

Advancing Pre-Service Environmental Education in Alberta:

A Discussion Paper

(23 January 2012 DRAFT)

This is a living document that will continue to be updated with current research, progress on government initiatives and from suggestions for improvements. It is important reading for all those who plan to attend one of our upcoming events: **Advancing Environmental Education and Education for Sustainability: a Dialogue about Teacher Pre-Service Education** (<http://www.abcee.org/preservice-teacher>).

Comments are welcomed either as suggestions or through using 'Track Changes' in the document. Please send your comments to Lori Toma, the Alberta Council for Environmental Education (ACEE) contractor that is compiling this work at: lori@abcee.org.

The Role of ACEE

ACEE's mission is *to work collaboratively to advance environmental education in Alberta*. In line with this mission, ACEE identified the initiative to advance pre-service environmental education as a priority in 2011-2012. The goals of this initiative are to:

- Create a 'Teacher Preparation Network' of key individuals involved with teacher preparation courses at Alberta's post-secondary institutions
- Facilitate a dialogue on environmental education for those who prepare teachers, with the key outcome of seeing an increase of environmental education content in curriculum
- Support Alberta pre-service teachers in learning how to integrate environmental education into their teaching throughout their teaching careers

Although ACEE hopes to help facilitate and catalyze change, this change must happen within the respective post secondary institution and its instructors in order for the infusion of environmental education content in curriculum to be integrated and sustainable. ACEE is open to suggestions on where and how this support is best given.

What is Environmental Education?

From the 2007 'Framework to Advance environmental education in Alberta'

Albertan environmental education stakeholders have rallied around a classic definition of environmental education as a learning process that:

- Increases peoples' knowledge and awareness about the environment and associated challenges;
- Develops the necessary skills and expertise to address these challenges, including critical thinking skills
- Fosters attitudes, motivation, and commitment to make informed decisions and take responsible action

Through consecutive summits on environmental education, Albertan stakeholders have held that environmental education show varying perspectives on issues, showing learners how to think, not what to think; and that environmental education should take place in a way that allows the learner to understand the interconnections between environment, society, and economy, learning the social, economic, and political implications of decision making in connection with the environment and the use of natural resources.

Why train teachers to teach Environmental Education in Alberta?

It has now become an urgent matter to put research into action and do our part as educators to help save the planet. Richard Louv, author of the national best seller, *Last Child in the Woods* stresses the importance of balance for survival by stating, "We are entering the most creative period in history. The twenty-first century will be the century of human restoration in the natural world."ⁱⁱ

The importance of environmental education in the school system is also strongly supported by 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.ⁱⁱⁱ Most notably, 75% of Albertans agree that schools in Alberta should give **top** priority to providing students with opportunities to do environmental action projects. Environmental action projects help connect students with community and this fits with what was heard from Albertans in the Alberta government's *Inspiring Action on Education* process:

"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."^{iv}

The Ipsos Reid poll also found more than half of Albertans agree that environmental education should help learners appreciate nature (87%) and understand environmental issues and increase their environmental knowledge (88%). Though still high, comparatively lower is agreement that environmental education should give learners citizenship skills that help them solve environmental issues in Alberta (81%).

Given this strong support from Albertans, and the increasing urgency of educating our future leaders to live sustainably, environmental education needs to have a strong presence in Alberta Post Secondary institutions. Infusing more environmental education into current pre-service curriculum will give future elementary and secondary school teachers the important skills and knowledge necessary to educate students on issues of sustainability across curriculum.

