



Environmental Education: Creating the Engaged and Innovative Alberta Citizens of Tomorrow

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Note to reader: This is a White Paper created by the Alberta Council for Environmental Education. It is a living document, and will continue to be updated with current research, progress on government initiatives and from suggestions for improvements. Comments are welcomed either as suggestions or through using ‘Track Changes’ on the document. Please send your comments to Kathy Worobec, the Alberta Council for Environmental Education (ACEE) Board member who is compiling this work, at kathyw@greenlearning.ca

Synopsis

Environmental education and citizenship are powerful vehicles to help create the engaged and innovative citizens of tomorrow. Peer-reviewed research illustrates the role environmental education can play in student performance and in creating healthy and engaged citizens. In Alberta, there is a unique opportunity to advance environmental education and citizenship to meet various government mandates. Working together, we can build an essential foundation of environmental education to prepare for the future - a future where Albertans are engaged, ethical, and entrepreneurial global citizens.

By creating an enhanced environmentally aware and conscious citizenry in Alberta, we can also help ensure an improved balance among the three key elements of a healthy province: environment, society and economy. Alberta’s image has suffered in the past few years. An environmentally educated Albertan will help Alberta maintain its position as a leader on the environment as well as on the innovative and prosperous fronts.

Introduction

The purpose of this document is to demonstrate that environmental education and citizenship are essential features of education in Alberta. Alberta Education’s *Inspiring Education* process holds the promise to transform education in Alberta. Environmental education can build a foundation to create engaged and innovative citizens as envisioned by *Inspiring Education*.

Alberta Education has been mandated by Premier Stelmach to lead an initiative to create a long-term vision for education in Alberta. This process is well underway

through the *Inspiring Education* and *Inspiring Action on Education* process, which engaged Albertans in creating a vision for education to 2030:

*To inspire and enable students to achieve success and fulfillment as engaged thinkers and ethical citizens with an entrepreneurial spirit within an inclusive education system.*¹

The Alberta Council for Environmental Education (ACEE) continually seeks input from education stakeholders, and in May 2010 it collaborated with the Alberta Teachers' Association to host the *Creating a Legacy Together* symposium. Over 250 educators examined the theme of environmental education and global citizenship in Alberta. Students, as the keynote speakers, gave deep insights into the role of teachers, school, community resources and parents in their journey to becoming engaged citizens. The powerful and compelling voices of students and teachers is included here as Appendix A: *Environmental education and citizenship: What we'd like to see in Alberta by 2030*. This document outlines the desired key competencies of students and teachers and the support that would be required from schools and schools boards as well as the broader education system to achieve these competencies. It is this vision for the future that ACEE is supporting and would like to build on in its work with Alberta Education.

ACEE has also participated in the *Inspiring Education* review process and has engaged the environmental education community in this process through a workshop series in the fall of 2010 with Alberta Education. This document is the next step of this process. It will:

- Showcase the importance of the work of the environmental education community, and
- Provide insight on how environmental education will help deliver on the vision of *Inspiring Education* and other government mandates.

Environmental Education is a Priority of the Alberta Government

The Alberta Government's *Land Use Framework* calls for "... a strategy for conservation and stewardship on public and private lands that will include education and awareness programs."² Cross-ministry collaboration is foreseen for Environment; Sustainable Resource Development; and Tourism, Parks and Recreation to help deliver on various aspects of the *Land Use Framework*. *Inspiring Action on Education* needs to include environmental education and citizenship in order to impart the awareness and ethos of stewardship.

Some of these ministries also call directly for environmental education:

- Goal 2 of Alberta Environment's Business Plan includes priority initiative:
*Provide education and engagement programs, information and tools to support the cumulative effects management system.*³

- Goal 2 of Alberta Tourism, Recreation and Parks' Business Plan includes:
The provincial parks system provides opportunities for outdoor recreation and tourism, and conserves Alberta's natural heritage. Interpretation and environmental education help to foster an understanding of Alberta's natural heritage and promote experiential, lifelong learning⁴.

