OF LAND & LIVING SKIES: A Community Journal on Place, Land, and Learning is a partnership between SaskOutdoors, the Sustainability Education Research Institute (SERI) with the University of Saskatchewan’s College of Education, and the Faculty of Education at the University of Regina. Of Land & Living Skies is a community journal where theory and practice merge, becoming a space for dialogue within the fields of environmental and sustainability education, and focusing on research, policy, and community practices, as well as inspiring action.

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Cover Image Artist: Jaylene Murray
Jaylene is working on her Master’s of Educational Foundations degree in Saskatoon. She has a background in outdoor education and adventure tourism and has worked on the water in Canada, Australia, and New Zealand. She took this image as part of a graduate course on Place and Critical Eco-pedagogies through the Department of Educational Foundations at the University of Saskatchewan.

NEXT ISSUES
Eco-literacy in the Early Years
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Urban Environmental Education
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I sit here thinking about why we would make an issue of Of Land & Living Skies: A Community Journal on Place, Land, and Learning themed on Water. I also sit here today, 9 months pregnant, with a body (well actually, two bodies) full of water and feeling the deep connections between being a mother, growing a child, and being on the Earth, our mother. I think about using warm water for healing and pain relief, I think about the need to stay hydrated, I look outside and see my tomato plants and how they need clean, healthy water to survive. And then I get up, as a 9 month pregnant woman needs to, to release some water in a toilet that flushes waste down with the same treated drinking water we drink (isn’t that bizarre?), and end up cursing the water on the floor from my 8 year old Rhodesian Ridgeback’s sloppy drinking habits. Then I think of the privilege that I have, as a white, settler woman, with a full time teaching job who can turn on the tap and drink safe, treated water until my heart desires.

As the Wild About Saskatoon website states about this year’s festival theme, “Water is the medium of life. It flows through our bodies, through our city -- through the whole, wild living world. It’s in every plant and animal, in every human cell. It’s the sap rising in the trees. The blood pulsing through our veins. The amniotic fluid in our mother’s wombs. Water nourishes, sustains, connects” (taken from www.wildaboutsaskatoon.org). Our dialogue section is written by a member of this festival committee reflecting on her connections to nature.

Water is the medium of life. It flows through our bodies, through our city -- through the whole, wild living world. It’s in every plant and animal, in every human cell. It’s the sap rising in the trees. The blood pulsing through our veins. The amniotic fluid in our mother’s wombs. Water nourishes, sustains, connects.

How about the water that comes from the drinking fountain at school?” Our This is My Place article by Glenn Sutter talks about his relationship with water as a songwriter and a biologist. The Towards Decolonization piece discusses the month-long solidarity camp in front of the Indian and Northern Affairs Canada office in Regina and how they have concerns about water in First Nations communities. They have found out that 17 First Nations in Saskatchewan are under boil water advisories. I did a quick search on the Health Canada website, and found the list of names and the number of people impacted. For example, Big Island Lake Cree Nation has been on a Boil Water Advisory since August 20, 2013 and affecting 501-1000 people. If this happened in a settler community, we would never allow this type of unsafe, toxic condition to be allowed for nearly 3 years.

For example, Big Island Lake Cree Nation has been on a Boil Water Advisory since August 20, 2013 and affecting 501-1000 people. If this happened in a settler community, we would never allow this type of unsafe, toxic condition to be allowed for nearly 3 years.

Other articles that we have in this issue include a Case Study in the Research from the Field section on three outdoor, integrated, trek school models of education for grade 11 students in the province. It highlights what the educators think and have experienced with the type of learning that happens in the programs. There is an article in the Digital Traces section about using Critter Cams with urban youth from Calgary. We have an article (Family Experience) written by a mom in Regina who was influenced by the film All the Time in the World who plans for spending long stretches of time on Sundays outdoors with her daughter.

The Photo Essay takes a look at a PhD research project that focuses on Indigenous knowledges in Bangladesh. The diversity of articles in this issue is great, and that is why it is such a wonderful opportunity to be the editor of our community journal project. Until next time,

Karen

Note: Since writing this, I had a wonderful baby born on June 1, in water, at my home.
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FALLING IN LOVE WITH NATURE IN THE CITY

A small group of dedicated nature lovers in Saskatoon called Wild about Saskatoon work towards the “conservation and enrichment of wild lives and wild places in and around Saskatoon, Saskatchewan, a middle-sized city on the banks of an ancient river” (from wildaboutsaskatoon.org). For the past two years, they have organized a NatureCity Festival at the end of May. Wild about Saskatoon member Fiji Robinson reflects on her love affair with nature in this city.

BY FIJI ROBINSON

It was thirteen years ago when a friend and I went on an adventure to the river’s edge, and I witnessed my first encounter with the wondrous bird migration we experience here in the fall. Newly transplanted from Ontario, I had never seen a sandhill crane, let alone hundreds of them on their journey, flock after flock, their loud, rattling calls reverberating down the river valley.

There were also great blue herons that day and varieties of geese I had no idea even existed. It was astounding.

That experience woke me up to the peough sound of the northern flicker and the eh-eh-eh of the nuthatch. I started seeing coyotes in Gabriel Dumont Park, mule deer feeding along Spadina Crescent West, and the bald eagle hanging out along the frozen river close to the Sid Buckwold Bridge.

We are blessed with a downtown residential core that features gorgeous elms full of songbirds, along with our beautiful river valley and outlying neighbourhoods with access to pockets of wetlands and wildlife.

Awakening and reawakening us to tune into the incredible natural world found in and around Saskatoon is the very reason why I got involved with Wild about Saskatoon four years ago. I’ve appreciated working with other people who value nature in their lives.

This year, the Festival continues to shine a spotlight on preserving Saskatoon’s Northeast Swale, the ancient river channel that remains as one of the largest pieces of unbroken prairie/riparian forest/wetland in the Saskatoon region. It is an integral part of the natural heritage of the City that deserves recognition and protection so that we can go there and experience it.

I also love the NatureCity Festival for echoing the ideals of the Healthy by Nature movement, which is based on three principles: spending time in nature improves human health; human health depends on healthy ecosystems; and parks and protected areas contribute to vibrant, healthy communities.

Could it be that a Healthy by Nature Saskatoon is within reach? It could be, because every year more and more organizations, businesses and individuals get involved with the NatureCity Festival, as they fall in love with the wild side of our city—meewasin.
PAM BELCHER’S work involves all aspects of the Saskatchewan Environmental Society’s school programs, including developing workshops, lessons, and resources connected to the Saskatchewan curriculum. Being a part of the Boreal Water Monitoring Project in northern Saskatchewan schools has allowed her to work with people who are passionate about the health of our environment, and the role that education can play in creating students who not only understand the issues, but also want to be a part of making a difference. She has an M.A. in Special Education.

MEGAN VAN BUSKIRK works for the Saskatchewan Environmental Society (SES). When she isn’t managing the office, she can be found proudly facilitating SES’s Boreal Watershed Monitoring Project or one of SES’s other school programs. She is also a member of Saskatchewan Guiding, and actively educates her fellow Girl Guide Leaders and the young members of Girl Guides about advocacy, social justice, and sustainability. Megan has a B.Sc. in Physical Geography and a B.A. in Northern Studies.

DR. RANJAN DATTA is a Bangladeshi-Canadian. He is dedicated to building an inter-cultural bridge amongst Aboriginal, immigrants, and refugee communities in Saskatoon. He is known as a community activist on Indigenous and immigrant rights as well as making positive impacts on the community. His research interests includes: Indigenous education, rights, and practice; anti-racist theory and practice; social and environmental justice; community gardens, and Indigenous research methodology and methods. His current research focuses on building a bridge between formal and informal learning in the realization of cross-cultural practices, with a specific focus on science and environmental education.

TYLER DIXON is originally from Regina, but has called Calgary home since 2006. He is a high school teacher with the Calgary Board of Education with a passion for the outdoors. Tyler volunteers with the GOT Parks initiative, the Calgary Guardian (where he is the Outdoor Editor), and Alberta Parks as an Ambassador. Tyler enjoys hiking, mountain biking, paddling, camping, cross-country skiing, and snowboarding, as well as team sports, travelling, photography, spending time with good friends and being at home with his wife Christine and their dog Rome.