Alberta Education's 'Action on Curriculum' Initiative Supports Environmental Education

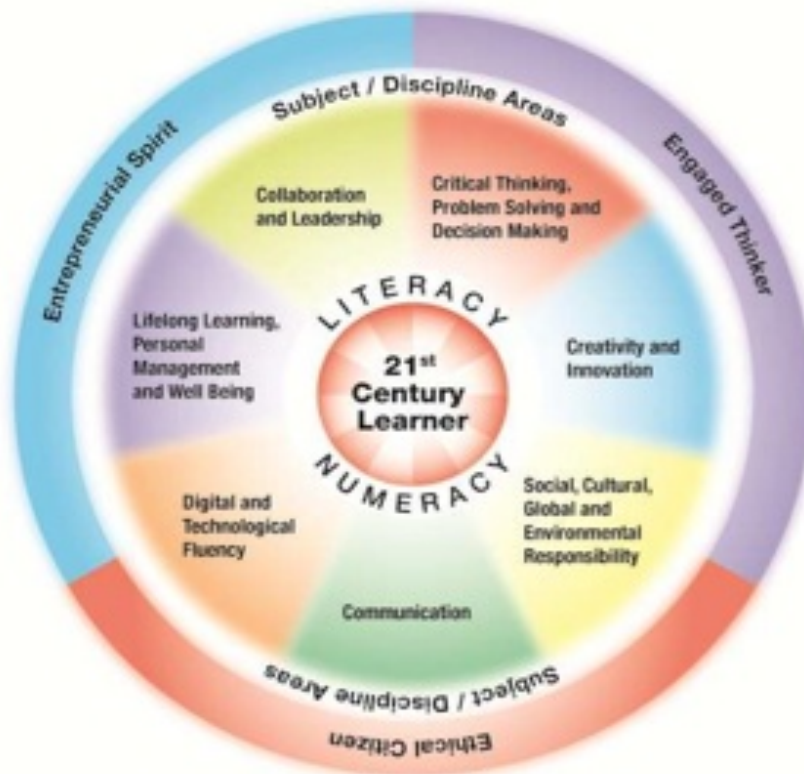
ACEE's initiative to advance pre-service environmental education in Alberta has direct links to Alberta Education's *Action on Curriculum: Curriculum standards and process redesign*, which aims to ensure that the entire Alberta curriculum is forward thinking, current and relevant for students. The project's guiding vision is "Engaging curriculum that inspires every student, every day."^v The goals of *Action on Curriculum* are to develop:

- Revised standards and guidelines for future curriculum (programs of study, assessment tools and learning and teaching resources), and
- A cohesive and collaborative process for curriculum development that will ensure that curriculum is responsive to students in a rapidly changing world."

According to the Minister of Education, Inspiring Education is "about dreaming the dream and Inspiring Action is about what we all must do to make this dream a reality".^{vi} The document *Inspiring Action on Education: A discussion paper* aimed to identify the major topics that required further discussion once the *Inspiring Education: A dialogue with Albertans* Steering Committee report was released and made public.

The following represents some of the relevant milestones:

- ***Inspiring Education: Inspiring Education: A Dialogue with Albertans***. Report to Minister of the Steering Committee (April 2010)
- ***Inspiring Action on Education*** (government's response to the report) - June 2010
- A series of provincial Research Round Tables and Symposia during 2011, the latter organized in partnership with the Alberta Teachers Association
- ***Framework for Student Learning: Competencies for Engaged Thinkers and Ethical Citizens with an Entrepreneurial Spirit*** - Sept 2011



As you can see by this diagram, Alberta Education's *Action on Curriculum* initiative identifies many key imperatives for the 21st Century learner that are in fact key elements of environmental education.^{vii} The presence of the 'Social, Cultural, Global and Environmental Responsibility' competency speaks volumes for the need to include environmental education in teacher training; this competency is described as follows in the 2010 ***Framework for Student Learning*** document cited above:

"Alberta students are responsible and contribute positively to the quality and sustainability of their environment, communities and society. They appreciate social, cultural, economic and environmental interconnectedness and diversity, demonstrate stewardship, and respect the rights and beliefs of others within local and global communities. Their potential to contribute to their communities, including as volunteers, is enhanced through their personal understanding of place and their ability to value fairness, equity and the principles of a democratic society. As active participants in their local and global community, they act responsibly and ethically in building and sustaining communities. In developing their identity, learners see themselves as individuals and as active agents of a broader world."

As of early 2012, Alberta Education is working to identify relevant indicators of these competencies, and ACEE is working with the government to create an Environmental Education Framework that would help inform this work. This work will culminate in a set

of Curriculum Standards and Guidelines that would subsequently be used to create or modify Alberta curriculum.