The Alberta Government's *Provincial Energy Strategy* recognizes the importance of energy literacy and calls for the development of actions to promote understanding, awareness and education of Alberta's energy issues.⁵ Alberta Energy has been working with the Centre for Environment-Economy Learning and stakeholders to develop a framework for *Advancing Energy Literacy in Alberta*.

The *Premier's Council for Economic Strategy* asks six questions with one question having a direct connection to education: 'How do we ensure we have the healthy, skilled and engaged citizens needed to drive innovation and sustain prosperity?'⁶ Environmental education is a powerful mechanism to motivate students, the future citizens of Alberta, to become engaged citizens and stewards of a healthy environment that provides the basis for a strong sustainable economy.

Alberta Education, as part of the Canadian Ministers of Education Council (CMEC), is participating in the Education for Sustainable Development (ESD) working group for the United Nations Decade of Education for Sustainable Development (2005-2014).

This is a unique time for the government ministries and the environmental education community to work together to support and help deliver on these initiatives.

The Need for Environmental Education

Beyond the opportunities in Alberta outlined above, there are other factors that support the need for environmental education. One such factor is the current emphasis on 21st century skills currently sweeping North American school jurisdictions. There are a variety of competencies for 21st century learning with Alberta Education using the following:

- Critical thinking and problem solving
- Creativity and Innovation
- Social Responsibility and Cultural, Global and Environmental Awareness
- Communication
- Digital Literacy
- Lifelong Learning, Self-Direction and Personal Management
- Collaboration and Leadership⁷

The Western and Northern Canadian Protocol (WNCP) for collaboration on education has drafted five guiding principles to serve as starting points for rethinking curriculum frameworks. The work of WNCP is providing a common vocabulary and a broad vision for the development of 21st century curriculum frameworks.

- Depth and coherence are essential to deep understanding.
- Diversity is a fundamental feature of a healthy, living system.
- Every discipline is a cultural inheritance.
- Competencies unite learning.
- Learning and living well together in an interconnected world leads to sustainability.⁸

Inspiring Education acknowledges that the current education system needs to be revised to help students deal with the many complex challenges they will face in their lifetime.⁹ Many of these challenges will be linked to Alberta's natural resource development and sustaining a healthy environment, enhancing our quality of life and ensuring a healthy sustainable economy. Environmental education embraces many of the competencies required for the 21st century.

Environmental education prepares all citizens with 21st Century essential skills that contribute to healthier, more environmentally sustainable, and economically prosperous communities.¹⁰

