Breaking Down the Barriers of Learning in the Outdoors

By Jody Watson, Barret Miller, and Carolee Buckler

When students have the opportunity to make a meaningful connection with nature, such as when they go beyond the classroom walls and learn in the outdoors, they are better able to develop the values they need to choose more sustainable lives.

As we share a limited amount of natural space with more and more people, and as we are increasingly leading lives that are less directly connected to nature, we are losing touch with the natural support systems that sustain us. Richard Louv, best-selling author of Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder, calls on us to imagine a world where children experience the joy of nature before they learn of its destruction. Claire Warden, an educational consultant from Scotland, emphasized on her recent visit to Winnipeg the importance of children being outside (experiencing all range of weathers), and stressed the freedom that the outdoor environment brings:

"Children are being given second-hand lives, where the freedom we were given as children is being taken away and replaced by a screen image of freedom. They look on as other people climb trees or smell flowers. Imagine if all you see every day is hard, unyielding lines, with shades of grey, and then consider the possibilities of a natural space where the carpet changes every day, unexpected wonders fly by, and the shades of colours are too many to describe. If we really believe in children, we need to allow nature to nurture them by giving them real experiences outside in nature."

Learning in the outdoors can take place in a variety of locations: school grounds, outdoor residential centres, urban spaces, zoos, farms, parks, gardens, woodlands, rivers, in the sand, up a tree, in a puddle, and more. Studies indicate that outdoor learning can contribute significantly to the education and personal development of children and young people and enable them to embrace the challenges of their future. Direct outdoor learning experiences help young people re-engage with the planet. There is evidence that outdoor learning also offers opportunities for students to lead physically active lives.

Nature can make positive contributions to our health. Research shows that outdoor experiences help reduce negative stress and protect psychological well-being.
Breaking Down the Barriers (continued)

especially in children undergoing stressful life events. Studies at the University of Illinois indicate that time in natural settings significantly reduces symptoms of attention-deficit (hyperactivity) disorder in children as young as age five. One 2005 study by the California Department of Education found that students in outdoor science programs improved their science testing scores by 27 percent. Learning in the outdoors also offers opportunities for students to deepen and contextualize their understanding within curriculum areas, and to link learning across the curriculum in different contexts and at all levels.

In 2011, Manitoba Education partnered with FortWhyte Alive to offer programming and supports to students and teachers on learning to live sustainably in an urban environment. Through funding from Manitoba Education, FortWhyte Alive has developed two new programs that empower and equip teachers with the skills needed to offer safe and fun outdoor experiential learning for their students.

The first new program is *The Outdoor Classroom*, which was developed for teachers as a modular workshop that can be offered as a half- or full-day session.

**This program will**
- build general outdoor education proficiency, including interpretive and group management skills
- help classroom educators plan and lead outdoor education lessons that meet high standards of professionalism for any grade or age level
- show how to connect outdoor learning experiences with curricula
- teach risk management and outdoor safety in fun, practical ways

Barret Miller, Special Programs Interpreter at FortWhyte, took the lead on the development of this program. Barret grew up in Pinawa, and has always been passionate about the outdoors. Using his experience as a naturalist, camp director, Scouts leader, and interpreter, he has designed a program that will excite teachers about taking their students outside. When developing the program, FortWhyte wanted to ensure that it would be relevant to all Manitoba schools, regardless of whether they have an existing outdoor classroom space. *The Outdoor Classroom* will give teachers the tools to feel comfortable in leading their students in any outdoor activity.

For those schools who are ready to take that next step in outdoor learning, FortWhyte is also offering *Naturescape for Educators*. This new program will inspire and assist schools in improving the health of our habitat and the health of our students by increasing biodiversity in the schoolyard. This is beneficial not just because it provides students with a natural outdoor play space, it also generates positive effects in terms of reducing pollution and climate change. The *Naturescape* program was created to encourage Winnipeg residents to increase the biodiversity in their own piece of the planet. Biodiversity is the wondrous variety of living things that exist on our planet—the greater the variety, the more stable the environment. Biodiversity not only promotes a healthy natural world, it also brings a plethora of colours and textures to our surroundings. To take this program to the next level, FortWhyte has expanded the program for schools like yours!

