

# “This Is More Like Home”: Knowing Nature through Community Mapping

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## **Abstract**

*Place-based environmental education is a pedagogy that infuses environmental education across disciplines in a way that is relevant and meaningful to students. One collaborative approach to place-based environmental education—community mapping—explores and represents local knowledge, visions held by community members, and relationships between spatial, physical, personal, and cultural elements of place. This paper shares a community mapping project done by a British Columbian Grade 4 class and, drawing from Knapp’s (2005) 10 ways of knowing nature, discusses how students came to know nature through observing, situated knowing, identifying, restoring, and transforming. Its findings encourage the inclusion of community mapping in place-based environmental education curriculum and instruction, and illuminate the value of the products and process of community mapping.*

## **Résumé**

*L’éducation environnementale axée sur le lieu est une méthode pédagogique qui intègre l’éducation environnementale dans toutes les disciplines d’une manière pertinente et digne d’intérêt pour les élèves. Une approche collaborative de l’éducation environnementale axée sur le lieu, la cartographie communautaire, examine et représente le savoir local, les visions des membres de la communauté ainsi que les relations entre les éléments du lieu de nature spatiale, physique, personnelle et culturelle. L’article expose un projet de cartographie communautaire réalisé par une classe de quatrième année en Colombie-Britannique et, se fondant sur les « dix façons de découvrir la nature » (Knapp 2005), examine la découverte de la nature par les élèves au moyen de l’observation, l’analyse contextuelle, l’identification, le rétablissement et la transformation. Les conclusions soutiennent l’inclusion de la cartographie communautaire dans les programmes d’éducation environnementale axée sur le lieu et soulignent la valeur des produits et des processus de la cartographie communautaire.*

**Keywords:** community mapping, place-based education, knowing nature

Over the past decade, a number of critical Canadian policy documents have affirmed the importance of environmental education and its inclusion in the prescribed curriculum. For example, in Ontario, *Shaping our Schools, Shaping our Future* outlined priorities for current actions and provided a foundation for enhancing the province’s environmental education curriculum (Ontario Ministry

of Education, 2007). Similarly, the British Columbia Ministry of Education created *Environmental Learning and Experience* (2007), an environmental education guide offering Kindergarten-Grade 12 teachers a pedagogical framework grounded in the principles of complexity, aesthetics, responsibility, and ethics. While its programs have a multitude of goals and mission statements, there are shared features across environmental education curricula. These include developing students' understandings of how the environment connects with their lives and how relationships exist within environmental communities, and learning through direct experience (British Columbia Ministry of Education, 2007; Ontario Ministry of Education, 2007).

Place-based environmental education is a pedagogy that infuses environmental education across disciplines in a way that is relevant and meaningful to students. It is situated in the places where people live, dealing with local issues and environmental topics, and blurring the perceived boundaries between the school and community (Gruenewald, 2003; Knapp, 2005; Zandvliet, 2010). Evolving from and examining the particularities of place, place-based environmental education celebrates the diversity of places and acknowledges the need for contextualized understandings. It is an environmental education approach that is experiential, extending the classroom to include explorations within the community. It informs how we live and interact within the world on many levels—socially, culturally, politically, and ecologically—and highlights this interconnectedness in its pedagogy. Through its curriculum and instruction, place-based environmental education brings together place with the self and the community (Woodhouse & Knapp, 2000). This paper looks at one pedagogical approach to place-based environmental education curriculum and instruction—community mapping—and examines its potential to support the development of students' ways of knowing the natural world.

### Interpreting Place and Places through Mapping

Mapping is a way that people make sense of the world and their place within it; maps are representations of the space we inhabit (Dorling & Fairbairn, 1997). Traditional topographic maps have acted as “representation[s] of a part of the earth's surface” (Wood, 2010, p. 18), both naturalizing and universalizing the world, and have been recognized by many as objective and neutral products of science (Kitchin & Dodge, 2007). Looking historically, it is clear that maps have been an attempt at ordering reality, as mapmakers set down their worldviews through cartography (Dorling & Fairbairn, 1997). However, these perceptions of the map are far from objective, and overlook historical origins of mapping and its role in establishing and maintaining social relations within those mapped spaces (Wood, 2010).