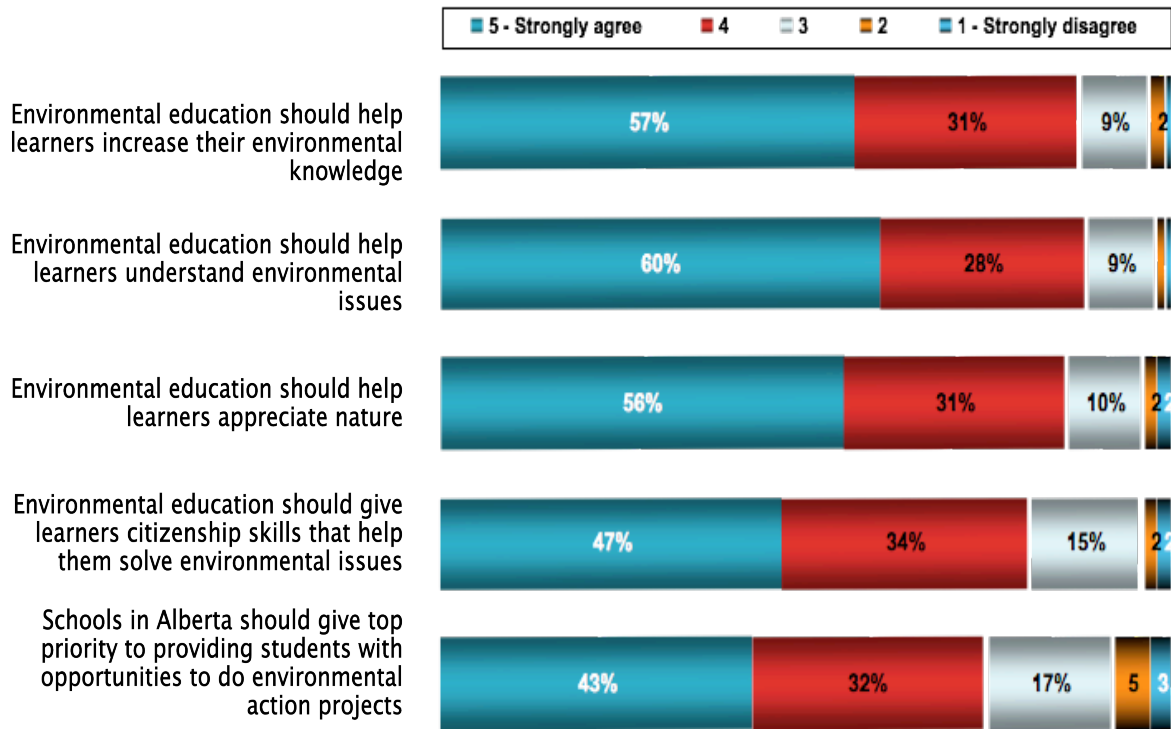
Transforming education to focus on these competencies will help Albertans deal with complex challenges and ensure Alberta has strong communities with a healthy environment. This will bring prosperity to future generations of Albertans.

In a 2009 poll of over 800 Alberta households conducted by Ipsos Reid for the Alberta Council for Environmental Education, Albertans indicated their strong support for all dimensions of environmental education.¹¹ Most notably, 75% of Albertans agree that schools in Alberta should give top priority to provide students with opportunities to engage in environmental action projects (see polling information on the next page). Environmental action projects connect students with community. Attempted projects, whether successful or not, provide profound learning experiences allowing students to gain an understanding of their individual power for meaningful action. This fits with what was heard from Albertans in *Inspiring Education*:

Our concept of education should expand beyond the school and integrate the community, the environment and the "real world." We should make the community a true partner in the education experience.¹²



Q26. Please indicate your agreement or disagreement with the following statements about environmental education using a five-point scale



Environmental education also improves children’s health. Richard Louv’s work *Last Child in the Woods* highlights the importance of connecting with nature for healthy childhood development.

Andrea Faber Taylor and Francis Kuo, researchers at the University of Illinois have shown that the greener a child’s everyday environment, the more manageable their symptoms of attention-deficit disorder, and in a report published in August, 2008, described how children concentrate better after a simple walk in the park. Many other studies suggest that children who spend more time in nature are healthier, happier and smarter.¹³

Childhood obesity, on the rise in Canada, has a long-lasting, economic impact on an already stressed health care system. The natural link between environmental education and physical activity has the potential to reverse this unfortunate modern norm.



Over the past 20 years, time spent playing outdoors has been cut in half, but the childhood obesity rate has tripled.¹⁴

The medical community recognizes that unstructured outdoor play also has other unique health benefits. An emphasis on environmental education by Alberta Education will positively complement the need and focus on sustained physical activity.

The need for a stronger connection between children and nature led to the passing of the *No Child Left Inside Act* in the United States, and many U.S. states are in the process of developing environmental literacy plans. The North American Association of Environmental Education produced a guide to assist the development of these environmental literacy plans.

The interconnections of environmental education and citizenship will achieve many of the goals of Alberta Education and bring additional health, societal and economic benefits to Albertans.

