes have accelerated in the last two decades on the Niagara Escarpment, as demand for mineral resources contained within a region's soil has increased. A major limestone outcrop in southwestern Ontario, the Escarpment's close proximity to the Greater Toronto Area (GTA) has made quarrying in the region an attractive prospect for the provincial government – who has historically designed policies supporting the development and expansion of quarries/pits closer to major markets (Patano and Sandberg 2005:30). Local residents and environmentalists, however, have viewed the industry's gradual expansion throughout the Escarpment as a significant danger to the landform's physical structure and ecosystem. The local debate that unfolded surrounding the aggregate industry in the Escarpment had been ongoing since the 1950s, and was characterized as a political struggle between competing demands: regional/provincial need for gravel; a local community's desire for undisturbed landscape; and environmentalists' concern over the preservation of nature and natural processes (Patano and Sandberg 2005: 26). This group of forward-thinking Burlington-area residents challenged provincial government to establish land-use policies and responsible environmental practices in the 1970s. At the turn of the 21st century, debates renewed throughout the Escarpment as established aggregate companies sought to expand existing quarrying sites to extend their operations' life cycles in Milton (2001),

Burlington (2005), Duntroon (2008), and Acton (2009), to name a few. In addition to defending their homes and ensuring continued protection of the Escarpment, local residents and environmentalists scrutinized the industry and government in the context of the broader debate surrounding Ontario's conservation policies and proposed quarrying projects.

An escarpment is a gently sloped layering of rock that separates two areas of land at different heights, wherein one side of the landform forms a gentle slope while the other forms a steep cliff (Duff 1999).⁴ The Niagara Escarpment runs east/west from Illinois, through Wisconsin, Michigan, Ontario, and down into New York State (Fig. 1).⁵ The segment located in southern Ontario stretches 725 km from the Niagara Falls to the tip of the Bruce Peninsula, and is a rich mosaic of forest composed of wetland complexes, cliff faces, slopes, and aquatic ecosystems, and is home to a variety of wildlife and flora (ONE 2016a). One of the most precious features of the Escarpment is the backbone of heavily protected lands the lie at and near the cliff face of Mount Nemo plateau (UNESCO 2007). The backbone provides essential ecosystem services to the region, comprising interconnected habitat cells that are responsible for landscape connectivity (With 2002), allowing for the filtration of water through soil and permeable rocks to groundwater storage systems, such as wells and aquifers (Plotnick and Gardner 1991). As mountainous habitat is destroyed, “the loss of one of these cells ultimately ‘breaks’ the backbone...and abruptly disrupts landscape connectivity” (With 2002: 121).

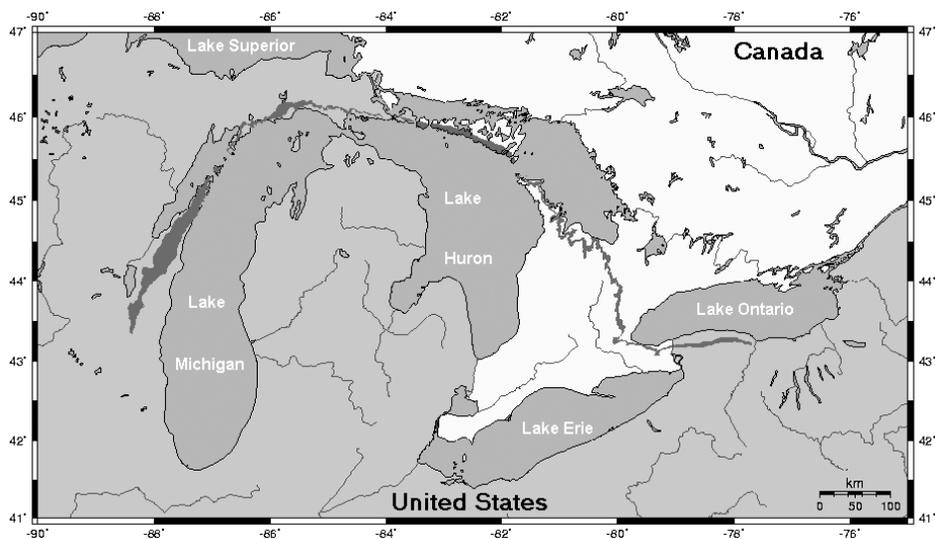


Fig. 1. Niagara escarpment, map. The Niagara Escarpment is represented in the black arcing line that runs through Illinois, the Great Lakes, into Ontario and down into New York State.

As a result of the diverse ecology and topography of the Escarpment, the land has the perfect composition of resources to support important yet conflicting industries. In addition to outdoor recreation activities such as hiking and rock climbing, the Escarpment sustains active farming, forestry, and limestone aggregate extraction locations. In Mount Nemo specifically, the 600-acre Burlington limestone Quarry lies roughly 2 km west of the protected “backbone” corridor, in the middle of a subdivision (256 homes), with farmland, a coniferous plantation, and woodland and wetland complexes in the property south of the site. First established in 1953 by King Paving and Materials Limited, the Burlington Quarry has been owned and operated by Nelson Aggregate Co. since 1983. Although it has been a source of employment for the community, the quarry has been an ongoing issue for residents in the region, who have endured numerous disturbances throughout its history.