**FortWhyte Alive will**
- offer information on school gardening and other green space development
- provide outdoor curriculum-based activities for students within the schoolyard
- recognize school greening achievements through *Naturescape* certification, free programs, and gifts
- recommend possible funding sources
- offer guidance when requested

Included in FortWhyte Alive’s program are a number of educational backgrounders to support teachers in enhancing biodiversity in the schoolyard. Getting started can be intimidating, but even the smallest and simplest garden can attract a wide variety of critters and prove to be an invaluable learning tool. The *Naturescape for Educators* program provides advice on establishing an outdoor learning space and maintaining it. Students will benefit from outdoor learning opportunities, and educators can feel comfortable knowing that they are providing lessons and activities linked to the curriculum.

Learning in the outdoors connects with a number of Manitoba Education priorities, but is especially linked to the following three areas: active citizenship, healthy living, and sustainable development. Manitoba Education is in the process of developing a *Guide to Learning in the Outdoors*, which will complement the work of FortWhyte Alive and many other educational partners. This guide will serve several audiences, including teachers, school administrators, non-governmental organizations, outdoor educators, daycare providers, and more.

Working together, we have the potential to inspire young people, to provide them with enriched learning experiences, and to empower them to appreciate, value, and make the most out of our natural spaces and places.

For further information on FortWhyte Alive programs, please contact education@fortwhyte.org.
By Kyle A. Lewkowich
Architect, Sustainable Schools Design and Construction, Public Schools Finance Board

Since the 2007 announcement of the Province of Manitoba’s Green Building Policy, new schools in Manitoba are being designed and constructed to follow basic principles of sustainability. These principles aim to balance the three primary objectives of promoting social/community amelioration, environmental protection, and economic benefit for all partners.

For schools, the Public Schools Finance Board (PSFB) has refined these general sustainability principles to promote a student-focused perspective that is balanced against the need to control long-term operating costs for school divisions. Building designs are judged using a point-based system called Leadership for Energy and Environmental Design (LEED), based on the following factors:

- **Livability** of the interior and exterior of the site
- **Energy Efficiency**
- **Durability** of construction materials

Upon project completion, documentation is forwarded to the Canada Green Building Council (CaGBC) for third-party verification, and potential recognition at the Certified, Silver, Gold, or Platinum level. As school design and construction is a multi-year process, we are only now moving forward into the documentation phase for a number of new school projects that started as early as 2007.

As described in the following two examples, PSFB is working with design teams to make sustainability goals tangible for students and teachers by following a specific LEED initiative called *The School as a Teaching Tool*. According to the United States Green Building Council’s *LEED for Schools Reference Guide*, the design initiative is intended to “promote environmental education and...awareness of the impact of the built environment” by reinforcing the connection between the curriculum and lessons that can be learned from the school building and school site itself.

At Prairie Dale Middle School in Schanzenfeld, the most obvious sign of this initiative is an interactive, programmable touch-screen device installed outside the library to educate students and visitors on the energy efficiency advances of the new school. From real-time metering of the building’s heating/cooling systems, water use information, a model of the ground-source heat pumps, and a programmable quiz function, students can observe and learn about energy and resource use.

Prairie Dale School Sustainability “Dashboard” by MCM Architects (Garden Valley School Division).

While energy efficiency is an obvious sustainability target, the design of Prairie Dale is also intended to bridge the gulf between humanities and sciences. Lessons in geography, geology, and natural history, for example, are illustrated by fossils in the locally quarried limestone of the building facade. Lessons in hydrology, settlement of western Canada, and ethnobotany are suggested through indigenous plants used in the wildflower gardens and naturalized swales. Lessons in community building are inspired...
by the use of locally sourced materials used in construction, thus demonstrating the value of local economic growth, and prompting discussion of other rural development issues.

In the second example, Hanover School Division, along with the landscape architecture firm Hilderman Thomas Frank Cram, is using Outdoor Learning Environment funding (a provincial award of up to $100,000 per new school project for the development of outdoor learning opportunities) at Steinbach’s new high school to create an entry garden inspired by the mathematical principles of the Golden Mean and the Fibonacci sequence. Using cues that reference the mathematical progressions that are the roots of geometry, western musical modes, architecture, and ideal proportions, the garden itself will be encoded for discovery, thus engaging students at all high school grade levels in subject areas ranging from natural sciences to the humanities.