DR. MALIN HANSEN is a biologist who currently teaches biology at First Nations University of Canada. She is also a mom who likes to spend time camping, hiking and exploring nature with her family and friends. She organizes a casual nature club for families in Regina. Check it out by searching for Regina Nature Club on facebook.

DR. GLENN SUTTER is based in Regina, Saskatchewan. He frequently writes about nature, environmental issues, and the human condition. His love and appreciation of nature stems from his childhood growing up in the ’70s in Souris, Manitoba, where he spent much of his time outdoors hanging around the banks of the Souris River. This curiosity and love of nature also helped guide his academic and professional careers, leading him to a PhD in biology and his current role as Curator of Human Ecology at the Royal Saskatchewan Museum.

DR. GARTH PICKARD is Professor Emeritus at the University of Regina (Faculty of Education) and is currently a Research Associate with the University of Regina Institute of Energy, Environment, and Sustainable Communities (IEESC). He is also directly affiliated with the UNESCO International Network for Re-orienting Teacher Education towards Sustainability and the United Nations University Regional Centre of Expertise on Education for Sustainable Development.

ROBYN PITAWANAKWAT, a mother of three children, was born in Northern Alberta to an activist mother from Whitefish River First Nation in Ontario, and raised in Regina. Robyn and her partner Tannen are homeschooling their Anishnaabe children in an effort to prevent the devastating effects of a colonized education. Robyn has previously been involved with raising awareness about instances of police brutality, and pushing for police accountability and civilian oversight in Regina. She is also a co-coordinator for the Mary Pitawanakwat Fund for Children. Robyn has just launched a nonprofit organization called Regina Diaper Bank and Come Clean Laundromat in hopes of reducing financial strains on lower income families.
BOREAL WATERSHED MONITORING EDUCATION: 
Combining Efforts to Answer Key Questions 
About the Health of Local Watersheds

BY PAM BELCHER & MEGAN VAN BUSKIRK, 
SES WATER EDUCATORS

These students are participating in the Boreal Watershed Monitoring Program, a program supported by the Saskatchewan Ministry of Environment, and conceived and run by the Saskatchewan Environmental Society (SES). Students from the communities of La Ronge, Prince Albert, La Loche, Buffalo Narrows, Île-à-la-Crosse, and Beauval take part in workshops at their school or nearby at a lake or river in their community. The workshops generally take place over the span of a day, and the activities are aligned with the curriculum and the season.

THE IMPORTANCE OF A HEALTHY WATERSHED

An overarching goal of the program is to help students question, and begin to find answers to some very simple questions. Can we drink the water on our canoe trip? Are the fish my family catches healthy for us to eat? How about the water that comes from the drinking fountain at school?

The concept for the Boreal Watershed Monitoring Education Project began with the speech from the throne in 2010: “From the Great Sand Hills in the southwest to our pristine northern boreal forest lakes, Saskatchewan’s landscape is comprised of many unique and irreplaceable features. These features must be protected for the enjoyment of future generations.” (Hon. Barnhardt). The research goals that emerged from this directive included assessing the current state of the regions’ environment, measuring changes, and evaluating ecosystem health in the areas of water, air and soil quality, in response to multiple stressors.

Contracted by the Saskatchewan Ministry of Environment in 2012, the Saskatchewan Environmental Society developed, and has been providing a school-based education program to help students learn about watersheds, and the role they play in maintaining healthy ecosystems. The goal is to involve students in learning about the health of their local watershed, to encourage them to care about it, and learn to protect it. To achieve this, the program introduces students to a number of ways of viewing their watershed, and understanding it as a system:

• Recognizing that Indigenous knowledge and empirical science are both valid means for
asking questions, and providing places to look for answers.

- Giving students the opportunity to learn scientific methods of determining watershed health—including industrial, climate and biological considerations—so they will have a better understanding of what might affect their local system.
- Taking students outside, to places where they can see how pieces of the system affect one another.
- Teaching students to take accurate and regular samples of tap, and lake or river water that will be tested in a sophisticated laboratory, for metals and general chemical analysis.
- Providing students with authentic results from their work, an understanding of what those results mean, and how the results could guide further inquiry.
- Opportunities to talk about, and generate an understanding of, the health of their watershed.

BringIng ExpIRs InTo The learnIng

Along with the Saskatchewan Ministry of Environment and the SES, key working partners are the University of Saskatchewan (U of S), teachers and environmental experts, and Elders from each community. The role of the U of S has been flexible and serendipitous, involving professors, researchers, and PhD students from the university’s School of Environment and Sustainability (SENS). The value of having knowledgeable people in the classroom was apparent from the very first workshop. Students were respectful and curious, and keen to work on activities side by side with Elders and researchers. By bringing experts into the classroom, and researchers into the community, the program hopes to promote and model a respectful partnership. The Elders, many of whom are fishers and trappers, speak with knowledge and experience about the area and how we fit into the system alongside other species, while the researchers work to present complex information to students in areas such as biology, toxicology and climate science, in understandable and engaging ways.

THE WORKSHOPS

The program has evolved into offering three main workshops each year: in fall, winter and late spring. In each, students learn about and do water or snow sampling and testing, and chart their results; Elders contribute First Nations connections and knowledge; researchers share their expertise on the day’s focus area; and discussion is encouraged around understanding how all the pieces fit together, what students wonder about, and what further inquiries we need to make. Here is a summary of the activities that often take place in each workshop.

FALL WORKSHOP

- Macroinvertebrate study—lakeside study and identification of macroinvertebrates, using the Leaf Pack.
- Tap and lake or river water sampling and testing using LaMotte testing kits.
- Heterotrophic plate count of bacteria using filtered and raw lake or river water, using the Safe Drinking Water Foundation’s Water Pollution Kit.
- Medicinal plant root collection for sampling, primarily rat root and cattail.

On other workshop days, students might be wading in the shallows of the rivers and lakes near their school, looking at macroinvertebrates, and trying to determine if the waters in their community are healthy or not. They also sample and test the water for pH, alkalinity, nitrates and other elements, and take monthly samples to send away for more complex laboratory testing. Elders, teachers, and researchers guide and encourage the students’ inquiries in the workshops, each bringing an area of expertise and life experience that contributes to the whole picture.
**WINTER WORKSHOP**

- Winter hike or snowshoe in an area near a lake or river, with multiple stops along the way to discuss snow ecology.
- Snow layer cross-section to encourage discussion about winter survival, pollution and runoff, and seasonal fluctuation.
- Tap and lake, river, or melted snow sampling and testing using LaMotte testing kits.

**SPRING WORKSHOP**

- Fish dissection, last year’s experiment was to extract a small tissue sample for mercury testing at the U of S.
- Macroinvertebrate study—lakeside study and identification of macroinvertebrates, using Leaf Pack.
- Tap and lake or river water sampling and testing using LaMotte testing kits.

**ADDITIONAL ACTIVITIES**

- pH testing of a variety of substances, including melted snow from a variety of locations both urban and rural.
- Pre-prepared macroinvertebrate petri dish “pond samples”—students identify macroinvertebrates and determine if the existing species and proportion point to a healthy or unhealthy pond. Even though the samples are not particular to any specific body of water, this activity allows students to learn from an experiential point of view.
- Creating a paper watershed using local maps, and including local features like sewage lagoons, cabins, and industry.
- Drawing mind maps about water resource use.
- Demonstrating how plants help to filter water by examining cattails soaked in food colouring.
- Examining how duckweed is affected by the addition of fertilizer and road salts.
- Using local maps and charts to discuss ecosystem impact from forest fires, and how this relates to water quality.
- Learning about Geographic Information Systems (GIS) by creating a plot point for an interactive, online map developed specifically for the Boreal Water Monitoring Program.