Human impact on this environment has been a significant concern for residents of the region since the 1950s, when the community first came together to discuss ways to protect the Escarpment. Local discussion intensified throughout the 1960s in response to a “gap” that Dufferin Aggregate blasted in the Escarpment north of Mount Nemo that was visible from Ontario’s well-trafficked Highway 401 (Patano and Sandberg 2005: 26). The “Dufferin gap” (as it is now known) was the original impetus for the creation of the Niagara Escarpment Planning and Development Act (NEPDA) and the Niagara Escarpment Commission (NEC) under Ontario’s Ministry of Natural Resources (MNR) in 1973. The Act’s purpose is to establish a planning process to “provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment and to ensure only such development occurs as is compatible with that natural environment” (Section 2). Governed by the Act, the NEC developed a framework of policies and objectives regarding the development, preservation, and recreational enjoyment of the region known as the Niagara Escarpment Plan (1985). The first large-scale environmental land-use plan in Canada, the NEP outlines a substantial plan for seven designations, including Natural, Protection, Rural, Urban and Minor-Urban, Recreation, and Mineral Resource Extraction, for the counties falling into the Niagara Escarpment Plan Area. Although the NEP’s overriding objective is to protect, maintain, and ensure compatible development of the unique ecologic and historic areas (NEC 2017: 7), the governing Act seemingly treats protection as a constraint to development rather than as a priority (Patano and Sandberg 2005: 26). Ultimately, it is the NEC that is responsible for evaluating and then approving or rejecting all development applications for the Escarpment.

This local preservation movement in the Escarpment evolved in parallel to larger global initiatives for protecting the world's natural resources that unfolded during the final decades of the 20th century. In 1971, the United Nations Educational, Scientific and Cultural Organization (UNESCO) launched its "Man in the Biosphere Programme" (MAB), which aimed at improving relationships between people and their environments.⁶ The MAB programme established a World Network of Biosphere Reserves to identify important areas in the world that demonstrate a "balanced relationship between humans and biospheres" in order to provide mechanisms to apply sound stewardship and ensure their long-term environmental, economic, and social sustainability (UNESCO 2016). In February 1990, UNESCO designated

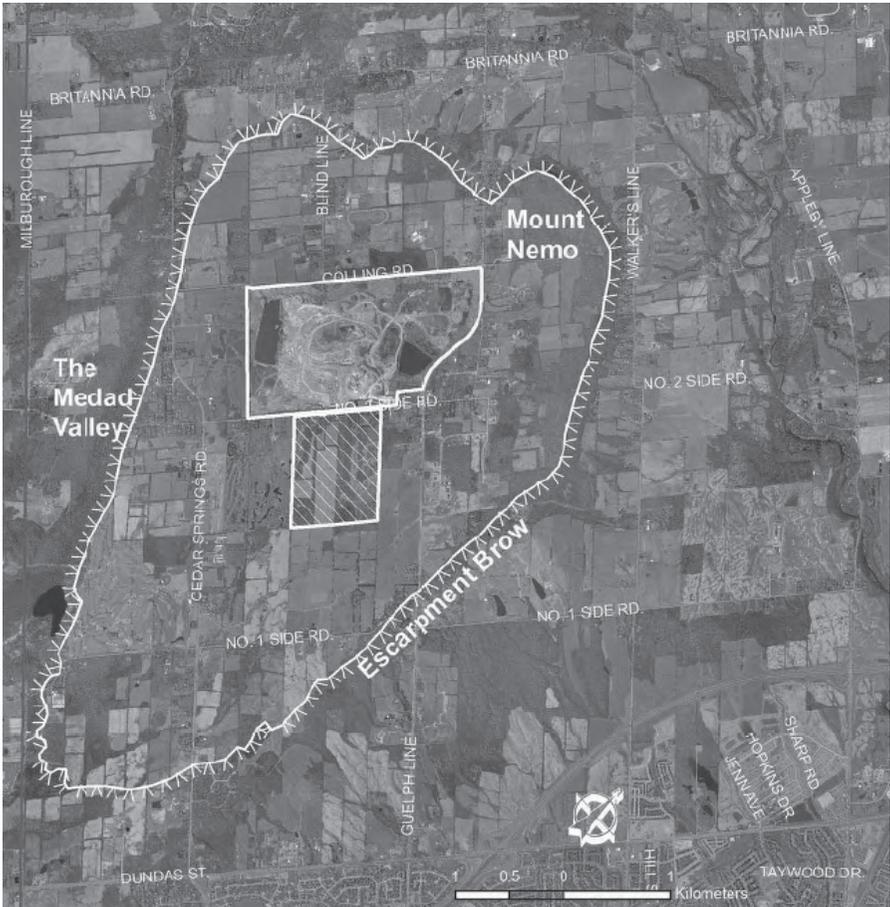


Fig. 2. Burlington Quarry, existing site (north) and proposed expansion (south). Map of the Burlington Quarry and proposed expansion site on Mount Nemo Plateau was reproduced from the Joint Agency Review Team's Report (2009: 62).

the Ontario Niagara Escarpment a World Biosphere Reserve, recognized the province's unique environmental plan, and identified the need to protect "this complex landscape within a rapidly urbanizing region" (ONE 2016b). These initiatives highlighted the importance of considering ecosystems in a context of sustainable development, alongside issues such as climate change and tropical deforestation.

Nelson's 2004 application was one of the most controversial applications to amend the NEP since Dufferin Aggregate's 2001 application to expand their Milton Quarry (see Patano and Sandberg 2005). With the lifecycle of the existing quarry site nearing its end, Nelson submitted an application with five municipal and provincial agencies to have a plot of land south of their existing site on the Mount Nemo plateau rezoned from Rural Land to Mineral Extraction Land in order to extend their operations (Fig. 2). Although mineral extraction is permitted within designated regions of the Niagara Escarpment Planning Area, several grandfather clauses exist within the Act that allow pre-existing aggregate operations to continue, but not expand (CONE 1998). The Act's Mineral Resources Extraction policy strictly outlines that *new* mineral resource extraction areas producing more than 20,000 tons annually require an amendment to the NEP to change the land use designation from Escarpment Rural Land to Mineral Resource Extraction Area. Nelson's application proposed a 200-acre expansion to enlarge the existing 600-acre quarry by 33 percent, extending Burlington Quarry's life for another 20 years at the same extraction rate of approximately two million tons of gravel per year.⁷