The advantage to ESD of implementing the School as a Teaching Tool initiative is that we are now promoting the intentional decisions made in the design and construction of places of learning as curriculum support tools, allowing divisions and teachers to connect the building and site to ESD curriculum.

Meeting the Challenge: Two Weeks Outside

By Peters Preittie

Manitoba Nature Action Collaborative for Children has set June 4–15 to kick off its “Two Weeks Outdoors” event for 2012. This means the event will coincide with Canada’s national Nature Play Day on June 15, which was initiated by the Child Nature Alliance.

For the second year in a row, Seven Oaks Child Day Care Centre Inc. has jumped onboard and, along with Discovery Children’s Centre, is making plans to spend two weeks outdoors. Last year, two groups of children, the Budgies (2- and 3-year-olds) and the Robins (3- and 4-year-olds), successfully completed this challenge. Both groups are excited and looking forward to the adventures of “Outdoor Child Care” again this year, with plans of enticing other groups to the challenge.

All events will take place outdoors, including napping and meals, but we have decided that children and staff will use indoor facilities for their bathroom needs. We have purchased a new tent, numerous tarps, and very appropriate outdoor clothing such as rain suits for the children. With all this nice weather, it has been particularly wet and muddy in the yard, and we have become accustomed to mud in everything, including seepage through our socks and in between our toes. Thank goodness for washing machines and daily baths!

We invite others across the city, the province, and Canada to join us in meeting the challenge of getting our children back to nature and revelling in the simple pleasures of being outdoors.
School Rain Gardens Promote the Development of Innovative Stormwater Management in Manitoba

By Hao Chen
Master’s student of Environmental Science, University of Manitoba

With rising concerns in recent years about water pollution in the Red River and, particularly, Lake Winnipeg, building beautiful rain gardens in the city may become one of the more promising solutions for improving water quality. These innovative design options provide not only beautiful gardens, but also help improve rivers, streams, and lakes by reducing stormwater pollution.

In the USA, many municipalities have begun to use rain gardens as stormwater management strategies in order to solve local water-quality issues, as well as to encourage groundwater recharge and to control flooding. Local governments have offered incentives to motivate schools and private landowners to do something about stormwater management in their areas. The largest obstacle to rain garden development is the lack of knowledge by the public, so how to educate the public becomes the primary concern. Schools are not only institutions for the teaching of children; they can also serve as an institution for education of the general public.

The first school rain garden in North America was in the Mount Tabor Middle School in Portland, Oregon. The project demonstrates the City of Portland’s commitment to promote the rain garden concept in the city, and many regard this school rain garden project as one of Portland’s most successful stormwater management projects to date.

School rain gardens could also be one of Winnipeg’s most significant contributors to public education on environmental awareness and stormwater management, and to ensure long-term sustainable development in the region. Achieving sustainability is dependent on the ability of management to adjust to change, particularly as it is related to refining or redesigning land use in a way that generates an environmental profit without compromising its social integrity and the public consultation process. This difficulty will likely increase as projects become more complex and dynamic, and as social feedback and knowledge about water-quality management—especially in a multicultural and low water-quality region like Winnipeg—continues to grow.

With programs like the construction of a rain garden at École St. Avila in the Pembina Trails School Division, we will be better able to achieve the goal of increased rain garden development in Winnipeg. The success and continued growth of such projects will contribute to enhanced public education about how a school rain garden can change the way an entire region thinks about stormwater management.
By Ira Udow, Dorothy Goddard, and Chitra Pradhan, Brock Corydon School

As a member of UNESCO’s Associated Schools Network, Brock Corydon School is committed to educating students about their personal and social responsibility to understand and develop sustainable life practices. This commitment has resulted in Garden to Earth: The Full Circle, a program that Brock Corydon teachers are using to help students learn how to take care of themselves, each other, our earth, and our environment within an urban setting.