Historically and currently, maps have been commissioned and produced by those in power—cartography has even been identified as a “preserve of the

powerful” (Dorling & Fairbairn, 1997, p. 65). Rather than to inform the wider public audience, maps and cartographic tools have been used to benefit their creators, forwarding capitalist interests (e.g., selling a lifestyle of comfortable travel and the freedom of the open road), affirming political identity and homogenizing diversity (e.g., non-inclusion of First Nations peoples and their sacred spaces), determining and asserting land ownership, and military strategizing in times of war and conflict. Those with the financial means to employ cartographers—an elite few—decide what is presented and left absent from maps (Dorling & Fairbairn, 1997). These absences, as Harley (1988a, 1988b, 1989) reminds us, are even more telling than what is shown, as “other” voices are actively silenced while privileged voices are heard. It seems that we now have a much wider-reaching access to maps, but as a result of this domination of map-making by those in power, “we have lost the ability...to *conceptualize, make, and use* images of place” (Aberley, 1993, p. 1).

While governments and powerful institutions continue to dominate map production, there is a shift toward the expression of alternative views and the celebration of a multiplicity of voices. We are coming to recognize ecomapping, Aboriginal mapping, humanist cartography, and “new” world atlases created by a diverse group of mapmakers, from primary school students to retirees (Dorling & Fairbairn, 1997). Community mapping is one such alternative from the norm that reflects the shared spaces, knowledge, and values of members of a community.

Community mapping has been defined as “local mapping, produced collaboratively, by local people and often incorporating alternative local knowledge” (Perkins, 2008, p. 154). Based on shared lived experiences, it centres on features that people value and the visions they hold for their community. Community mapping is done *by* the community, not *for* or *of* it. “It requires people to dig into the past, to walk their local territories and streets, and to talk to their neighbours” (Lydon, 2003, p. 22). Community mapwork supports dialogue, fostering the development of connections between people and their place, and its maps represent the relationships between spatial, physical, and cultural elements of place, as well as emotional and abstract connections to it (Amsden & VanWynsberghe, 2005).

A strength of the community mapping process lies in its openness and inclusiveness; all means of communication and expression can be used (Amsden & VanWynsberghe, 2005). Community maps can be traditional topographic representations of place, but can also take on a more arts-based form—maps can be painted, sewn, sculpted, woven, filmed, acted, or even sung (Clifford & King, 1996). While the forms taken by community maps vary widely, the end products are always “snapshot[s] of the community as the community sees it” (Amsden & VanWynsberghe, 2005, p. 362).

Community maps are captured by members of the community, but as with maps created by those identified as powerful, community maps still reflect

relations of power. Those with an interest and an invite to participate in a mapping project will decide on the lenses used and the images captured. Some groups may be inadvertently excluded from the mapping process and, in turn, their view of the community might not be realized in the products of the project. Parker (2006) discusses issues of inclusion, transparency, and empowerment as she compares and contrasts community mapping projects and relationships between created maps and power. Wide community engagement in a mapping project is ideal, but is difficult to obtain and simply not always possible. For example, some projects have been exclusive of the voices of women and those living in urban communities. Transparency in community mapping projects is often a goal, as project objectives and criteria are defined and authorship identified. However, given the specificity of projects to a particular community, those from outside the community can be marginalized and their identification as outsiders reinforced. Finally, empowerment is usually viewed as fundamental to community mapping, and yet how this is realized is rarely clarified. For example, empowerment might be achieved through an increased capacity for collective action or a social or procedural change. The processes and products of mapping could however be disempowering, by perpetuating stereotypes and encouraging action upon citizens, rather than empowering citizens to act for themselves (Parker, 2006). For these reasons, it is important for mapmakers to be mindful of privileging people and perspectives in their maps. Whose voices are included and whose are excluded? What is included and what is excluded? Community mapping projects have the potential to open up spaces and conversations, but it is important to recognize the inherent relations of power in their products and processes.