An expansion application of this nature involves a six-part approval process. Nelson required an amendment to change land designation under the NEP, followed by amendments to three regional and town plans (including Burlington and Halton), an NEC development permit, and a license from the MNR under the Aggregate Resources Act (Patano and Sandberg 2005: 26-27). Following Nelson's application, a Joint Agency Review Team (JART), headed by the NEC, conducted a comprehensive review of Nelson's application with the aid of the Region of Halton, the City of Burlington, Conservation Halton, and Ontario's MNR. This process included not only an examination of the Burlington quarry and proposed site, but also a scientific examination of the ecosystem, including natural heritage, water resources, and wildlife. JART (2009) conducted fieldwork, surveys, and site visits, and held three public information sessions during their evaluation period. Expected to last two years, their review took nearly four-and-a-half years from Nelson's submission to JART's final review – an indication of the challenges to a thorough investigation of the proposed quarry site and the impact that this expansion

would have on the community and natural heritage of the region. JART's public information sessions provided the community with a venue for sharing their concerns about the expansion application; the residents' stories revealed not just frustration with Nelson's application, but also the ongoing impact that quarrying has had on their well-being. Harmer actively participated in these public meetings, using both her discourse and musical platform to spotlight larger ecological consequences of continued quarrying in the region.

Sarah Harmer and Community Mobility

Motivated to stop the expansion of the Burlington Quarry's mining practice, local residents of Mount Nemo mobilized immediately to protect their land and ecosystem. Sarah Harmer, born and raised on a farm adjacent to the Mount Nemo Conservation Area, played a significant role in the local campaign. In January 2005, just three months after Nelson submitted its application, Harmer and her mother Isabelle co-founded the Protecting the Escarpment Rural Land (known as PERL), a not-for-profit organization that has fought to protect the Niagara Escarpment ecosystem. PERL held regular community town halls, and worked closely with environmental lawyers, scientists, and associations to build a case against the Nelson Aggregate expansion application while working to have the surrounding wetland and endangered species further protected by the province.⁸ Harmer was a strong and unwavering voice in this campaign: she actively participated in community debates, discussions, and moratoriums, wrote submissions to the Joint Board (an Environmental Review Tribunal and Ontario Municipal Board), and continually challenged Ministry of Natural Resources representatives on provincial policy concerning the protection of endangered species (notably the Jefferson Salamander and Federally Endangered Butternut Tree). In so doing, Harmer became the voice of an environment and ecosystem incapable of speaking for itself.

Music was a central component of Harmer's activism, allowing her to bring provincial and national attention to this local issue. Following PERL's first town hall in June 2005, Harmer embarked upon a seven-night "I Love the Escarpment Tour" hiking trip with a mission to share her message and learn more about the region along the way. Harmer opted not to use her management team or hire a publicist for this tour; instead she hired friends to help her coordinate the tour, plan activities, and map the trail (Goodman 2006). The tour followed the geological path of the Escarpment down the historic Bruce Trail, starting in Owen Sound on 14 June 2005, then hiking, caving, climbing, kayaking, and riding horses through to Collingwood, Avening, Mono Centre,

Georgetown, and Waterdown before ending in Burlington. She performed concerts in each of these towns (Fig. 3).⁹ As Kate Galloway has pointed out, Harmer and her band bypassed “major cities and venues, relying instead on venues in smaller towns and communities,” focusing on “the communities that were experiencing the impact of the expanding aggregate industry” (2014: 78). Of course, by touring in this manner (away from big cities and largely acoustic in production), Harmer and her band also significantly reduced their carbon footprint.¹⁰ While the musicians hiked through the region, their instruments and equipment were delivered to each tour stop in a biodiesel van, and they used hybrid cars for low-impact travel when needed (Goodman 2006). They also met with geologists and environmentalists throughout the tour to learn more about the region. Andy Keen captured all of these conversations, as well as the band’s adventurous trek, their concert performances, and her activist work at community town hall debates, on film, which Harmer then released as the *Escarpment Blues* documentary in October 2006.

Filming *Escarpment Blues*

Released in October 2006, the *Escarpment Blues* feature-length documentary, which showcases her June 2005 “I Love the Escarpment Tour,” offers

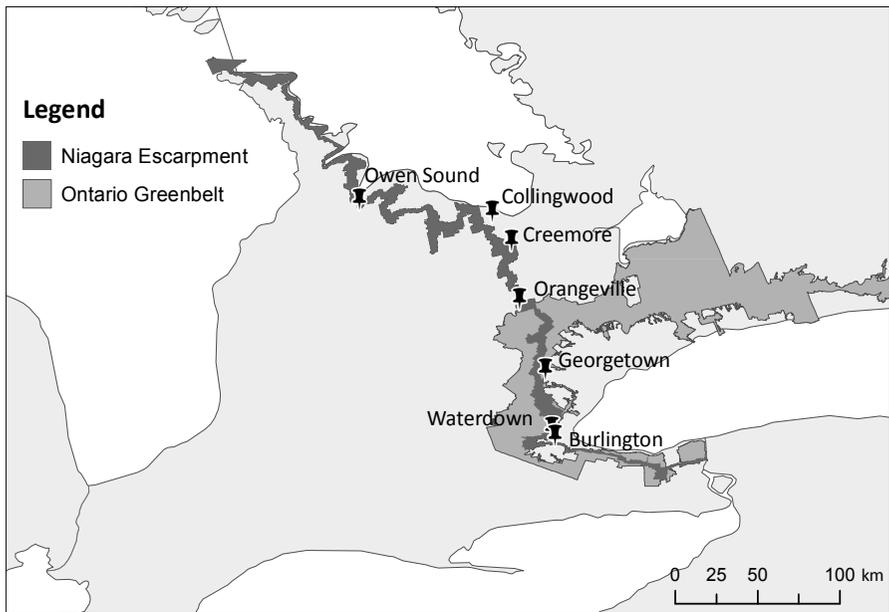


Fig. 3 “I Love the Escarpment” tour trail.

another layer to Harmer's activist narrative. Titled after her song of the same name, *Escarpment Blues* firmly emphasizes Harmer's activist campaign and the powerful role that she played in mobilizing the local community. The documentary elaborates several intersecting narratives: it captures the geological path of the tour from Tobermory to Burlington; it highlights the relationship between a lead singer and her band; and it shares Harmer's activist journey. Through direct conversation with the camera and interview footage, she shares her personal mission to protect her childhood home from quarry development, continually underscoring the intimate connection between humans and nature. She also speaks about the history of the region, calling attention to the important work of local activists that preceded her, its UNESCO designation, and the importance of assuring the continued protection of Mount Nemo.