Brock Corydon School is located in a residential area of Winnipeg where many former garden plots have been overtaken by homes and commercial sites. In 2000, Brock Corydon School responded to the need for renewed green space by planting trees and establishing garden plots in front of the school. It has since expanded into the playground area to include indigenous perennial and annual plants and, most recently, vegetable garden plots. Successful applications for ESD-related grants have allowed the school to develop pathways for easy access to the garden plots and to install an underground sprinkler system to ensure an adequate supply of water.

The garden has been and continues to be a collaborative community effort. An active Parent Advisory Council provides funds annually to support the gardening needs. Parent volunteers work alongside students from Nursery to Grade 6 in caring for and maintaining each classroom’s assigned garden plot during the spring and fall seasons. Each day, the school’s Green Team, which is made up of Grades 4, 5, and 6 student volunteers, collects the organic lunch scraps from each classroom and the staff room for the two compost bins located near the vegetable gardens that replenish and enrich the soil.

The Garden to Earth: The Full Circle project specifically engages Grades 3 and 4 students in planting, caring for, and harvesting the vegetable garden plots. Classroom grow lamps allow the students to grow their own seedlings while learning about how plants grow and what conditions result in healthier plants. In time, the students learn how to transplant their plants into the school’s vegetable garden. The study continues outdoors, where students maintain the vegetable gardens, document the growth, and

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of the plants, and observe the habitats provided for the variety of insects and birds. By harvest time, the students are ready to reap the benefits of their labour, as they compost the remains of their plants, pick the ripe vegetables, and prepare tasty and nutritious dishes. At the end, they have learned the value of natural food consumption and cooking, composting, and returning nutrients to our environment. Each student also grows a personal container of plants that is taken home to reinforce the importance of home gardening and composting to provide healthy food choices for a healthy body while caring for a healthy environment.

The curricular connections and sustainable life practices are integrated throughout this project. The hands-on activities give students an authentic real-life experience that enables them to value and respect the growth and changes in plants as living things. The teachers have incorporated Aboriginal perspectives such as the “three sisters” planting method, where the three main agricultural crops (i.e., squash, maize, and climbing beans) are planted close together in order to complement one another. The beans use the maize as a climbing structure, eliminating the need for poles. The beans provide nitrogen to the soil that the other plants utilize, and the squash spreads along the ground, blocking the sunlight and helping prevent weeds.

Students are able to explain the importance of understanding the characteristics of different soils, and describe ways to return organic matter to the soil. By discussing how various cultures use plant parts for food and medicine, students begin to appreciate how traditional knowledge contributes to their understanding of plants.

Garden to Earth: The Full Circle reconnects children to the outdoors, as more of the sparse, flat playground areas are transformed into natural play areas of exploration and discovery. Students are developing a greater sense of responsibility to care for their environment through increased understanding of plant, soil, climate, and food-related issues. Through their engagement, they are learning to make informed and healthy food choices, and to appreciate how humans and other living things depend on the environment to meet their needs.
Water on the Land: Sustainable Stormwater Management Guide Launches in March 2012

By Julie Turenne-Maynard, Executive Director, Rivers West

Rivers West Red River Corridor Inc. spearheaded the designation of the Red River as a Canadian Heritage River in 2007 and is mandated to ensure that this designation is maintained. As a result, Rivers West works with a multitude of stakeholders in developing a variety of projects that respect the natural environment, culture, and heritage that surrounds the Red from Emerson to Lake Winnipeg.

Over the past several years, the organization has developed supplementary curriculum resource guides and teaching tools tailored to the Manitoba teaching curriculum in the fields of science (Grade 4 – Habitat Means Home; Grade 8 – Red River Basin Water System) and social studies (Grades 4 to 6 – Historic Places of the Red River Corridor).

Recently, Rivers West partnered with École St-Avila in the development of its bio-retention project and is currently collaborating with a few other community organizations and schools to assist in the development of rain gardens and bio-retention projects. In doing so, it became quite apparent that persons wanting to develop these projects were missing a lot of information and were in need of a guide that could assist them in this process.