One of the most important aspects of the water monitoring program is the inclusion of Elders, or knowledge keepers, from each of the northern communities. Teachers are asked for their assistance in identifying someone in the community who has expertise in fishing, trapping, medicinal plants, or is an Elder in the community. The Elders are invited to each workshop, and a small honorarium is provided to them. Each is invited to speak about their experiences with water, their watershed, and any changes they have seen over the many years they have lived and worked in the area. Often those comments are made in Cree or Dene. Specifically, in each workshop, they are asked to contribute their expertise around the focus of study for the day: for example, macroinvertebrates, fish anatomy and fish health, or medicinal plant uses.
RESPONSE TO CURRICULUM

Within the six schools in the monitoring program, there are participating students and teachers involved in many subjects and grades. This includes Northern Lifestyles 10, 20 and 30; Chemistry 30; Biology 30; Environmental Science 20; Health Science 20; Science 9 and 10; Wildlife Management 10, 20 and 30; and students in Grade 8. The program began by seeking out teachers who were interested in being involved in the program, and was developed to be flexible to the curriculum they were teaching in their classrooms. As a result, there is an effort to adapt information to both Grade 8 students working on their science unit, Water Systems on Earth; and for students in Environmental Science 20, learning about aquatic ecosystems and the potential impacts of climate change. A number of the additional activities above have come from addressing those outcomes.

MONTHLY WATER TESTING AND AUTHENTICITY IN THE CLASSROOM

As an ongoing part of the program, students take monthly samples of water in their community, and send it to the Saskatchewan Research Council (SRC) for a water analysis that goes beyond what students are able to do in the classroom. Tap water samples and lake, river, or snow melt water samples are tested for a variety of minerals and heavy metals, as regulated under the Saskatchewan Municipal Drinking Water Guidelines. Students learn the safe handling of preservatives, how to take samples, fill out the required paperwork, and send the samples to the SRC for testing. Results are compiled and summaries of some of the results are communicated to students during the workshops. Students learn to read the charts as well as begin to understand the connections between the elements and the health of the overall system. Between workshops, test results and explanatory charts are sent to teachers via email. Teachers can use results with their students in any way that fits their curriculum and subject goals.

On a few occasions, tap water results have tested above the Saskatchewan or Canadian drinking water guidelines, and this was communicated to schools. Specifically, two old, science room taps and one bathroom tap tested high in lead, copper and manganese, but are not used as a drinking water source.

THE BIG PICTURE

Because workshops are inquiry-based and integrate experiential learning, the expertise of local Elders and other knowledge keepers can be woven throughout. Without weaving together scientific and traditional knowledge, an important understanding of the watershed as an interconnected system would be lost. Using inquiry into water, plants and animals in their communities, students look beyond the pages of their textbooks to bring their education and traditional lifestyles together. The participation of Elders and other knowledge keepers inspires students to look at how water health impacts their lives, and ultimately to protect one of our most precious resources—water.

Elder Ida Tremblay from La Ronge, once told the students about how their local water has changed in her lifetime: “We used to spend so much time in and near the water that we would get in trouble for getting wet in the spring. We flipped rocks to find fish and look at them. A couple of years ago, my sister took her kids to Eagle Point for a picnic and they couldn’t find any of these fish. A lot of bugs have also disappeared. As kids, we used to have bugs as pets. We used to make bracelets out of really thin black bugs but I didn’t find any last summer. There used to be so many out there. It shows how much has changed. It is sad to talk about the things we have lost.” Ida continued her story, describing how boiled water does not taste as good as the untouched lake water she used to drink when she was younger. The knowledge and contributions of the Elders are significant and also help to create an intergenerational atmosphere in the classroom that is respectful, relaxed, and informative.
CASE STUDY

Education for Sustainable Development through Saskatchewan Outdoor Trek Schools

“This programme opens our eyes to the world, and makes us want to walk our talk. Like, most students in our class have started riding our bikes to school instead of getting rides. When we do reports we also have to try to find solutions, so we don’t just talk about a garbage problem, we try to fix it.” (Grade 11 Student)

DR. GARTH PICKARD

ABSTRACT

This Case Study examines Grade Eleven - Outdoor Trek School (OTS) programmes offered by three School Divisions in the Saskatchewan, Canada that fulfill the mandated curriculum of the Provincial, Ministry of Education. The study uses the voices of teachers to capture a better understanding of the qualities and unique challenges associated with the OTS programmes and highlights improved student attendance, high assignment completion rates, student maturity; and, improved academic outcomes as key indicators of programme success. The Case Study also identifies that over the past two decades, more than seven hundred and sixty students have benefited from a pedagogy, which reinforces Education for Sustainable Development (ESD) from economic, social, cultural and environmental perspectives.

INTRODUCTION

The notion of engaging children in learning experiences, which embrace a broader understanding of where such learning takes place, has existed in the Province of Saskatchewan since one room schools dotted the prairie landscape. Less than seventy years ago and unbeknownst to many, the walks to school through rural fields, or woods; or down five blocks on the way to the local school in town were most insightful. Such journeys brought stories to morning classes of birds and gophers and geese overhead, and tales of harsh, ice freezing winds blowing stiff swirls of snow. Those walks also allowed school children that chance to hear the fall crunching sounds of dried Balsam Poplar leaves underfoot; and, smells of budding caragana and lilac. Things learned through such lived informal experiences carried a sense of authenticity to the real world of school. They also implied links with nature, and conveyed within it, the subtle understanding that such adventures were in fact, more sensory and rational than what the literal disciplined school curriculum offered.

Over time; however, these ‘furrow walks, hops and skips’ to school gave way to regional school re-zoning and to rural and city busing, taking some children on rides of over one hour. Those walks to school lapsed all too often into SUV drop-off lanes, where parents still today scramble to ‘shoo’ their young ones, stuffed backpacks in tow, off onto straight cement sidewalks leading to lines of children waiting to be hurriedly marshalled into traditional classrooms. Even though this educational ‘transition’ has manifested itself throughout all school divisions in Saskatchewan, today what has lingered nevertheless, is the importance of the essential learnings gained through informal out-of-door experiences, and the significance of providing formal educational experiences, which capture the nuance of Education for Sustainable Development (ESD).

In schools throughout Saskatchewan constructing understanding through inquiry is encouraged within all Grade levels. Within the Middle-year and High School Outdoor and Trek School programmes; however, such inquiry based learning is augmented. These programmes allow children to live out their lives through experientially charged interdisciplinary, multi-sensory, and place-based learning experiences, which ‘drill-down’ through the curriculum in critical and creative ways. Of importance to these programmes is the attention given to education for sustainable development, the concept of interdependence, and the skills associated with building confidence and a sense of empowerment.
It becomes important to capture and explore how these programmes emerged in Saskatchewan, demonstrate their linkage to ESD and to share with readers, the voices of teachers dedicated to this informed way of teaching and learning.

**BACKGROUND**

The idea of Outdoor Schools providing an integrative function between and among various disciplines as well as between content and methodology is not new. Similarly, research in Outdoor Education continues to support the important role that going beyond the traditional classroom plays. The research further demonstrates how such learning experiences act as vehicles in addressing the interrelated nature of common learnings associated with critical and creative thinking, valuing, numeracy and literacy.

Known as one of Canada’s rural agricultural provinces, Saskatchewan had an established history of providing out-of-door professional development learning opportunities to practicing teachers dating as far back as the mid-1960s. In 1983 and to address the growing need for outdoor education programmes, the University of Regina introduced an undergraduate four year teacher education degree programme using education through health, physical, and outdoor practice. The degree programme reflected the importance of personal wellbeing, and a responsibility for contributing to social justice in the domains of both culture and natural ecology. The self-reflective, learner-centered programme was fundamentally based upon an experiential, interdisciplinary, multi-sensory, place-based and spiritual pedagogy. It also provided for continuous mentored professional support, and a complex blend of theoretical understanding and practical skill. The overall course of study additionally contributed to understanding the positive implications related to re-orienting teacher education practice to address sustainability. The graduates of the programme carried into the teaching profession the importance of modifying the traditional classroom by allowing for ‘hands-on’ learning as a means of enhancing classroom experiences.