Not surprisingly, the region's landscape features prominently in the documentary narrative. In her work on Sigur Rós's tour documentary *Heima* (Icelandic for "at home"), Daphne Hall articulates how feature-length films afford artists the opportunity to comment on societal and environmental changes (2014: 39-41). Her analyses demonstrate how *Heima* overlays landscape and community-based images with live tour performances to invoke nostalgia not just for a simpler way of life, but indeed a place in time that no longer exists – or perhaps never existed (2014: 40, 42). Harmer's tour documentary draws on similar techniques, but also seems to have a larger community-building goal in mind. A majority of the documentary's footage presents the Escarpment as a natural wonder and recreational area, with long shots of the region's cliff faces, caves, and bodies of water as Harmer and her band travel the Bruce Trail. Footage of the Burlington Quarry is used sparingly throughout the documentary, with shots of quarry activity entering the video narrative during Harmer's direct interview-monologues about the quarry application and industry activity on the plateau. Contrasting colour schemes play an important role here: the juxtaposition of the natural colours of the Escarpment's undisturbed landscape with the grey tones of the open quarry pit and on-site machinery activity creates a jarring tension between nature and industry. In so doing, the documentary underscores the political tensions between the aggregate industry, local residents, and environmentalists. Even though the footage of the Escarpment landscape significantly outweighs the number of clips of the Burlington quarry, the quarry activity is used powerfully in relation to her activist discourse. Shots of the quarry accompany Harmer's description not just of the region's history, but of the potential ecological collapse that awaits should the quarry project be accepted:

You cannot sustain this type of industry on Mount Nemo; it will put the systems into collapse. [...] What we're confronting is an old industrial growth model and what we're replacing it with is the concept of the practice of sustainability and redirecting industry – which we rely on, which we need – to truly appropriate places. And there are truly more appropriate and less environmentally sensitive places to get rock. (transcribed from Harmer 2006)

Although the quarry footage establishes a sense of foreboding for the fate of the land throughout the documentary, the message is not apocalyptic. Instead both Harmer and the documentary deploy nostalgia in an effort to re-establish the region's narrative in line with its UNESCO designation as “Canada's most biologically diverse biosphere reserve” (2012: 2).

While a significant component of the tour focuses on Harmer's environmental pilgrimage, the documentary actively spotlights the issues affecting local residents. Water quality and quantity emerges as a significant issue for local residents throughout. In her opening monologue, Harmer outlines Nelson Aggregate's water-use practices, revealing that they “already use between 30 and 40 percent of the available water resources – the available water inventory for the entire plateau.” If their 200-acre expansion were approved, they would use “another third of that amount.” Mount Nemo residents, as well as communities down through the watershed, would thus be at risk of losing their clean water supply. At the time of filming, Mount Nemo residents were dealing with water quality issues. One resident revealed that plateau water wells were already contaminated with e-coli and chloroform – a problem that impacted the entire neighbourhood. Given this history, locals were concerned about how the expansion would affect quality of life; damage to their homes; and Nelson Aggregate's or the City of Burlington's compensation strategies for any future issues if the expansion were to be approved. One resident described a situation in which he invited a Nelson representative to his house to measure the ground tremors during quarry blasting. A particularly powerful explosion that shook his house registered a reading of 2.9 megawatts. He was shocked to find out that the legal limit is 12 megawatts. In recounting this situation, he stated:

[A]t 12 megawatts the bricks would fall off the house. That's how bad it is. We are open pit mining in the middle of a subdivision: 256 homes. This is not somewhere in the middle of the fields.... This is right in town. [...] If you're damaging my property you're

going to have to be responsible. Enough is enough. (transcribed from Harmer 2006)

Frustrated and angry over the application to expand in an already vulnerable community, residents used these public fora as an active pursuit for accountability after years of suffering. By spotlighting local residents in this way, the documentary provided a platform for a community ignored by an industry increasingly determined to develop selected spaces at any cost. Consequently, *Escarpment Blues* does not just pay tribute to the land and its community, it also celebrates the land's beauty and rich biodiversity while simultaneously lamenting its destruction through quarrying. In so doing, the documentary highlights the ways in which Harmer's environmental pilgrimage – and, crucially, her music – united a community through its shared mission to save the Escarpment.

Singing “Escarpment Blues”

At the heart of Harmer's tour, the documentary, and the entire PERL campaign was Harmer's provocative song, “Escarpment Blues.” In it, she poetically describes the symbiotic relationship between humans and their surrounding environment, invoking a communal narrative stance to express the shared responsibility for the fate of this precious biosphere. As such, the song offers a powerful musical platform for the community's fight to protect the Niagara Escarpment from continued development. Harmer's experiences throughout these early stages in her campaign had an impact on her musical practice, which already articulated a strong sense of regionalism and relationship to place. Between 1998 and 2005, Harmer had amassed a collection of songs with an overwhelmingly pastoral tone: songs that she had written but set aside until she had enough in the same sentiment/style to complete an album (Goodman 2006). The resulting album, *I'm a Mountain* (2005), addresses a range of nature and landscape topics, including the oleander flower (“Oleander”), an ode to the endangered salamander (“Salamandre,” with French lyrics, written by fellow Canadian singer-songwriters Chris Brown and Kate Fenner), and a contemplation of the sacred beauty of the Escarpment landscape (“How Deep in the Valley”). She completed this set of songs in April 2005 with her musical response to Nelson's application, “Escarpment Blues” (Goodman 2006).