Rivers West Red River Corridor approached the Province of Manitoba’s Department of Water Stewardship and Department of Education to discuss the development of a sustainable stormwater management guide that would include information on watershed health, outdoor learning, and natural play opportunities, as well as provide useful resources and information on how to get projects started for school grounds, public spaces, and mid-size commercial properties.

Water on the Land: Stormwater Management Guide for Schools will contribute to a wider understanding of the concept of stormwater management, will explain how to implement a stormwater management system, and will demonstrate how to use the system as an educational tool. This guide could promote the development of rain gardens in Manitoba schools, and ultimately contribute to the development of a rain garden network throughout the province.

The Province of Manitoba Water Stewardship Fund allocated funding to develop the guide, and other partners contributed in-kind and financial resources to complete the project in both official languages. The official launch was held on World Water Day on March 22nd, 2012. Rivers West intends to distribute the guide to over 900 schools in Manitoba, as well as to municipalities and conservation districts. An online version of the guide will also be available at <www.riverswest.ca> and <www.routesonthered.ca>.

Depending on funding, future plans include the development of lesson plans with general learning outcomes and specific learning outcomes, as well as technical tools for use by schools and the general public.
By Brett Lestition
École Beausejour Early Years School

In the spring of 2011, we at École Beausejour Early Years School set out to naturalize our school’s surrounding green space and implement a school-wide, student-led composting program. With the values of environmental sustainability, economic responsibility, and community connectedness at the forefront of our vision, we began our journey.

One of the essential goals in developing and implementing our composting program was to make it as authentic as possible to the students and their learning. This was achieved by handing over ownership of the composting initiative to the children themselves. The “Compost Club” executive, which is made up of Grade 5 students, began meeting three times a week to determine the structure, protocol, and job responsibilities of the various members of the group. Guided by the suggestions of supervising teachers, students had to make decisions such as how and when the compost from each classroom would be collected, stored, transported, and, ultimately, mixed into the garden boxes and flower beds around the school. The executive was also responsible for generating school-wide awareness. This included making informational posters to put up in the halls, delivering compost buckets to each classroom, and educating the students in younger grades about good composting practices. Such classroom visits by club members would include discussions surrounding basic topics, such as what can and cannot be put into classroom buckets, to more complex ideas, such as soil aeration and moisture content. Club members also discussed with classmates ideas surrounding consumption and waste management. Organic material from lunches and snacks was now being put into composters to produce nutrient-rich soil to be added to garden boxes and flower beds around the school, rather than be contaminated and wasted in landfills.

Within the garden boxes, vegetables were planted, then ultimately harvested and used during a soup-making day, allowing students to take ownership of their learning and foster a sense of responsibility and accomplishment from their efforts. The resulting biodiversity that has been achieved within the flower beds and garden boxes has also provided an educational opportunity to those students who have visited these locations during class time. Students have taken the opportunity to examine, study, and sketch the various interactions, individual parts, and general state of these mini-ecosystems.

Overall, this initiative has challenged students to tackle big questions, such as what they value about the environment. It has also helped them to develop a richer understanding of what it means to take proactive measures to become an active citizen in the community.

By instilling this knowledge in the young people at our school, we hope to pave the way for future generations of farmers, agronomists, and biological scientists to carry with them a sense of environmental responsibility as they use sustainable practices. The funds afforded to us by the ESD Grant have allowed us to realize our school goals of naturalizing our green space and implementing a composting program.
Assiniboine Park

Your Destination for Year-round Learning

By Scott Gray
Director of Park Programming, Assiniboine Park Conservancy

Assiniboine Park is a vibrant and valued community resource and a worthwhile place for out-of-class education opportunities. The park’s natural assets and popular attractions – including the Assiniboine Park Zoo – also make it uniquely positioned to deliver high-quality education programs with a particular emphasis on the environment, conservation, and wildlife.

The Assiniboine Park Conservancy (APC) currently offers over 20 interdisciplinary programs that satisfy students’ inherent curiosity about their environment through activity-based workshops that bring the topic to life.