Provincial and Federal Initiatives to Support Environmental Education

Other Canadian provinces and the Canadian Ministers of Education Council (CMEC) are deeply committed to increasing environmental education and citizenship in classrooms:

Ontario: *Shaping our Schools, Shaping our Future – Environmental Education in Ontario Schools*, June 2007. Under the leadership of Canada’s first female astronaut Dr. Roberta Bondar, a Working Group identified the need for a comprehensive environmental education policy for Ontario schools, and detailed the key elements of such a policy in regard to leadership and accountability, curriculum and teaching and resources in its *Shaping our Schools, Shaping our Future* report. The Ontario government adopted every recommendation in this report and has created *Environmental Education – Scope and Sequence of Expectations* for grades 1 to 12.

British Columbia: In 2007, the BC Ministry of Education developed a new provincial framework for environmental education, *Environmental Learning and Experience*. In 2008, a set of Curriculum Maps was released to help teachers connect learning outcomes across K-12 curricula with elements of the *Environmental Learning and Experience Guide*. With the release of the Guide and Curriculum Maps, teachers have a stronger foundation on which to base their teaching about the environment.

Manitoba: Manitoba Education is a partner in the Education for Sustainable Development (ESD) process in Canada as part of the United Nations Decade of Education for Sustainable Development (2005-2014). They have developed *Education for a Sustainable Future: A Resource for Curriculum Developers, Teachers and Administrators*.

Canadian Ministers of Education Council (CMEC): CMEC has established an Education for Sustainable Development (ESD) working group and they have included ESD as one of the key activity areas in *Learn Canada 2020*, a framework to enhance Canada's education systems, learning opportunities and overall education outcomes at all levels. The first major task for the working group (made up of representatives from all provinces and one territory) is to establish a CMEC pan-Canadian *ESD Framework for Collaboration and Action*. Manitoba is the lead province for CMEC's work in ESD.

Environmental Education –A Vehicle for Achieving These Goals

Environmental education provides an essential framework to achieve the values and principles outlined in *Inspiring Action on Education*, 21st Century learning outcomes and increasing outdoor activity of children.

*Using the environment as an integrating context is interdisciplinary, collaborative, student-centered, hands-on and engages students in learning.*¹⁵

Peer-reviewed research tells us that learning in an environment-based context has many benefits:

- Better performance on standardized measures of academic achievement in reading, writing, math, science and social studies.
- Reduced discipline and classroom management problems.
- Increased engagement and enthusiasm for learning.
- Greater pride and ownership in accomplishments.¹⁶

There are teachers who already use environmental education in meaningful ways in their classrooms, schoolyards and local natural areas. A transformation of education will see this as the norm rather than the exception.

A Commitment from the Environmental Education Community

The Alberta Council for Environmental Education (ACEE) has continued to build on the work of the 250 educators at the 2010 symposium through its workshop series to identify the key competencies of environmental literate and engaged citizens. *The Environmental Education and Citizenship: What we'd like to see in Alberta by 2030* (Appendix A) is the culmination of this work.

ACEE will continue to bring together the environmental education community for review and input at various stages of the transformation of education from policy development to programs of studies. This will follow the model established in 2009, where ACEE convened 50 stakeholders from 36 organizations to provide support and advice to Alberta Education staff on the proposed Elementary Science Program of Studies.

Also, program staff involved in delivering environmental education from the Alberta Ministries of Environment; Agriculture; Sustainable Resource Development; and Tourism, Parks and Recreation have begun a dialogue on how better to collaborate with *Inspiring Education* to meet the mission of each Ministry.

ACEE and the environmental education community will enhance the professional in-service and pre-service learning opportunities for teachers to aid in the integration of environmental education into their practice. Later in 2011, ACEE will provide additional support through access to environmental education resources and programs through an on-line searchable database.

As Alberta Education's vision is implemented, it will be important to show progress toward achieving the vision of engaged, ethical and entrepreneurial citizens. ACEE has already conducted baseline polling of Albertan adults (2009) and youth (2010). Future polls will enable ACEE and Alberta Education to track progress of key elements of the transformation that is envisaged by Alberta Education.

Environmental education and citizenship are powerful vehicles to help achieve the goals of *Inspiring Education* and other government initiatives, and promise to leave a legacy for the next generation – a legacy of healthier, engaged, ethical and innovative citizens.