The goals of community mapping projects are diverse and dependent on the participating mapmakers. Community mapping has been used to identify and communicate community assets and services for adults and children (Connor, 2001; Kretzmann & McKnight, 1993). They have been used in the professional development of teachers and as a post-secondary teaching tool (Robinson, Vineyard, & Reagor, 2004; Tindle, Leconte, Buchanan, & Taymans, 2005). Community maps have also been successfully used as a participatory research tool with youth in an evaluation of accessibility of health services to young adults (Amsden & VanWynsberghe, 2005).

Community mapping is a pedagogical approach that embodies place-based environmental education through its exploration and representation of place, yet despite its rich potential for inclusion in formal teaching and learning contexts, there is a lack of research on how it can support students' developing understanding of environmental interconnectedness and their respect of other-than-human beings and relationships in the natural world. This paper explores this as it shares the results of one such mapping project, and how it supported students' ways of knowing the natural world.

## Mapping Sandy Beach Provincial Park<sup>1</sup>

From September to November 2008, I worked with a British Columbian Grade 4 class of 25 seven- and eight-year-old students on a community mapping project of Sandy Beach, a local provincial park. This class was chosen as I had an existing relationship with Ms. C, the classroom teacher, based on a shared interest in environmental education and a mutual acquaintance. We both have personal connections to Sandy Beach; she previously worked there as a park naturalist and I spent many childhood summer holidays there. Ms. C was keen on bringing place-based environmental education into her teaching and her students' learning, and was assigned to teach Grade 4 in the year that we collaborated.

The project focused on the natural, local, and First Nations histories of the park, as well as students' own personal connections to and experiences of the park. The mapping project was cross-curricular, connecting social studies, science, mathematics, language arts, and visual arts curricula, and addressed learning objectives in each of these disciplines. For example, it addressed British Columbia Grade 4 science prescribed learning outcomes related to habitats and communities, and skills and processes of Grade 4 social studies prescribed learning outcomes. In all, the class worked on mapping activities once or twice per week over the course of the twelve-week project.

The students went on three field trips to Sandy Beach, where they worked in groups of six or seven, with at least one adult (classroom teacher, researcher, or parent volunteer). Each group used a digital camera to capture significant features of their choosing, and kept field notes on provided sheets. Students actively engaged in a variety of activities during the field trips, including a low tide beach walk, a scavenger hunt, and a sound and colour walk.

As well as the Sandy Beach field trips, the project included class visits from community members. The local museum director came to the classroom to talk with the students about the history of the Barry family and their farm on the site of Sandy Beach. The school district's First Nations liaison, a member of the local First Nation, also came to the class to lead a discussion on the local environment, and conduct a weaving workshop on Western Red Cedar trees, which highlighted the practical and spiritual importance of cedars to local First Nations peoples. These speakers were intentionally chosen to contribute to the project as both were acknowledged to have unique expertise of place and excellent rapport with school groups.

Within the project, students created a variety of maps that displayed their understanding of and experiences at Sandy Beach. Students created found poetry related to their sensory experiences at Sandy Beach, made sculptures of special places at the park (see Figure 1), and added captions and stories to a class album of photographs taken by students on the field trips.