- On-site school programs are offered at the Conservatory, Pavilion, Zoo, and the new Qualico Family Centre.
- The Assiniboine Park Zoo is Manitoba’s premiere location for animal-based education.
- The Pavilion Gallery Museum, Leo Mol Sculpture Garden, and the amazing natural art found throughout the park are first-class locations for art education.
- The Assiniboine Park Conservatory is one of the most unique plant-based teaching facilities in Manitoba with extensive living classrooms – the Abilities Garden, the English Gardens, the Tropical Palm House, and Floral Display Atrium – that provide dynamic year-round settings for exciting lessons.
- Learning outcomes from Kindergarten to Grade 12 provincial curricula in science, social studies, English language arts, physical education/health education, career development, and the arts are incorporated into all programs.

We Educate and Engage

Educators are always looking for original activities that will both capture and hold students’ interest. APC programs for Middle Years and Senior Years students are designed to educate and engage.

Whenever possible, hands-on activities and different styles of learning are incorporated into the programs. The programming team respects that students at this age are becoming more engaged in their communities and are developing a broader world view, and therefore will adjust their delivery to engage the students more deeply in the subject matter.

In addition to traditional plant and animal themes, Assiniboine Park also offers programs that explore current environmental issues. In the “Biofuels” program, students are encouraged to become informed citizens and critical thinkers as they explore, review, and discuss new fuel types, and develop a public

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Assiniboine Park: Your Destination for Year-round Learning (continued)

service announcement
supporting their opinion. The International Polar Bear Conservation Centre, which recently opened at the Assiniboine Park Zoo, holds curriculum-focused education programs for students in Middle and Senior Years, focusing on environmental and wildlife conservation, climate change, and Arctic ecosystems.

Another popular program designed with teens in mind invites students on a CSI-inspired journey of discovery in “The Case of the Missing Orchids.” This “ripped from the headlines” program, based on a true crime story with a Winnipeg connection, introduces students to the larger issue of conservation and the role we can play in protecting endangered plant and animal species.

Other programs take students back in time, providing them with an opportunity to explore mankind’s history with the natural world and conservation lessons from the past. Assiniboine Park is dedicated to providing people of all ages with the highest quality environmental education programs in the province, creating a lasting appreciation of the natural world, and inspiring people to get out and be active throughout the year. APC School & Group Programs are second to none and are available year-round.

For more information about school and group programs, please contact Assiniboine Park Programming by email at parkprograms@assiniboinepark.ca, call 204-927-6070, or visit online at www.assiniboinepark.ca or www.assiniboineparkzoo.ca.

We Canada’s National Tour – Winnipeg

By Carolee Buckler

We Canada’s national tour, Dialogue and Action for Earth Summit 2012, was at Lincoln Middle School and Maples Collegiate on Tuesday, March 6th, and at the University of Winnipeg on March 7th.

Aleksandra Nasteska, co-founder of We Canada, along with Victoria Wee, Director of Youth Engagement, spoke at the schools. At the University of Winnipeg, Elisabeth Guilbaud-Cox, Officer-in-Charge of the United Nations Environment Programme Regional Office for North America (UNEP RONA), was the guest speaker.

We Canada did a review of Canada’s history at the Earth Summit, facilitated dialogues on Canada’s role at the UN Earth Summit, and guided students in a discussion on what kind of community they would like to live in. Students were asked to think of some of the current environmental, social, and economic issues, and what could be done to solve those issues. The youth described their vision of the country at the Earth Summit 2012. These suggestions will be put into a report for Canadian officials to bring to the United Nations Conference on Sustainable Development, Rio plus 20 (UN Earth Summit), on June 20–22.

We Canada is a non-partisan, youth-led citizen initiative mobilizing for Canadian leadership in sustainability at the upcoming United Nations Conference on Sustainable Development (Earth Summit 2012, Rio+20). Founded and run by over 70 young adult volunteers and veteran sustainability advocates from across the country, We Canada creates a platform that enables civil society participation in the Earth Summit 2012.
Understanding the principles of sustainability and the interdependence of the environment, the economy, and social systems can help us learn to become effective stewards of natural resources and the environment. As a result, educators are being challenged to make the changes needed to set the path to sustainable development.