APPENDIX A

Environmental education and citizenship: What we'd like to see in Alberta by 2030

DRAFT – FEEDBACK WELCOME!

This DRAFT document was

- *created by the Alberta Council for Environmental Education*
- *based on the proceedings of the May 2010 'Creating a Legacy Together' Symposium, which captured the vision for environmental education and global citizenship in Alberta of a dozen youth keynotes and over 250 students, teachers, and agency professionals (<http://abcee.org/EE-framework/what-we-heard>)*
- *Available for public comment on-line from 21 Sept – 25 October 2010*
- *Revised again based on detailed feedback from 45 environmental educators at workshops in Edmonton and Calgary, October 2010*

By the year 2030, what competencies does an environmentally literate student have?

Students...

- have a positive relationship with nature and the natural world, as a result of meaningful outdoor experiences
- demonstrate that they understand and care deeply about the world around them
- have an inner drive to do something to make the world a better place: they know about environmental issues, can think critically about them, and are engaged in activities to address them
- learn by doing, engaging in collaborative real-world project-based learning that is guided by their interests and relevant to their lives
- are competent in their public action skills, have experience in applying them, and know their actions make a difference
- have excellent communication skills, including written, verbal, and listening skills
- are life-long learners
- are active citizens.

Cont'd...



By the year 2030, what competencies do the *teachers* of these students have?

Teachers...

- inspire, engage and empower their students to become environmental citizens
- understand that environmental education is an excellent way to deliver on all Alberta curricula that deals with environmental topics or citizenship competencies, and on other identified 21st Century learning skills
- know that 'hope is a verb with its sleeves rolled up,' and give students hope about the environment by motivating them, empowering them, and engaging them in environmental projects that help make a difference
- have a personal relationship with nature and are comfortable taking their students outdoors, and able to create powerful and positive outdoor learning experiences
- create classrooms that are safe places for important conversations that help students find, fine-tune, and focus their passion
- honour students' commitments, and hold students accountable to them
- challenge students with statements like "There are problems in this world, what are you going to do about it?"
- create authentic inquiry-based learning experiences
- understand how to teach about controversial issues
- teach the curriculum through cross-curricular models that use the environment as an integrating context for teaching and learning, and as a way of connecting learning to government, community groups, resources, and issues
- are the 'guide on the side,' not the 'sage on the stage:' they facilitate student-centred learning, and are partners in the learning process
- know the power of 'teaching through doing:' they walk the talk in their lifestyle choices and citizenship activities
- have abundant time, opportunities, support, and resources to create these learning experiences.

By the year 2030, how do schools and school boards support teachers and students?

Schools...

- identify environmental education as a priority, and environmental citizenship as an essential learning outcome



- reduce barriers to environmental education and citizenship (barriers include lack of time and resources, overcrowded curriculum, increased class size and complexity, concern about outdoor activities, etc.).
- schools will build bridges to overcome these barriers: for example, they will...
 - encourage both outdoor education and locally developed environmental education courses
 - create a culture of environmental citizenship throughout the school, weaving together classroom learning, create school wide environment themes, and environmental initiatives such as green clubs or recycling
 - support relevant teacher professional learning
 - allow teachers time to plan and develop partnerships and relationships between school and community to strengthen environmental initiatives
 - strive to reduce their environmental footprint through such things as green design and energy conservation, and engage students in this work.

By the year 2030, what does the broader education system look like?

The Alberta public and Alberta decision-makers recognize that

- environmental education and citizenship are essential features of education
- environmental education doesn't just occur in the formal education system; we need to support both non-profit and government agencies that deliver environmental education in informal and non-formal education settings
- policy must ensure that children avoid 'nature deficit disorder:' we must ensure that children receive abundant time in nature
- we need to do more if we are to create a generation of Albertans who can develop a sustainable future
- communities, families and individuals play an important role in supporting environmental education and citizenship in school and out of school and that learning is a lifelong process.