The recording and musical setting complements the album's lyrical narrative: recorded in one room with a live-off-the-floor sound (Q on CBC 2010), Harmer referred to *I'm a Mountain* as a performance of “Canadiana” for

its blend of alt-country, folk, bluegrass, and blues styles (Q on CBC 2011).¹¹ Although known for her acoustic folk sound, Harmer did not adopt bluegrass on her previous albums. Defined by Robert Cantwell (2003: 71) as “a ‘representation’ of traditional Appalachian music,” bluegrass remains strongly tied to place in general, and more specifically to rural, mountainous regions and lifestyles. No longer bound to a specific place, bluegrass has been invoked to address issues of unwanted change in rural regions (Stimeling 2012: 4, 20). Musical styles have the power to evoke or allude to specific events or places through a “field of associations [that] is not simply physiological but cultural and historical” (Watkins 2011: 406; see also Stimeling 2012: 13). Thus, the folk/bluegrass-inspired musical language of Harmer’s album, and indeed “Escarpment Blues,” draws stylistic associations between Appalachia and the Niagara Escarpment, suggesting kinship between regions with similar histories of land exploitation. Regionalism is further articulated in the artwork for the *I’m a Mountain* album, created by Stewart Jones (Fig. 4), where the Mount



Fig. 4. *I'm a Mountain* album artwork.

Nemo plateau is framed in a crooked painting on the wall.¹² This visual gesture preserves an image, nostalgically capturing a memory of Mount Nemo at a moment when the land had yet to be touched (or fully exploited) by industry – a sentiment that unfolds through the narrative of “Escarpment Blues.”

The title of “Escarpment Blues” refers not to the blues genre, but to the feelings of melancholy and sadness (i.e., “having the blues”) that Harmer associates with the fate of the region. “Escarpment Blues” has an unusual form, opening with a repeating, modified refrain instead of a verse. Although perhaps unusual for contemporary country and popular music, it is indicative of the unconventional stylistic traits invoked by alt-country songwriters in general, and Harmer specifically. Harmer opens her song with an introspective repeating refrain that questions (often rhetorically) the impact that the quarry expansion will have on the community, wildlife, and water quality on the Niagara Escarpment. Harmer employs assonance in these refrains by repeating “o” vowel sounds to develop provocative descriptions of quarrying that conjures images of exploding landscapes.¹³ She contrasts the visual imagery of the refrain with metaphorical language in the verses to offer complex observations on the role that quarries play in the region: she acknowledges the need for stone, but highlights the larger ecological risks, including the destruction of animal habitat (verse 1) and the weakening of environmental knowledge if the community idly stands by and allows the expansion to occur (verse 2). This first narrative layer engages her audience in the introspective process, encouraging them to contemplate these questions with her. Lying beneath this layer is an exploration of the complex relationship between human society and natural environment.

Throughout the song narrative, Harmer maps the region and imparts identity to the Escarpment, articulating the interconnected relationship between community and place. The narrative invokes two types of mapping: the first is cartographic in nature, where she literally maps out the boundaries of the affected region, and the second is ecologic, in which she describes the interconnectedness of the region’s inhabitants. Harmer initially maps the affected territory as *her* “backyard,” and then extends her map throughout the song narrative to include first the “backbone” of the Mount Nemo cliff face, then the Blind Line (a local road that runs perpendicular to the Burlington Quarry), and finally to include significant bodies of water (the Great Lakes and aquifers). By mapping the region in this manner, she highlights the immediate affected local territory, but then expands her map to reveal the larger environmental implications of blasting below water tables in a region whose supply flows from Mount Nemo aquifers to major provincial bodies of water. As she underscores the boundary-less nature of this impact, she also

expands the perspective from those affected to the entire community, shifting from what Lori Burns calls a personal (“my”) to communal (“we”) narrative stance (2010: 162-63). In so doing, she traces the evolution of environmental issues in her community from the initial (visual) impact on personal property to the slow and inevitable destruction of the region’s ecosystem.

The second mapping layer anthropomorphizes place, transforming the Escarpment into a living, breathing ecosystem that may not endure more quarrying. This shift happens in the opening of refrain 2, where Harmer switches the word “backyard” to “backbone,” referencing the geological structure of the Mount Nemo plateau. Harmer describes the impact of quarrying on the backbone’s ecology in a poetic language easily understood by audiences. She ascribes the backbone human-like characteristics, turning it literally and figuratively into the spine of the region that connects to the belowground water sources (what she calls “the muscles of the land”) running through the region. While the quarry might be able to provide “stone for the road,” as she says, blowing a hole in the backbone’s ecosystem could have damaging effects to the muscles (the aquifers, wells, and other natural lines) that enable the land to continue to live and breathe naturally (or, to “stand”). She then reverses this literary structure in the bridge: instead of ascribing human-like characteristics to landscape, she describes human physiology through a photosynthetic lens by which sun, water, and soil provides the nutrients required for human survival. By anthropomorphizing the landscape in the refrains and phytopomorphizing humans in the bridge, Harmer’s narrative describes the complex relationship between society and place, and articulates the interconnectivity of this ecosystem. As such, it offers a deep ecology perspective, wherein the Escarpment becomes a living, breathing organism, and both humans and the landform require a functioning ecosystem for survival.

Narrative stance is an integral element to understanding the song’s community-building powers. Harmer’s shift from “my” in refrain 1 to the plural, inclusive pronoun “we” in all subsequent formal sections serves to encourage Burlingtonians to understand their role in protecting the environment: they can no longer idly stand by and wait for change; they must work together to protect the land, placing responsibility for protecting the Escarpment directly in the hands of the community (refrain 2). Indeed, this is no longer an individual issue, but rather an issue that affects every living organism in the region: industrial intervention, as outlined in geological literature about the backbone, poses a great risk of destroying the region’s symbiosis. Harmer’s narrative positions the community as a steward of the land, and urges her neighbours to work together to effect change.