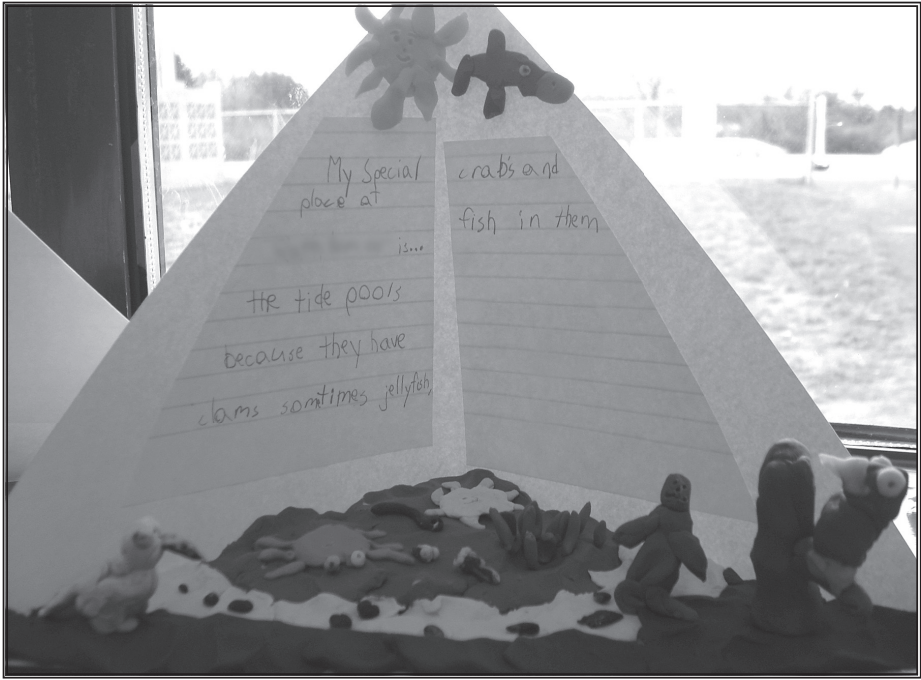


Figure 1. Special place sculpture of the tidal pools at Sandy Beach

Using *Jessie's Island*, a children's book (McFarlane, 1992), as a model, students wrote letters to family and friends who had never been to Sandy Beach and compiled these into a class book. Finally, an emergent bulletin board map (Sobel, 1998) was created collaboratively by the students. This map began as a simple outline of the park drawn on a bulletin board outside the classroom. Over the course of the project, it was layered with drawn physical features, field trip photographs of personally significant places and features, and anecdotes of stories of their experiences at the park, and it was framed by renamed park-specific colour samples from the sound and colour walks (see Figure 2).

While analyzing the influence that community mapping had on students' environmental worldviews, I was struck by the parallels of my data to Knapp's conceptualizing of the ways of knowing nature. Drawing on Leopold's *Sand County Almanac* (1966), Knapp (2005) asserts that educators can plan and teach a holistic place-based education, and outlines 10 ways of knowing nature: *wondering and questioning, knowing local history, observing seasonal changes, listening intently, counting and measuring, empathizing with and personifying nature, connecting elements in cycles, finding beauty, seeking solitude for reflection, and improving land health*. As I engaged with Knapp's themes, I recognized elements