In Saskatchewan, most school children participate in ‘inter-curricular’ field excursions with the specific intent to complement the curriculum, enrich the learning experience, and improve in general, overall learning outcomes. The measured benefits of; better attendance, enhanced inquiry and problem-solving skills; and, higher percentage grade averages in the Social and general Science class areas provided School Boards the evidence of the importance of such programmes. As a result and because of the collaborative effort of practicing teachers and in-school administrators within the Saskatoon Public School Division, a pilot Outdoor Trek School (OTS) programme was designed in 1990’s for Grade Eleven students. The OTS had a limited co-educational enrollment of 24 students selected from student applicants from throughout the City of Saskatoon and provided academic credit in English 20, Biology 20, Geography 20, Physical Education 20, and Wildlife Management 20 during one semester. The OTS allowed the students the opportunity of travel across the Province of Saskatchewan leaving as small an ‘ecological footprint’ as possible, while at the same time learning to live in sustainable ways and understanding the importance of ecological and social justice. Two other complimentary Outdoor Trek School programmes emerged in Saskatchewan as an outcome of the success of the first programme; one established with the Regina Public School Division; and one established with the Prairie Valley School Division.

**METHODOLOGY**

The methodological pathway chosen for this Case Study relied upon content analysis and a strategy of inquiry (Creswell, 2003) which captured, in part, the lived experiences of those teachers intimate with the development of the Outdoor Trek School curricula and similarly, with their experiences peculiar to actualizing it. Programme documents and outlines were reviewed with semi-structured interviews being conducted, transcribed and analyzed for common themes. Questions, which directed the interview process focussed on key factors and tangible rewards linked to Education for Sustainable Development (ESD), and the insights learned through and from the experience of teaching in the OTS programmes. Within that context and with the added voices of the teachers responsible for developing and implementing the OTS programmes, the essence of how ESD emerged through the OTS experiences was captured.

**GENERAL DESCRIPTION OF ESD EFFORTS AND ANALYSIS**

The four Cross-curricular Competencies found within and throughout Saskatchewan Education curricula that relate to thinking, identity, literacy, and social responsibility, are interrelated areas containing understandings, values, skills, and processes, which are considered most important for learning within all academic areas of study. The Outdoor Trek School programmes create an enriched environment through which these competencies are cultivated. The OTS programmes in addition provide for contextual meaning where students become independent learners, develop critical and creative thinking skills, experience personal and social growth, and achieve academically. In relationship to the curricular experiences that address sustainability and identify the knowledge, issues, perspectives, skills, and values central to sustainable development, the OTS programmes rely heavily upon both rural and urban environments. These environments provide ‘real’
classrooms from which the ‘lived’ curriculum emerges. With respect to OTS curriculum, teacher Rob revealed the importance of curriculum depth when he mentioned:

…it is all about drilling through the curriculum … I think a lot of students are kind of going through life in a bit of a haze … not much is real to them … their relationships are less real in ‘cyber-space’… what knowledge means is less real … it’s about helping students understand that they can become the kind of people they wish to become and not just be caught up in the mainstream of school … I don’t wish to sound pretentious, but the OTS is all about students living authentic lives … where they are paying attention and they are recognizing what is going on …

The OTS interdisciplinary learning experiences, which find students hiking through Saskatchewan’s Cypress Hills, living in downtown urban environments, and surviving in either prairie winter conditions or in northern boreal forests are most relevant in developing skills and abilities to act autonomously in an interdependent world. These experiences enhance their awareness of the natural environment, of social and cultural expectations, and of the possibilities for individual and group accomplishments. In emphasizing the importance of relationships in such learning experiences, teacher Karen explained:

… last week when we were in the Cypress Hills … it was all about experiential learning without textbooks per say as the Cypress Hills were themselves textbooks … it was also about friendship … we have the same students all day for five months … and they have to develop relationships with each other and with us differently than any other school …

Through these ‘lived experiences’ students hone their ability to flourish in harmony with others and with the natural and constructed worlds. The OTS programmes develop and strengthen the understanding, valuing, and caring for oneself as well as understanding, valuing, and respecting human diversity, human rights and personal responsibilities. Similarly, the OTS programmes assist students understand and value social and environmental interdependence and sustainability. As teacher Karen emphasized:

… the OTS experience develops independence, confidence and empowerment … the students meet their expectations and they accomplish things they might not normally accomplish … ‘like I can go out and light a fire by myself and cook’ … and other life skills that other 16 year olds don’t get a chance to learn … and this is empowering … you know this ‘us and them’ … [in reference to student and teacher relationship] so the dynamic of us having power over them is a bit different than that found in other classrooms … it seems all about connections with us and they know its different … they stop and listen to birds and see differences in the trees and wild flowers and that they are connected to them, and that having a warmer winter this year moved up the blooming times and all of that … the OTS helps them think in a holistic way and helps them understand that things are not compartmentalized … they are thinking of things as topics and coming up with all sorts of variables and solutions …

Teachers Brenda and Jeff shared that their students were fully engaged and happy to be learning. From their perspective and because of the process of learning that for them defined the OTS programme, the students were more mature, inquisitive, more focussed and they did not have that ‘pooh-pooh’ on school anymore … and that school was not such a bad thing. As Jeff reinforced:

… we have 100% assignment completion … I know other teachers strive for this, but we are doing it … you know we haven’t really talked about this, but we did look at comparing grades
Shayna Hamilton, pictured left, is a 3rd year student studying a Bachelor of Science degree in Ecology and Environmental Biology at the University of Regina with an interest in species at risk, avian biology, and fisheries.

She explains, “This beautiful male Baltimore Oriole was caught in a mist net at the Last Mountain Bird Observatory this spring. After a couple quick pictures, the bander took the bird inside the banding station to determine the age, wing length, weight, and then banded the bird as part of the ongoing research on migratory boreal birds.”

For more information on the banding station visit www.naturesask.ca/whatwedo/lmbo

The Last Mountain Bird Observatory is located in the Last Mountain Regional Park near Govan, Saskatchewan.
and we found that their grades were improving in OTS and when we looked at their grades in Grade Twelve we found that their grades were going up ... we felt in ways, vindicated with that one ...

Teacher Samantha supported what the other teachers had observed and mentioned:

... at the heart of all of our experiences is our philosophy of helping young people develop independence, responsibility, and respect. We strongly believe that when they are trusted with a high degree of responsibility for their own learning, young people are capable of high achievement in academics, self-directed learning, communication with adults, effective time management, and much more ... the independence we offer our students allows them to learn about their strengths and weaknesses, pushes them to grow from their experiences, and creates an environment of trust and respect ... the theme of respect becomes an important idea for us to understand as we look at our relationships with the environment, with the community, and with each other...

In particular the students gain a grounded respect of sustaining well-being through the enriching connections they make within the curriculum with teachers, peers and the world around them. Whether on an urban trek or wilderness experience students develop a sense of expectancy for living sustainably and helping others do the same. As teacher Jeff explained:

... I think integration is just a wonderful thing ... and the fact that our students don’t necessarily know that ‘the bell rings and it’s time for Biology and the bell rings and it is time for English class’ ... the fact that we are able to integrate most of our projects together in a fashion that is seamless so they actually don’t know what class they are taking is wonderful ... I think our students sometimes don’t fully comprehend the outcomes of what they are learning from the experiences ... it seems that we have been conditioned over years that education is doing ‘questions out of a book’ and many other things, and that education is done in a classroom in a structured way ... it is hard sometimes for others to understand that curriculum outcomes are truly being met because of the OTS learning format ...