The musical setting plays a significant role in emphasizing the contemplative nature of the narrative, employing musical references that communicate regional identity. The accompaniment incorporates conventional country music harmonies (tonic, subdominant, and dominant chords) and instruments (acoustic guitar, mandolin, upright bass) to evoke rurality through a folk-bluegrass style.¹⁴ This style is routinely invoked in the folk and alternative country traditions by artists who use music as a vehicle for responding to political and environmental issues. Songs like Woody Guthrie's "This Land is Your Land," Jean Ritchie's "Black Waters," Pete Seeger's Hudson River songs, and Corb Lund's "This is My Prairie" all invoke a similar style to support their enviro-political messages (Watson 2016: 67-69). Arranged in this musical style, "Escarpmnt Blues" sits firmly in this folk-alternative country tradition.

The song's melodic phrasing plays a significant role in conveying her message and gives voice to the environment. The song's refrain consists of an antecedent-consequent phrase design of four-bar phrase pairs, where the underlying harmonic moves from subdominant to tonic to close phrase 1 and from dominant to tonic to close phrase 2. The concluding *melodic* gestures of these two phrases are particularly interesting, as they echo the narrative shift in the lyrics between personal reflection and rhetorical questioning of the state of affairs in a manner similar to speech patterns. For example, as Harmer reflects on the impact that blasting through the escarpment will have on the community in the refrain, the melodic gestures fall from A5 to below C4.¹⁵ At the end of each refrain, the melodic line concludes in an upward turn (from A4 to D4), where the lyrics pose direct and rhetorical questions. As such, this upward turn could be heard as a rhetorical connotation that musically articulates a series of questions about the fate of the landscape of her youth to close the refrains.¹⁶ In the final refrain that closes the song, Harmer alters the concluding melodic gesture: after a full statement of the refrain concluding with the rising gesture, she repeats the final phrase without it and instead descends to the tonic D4 as she resolutely states, "I don't know how much longer we can stand." Alternating this gesture does not just serve the musical purpose of bringing the song to a close on the tonic, but it also suggests that Harmer is no longer asking questions about the situation: her song concludes instead with an ominous statement about the immediate future of the Escarpment.

In addition to this melodic practice of rhetorical connotation, the falling melodic line articulated in the refrain could be heard as articulating musical correspondence with the topographic features of the Escarpment landscape.¹⁷ For example, in the opening refrain, the melodic line drops an octave from A4 to A3 as Harmer sings about the below ground blasting and the downward flow

of water in the phrase antecedents, and then from A4 down to F#3 in the final consequent as she questions the impact on local water wells (Fig. 5).¹⁸ This gesture seems to trace the contour of the Escarpment's physical landscape. The falling melodic line, combined with the repetitive lyrical emphasis on "o" vowel sounds throughout the refrain, conveys profound connections between music and environment: not only do they articulate provocative descriptions of quarrying that conjures images of exploding landscapes, but they seem to function as a reminder of the depth of the ecological issues at play in this

The image displays a musical score for the refrain of "Escarpment Blues." It consists of four systems of music, each with a vocal line and an instrumental accompaniment. The key signature is one sharp (F#) and the time signature is 4/4. The lyrics are: "If they blow a hole in my back yard / Eve-ry-one is gon-na run a-wa-y / And the creeks won't flow to / the great lakes be-lo-w / Will the wa-ter in the well still be o-ka-y / If they blow a hole in the back-bone / The one that". The instrumental parts are for Acoustic Guitar and Double Bass (D.B.). The score includes various musical notations such as triplets, slurs, and dynamic markings.

Fig. 5. "Escarpment Blues," Refrain 1. The transcription for the "Escarpment Blues" refrain was created by the author. Lyrics for "Escarpment Blues" are reproduced with permission of Sarah Harmer.

debate. Indeed, by continually sinking lower in her register throughout the refrain, Harmer traces the landscape's contour from the tip of the backbone to the precious water tables below ground that support the region, giving voice to the ecosystem that she is fighting so hard to protect.

Conclusions

This is about working together. This isn't about working in isolation. And these issues are ones that we are all concerned with. This particular application is right here on Mount Nemo, in North Burlington. But its implications are much wider than that. I think it's time for new quarrying to be banned from the Niagara Escarpment. It just makes sense. (Harmer 2006)

Between 2005 and 2012, Harmer dedicated her time almost entirely to PERL and the Escarpment, participating in town halls, working with scientists, writing to government, testifying in court, and using her music at fundraising and campaign events to raise continued awareness for the ecological issues at the heart of public debate (Kohls 2011). Harmer's record label even donated all proceeds from "Escarpment Blues" sales to support PERL's activities (Richmond 2011). After more than four years of research and evaluation, JART released its technical findings for the Nelson Aggregate application in February 2009, citing serious issues with their application.¹⁹ Not only did this 100-page report identify a discrepancy in the number of acres Nelson planned to develop, but it also indicated that their application did not comply with portions of the NEP land-use policies, and did not sufficiently study the whole Mount Nemo plateau region. Nelson neglected to account for the impact that polluted water waste would have on the plateau's ecosystem once the overburden had been removed from the new site; any well within a 2-km radius of the aggregate site would be affected by development with regards to both water quality *and* quantity (18). The aggregate company also failed to address the impact that their activities would have on two endangered species, including the federally protected Butternut Tree and the Jefferson Salamander – which, thanks to Harmer's initiatives, was reclassified as an endangered species in 2011.²⁰ Given the nature of the development and the regulations outlined in the Act, JART argued that, ultimately, the new quarry's footprint would result in a deficit of environmental issues: a number of irreplaceable features would be lost in this project (16).²¹ The preliminary results of the NEC-led evaluation rolled in, with the Burlington City council,

Halton's regional council, Conservation Halton, and the Niagara Escarpment Commission each rejecting Nelson's application.