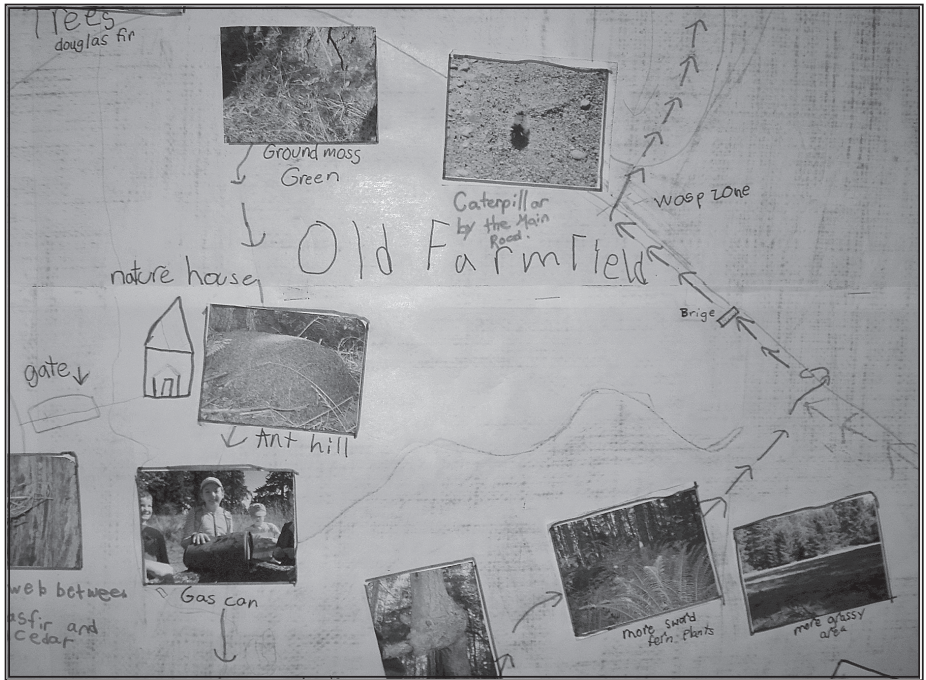


Figure 2. Part of emergent bulletin board map showing photographs, paths followed, and significant places and features

of each of his 10 ways of knowing nature in the data I was analyzing for my thesis. While I recognize that these categories focus on knowing and caring about the natural world and do not implicitly speak to the social, cultural, and political complexities of place, they do allow an access point for young students as they begin to explore place and their place within it, and they provide a foundation upon which to build a more holistic understanding of the complex relations of place. In this paper, I use Knapp's ways of knowing nature to highlight the students' rich understanding of place and the multiple ways that they came to know Sandy Beach.

Data was drawn from multiple sources: conversations and interviews with students, observations of field trip and classroom mapmaking, students' written mapwork (i.e., letters, poetry, photo album captions), and visual materials (i.e., photographs, maps, artwork). Of the 25 students who participated in the mapping project, 23 students (12 girls and 11 boys) consented to and participated in the collection of all of the above data. As students worked in groups of three to create the emergent bulletin board map, the informal conversations between students and me were recorded. Students took part in two semi-structured small group (two to three students) interviews, one immediately following the completion of

the project in early December 2008 and another three and a half months later, at the end of March 2009. Copies of all consenting students' mapwork were also collected.

Much of the data collected from students fell into more than one of Knapp's categories (e.g., *wondering and questioning* and *observing seasonal changes*, *finding beauty* and *seeking solitude for reflection*). With these overlaps in mind, I developed five themes that encompassed Knapp's ten ways of knowing: (a) observing, (b) situated knowing, (c) identifying, (d) restoring, and (e) transforming. These themes were used to conduct a content analysis of conversation and interview transcriptions. Observational field notes, students' written mapwork, and visual materials collected were compiled and also analyzed thematically, using the five themes. In the spirit of the project, and also to reduce my bias in interpretation, I have included quotations and images that capture the students' voices.

## Knowing Nature through Community Mapping

The data collected from students suggest that community mapping projects can support the ways of knowing nature presented by Knapp (2005). Here, the findings from each of the five themes are shared.

### *Observing*

This category draws upon four of Knapp's categories: *wondering and questioning*, *observing seasonal changes*, *listening intently*, and *counting and measuring*. These ways of knowing nature involve being conscious of one's natural surroundings, considering connections between and changes within elements observed, and wondering about the natural environment. Students shared the sensory experiences they had at the park. In their sound poems and photo album captions, students wrote of gravel crunching, crickets chirping, dog collars clinking, ravens laughing, wind whistling, tree frogs croaking, and the highway grumbling. Students also shared specific descriptions of the colours of the park in their renamed paint chips, including *ground moss green*, *arbutus inner bark*, *arbutus peeling bark*, and *spore brown*.

Students made observations of numbers and sizes of plants and animals at the park. For example, Tara and Sienna recalled counting 48 jellyfish on the beach, and Rachel noted that some huckleberry bushes were gigantic, "probably a little taller than me." Along with counting, students used their bodies to physically make measurements. Many students worked together to measure the circumference of a Douglas fir tree, finding that it took seven students holding hands to go around its base and that "it's taller than our school." In a beach walk photograph, one student used her index finger to indicate the relative size of a tiny seastar (see Figure 3).