Education is essential to promoting sustainable development. Citizens of the world need to learn their way to sustainability. The current knowledge base does not contain the solutions to contemporary global environmental, societal, and economic problems. Education is, therefore, an essential tool for present and future leaders and citizens to create solutions and to find new paths to a better future. ESD is not a particular program or project, but is rather an umbrella for many forms of education that already exist, and new ones that have yet to be created. ESD promotes efforts to rethink educational programs and systems. Furthermore, it calls for lifelong learning and recognizes the fact that the educational needs of people change over their lifetimes.

ESD should provide educators and students with an opportunity to explore how their behaviours affect the quality of life of people and other living beings around the globe. It should also emphasize pedagogical learning approaches that are active and experiential, and based on inquiry and real-world problems. It can be interwoven into all disciplines, and can elevate the learning experience to one that is richer in relevance and meaning.

There are many programs using an ESD approach to learning, and many individuals and organizations around the world have already implemented several ESD programs through formal and non-formal channels of education. ESD is receiving increased attention from professional societies as a result of public concern over local and national and international environmental issues and ongoing engagement by NGOs and governmental bodies. In addition, the impetus provided by the United Nations Decade for Education for Sustainable Development, the Earth Summit, and other international efforts is catalyzing increased public attention to education for sustainability. This trend is fostering interdisciplinary linkages among the natural and social sciences. Achieving a sustainable future will not happen unless the educational system involves citizens and specialists who understand the interconnections among the environmental, economic, and social disciplines.

Increasingly, however, people are being overwhelmed with information. On the Internet, for example, they can find information about global-scale environmental changes like global warming, loss of biodiversity, and the ozone hole. They can also find out how human activities contribute to these changes, how they are interrelated, and how they affect ecosystems and human health. The most up-to-date scientific information is also more readily available than ever before. Citizens need to be able to understand how to use this information, and education can help ensure that technology and the capacity to use information are available to everyone.

To sum up, the environmental dimension of sustainable development is necessary for the continuation of life on earth. When people fulfill their responsibilities, there are positive results to natural life in general, such as decreases in energy consumption and the prevention of environmental pollution. When the concepts of sustainability are infused into all learning (from structured schooling in formal education settings to lifelong learning in non-formal programs), people will become environmentally aware and learn to be active citizens of the environment from an early age.
Youth at the United Nations Climate Change Summit

By Anika Terton
Public Education and Outreach Coordinator,
Climate Change Connection

Climate change will be the defining issue of my generation. The international climate change negotiations have wide-ranging implications for global justice, equity, and development issues, and yet young Canadians are, on the whole, disengaged from negotiations over these critical policy questions.

That is why I travelled from Winnipeg to Durban, South Africa, for the 17th Conference of the Parties (COP17), a discussion of the United Nations Framework Convention on Climate Change in December 2011. As a member of the Canadian Youth Delegation, I was one of a group of 18 young people from all over Canada who were tasked with acting as liaisons between these high-level talks and our peers at home. We are responsible for explaining the proceedings to other young people, and for taking our generation’s concern to our leaders to urge them to take action.

The Canadian Youth Delegation is a project of the Canadian Youth Climate Coalition, a united front of youth demanding stronger action on climate change. Canadian youth have been participating in the international process since the very first Conference of the Parties in 1995, which established the Berlin Mandate.

Throughout the two weeks at COP17, I blogged for the Canadian Youth Delegation and created my own personal blog, which can be found at <www.youthdelegatemanitoba.wordpress.com>. I attended the daily policy briefings held by the Canadian government delegation, which were hosted by Guy Saint-Jacques (Canada’s Chief Negotiator and Ambassador for Climate Change). Canadian youth were noted as being the most active participants during these sessions, posing challenging and penetrating questions to help drive home their messages of climate leadership.

One of the most moving experiences of the conference happened when the Canadian Youth Delegation “skyped in” to speak to 300 students during a school environmental conference in Vancouver. The 300 students broke into a round of applause, congratulating us for the work we have done in Durban. At the call, I recognized that a small number of young Canadians were able to make an extraordinary difference in Durban. Hearing the support from these young people back in Canada was powerful beyond words.

I am deeply grateful for having had this amazing opportunity, and I will use the skills and knowledge I have gained every day. Furthermore, I was able to bring back these experiences and share them with youth in Manitoba, and get them involved in the issue and aware of our generation’s role.