Teacher Samantha emphasized the importance of the lived experience reinforcing ESD learnings when she commented that:

... as we travel across the province together, we make it a point of walking softly; leaving as small an ecological footprint as possible. With this in mind, we teach the students how to travel around the city in sustainable ways, reduce waste production, and even introduce them to people who have devoted their lives to living gently on the earth ... on the flip side, we try our best to leave a huge impact on the people and organizations we work with by volunteering our time and energy to give back to our community ... we offer several experiences to work in gardens/farms, collect data for field research, build bird and bat boxes, clean up campsites, and do whatever we can to give back to the people who provide expertise to our class ... in these volunteer experiences, our students often build a skill set that allows them to go on to travel, work with animals, conduct research, and find their own way to walk softly on the earth...
OUTCOMES OF THE PROGRAMME

The Outdoor Trek School programmes have challenged fifteen and sixteen year old students to view school differently. They now view school as a shared process of becoming and not as an institutional ‘right-of-passage’ leading to ‘life in the real world.’ Furthermore and as a result of the OTS programmes, students and teachers alike have a heightened awareness of ESD resources available to them. For all three OTS programmes close links within Saskatchewan have been made, for example, to: the Saskatchewan Eco Network, the Saskatchewan Wildlife Federation, the Royal Saskatchewan Museum, the United Nations University Regional Centre of Expertise on Education for Sustainable Development (Saskatchewan); and, Learning for a Sustainable Future (LSF).

The OTS programmes have also engaged parents of the students by helping them to understand the importance of an inter-related curriculum, and the student-directed nature of the learning experiences. Additionally, the programmes have indirectly allowed parents to be more cognizant of ESD principles and to some extent helped them to embrace those principles throughout their daily lives.

A related outcome of the OTS programmes is exemplified by a student graduate of the original OTS programme in Saskatoon; completing a Bachelor of Education degree from the University of Regina; and, then being hired by the Saskatoon Public Schools as a new OTS teacher in that same programme.

IMPACTS OF THE PROGRAMME

Since their inception and collectively, the Outdoor Trek Schools have enrolled close to seven hundred and sixty (760) students, while at the same time engaging ten (10) full-time OTS teachers. During this time, thirty-seven (37) outdoor learning classrooms have been identified within provincial boundaries of which twenty-three (23) have been created and shared with and through the Outdoor Environmental Education Departments of each school division for fall, winter and spring field studies. Only one OTS programme runs in both the fall and winter semesters. The other two programmes are offered only in winter semesters.

While specific grade point data was not made available for policy reasons, anecdotal information regarding academic achievement expectations indicated that students achieved better percentage grades in the OTS programmes and in their final Grade Twelve year. Interestingly, the data suggested that the students were concerned more about learning for learning sake and less for the grades they received.

Currently, graduate research is being conducted with respect to OTS programme outcomes based learning, the impact of learning on ESD knowledge and academic achievement; and, the implications of re-entering the traditional Grade Twelve classroom.

KEY OBSERVATIONS

What profoundly characterizes the Outdoor Trek School programmes in Saskatchewan is the nature of place-based curriculum. The OTS programmes have established several geographical curriculum sites from which to teach the required academic areas of study. Each site captures the curriculum from a different ‘angle’ allowing students to explore the same curricular concepts from different perspectives ‘piling-on understanding’ at each site location. Curricular sites such as the Brightwater Science and Environmental Centre, the Churchill River, Grasslands National Park, the Nisbet Forest, Cypress Hills and Moose Mountain Provincial Parks, the Cities of Regina and Saskatoon (various site locations), Wanuskewin First Nations, Wascana and Meewasin Valley Authorities were inventoried to ensure that they provided for best-place; best practice learning environments that were multi-sensory, interdisciplinary and allowed for reflective personal growth.

Another key observation made when discussing the success of the OTS programmes with the teachers underscored the importance of gaining support and the significance of effectively communicating with parents, other teachers, in-school administrators and directors and superintendents. As teacher Brenda mentioned:

... there is a systemic challenge to these kinds of programmes ... we know funding is a continuous challenge and issue ... but to be able to team teach and getting our two prep-periods together allows us to do so much ... we get lots of support from our School Division and from our School in the sense we get two teachers assigned to one classroom ... it allows us to pay that special attention to the students and we tell that to the parents ... we provide up-dates, telephone calls, you name it ... it is because we can ... what we see are terrific attendance rates ... and the kids learn pretty quickly that they need to text us right away so we know that
they were going to be late or away ... yes, are attendance rates have gone up because they enjoy what they are doing ... they are taking responsibility ... we are not just teaching for outcomes we are teaching for responsibility too ... life skills are a big part of it ... we may not be teaching about life skills specifically, but it happens ... they are so more mature at the end than they were at the beginning and we make sure everyone knows about this ...

Similarly, teacher Jeff reinforced the importance of communication and the complexity of how the unique OTS process of learning unfolds. Jeff emphasized that:

... the fact of the matter is that we are involved in a constant process of educating not just our students, but our administrators and School Board members, parents of our students, and other students in the school at large because what we have found is that if we don’t educate them they rightly make assumptions ... when they see us leaving the school more often than not, they assume we are just playing and that we are not teaching to the curriculum outcomes ... that fact of the matter is that we teach to all the outcomes ... we just teach to them in a different way... you know we pride ourselves on the fact that we are providing a holistic education for our students that involves the community ... we need to communicate this ... we have 25 to 30 different speakers in throughout the semester and we are getting more people from the community that wish to be involved ...

In each teacher’s mind, it was challenging for them to help those in senior educational decision-making roles understand the value of the OTS programme. As one teacher mentioned ‘...how do you help those who are not engaged in the process understand the process ... this is a huge challenge at times ...

Summary Comments

The Outdoor Trek School programmes provide a window through which others in the ‘education business’ can witness learning that is about sustainability, community, and humility, born out of gratitude. In many respects the OTS programmes need to be held in reverence as they shed light on the ‘new-normal’ of educational practice. What one learns from following the OTS experience is that attention to curricular reform that ‘resonates’ interdisciplinarity is key; that parochial outcome based assessment practices have to change; and that re-orienting teacher education to reflect and meet this important challenge needs to happen.

Works Cited


Saskatchewan Wildlife Federation - http://www.swf.sk.ca/

Royal Saskatchewan Museum - http://www.royalsaskmuseum.ca/


Learning for a Sustainable Future - http://www.lsf-lst.ca/
Have you ever wondered what goes on in the forest when you’re not there? As someone who spends a considerable amount of time outdoors, it was that exact question that prompted the development of a wildlife camera program at my school. The school’s unique location, nestled in the foothills of the Rocky Mountains, offered an unparalleled opportunity for students to learn about Alberta’s resident wildlife in a safe and exciting way.

The majority of our students reside in urban centres and have spent little-to-no time outdoors. Wildlife, being an unknown variable during their time at the school, can be both fascinating and fearful at the same time. It is not uncommon to see different animals, hear them in the distance, or uncover evidence of their existence. To help satisfy their curiosity and further promote positive relationships with the natural world, we filled our small school with taxidermy, antlers, furs, skulls, feathers, bones, and a host of other wildlife-specific educational material. To be honest it looks more like a museum, or a hunting lodge, than a school! As beneficial as all of this was, we really wanted to learn more about who was sharing the woods with us. We decided that a wildlife camera should be our next purchase.

Utilizing the technology budget that was available through our parent school in Calgary, we purchased two remote trail cameras in August of 2012 and immediately set them up at various locations around our site. Since we hadn’t used these types of cameras before there was definitely a steep learning curve in determining the correct settings for the ambient temperature, the ideal height for placement, and the field of view for the sensor. Maybe it was just dumb luck, but we managed to capture three different species in our first week of using them. As we became more comfortable with the new technology and slowly discovered the best spots
to place them we began having a lot more success in capturing wildlife on camera. Over the next two and a half years, our fleet grew to include five cameras, allowing us to cover more of the surrounding area. To date we’ve captured twenty-five different species of mammals and birds, including males, females, and sometimes even their young. It’s very exciting to head out and check the cameras because it’s always a mystery as to who or what’s walked by.

Once we were comfortable using the cameras ourselves, the logical next step was to include the students in this project. We were able to link the cameras to the Alberta Education curriculum via the Career and Technology Studies branch of courses. Students enrolled in wildlife-specific courses will examine human relationships to the natural environment and consider the impact various human pursuits can have on species and ecosystems. Utilizing the educational outcomes outlined by Alberta Education, we were then able to develop courses for credit while utilizing the wildlife cameras. It is our hope that the students learn something new about the natural world, as well as leave our program with a few more credits than when they arrived.