Figure 3. Student showing the relative size of a seastar with her index finger

The students also made note of changes they observed in the park over the course of the project. Most shared that the number of wasps was very high in the summer but much smaller in the autumn; some speculated that this was because wasps hibernated and hated the cold. In their letters, many students described the plants and animals that could be observed in different seasons, for example, puffballs and *Amanita* spp. in autumn. Students also wrote of changes to the beach with the tides and the animals that could be observed when the tide was low—sea anemones, seastars, horse clams, periwinkles, moon snails, and jellyfish.

Students used their observations to make predictions about what they had seen or heard. For example, Lisa spoke about seeing some feathers that she thought were from a seagull, because she knew that those from an eagle or crow would have been much bigger. Norah suspected that the spider's nest she found in a tree was in a hole actually made by a woodpecker. Clumps of white fur were found along a trail and students questioned what animal this fur had once belonged to; most students agreed that it was likely from a dog.

Through their observations, students demonstrated evidence of knowing nature and direct connections to place. The depth of their sensory understandings of Sandy Beach supports the development of a rich and meaningful connection to the natural world.

### *Situated Knowing*

This theme includes Knapp's *knowing local history*. Within it, past and present uses of the land are considered and examined, and the history of place is realized. Students recalled the class visits from the museum manager and First Nations liaison as they spoke about the history of the park. They shared at length stories of the Barry family who used to farm the current park site; Charles and Xavier even shared an animated retelling of the unfortunate end of Mrs. Barry's second husband. Students' knowledge of the Barry family's history on the land was also evident in photograph captions and descriptions in letters of an old fashioned, rusty earring found on the beach that students speculated had once belonged to Mrs. Barry (see Figure 4).



Figure 4. Found earring that students speculated belonged to Mrs. Barry

Photographs and captions also identified a found rusted muffler as being from a Barry farm tractor, and students' letters told family and friends that the interpretive centre had once been the Barry's home. Students similarly noted the many connections First Nations peoples have to the land and resources at Sandy Beach. In their letters, they related that the park provided clams, oysters, fish, and seaweed for food, and that the Western Red Cedars of the park were used to make canoes, clothing, blankets, and woven mats and baskets.

Also within this theme were students' personal stories of place. Here, all students shared narratives of their own memorable experiences at the park.

Their descriptions included recollections of family gatherings and camping trips, bike rides down particular trails, and school visits from the previous year. Quinn said the park was important to him because it was the first beach that he visited when he moved to the area. Charles shared that Sandy Beach was very special to him for many reasons, including that his parents were married there and his grandparents' home was next to the park.

These situated understandings of place support the students' growing knowledge of Sandy Beach. Through these connections to the land, students are able to develop and recognize the relations that we have with the land and how we interact with it.

### *Identifying*

Within this theme are Knapp's *empathizing with and personifying nature and connecting elements in cycles*. These connections to physical and affective features of place highlight relationships between both the person and place and among elements of place. Students shared a number of instances where they placed human characteristics on plants and animals at Sandy Beach. A photograph of the ventral side of a sand dollar was captioned as a "sand doller (sic) belly." Ants were likened to soldiers as the paths they created were described as "trenches... like in World War I." One of the most talked-about features of Sandy Beach was the dragon, or dinosaur, tree. Norah named the tree *Fluffy* and when describing it, she spoke of the tree's neck and ears. This tree was Ethan's favourite part of the park; he said that to him, the tree felt like a guardian who would watch over and care for him.

Not only did students personify elements of the park, they also identified specific relationships between plants and animals inhabiting the park. Most of these related to food chains in the park's ecosystems. Students wrote about seagulls dropping clams from great heights to break them open to eat. They also shared that they saw Pileated woodpeckers pecking holes in trees to search for insects. Similarly, students made connections between plants, animals, and human uses of the park. Here students commented on how litter, campfire smoke, and loud noises might affect animals at the park. They also shared that because of our presence, some plants and habitats could be destroyed. Oliver noted that should Sandy Beach be expanded, trees would be cut down and this would in turn "cut down our air supply."

These specific recognitions of the other-than-human world suggest that the students see the natural world as similar to themselves, rather than different. Likewise, they identify connections among members of the park, including humans.