The Alberta curriculum

- has been drastically revised, and has had much 'curricular deadwood' removed
- supports the creation of the 'Twenty-First Century Skills' that are being called for in educational reform across North America
- now allows teachers the space they need to create meaningful learning experiences, including cross-curricular approaches in Grades 7-12.
- contains curricular content, skills, and attitudes that all contribute to creating environmentally literate students



- supports, revises, and reinforces existing exemplary curriculum, such as the optional ENVOE (Environmental and Outdoor Education) curriculum that is taught in a few junior high and middle schools in Alberta
- assessment and accountability policies also support this environmental literacy goal, and emphasize environmental education and citizenship competencies

Both practicing teachers and new teacher graduates have the competencies listed above...

- the network of organizations that deliver professional learning to practicing teachers now offers a suite of educational opportunities that support environmental education and citizenship
- similarly, the Alberta universities and colleges responsible for teacher preparation have revised their programs.

Endnotes

- ¹ Government of Alberta, *Inspiring Action on Education Discussion Paper* (June 2010) Pg. 7
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<http://landuse.alberta.ca/AboutLanduseFramework/Default.aspx>
- ³ Government of Alberta, *Budget 2011: Building a Better Alberta, Environment Business Plan 2011-14* (February 2011) Pg. 7
<http://www.finance.alberta.ca/publications/measuring/ministry-business-plans.html>
- ⁴ Government of Alberta, *Budget 2011: Building a Better Alberta, Tourism, Parks and Recreation Business Plan 2011-14* (February 2011) Pg. 8
<http://www.finance.alberta.ca/publications/measuring/ministry-business-plans.html>
- ⁵ Government of Alberta, *Launching Alberta's Energy Future – Provincial Energy Strategy* (December 2008) Pg. 45
- ⁶ Premier's Council for Economic Strategy, *An Invitation to Help Shape Alberta's Future* (June 2010) Pg. 4
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- ⁷ Government of Alberta, *Inspiring Action on Education Discussion Paper* (June 2010) Pg. 7
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- ⁸ Western and Northern Canada Protocol for collaboration in education, *Guiding Principles for WNCP Curriculum Framework Projects* (January 2011) Pg. 7
- ⁹ Government of Alberta, *Inspiring Education – A Dialogue with Albertans* (April 2010) Pg. 4
<http://www.inspiringeducation.alberta.ca/>
- ¹⁰ North American Association for Environmental Education, *Developing a State Environmental Literacy Plan* (2008) Pg. 3
<http://www.naaee.org/selp.pdf/view?searchterm=environmental%20literacy>
- ¹¹ Ipsos Reid Public Affairs, *Provincial Polling on Environmental Education and Market-Based Instruments Final Report* (March 2009) Pg. 33
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- ¹² Government of Alberta, *Inspiring Education – A Dialogue with Albertans* (April 2010) Pg. 23 <http://www.inspiringeducation.alberta.ca/>
 - ¹³ Richard Louv, Children Nature Network, *Passage of No Child Left Inside Act Suggests New Era for Nature in Education* (September 20, 2008) <http://www.childrenandnature.org/blog/2008/09/20/beyond-the-landmark-no-child-left-inside-act/>
 - ¹⁴ Heather White, National Wildlife Federation, *Connecting Today's Kids with Nature – A Policy Action Plan* (May 2008) Pg. 10 <http://www.nwf.org/News-and-Magazines/Media-Center/Reports/Archive/2008/Connecting-Todays-Kids-With-Nature.aspx>
 - ¹⁵ Gerald Lieberman and Linda Hoody, *Closing the Achievement Gap – Using the Environment as an Integrating Context for Learning* (1998) Pg. 1 <http://www.seer.org/pages/GAP.html>
 - ¹⁶ North American Association for Environmental Education, *Developing a State Environmental Literacy Plan* (2008) Pg. 4 <http://www.naaee.org/selp.pdf/view?searchterm=environmental%20literacy>