The camera program has been more successful than we first imagined. We were getting so many great shots that we needed a way to showcase our findings. We started the Wild About Base Camp blog and Facebook page, which allowed us to share the best photos and video clips with all interested parties. If you’re intent on seeing what we’ve captured over the years, the blog is your best opportunity. The year in review videos highlight the best footage from each school year and there’s even a coyote documentary that was created by one of our past students. We’d love to hear from you if you have any questions or comments about the camera project or the program as a whole.

HELPFUL LINKS
Blog: enviroschool.blogspot.ca/
Facebook: www.facebook.com/wildaboutbasecamp
Email: teachers@envirosbasecamp.org
I have always wanted my daughter to grow up close to nature. There is so much to learn and be inspired by in the natural world. Some of the happiest moments of my life have been while I am admiring the view from a mountain, smelling the wet leaves and crisp air during an autumn hike, hearing the sound of water while canoeing, or waking up in a tent by a lake in the woods. I want to share such moments with my daughter.
When my daughter was young I used to take her hiking a lot. She would sit on my front first and later on my back as she grew older. But when she grew too old to be carried I had to figure out new ways to spend time with her in nature. Like other children she loved the playground and while we did spend time there, I felt something was missing.

Last fall I came across the Canadian-made film called: “All the time in the world”. The film is about a family with three young children (4, 8 and 10) that decides to spend nine months in an isolated cabin in the woods. They did this to disconnect from their busy and structured lives in the city and to reconnect with each other and nature. I found this film very inspirational.

Although we are not planning on spending nine month in an isolated cabin, the film made me realize the importance of letting children reconnect with nature without being rushed by a set agenda or schedule. After seeing the film I started taking Nora to the park, but instead of heading straight for the playground we would explore the trees, play in the leaves, and look for insects. I would avoid scheduling other things during the afternoon and we would bring a picnic so that we could spend as much time outside as we wanted. Though I would introduce activities, I would let Nora be the guide. What I found, was that she did not run straight to the playground. Instead, when given the opportunity and time to explore nature she would often prefer to play in the trees.

At first it may seem daunting to come up with things to keep a young child engaged and motivated in nature without toys, slides, swings and climbing structures. However, I have learned that if given enough time children become very creative in nature. While I usually introduce activities, she often modifies them and brings them to a new level on her own. Some of our favourite activities are building houses with sticks, rocks or cones, pond dipping with fish nets, looking for insects under rocks and logs with a magnifying glass, making tree trolls with plasticine clay, hiding treasures, drawing maps and looking for the treasure again a few weeks later. We also learn about different species of trees and plants.

I have learned that the key to getting children interested in these types of activities is giving them enough time. First of all they have to get used to playing with things in nature rather than toys and this takes time. Then they need to be allowed to play and explore without being interrupted.

Learning and exploring takes time. This is true in all environments, but I think it is especially important when learning and exploring in nature. The natural world is complex and a child who is trying to understand what an ant is and how it works needs time, sometimes with guidance from an adult, but sometimes just on their own. A child who seems uninterested at first, may just need time to explore for himself or herself.

My daughter still loves swinging, but we try to find a balance between the structured playground and the unstructured opportunities that the natural world provides.
Water has a way of seeping into my thinking, both as a scientist and as a folk-rock songwriter, and both streams of thought are strongly influenced by my sense of place. After mulling about why this might be, I have come up with a few ideas. To start with, I am sure water is big for me because of my upbringing. I grew up in Souris, Manitoba, and spent much of my time in, on, or next to the Souris River. I have strong memories of skating on hand-flooded rinks, wading in small rapids on Plum Creek, canoeing quietly to sneak up on turtles basking on the shore, jumping from our rope-swing, and hours spent tubing and water skiing on hot summer afternoons.

Water was also a recurring theme at university. As an undergraduate and then graduate student interested in animal physiology, wildlife conservation, and environmental issues, my training in biology encouraged me to think about complex interactions and relationships, from the role that water plays in metabolic pathways, to massive processes that affect the global water cycle. More recently, water has become a major thread in my work as Curator of Human Ecology at the Royal Saskatchewan Museum. Some of this work involves helping with exhibits, public programs, and university courses that focus on the scale, pace, and implications of human activities. I have also been studying and working with communities that are trying to preserve and enhance aspects of their natural and cultural heritage by setting up ecomuseums, also known as “museums without walls.” On all fronts, I often find myself reading, talking, and worrying about water issues.

So when I hit middle age and started to express my thoughts and concerns about the world through songwriting, it’s not surprising that water started to show up as a recurring theme. In fact, after looking over my lyrics with this article in mind, I found references to water in about 15% of my catalogue, which now includes 3 full-length albums and over 60 songs. I’m not sure how that compares to other songwriters, or other forms of artistic expression, but I think there are a few reasons why water tends to provide context or act as a muse fairly often. To start with, water offers a range of images and experiences that are easy to connect with, making it an accessible and effective metaphor. As my favourite eco-philosopher Stan Rowe (2000) put it, “We think by means of metaphor... they are the tools of mind and imagination.”

... water offers a range of images and experiences that are easy to connect with, making it an accessible and effective metaphor.

We think by means of metaphor... they are the tools of mind and imagination.
think by means of metaphor... they are the tools of mind and imagination.”

Some of the water in my songs is strictly metaphorical. There are “waves on a distant shore” that represent a hectic life in the 2008 love song All You Need. There’s a river that “knows the way to go” in a 2011 song about resilience called So Many Arrows. There are rains that can never “wash me away” in Lay Me Down, a recent song about the downsides of urban life. And there is the “sweetest water” that comes from long-term relationships in my latest song Ordinary Wine.

It can imply timeless energy, movement, connection, sadness, anger, and other emotions and metaphors are attractive when you’re trying to convey these things.

Other songs are reflections of real, watery experiences. A quiet walk during a summer downpour gave rise to a tune about connections called Ours to Know. Many years ago, I was canoeing on the Souris when the love song Still Water came to mind, and in 2011, that same river became a “raging stream” and left me with a song about acceptance called That River Rising.

My last example shows how effective water can be during the songwriting process. A few years ago, I got thinking about the wonderful light that would bathe our backyard after a summer thunderstorm, as I was heading to Souris to visit my elderly mom. Even though it was a cold February day with bright sundogs overhead, water became a muse one again and the seed was planted for a song about going home called Sunlight After Rain. Of all the songs I’ve written, I’m especially glad this one came along, because I remember the water and feel a deep and comforting sense of place every time I play it.

REFERENCES

TEACHINGS FROM THE NORTHERN LANDSCAPE:

WOODLANDS CREE VALUES THAT GUIDE

DR. HERMAN MICHELL

The Woodlands Cree of Northern Saskatchewan and Manitoba have always had a set of Traditional Values that guide daily life. These values emerged out of a deep relationship with the land, lakes, and rivers. The Elders say traditional values are teachings and lessons of how to live in a good way. They guide our thinking and actions. Woodlands Cree values are passed on by Elders and reinforced through role modeling, living by example, coming together with relatives from across the country, sharing knowledge, engaging in ceremonies, prayer, songs, dances, stories, art, drama, writing, crafts, and other traditional expressions....

Strength

is a Cree Value that is often symbolized by Grandfather Rocks.

We must be as strong as the rocks that we see on the shoreline. They have seen many seasons. They have experienced the ravages of winter and the warm rays of summer.

Our Kookums say we must be strong inside. Take all your experiences and turn them into something positive. We all have will-power that propels us forward even at the weakest of moments.
TRUTH AND RECONCILIATION COMMISSION OF CANADA:

As the Truth and Reconciliation Commission of Canada website states, “The first stage of the journey of the Truth and Reconciliation Commission of Canada is now complete. As of December 18 2015, the TRC offices are now closed. But the journey of Truth and Reconciliation is far from over. The work of the TRC has now been transferred to the National Centre for Truth and Reconciliation. On the National Centre for Truth and Reconciliation website http://nctr.ca/ there is a section “For Educators” that includes several videos to be used for teachers and students. Reconciliation Education is outdoor and environmental education.