### *Restoring*

The theme of restoring brings together Knapp's *finding beauty* and *seeking solitude for reflection*. The term *restoring* was chosen to reflect the work of

Kaplan and Kaplan (1989), who asserted that natural spaces are places where one can feel relaxed, calmed, and recharged. These feelings are evident within this theme, as place was contemplated during time set aside for quiet and reflective experiences of place. Most students spoke of Sandy Beach as a beautiful place; the sunsets and leaves were identified as beautifully coloured and Rachel wrote that the park had “the prettiest beach.” Students shared that the park was a great place for bird watching and that you could see “glorious bald eagles soaring high above your head” and might spot a “majestic heron or two standing at the shore line.”

The students’ acknowledgements of Sandy Beach as a restorative place were particularly poignant. The park was described as being *peaceful, relaxing, fun, and safe*. The ocean brought positive feelings as students listened to the “peaceful sounds of the waves hitting the shore” and saw the “welcoming tide.” The park amphitheatre was identified as a place “where you can act out and feel free.” When asked what their favourite place at the park was, all of the students spoke of natural elements—the beach, specific trees, the forest, where the huckleberries were, to name but a few. None of the students identified human-built structures as their favourite places. Charles, Xavier, and Ethan spoke at length about how the park felt like home, how it was “a real place” and “more like what you think of land.” The boys also shared that Sandy Beach was a place where they could go to “get away from...civilization” and stress.

The recognition of Sandy Beach as a restorative place by students suggests that they see the inherent and intrinsic value of the park. The natural elements are not viewed as valuable as separate objects, but rather the park is seen as a whole, “real” place. The experience of being at Sandy Beach is calming and comforting for the students—they find peace and pleasure in being in place.

### *Transforming*

This theme covers Knapp’s *improving land health* and includes those acts that, while helping the environment, also benefit the actor, physically, intellectually, and emotionally (Knapp, 2005). The mapping project itself educated students on the biotic and abiotic elements of the park and the relationships between those elements. During and after the project, students themselves took on the role of environmental educators as they shared their understandings and experiences with other members of their school community through their displayed mapwork, particularly with the emergent bulletin board map. Many parents also commented that their children had spoken of the project with them at home, and had led them on guided tours of the park.

Through their teaching of others, students shared how they knew the park, highlighting their experiences in place, their emotional and personal connections, and their knowledge of the interconnectedness of members of the Sandy Beach community.

## Pedagogical Possibilities for Community Mapping

Community mapping allows mapmakers to make sense of and learn about their own community and its complexities, as they work collaboratively with other members of the community. The process of community mapping involves sharing local and alternative understandings of place—stories, experiences, histories, and images—as maps celebrating alterity, diversity, and multiple voices are created. The Sandy Beach community mapping project allowed Grade 4 students to experience and come to know the natural world of their local community, and realize their individual and collective places within it through mapping.

As they shared their experiences in the park through their mapping and discussion, it was clear that students were able to directly connect to the natural elements of place through their sensory experience and interactions with place. Community mapping can offer an avenue for students to directly experience the natural world in a mindful, interactive way. These students had a multitude of sensory experiences—the salty, crisp smell of the ocean, the brightness of the forest greens after a rainfall, the bitter taste of the first bite of huckleberries, the chill of the sea breeze, the clattering of rocks with each retreating wave. The students' stories of rich, first-hand, sensory experiences in nature illustrate the power of learning about the natural world through direct experience in place, a pedagogy encouraged by Leopold (1966) and supported by Knapp (2005), advocates of place-based environmental education (Woodhouse & Knapp, 2000; Zandvliet, 2010), and now, provincial curricular documents (British Columbia Ministry of Education, 2007; Ontario Ministry of Education, 2007).