The vision that emerged throughout JART's review and the year-long public Mount Nemo Quarry Hearing with the Joint Board in 2011 was that of an aggregate company that lacked respect for both the community and the region's ecosystem – a company that seemingly believed that natural heritage could simply be “recreated” at a later date with no environmental expense. In a unanimous decision released in October 2012, the Joint Board denied Nelson's application, citing the protection of the Jefferson Salamander and its sensitive ecologic habitat amongst the primary reasons for the decision. This rejection was hailed as a significant victory for all involved in the fight against this proposal, including Harmer, who applauded the board for a balanced decision that was “in keeping with [their] belief that the development of the Niagara Escarpment, a UNESCO World Biosphere Reserve, must be harmonious with the features and functions of the natural environment” (Inside Halton 2012).

The campaign against the Burlington Quarry unfolded within a much larger provincial quarry crisis, which encompasses a series of proposed quarry expansions throughout the Ontario (Galloway 2014: 77). Conflicting decisions from individual quarry expansion applications have created a very confusing legal landscape, resulting in critical questions concerning how the Act and the NEP should be interpreted, and who should be included on the provincial Joint Board committee responsible for these decisions (Donnelly and Sabourin 2012: 4).²² PERL's legal counsel published a short article on this situation, outlining the similarities of the local trials throughout the region, and comparing the language of each Joint Board response (Donnelly and Sabourin 2012). They discovered, among other discrepancies, that the MNR and Joint Board for the Duntroon case used different resource planning policies than those that had been carefully crafted to govern the NEP Area (2012: 4). In so doing, they failed to analyze what Donnelly and Sabourin identified as the “geological backbone of southern Ontario and a World Biosphere Reserve” through the “protective lens of the statutory provisions of [the Act] and the policies of the NEP” (2012: 2).²³ The discrepancies amongst the individual cases articulate competing interests between the province, conservation authorities (NEC), and local communities and environmentalists, wherein conflicting decisions are made about the same geological region, calling into question not just the political process and respective powers of each representative body (especially the NEC and MNR), but also the future of the Escarpment's natural heritage (Donnelly and Sabourin 2012: 4). Thus, while many inconsistencies clearly

exist in the provincial evaluation process, Harmer's initiatives demonstrate a critical moment in Escarpment history – one in which local activists successfully challenged industry and government expertise on the social and environmental impact of quarrying.

In his article on the environmental self, James G. Cantrill observes that an individual's relationship to place (their "sense of place") often becomes quite powerful in response to changes (or proposed changes) in environmental policy (1998: 303). Such responses to environmental issues suggest deep emotional attachments to place, expressed through either social- or nature-based understandings of the region. Harmer's advocacy suggests a blending of the social- and nature-based understandings of place articulated in Cantrill's work, presenting an environmental stewardship and understanding of the interconnecting relationship between the self, society, and the environment (1998: 315). Harmer campaigned on a platform that advocated for biospherical egalitarianism; she argued that the superficial solutions proposed by Nelson's expansion application would have catastrophic impact on the Escarpment's ecosystem, and urged the provincial government to redirect quarry activities to more appropriate and less environmentally sensitive places. By focusing several of her initiatives on the Jefferson Salamander, the butternut tree, and ground-water storage systems, Harmer's platform emphasized the inherent value of all living organisms in the Escarpment's ecosystem.

Harmer's musical practice, her songwriting and her tour, played a critical role in this environmental narrative. Through her music, Harmer enoiced the Escarpment ecosystem, mapping the geography and geology of the region in a way that highlighted the ecological issues at the heart of the debate. Her discourse deployed nostalgia not only for a simpler time and place in the Escarpment's pre-1950 history, but for what Svetlana Boym has described as a longing for a disturbance-free life and a rejection of new industrial development in ecologically significant regions (2001: xv). "Escarpment Blues" extends this nostalgic narrative on two levels: while the song describes the geological issues at play in a provocative language, the anthropomorphization of place and phytopomorphization of its inhabitants articulates the intimate and interdependent relationship between society and nature. Through her music, tour, and activist work, Harmer led a powerful environmental movement in her local community. Her music remained at the heart of this debate, mobilizing her community to engage in discussion and protest, and ultimately affecting meaningful change in the fight to protect Mount Nemo from development. 🌱

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Notes

1. Nelson Aggregate is an aggregate mining and construction materials supply company. They are involved in extracting, manufacturing, and distributing crushed aggregate (stone and gravel) product. Nelson specializes in limestone, sand and gravel. For more about Nelson Aggregate Co.'s operations, visit their website, <https://www.nelsonaggregate.com> (accessed 18 January, 2018).

2. The concept of "biocentrism" is adopted from ecological literature. "Biocentric" suggests an ethical belief that rights and needs of humans and nature (including all wildlife and plants) exist on an equal playing field. For more discussion on deep ecology and biocentrism, see Arne Naess's article "From Ecology to Ecosophy, from Science to Wisdom" (1989).

3. The eight-point deep ecology platform can be read on the Foundation for Deep Ecology website, <http://www.deepecology.org/platform.htm> (accessed 17 January, 2016).

4. Escarpments form as a result faulting, tilting, warping, and/or erosion in the earth's surface (Duff 1999).

5. The *Niagara escarpment map* (Kelisi 2006) was reproduced from https://en.wikipedia.org/wiki/Niagara_Escarpment#/media/File:Niagara_Escarpment_map.png.

6. For more information about the MAB programme visit: <http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/man-and-biosphere-programme/> (accessed 15 May, 2016).