CALLS TO ACTION

In order to redress the legacy of residential schools and advance the process of Canadian reconciliation, the Truth and Reconciliation Commission makes the following calls to action. Below are the calls to action under the heading, “Education”. All educators in Canada should read, research, and know about these calls to action.

Legacy

Education

6. We call upon the Government of Canada to repeal Section 43 of the Criminal Code of Canada.

7. We call upon the federal government to develop with Aboriginal groups a joint strategy to eliminate educational and employment gaps between Aboriginal and non-Aboriginal Canadians.

8. We call upon the federal government to eliminate the discrepancy in federal education funding for First Nations children being educated on reserves and those First Nations children being educated off reserves.

9. We call upon the federal government to prepare and publish annual reports comparing funding for the education of First Nations children on and off reserves, as well as educational and income attainments of Aboriginal peoples in Canada compared with non-Aboriginal people.

10. We call on the federal government to draft new Aboriginal education legislation with the full participation and informed consent of Aboriginal peoples. The new legislation would include a commitment to sufficient funding and would incorporate the following principles:

   i. Providing sufficient funding to close identified educational achievement gaps within one generation.

   ii. Improving education attainment levels and success rates.

   iii. Developing culturally appropriate curricula.

   iv. Protecting the right to Aboriginal languages, including the teaching of Aboriginal languages as credit courses.

   v. Enabling parental and community responsibility, control, and accountability, similar to what parents enjoy in public school systems.

   vi. Enabling parents to fully participate in the education of their children.

   vii. Respecting and honouring Treaty relationships.

11. We call upon the federal government to provide adequate funding to end the backlog of First Nations students seeking a post-secondary education.

12. We call upon the federal, provincial, territorial, and Aboriginal governments to develop culturally appropriate early childhood education programs for Aboriginal families.
“WaTer does noT Belong To us, We Belong To The WaTer”

—eldEr okko khyeng from the laitu khyeng indigeneous community in chttagong hill tracts (cht), bangladesh.

“Our water talks for us. Our water is all about who we are.” Co-researcher Nyojy U Khyang. This PhD research photo represents water as an Indigenous identity. Community sees that water is central to the community’s belief, identity, and cultural values.
“WATER IS OUR GOD, LIFE, AND PARENTS”

–ELDER KOSOMO PURE KHYENG FROM THE LAITU KHYENG INDIGENOUS COMMUNITY IN CHITTAGONG HILL TRACTS (CHT), BANGLADESH.
Water to the Indigenous community is not only a source of life that helps to survive whole ecosystem, but also water is a sacred relationship that shows honour, respect, and spiritual celebrations to the past, present, and future meanings of sustainability. This PhD research photo explores how traditional knowledge was used to inform the development of a water treatment plant in the Laitu Khyeng Indigenous community.

Land and water are indicated as significant sources of ritual. Ritual in relation to seeing the land and water is as alive, and as associated with honoring ancestors. For example, many Laitu Khyeng Indigenous people in the community start their day by praying to the forest land and water gods and Elders. They believed if they did not respect and honor the land and water, the ancestors would not protect them during food crises and sickness.

The Laitu Khyeng Indigenous Elder is showing land and water are as sacred places and his perception with a poem (translated by co-researcher participant Mathui Ching Khyang):

“O our beautiful Mother forest land and water,
You are the great divine power
We are devoted to you
You are in our heart, please do not leave us.
Protect us and keep us on your blessings.
Give us strengths so that we can protect us.”

He also believed that “what we do to the land and water today impacts on what happens to the environment in the future.”
The meanings of land and water are to the Laitu Khyeng Indigenous community honor practices. Co-researcher Nyojy U Khyang provided an example in his commonplace book: “When we climb up to a big tree for foods, we pray and ask permission from the plant in saying: ‘Do you allow me to take your creation [fruits] for us?’” He proceeded to explain that, “The community believes if they ask permission to trees, indicating the community may not overuse their resources, and then the trees may continue blessing the community.”

“How to Make Traditional Cloths (Elder Teaching Youth)” by Ranjan Datta (School of Environment and Sustainability) Elder is teaching youth how to make traditional cloths in the Laitu Khyeng Indigenous Community, Chittagong Hill Tracts (CHT), Bangladesh. This photo is as part of Doctor of Philosophy (Ph.D.) dissertation to the College of Graduate Studies in the School of Environment and Sustainability, University of Saskatchewan, Canada.

The Laitu Khyeng Indigenous Co-Researcher participant Nyojy U Khyang participants is explaining sustainability is to learn traditional cultivation systems. He wrote in his commonplace book: “We youth hopes to learn our cultivation processes from our elders. We know our cultivation system can save our land, water, animals, birds, and our ecosystem … We do not have enough money, but we do have Elders and knowledge-holders who can teach us how to protect ourselves and our environment.”
“...BUT WE DO HAVE ELDERS AND KNOWLEDGE-HOLDERS WHO CAN TEACH US HOW TO PROTECT OURSELVES AND OUR ENVIRONMENT.”
Activists have been occupying offices of Indigenous and Northern Affairs Canada (INAC) in Toronto, Winnipeg, and James Bay following news of the suicide crisis in the Attawapiskat First Nation in northern Ontario. On April 15, 2016, a group of activists in Regina, in solidarity with the other camps, had a protest in front of the Regina office of INAC. Then on Monday, April 18, 2016, the camp outside the Regina offices formed and has been going strong ever since. Community members have supported the camp with food and supplies. The camp has been multi-generational, and has celebrated events such as their one month anniversary with family-friendly potlucks, bbqs, movie nights, and even face painting for kids. Visit their facebook page Colonialism No More - Solidarity Camp Regina for updates on the camp.

**LLS: So...the camp was formed in solidarity with youth in Attawapiskat in response to the suicide crisis. What are some of the other First Nations communities with conditions similar to Attawapiskat around Canada that the youth are trying to get more Canadians aware of?**

**CNM:** I’m sure that there are many more than we are aware of but the ones that have been brought to our attention most while we’ve been protesting are: Key, Cote, Keeseekoose, White Bear, and Ochapowace which are all First Nations in Saskatchewan.

**LLS: This issue of Of Land & Living Skies: A Community Journal on Place, Land, and Learning is themed around Water. Are there any specific demands related to water that the camp is asking for?**

**CNM:** We have asked and have received a list of First Nations with boil water advisories. We received documentation of more than 17 First Nation reserves under this advisory. At our most recent meeting with INAC, we also asked for a more detailed description of why and how the water is contaminated in each of those communities.

**Of Land & Living Skies journal (LLS): What is the Colonialism No More Solidarity Camp?**

Colonialism No More (CNM): It is an autonomous group of Indigenous and non-Indigenous allies who have come together to amplify the voices of Indigenous communities in crisis and bring concerns to the table in meetings with Indigenous and Northern Affairs Canada (INAC).
TOWARDS DECOLONIZATION
**LLS: What other demands does the camp have?**

CNM: We have asked that INAC provide community profiles so that we can track crisis situations. We want to know how many houses need major repairs, how many houses have mould damage, how many people have gotten sick from environmental contaminants in their water and houses. We also want to know how accessible fresh and affordable food is for each community.

**LLS: Of Land & Living Skies: A Community Journal on Place, Land, and Learning focuses on social and ecological justice education. What are some of the learning experiences that people at the camp have had that connect the dots between social and environmental issues?**

CNM: Seeing that more than 17 First Nations in Saskatchewan are under boil water advisories and that some of them had been in place since 2002 was quite heart breaking. It bothered many of us to see that children on reserve have a poverty rate of 66% while non-Indigenous children in Saskatchewan have the lowest poverty rate in the country at 13%. We know that many of the reserves are undesirable land and have very few economic opportunities. When there are water and other environmental crises, the First Nation is expected to foot the bill. They don’t have the resources to do so and so their communities suffer and remain in crisis as people develop chronic skin and lung conditions. The increased medical costs puts further strain on budgets that have been capped for two decades.