Along with allowing for direct sensory experience of place, the community mapping project encouraged students to make personal and emotional connections and reconnections to Sandy Beach and its other-than-human community. This emotional intimacy was evident in students' expressed empathy toward the plants and animals of the park. Their comments and behaviours at the park showed that they transpose human characteristics onto non-human beings through personification—students regularly referred to natural elements of the park with human names and qualities—and that they recognized an intrinsic value in those beings. Students shared in discussion that they cherish the park, as it is the site of many of their own special memories, as well as those of their family members and friends. The park was a place of personal restoration; students spoke of how they saw the park as peaceful and safe, a place of beauty, wonder, and fascination, and “more like home.” These findings echo Sobel's (1996) first two developmental stages of place-based environmental education: empathy between the child and the natural world, and exploration of the nearby world. To Sobel, these connections and discoveries are critical precursors to later place-related social inquiries and actions.

These feelings were also shared in the students' mapwork—in their letters,

sculptures, poetry, and emergent bulletin board map. As Gould poignantly reminds us, “we cannot win this battle to save species and environments without forging an emotional bond between ourselves and nature as well—for we will not fight to save what we do not love” (cited in Orr, 2004, p. 140). The community mapping project allowed students to know the park emotionally, to make rich personal connections between themselves and the local natural world, to recognize the inherent and intrinsic value in it, and to care for it.

Not only were students acknowledging the relationships between themselves and the natural world, but they were also able to make connections within the park’s ecosystems and between the park and the larger environment, identifying the park as an ideal of what they thought the world should be. Participants were also able to identify themselves as part of the natural world, rather than separate from it. In this project, students’ discussions of the impact of humans on natural systems indicate that they recognize that our being in the environment has an influence on the other-than-human world. Students also identified how interactions with place can change, as they related the story of the Barry family farm and the history of the First Nations peoples on the site of what is now Sandy Beach. The students saw that our actions not only influence us, but also those with whom we share the natural world. This layering of realized connections suggests that students did understand the rich interconnectedness within natural systems of the park.

While the community mapping project highlighted the students’ developing understanding of the natural elements of place and of their situatedness within the natural world, there were opportunities to explore further connections to social, political, and cultural aspects in community mapping and their contributions to place-based educational discourses. These extend beyond Knapp’s 10 ways of knowing nature and the 5 themes presented here. This was most apparent when considering the representation of First Nations voices and perspectives on place broadly, and on Sandy Beach specifically. Our community mapwork could have been enriched with a deeper inclusion of First Nations voices through the participation of local Elders, artists, and family members in all stages of our project. This would have recognized and celebrated the breadth and depth of the First Nations’ traditional and ongoing connections to place, and also reduced potential issues of inclusion, transparency, and empowerment. Also, power is inherent within the context of teaching, however, projects such as this can allow for an opening of the curriculum to student voices and perspectives.

The processes and products of community mapping celebrate the voices of participants and in this project, children, a typically disempowered group, were able to share their knowledge and visions of place with their community. The maps themselves were alternatives to traditional topographic maps; student-created maps, sculptures, poetry, and letters illustrated their observations, situated knowledge, identifications of and with place, personal restorations,

and transformations. These unique ways of knowing and representing nature recapture those skills that we have lost: “the ability...to *conceptualize, make, and use* images of place” (Aberley, 1993, p. 1). Extending the mapwork to a longer (e.g., year-long) project, with additional visits to Sandy Beach and increased community participation (i.e., family members, other members of the school and community), could have further fostered and deepened students’ understandings of the complexities of place and their role within it.

This research highlights the power that community mapping can have in fostering students’ developing connections to place and the broader environment. As illustrated in this paper, community mapping can support Knapp’s (2005) ways of knowing nature. Students’ observations, situated knowledge, identifications, personal restorations, and transformations resulting from community mapwork can support environmental education’s curricular goals. Community mapping projects involve direct experience and allow for the illumination of the relationships and connections between physical, cultural, historical, and personal understandings of place. Given these benefits and the turn toward active inclusion of environmental education in the prescribed curricula, community mapping’s use as a pedagogical tool in environmental education should be encouraged.

## Notes

- <sup>1</sup> All names have been replaced with pseudonyms to protect the anonymity of participants.

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