Please feel free to contact Anika if you would like her to talk to your students about her experiences at the United Nations climate change negotiations.

Email: ani@climatechangeconnection.org
Website: www.climatechangeconnection.org
The Monarchs Are Coming!

By Natalie Swaak
Education Coordinator, Toronto and Region Conservation Authority

Each spring, between March and June, monarch butterflies make their way across deserts, lakes, forests, farm fields, mountains, and valleys, from their overwintering grounds in Mexico to their summer grounds up north. Their total journey is about 4000 kilometres, which they make with the assistance of air currents and thermals.

It has long been thought that, in the fall, a single “super” generation makes the entire southbound trip; while, in the spring, it takes a few generations to complete the northbound trip. New research is suggesting, however, that up to 10 percent of the super generation makes the complete return trip back to their summer grounds.

That’s about 8000 kilometres of flying time for one little butterfly! The miracle of the “successor” generations of monarchs is that they are able to navigate the migration route and continue the journey that their parents or grandparents started, finally ending up in the summer grounds last seen many months and generations ago. This colourful and charismatic species is unique because it is the only butterfly known to make a two-way migration north and south, just like birds do.

This year’s first recorded monarch reached Canada at Point Pelee, Ontario, on April 24th. This was the earliest monarch to arrive in 25 years. The previous record still stands with the earliest recorded monarch arriving in Point Pelee on April 12, 1986. This year’s unseasonably warm spring has contributed to an early migration. Hopefully, the early start and favourable weather provide the monarchs with the helping hand they need to begin to reverse the decline seen over the last two decades. During the 2012 season, monarch populations were down 25 to 30 percent over 2011, possibly due to drought and fires across Texas and the southern United States. Major contributors to the long-term monarch population decline have been deforestation of the overwintering grounds in Mexico, development throughout their range, and agricultural practices—particularly the use of pesticides—in the United States and Canada.

Most of the monarch overwintering grounds are located in the Mexican state of Michoacán. Chip Taylor, the director of Monarch Watch, a non-profit organization dedicated to the conservation and monitoring of monarchs (see <www.monarchwatch.org>), estimates that 100 million hectares of land that previously supported monarchs have been lost to deforestation. The Monarch Butterfly Fund (see <www.monarchbutterflyfund.org>) is hard at work in Mexico raising awareness among the local population about the importance of conservation of the overwintering habitat, with the hope that through education and awareness the trend towards deforestation can be reversed.

If you want to help this threatened species while creating unforgettable learning experiences for you and your students, consider joining a workshop called “Teaching and Learning with Monarch Butterflies,” presented by the Monarch Teacher Network of Canada on July 17 and 18, 2012, in Winnipeg. This two-day workshop provides teachers with the knowledge, skills, and resources to engage with monarchs in the classroom, sharing the wonder of their life cycle and migration with students up close. The monarch’s incredible journey provides a unifying theme to teach essential skills across the curriculum in science, literacy, geography, and technology.

The course is appropriate for educators and classroom teachers working with students from pre-Kindergarten through high school. Monarch rearing and tagging activities take place in early September to coincide with the fall migration. These activities are a great way to build a strong foundation for a green year in any classroom or educational setting. To learn more about these workshops, visit <www.monarchteacher.ca>.
Manitoba Nature Summit Inc.

The 2012 Nature Summit will be held September 14–16, 2012, at Camp Manitou. The keynote speakers will be Dr. Heather Hinam and Severn Cullis Suzuki.

For detailed information on these speakers, please consult our website at <www.naturesummitmb.com>.

Heather Hinam is a Manitoba naturalist and educator.

Severn Cullis Suzuki, who will be presenting via video conference, is the daughter of David Suzuki.

The Nature Summit is accepting workshop proposals. Further information about requirements can be found on our website.

For additional information, consult our website or email us at <mnaccnaturesummit@gmail.com>.

We’re on the Web

For information about grants, newsletters, articles, correlation charts, parent brochures, posters, resources, and contacts, please visit our website at <www.edu.gov.mb.ca/k12/esd>.

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