**LLS: Who are some of the key people involved in the camp?**

CNM: The beauty of this group is that we don’t glorify an appointed leader. We have many hands contributing at any given time and it’s because of this rotating system we are able to keep up the energy moving forward. Prescott, Darren, Shannon, Florence, and several others are the key people at camp, while Andrew, Chris, Michelle and others do most of the administrative duties. We have artists like Eagle and Chelsea who contribute video, signage, and spectacular photos. We have our elder Bob, and our WIFI warrior Walter, and we have our gourmet chefs like Jared who contribute delicious meals. Bob Hughes, with Canadian Mental Health Association and my step-father, has contributed his food storage and dishwashing facilities, washroom facilities, and access to the 25 cent lunch program. Nickita coordinates media interviews, while Susana and I are the main media contacts. This is a community where every person willingly takes on responsibilities that reflect their strengths.

**LLS: What do you think the most successful moment or experience of the camp has been so far?**

CNM: There have been many wonderful experiences and I’m not sure I can pick just one. I loved both the poetry event and our one month anniversary. We celebrate camp members’ birthdays, and have recently incorporated movie nights in the camp’s tipi that was generously donated to us by the Ochapowace First Nation. We’ve also had traditional powwow dancers, also from Ochapowace, join us at the camp. There are so many people that contribute to the camp and when we have events, we have an opportunity to all celebrate together.

**LLS: Is there any other messages that you would like our readers, mostly environmental and land-based educators, to hear?**

CNM: I would challenge land-based educators to commit time and energy to helping their local First Nations and urban Indigenous peoples and organizations develop sustainable food sources. Personally, I have lost the understanding of how to grow a garden. My mother was an avid gardener but died when I was 17. I lost many future lessons in losing her and now, trying to develop those skills has been very expensive and unfruitful.
Project WET 2.0 is a fun, hands-on, inquiry learning based, water education program for formal and non-formal educators of Kindergarten to Grade 12 students. It is designed to supplement the existing provincial and territorial curricula and is suitable for both indoor and outdoor settings.

The program has several key components. Core to the English program is the new, revised Project WET 2.0 (second generation) Curriculum and Activity Guide which contains 65 complete multi-level lesson plans for use by educators with youth aged 4-18+ years. This instructional resource material provides support to the provincial and territorial curricula in science, social studies, math, language arts and health and wellness.

The second key component, Project WET professional development certification workshops, provide the opportunity for educators to learn and practise how to use the activities in the Guide as well as learning about local water resources issues. Research has shown that these full-day workshops increase the educators’ implementation rate of the Project WET learning activities with youth.

There are additional support materials to the Project WET Canada program. Canadian content, including background articles on local and national water issues, as well as Canadian photos, data, and student data sheets, are here on the Canadian Water Resources Association (CWRA) website and may be found on the Instructional Support Materials webpage.

In addition, each Project WET 2.0 Activity Guide has a unique access code to the on-line Project WET Portal, maintained by the international Project WET Foundation, headquartered in Bozeman, Montana. A number of supplementary activity guides, such as Discover a Watershed, Wonders of Wetlands and Healthy Water, Healthy People, have additional learning activities to extend the concepts in the Project WET 2.0 Activity Guide. Supplementary activity guides are listed on the Project WET Canada webpages and may be purchased on-line from the Project WET Foundation at www.projectwet.org/.

The KAIROS Blanket Exercise is an interactive learning experience that teaches the Indigenous rights history we’re rarely taught. Developed in response to the 1996 Report of the Royal Commission on Aboriginal Peoples—which recommended education on Canadian-Indigenous history as one of the key steps to reconciliation, the Blanket Exercise covers over 500 years of history in a one and a half hour participatory workshop.

Blanket Exercise participants take on the roles of Indigenous peoples in Canada. Standing on blankets that represent the land, they walk through pre-contact, treaty-making, colonization and resistance. They are directed by facilitators representing a narrator (or narrators) and the European colonizers. Participants are drawn into the experience by reading scrolls and carrying cards which ultimately determine their outcomes. By engaging on an emotional and intellectual level, the Blanket Exercise effectively educates and increases empathy. Ideally, the exercise is followed by a debriefing session in which participants have the opportunity to discuss the experience as a group. This often takes the form of a talking circle.

On the website there is an “Educators” section with curriculum documents and edu-kits, as well as planning documents.
WHEN THE ICE GOES OUT ON DORE LAKE

By Thijs Kuiken

This book takes place over three summers that the author lived on an uninhabited island on Dore Lake in northern Saskatchewan. This was the base of operations during his study of Newcastle disease on a breeding colony of double-crested cormorants and American white pelicans. When the Ice Goes out on Dore Lake will appeal to readers with interest in natural history, and to those who value ecological integrity of forested landscapes. A Special Publication of Nature Saskatchewan. www.naturesask.ca

ARTEMIS FLIES TO THE RESCUE

By Ingrid Alesich

Artemis is an albatross who loves our water planet, Earth. She is upset about huge islands of plastic garbage in the oceans. Some of these have killed many of her relatives and other sea life. She flies all over the planet to find out where the killer plastic comes from. On her long travels, she sees people and animals suffering from climate change. She finds out connections between the two big problems. However, she discovers some wonderful solutions in one area of the world. Artemis and her relatives decide to make plans to help all the people on all the continents to reverse the damage and clean up the oceans.

The author Ingrid Alesich was born in Egypt, grew up in Australia, moved to Canada at age 23 to teach and learned to enjoy most wintry days of Saskatchewan. She has a Bachelor of Science degree in Environmental sciences and a degree in Education. The reason she wrote Artemis Flies to the Rescue is because she could not find a children’s book on the issue of climate change and renewable energy. So she wrote the book for 6, 7, and 8 year olds, with the kind of rhythm, rhyme, and wordplay that would make the story not only fun and interesting to children, but would help them develop reading and spelling skills from phonics.

BLUE FUTURE: PROTECTING WATER FOR PEOPLE AND THE PLANET FOREVER

By Maude Barlow

The final book in Maude Barlow’s Blue trilogy, Blue Future: Protecting Water for People and the Planet Forever is a powerful, penetrating, and timely look at the global water crisis — and what we can do to prevent it. The global water crisis has dramatically deepened. The stage is being set for drought on an unprecedented scale, mass starvation, and the migration of millions of refugees leaving parched lands in search of water. The story does not need to end in tragedy.

Barlow offers solutions to the global water crisis based on four simple principles:

● Principle One: Water Is a Human Right chronicles the long fight to have the human right to water recognized and the powerful players still impeding this progress.

● Principle Two: Water Is a Common Heritage and Public Trust argues that water must not become a commodity to be bought and sold on the open market.

● Principle Three: Water Has Rights Too makes the case for the protection of source water and the need to make our human laws compatible with those of nature.

● Principle Four: Water Will Teach Us How to Live Together urges us to come together around a common threat — the end of water — and find a way to live more lightly on this planet.

The final installment in Barlow’s Blue trilogy, Blue Future includes inspiring stories of struggle and resistance from marginalized communities, as well as examples of government policies that work for people and the planet. A call to action to create a water-secure world, it is, in the end, a book of hope.
**WINGS OVER WASCANA (WOW)** is an outdoor nature festival held at Wascana Marsh offering free wetland and wildlife activities, entertainment, and guided hikes for people of all ages. This annual festival occurs in late May, in Regina, SK in the Habitat Conservation Area of the Wascana Marsh and is open to the public. The WOW festival began in 2005.

Over the years, WOW has had many activities for all ages including: early morning bird hikes, kite flying, arts and crafts, nature-based treasure hunts, live animal, bird, and reptile talks, owl pellet dissection, Ducks Unlimited Pond Dipping, goat grazing, lunch hour guests, native plant information and giveaway, invasive species identification, guided nature hikes, a specialized nature app, and activities such as solar oven baking and geocaching. The ‘Great Sit’, with local bird expert Frank Switzer, has been held every year since the inaugural Public Day in 2005.

www.wascanamash.ca