7. By comparison, Dufferin Aggregate sought to expand the Milton Quarry by 18 percent (Patano and Sandberg 2005: 27). See Nelson's Notice of Public Information Session for their application summary, http://www.halton.ca/planning_sustainability/planning_applications/applications_under_review/nelson_aggregate_quarry/ (accessed 15 May, 2016).

8. The list of collaborators can be found on PERL's website: <http://www.perlofburlington.org/contact-us-and-others/friends-of-perl/> (accessed 15 May, 2016).

9. The "*I Love the Escarpment*" tour trail map was created by Sarah Simpkin.

10. Mark Pedelty offers a critical analysis of the environmental efforts current musicians are making in order to reduce their environmental footprint during a global tour. He articulates the contradictions that arise between the environmental rhetoric and lifestyles of the musician adopting carbon offset programs, criticizing the movement as “eco-friendly” spectacle. Although certainly smaller in scale than the global tours and multi-city climate change concerts (like Al Gore’s Live Earth concerts), Harmer’s tour provides a valuable example of music’s ability to play a role in “fostering environmental sustainability, biodiversity, and human well-being” (Pedelty 2012: 202).

11. “Canadiana” refers to a class of literature written about or by Canadians. As a musical style, “Canadiana” is a blanket term that describes music pulling on the roots music styles of alt-country, folk, bluegrass, and blues “all bound by far-reaching national borderlines” (Raczycki 2014). Harmer has been included on a list of Canadiana artists, here: <http://www.thebluegrasssituation.com/read/contemporary-canadiana-primer-20-acts-great-white-north> (accessed 15 May, 2016).

12. The *I’m a Mountain* (2005) album cover artwork has been reproduced with permission of Sarah Harmer.

13. Full lyrics for “Escarpment Blues” can be retrieved from https://play.google.com/music/preview/T52fwqnm25i47wrr432lkxheklm?lyrics=1&utm_source=google&utm_medium=search&utm_campaign=lyrics&pcampaignid=kp-lyrics (accessed 15 May, 2016).

14. Harmer’s folk-bluegrass style is suggestive of a Dolly Parton influence – not just in terms of musical style, but also in nature-based thematic content. Harmer also covers Parton’s “Will He Be Waiting For Me” on her 1999 *The Grass is Blue* bluegrass album.

15. Harmer’s melody articulates a similar downward-falling gesture in the verses, where she lyrically addresses the community’s needs.

16. This idea of a rhetorical connotation in musical phrases is influenced by Richard Middleton’s work on associations or correspondences between music and lyrics. Drawing on the work of Gino Stefani (1973), Middleton (1990: 232) defines eight types of connotations (or associations) in popular music. He defines a *rhetorical connotation* as “associations arising from correspondences with rhetorical forms (questions, proposition, dialectic, and so on),” wherein “riffs generate connotations” (232). For more discussion on melody and melodic structure, see Theo Van Leeuwen’s chapter on melody in *Speech, Music, Sound* (1999: 92-124), Allan Moore’s discussion of melody in *Rock: The Primary Text* (2001: 49-51), or Simon Frith’s chapter on the voice in *Performing Rites* (1996: 183-202). Lori Burns also offers a fascinating analysis of the natural rise and fall in a speech-like vocal melody in Tori Amos’s performance of “Bells for Her” (2010: 172-73).

17. The idea of a correspondence between topography and musical gesture is borrowed from Denise von Glahn’s work in *The Sounds of Place: Music and the American Cultural Landscape*. Although not the objective of her analyses, she does offer comparative suggestions where relevant. For example, her analysis of George Frederick

Bristow's *Niagara: Symphony for Grand Orchestra and Chorus* suggests that the chromatic runs at the beginning of the work could be heard as a musical equivalent to "the heaving motions of the Falls" (von Glahn 2003: 59-60).

18. The transcription for the "Escarpment Blues" refrain was created by the author. Lyrics for "Escarpment Blues" are reproduced with permission of Sarah Harmer.

19. The community and JART both benefitted from PERL's work and initiatives. As outlined in JART's review (2009: 23), PERL engaged several consulting firms to assist with their research, which JART reviewed and incorporated into their analysis concerning wetlands evaluation on the Nelson property and adjacent lands (68), including PERL's identification of several mammals residing in the region (77), and the breeding region of the provincially threatened Jefferson Salamander (81).

20. Information regarding the Jefferson Salamander's classification can be found here: <https://www.ontario.ca/page/jefferson-salamander> (accessed 15 May, 2016).

21. For example, Nelson planned to extract aggregate in significant woodland and wetland regions, completely destroying more than 75,000 mixed coniferous trees that had only been planted in the late 1990s (16; PERL 2008).

22. In December 2006, Dalton McGuinty's Cabinet in the provincial government approved the expansion of Milton Quarry's application for a 205-acre expansion, despite its vigorous opposition by several environmental groups and the assigned JART (CONE 2006). While Harmer fought Nelson Aggregate in Burlington, Duntroon residents, local authorities, and the NEC actively opposed Walker Aggregate's application to expand the Duntroon Quarry – which the MNR supported and the Joint Board approved in June 2012 (Donnelly and Sabourin 2012: 2). At the time of writing, residents of nearby Acton are still awaiting the Joint Board decision after their campaign against Dufferin Aggregate's expansion of the Acton Quarry (Dufferin Aggregates 2016), which has been approved by local authorities. More information can be found regarding the Nelson Aggregate application and Dufferin Aggregate application here: <http://www.halton.ca/cms/One.aspx?portalId=8310&pageId=10137> (accessed 15 May, 2016).

23. Another high-profile case that unfolded in 2012 involved the David Suzuki Foundation, along with the Canadian Chefs Congress, local farmers, and musicians (including Sarah Harmer) challenging the US-backed Highland Companies proposal for a Mega-Quarry Melancthon Township (100 km northwest of Toronto) that sought to blast one billion tons of limestone (DSF 2012). In this case, Highland Companies withdrew their application in response to overwhelming opposition (Reaney 2012).

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