It is also important to note the ministerial order *Teaching Quality Standard Applicable to the Provision of Basic Education in Alberta* is currently under review.^{viii} The Teaching Quality Standard (TQS) document outlines both the current standards for teachers through education, professional development and evaluation.) outlines the determined knowledge, skills and attributes (KSAs) expected of teachers at different stages in their careers. This presents an opportunity for stakeholders: influencing policy to support the inclusion of environmental education in teaching quality and standards is an integral step to education our future leaders.

A Commitment from the Environmental Education Community

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 is a powerful vehicle to help achieve the goals of *Inspiring Education* and other government initiatives, and promises to leave a legacy for the next generation – a legacy of healthier, more engaged, ethical and innovative citizens. The environmental education community is already dedicated to making environmental education a priority in curriculum.

- Alberta Council for Environmental Education will continue to provide easy access to quality environmental education resources for teachers in Alberta, through its website at <http://www.abcee.org/resources/search/>^{ix}
- Environmental Education stakeholders in Alberta are engaged with Alberta Education in its work to re-create curriculum^x
- ACEE is working to enhance professional development for teachers that are already in the classroom^{xi}
- Alberta Teachers' Association is making enhancing teacher professional development a priority too through its special *Global, Environmental and Outdoor Education Council (GEOC)*^{xii,xiii}
- ACEE is working on an online searchable database to be released later this year. Its goal will be to enhance the professional in-service and pre-service learning opportunities for teachers to help prepare them for integrating environmental education into their teaching.
- ACEE will continue to offer its annual Cenovus Energy Environmental Education Leadership Clinics.^{xiv}

- Through the ACEE workshop series to identify the key competencies of environmentally literate and engaged citizens, the document *The Environmental Education and Citizenship: What we'd like to see in Alberta by 2030* (Appendix A) was developed.

A Call to Action: What can you do to advance Pre-Service Environmental Education in Alberta

There has never been a better time to help advance pre-service environmental education in Alberta. ACEE invites university faculty, students, and other stakeholders to:

- Attend and participate in dialogues
- Encourage a review of environmental education content in courses and programs.
- Infuse environmental education into current courses, across the teacher preparation and university curriculum.
- Call for specific changes to policy that prescribe 'what gets taught' in Alberta teacher training institutions

What others are doing to Support Environmental Education in Pre-Service Post Secondary Institutions

Resources available from the North American Association for Environmental Education (NAAEE)

NAEE has used its cyclic process of peer review and critique to create two excellent resources on preparing environmental educators and reorienting teacher education to address sustainability.

- The National Council for Accreditation of Teacher Education, which accredits the majority of U.S teaching colleges, approved *Standards for the Initial Preparation of Environmental Educators* in 2007. You can download and read this document here: <http://www.abcee.org/cms/wp-content/uploads/2011/02/STANDARDS-FOR-THE-INITIAL-PREPARATION-OF-ENVIRONMENTAL-EDUCATORS.pdf>
- The NAAEE also recommends the document *Guidelines for the Preparation and Professional Development of Environmental Educators*, which was created as part of the National Project for Excellence in Environmental Education and is relevant to teacher preparation in Canada. Reviewers consisted of teachers, educational administrators, environmental scientists, curriculum developers, university faculty members and environmental education agencies. You can download and read this document here: <http://www.abcee.org/cms/wp-content/uploads/2011/02/GUIDELINES-FOR-THE-PREPARATION-AND-PROFESSIONAL-DEVELOPMENT-OF-ENVIRONMENTAL-EDUCATORS.pdf>

United Nations Decade of Education for Sustainable Development (UNESCO)

The UNESCO Chair on Reorienting Teacher Education to Address Sustainability, Charles Hopkins and the Secretariat, Rosalyn McKeown designed this document, entitled *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability*.^{xv} This created based on input from an environmental education international network of 30 teacher-education institutions representing 28 countries. Along with recommending guidelines for reorienting education to address sustainability, the document also recommends:

- Ministerial and national level involvement
- Community and regional/provincial involvement
- Changes within institutions of higher education
 - I. Change across institutions of higher education
 - II. Change within faculties of education
 - III. Change related to engaging pre-services and in-service teachers
 - IV. Change at the individual faculty member level
- Funding and other resources
- Partnerships
- Research
- Communications
- Information technology opportunities

Canadian Ministers of Education Council (CMEC): CMEC has established an Education for Sustainable Development (ESD) working group made up of representatives from all provinces and one territory, 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 is to establish a CMEC pan-Canadian *ESD Framework for Collaboration and Action*. The province of Manitoba is currently the lead province for CMEC's work in ESD. Environmental Education and Education for Sustainable Development are linked by a common goal for education to assist learners to understand the interconnections between the use of natural resources and societal, economical, social, and political implications of decision making.

Examples of what other Post Secondary Institutions are doing to infuse Environmental Education across curriculum

University of Maryland's Chesapeake Project - this project is a University initiative to infuse environmental and sustainable education across curriculum at the University of Maryland. Since launching in 2009, they have successfully integrated over 56 courses with environmental education and education for sustainability. The key component to the project is a two-day workshop focusing on educating faculty members about core concepts

of environmental, social and economic sustainability. A discussion also takes place during this workshop to assist faculty in looking at unique ways of adapting their existing curriculum to include environmental and sustainable education.

Through these revised courses, students have the opportunity to explore sustainability through artistic, cultural, historical, mathematical, philosophical, and scientific lenses to gain a more comprehensive understanding of the subject. For instance, an art professor might lead a class discussion about sustainable materials and a math professor might frame math problems as they relate to the declining oyster population of the Chesapeake Bay. This integration across the disciplines helps students think critically about their local environment, fosters interdisciplinary learning and problem solving, and prepares students to find solutions to complex 21st century problems. ^{xvi}

Emory University's Piedmont Project – In 2001, two faculty members from Emory University began a summer institute to teach faculty members how they can infuse sustainability and environmental education across the all curriculum. After much success at this level, they expanded to offer a similar program for graduate students. This initiative supports Emory University's academic commitment to transforming culture toward sustainability. The faculty program takes place in the summer and is broken up into four parts. Participants are from all disciplines and commit to attending a two-day workshop where they brainstorm sustainability issues, environmental education and experiential learning. They commit to developing a syllabus for an existing course or create a new course that incorporates environmental education and sustainability appropriate to the course subject. Participating faculty will also take part in a fieldtrip and discussion session at the end of the summer to share their experiences. It has been reported that over 167 faculty have participated in the nine years of the program across multiple disciplines. ^{xvii}

Ponderosa Project – Northern Arizona University – Having provided the model for Emory University's Piedmont Project, NAU's Ponderosa project has been running successfully since 1997. Participants in the Ponderosa Project attend an intensive three-day workshop meant to train them in environmental issues and how to infuse this content into their current curriculum. The Ponderosa Group – comprised of NAU faculty members from across the University – meets on a regular basis throughout the academic year in support of this project. ^{xviii}

The goals of this project are as follows:

- Educate and empower faculty in an interdisciplinary effort
- "Green the Curriculum" so that the theme of environmental sustainability is introduced and reinforced throughout students' educational experiences
- Educate students in all courses of study about the implications of environmental sustainability in their chosen careers
- Empower students with the tools they can take into future leadership roles (knowledge, problem-solving techniques, desire to make a difference)

- Introduce environmental sustainability issues to our own campus and apply our knowledge toward campus stewardship
- Work within our communities at various levels (city, county, state, region, nation, and international) whenever possible to encourage and achieve environmental sustainability
- Provide resource materials to achieve the above goals

APPENDIX A

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

This 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/environmentaleducation-framework/what-we-heard>)*
- *Available for public comment 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 active citizens.

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

Teachers...

- inspire, engage and empower their students to become environmental citizens
- know that 'hope is a verb with its sleeves rolled up,' and give students hope about the environment by 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-centered 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 is an essential feature 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.

APPENDIX B

Canadian Milestones

Canada's progress in ESD is based on two decades of commitment by governments, NGOs, and postsecondary institutions, leading to the following notable milestones:

1988	The National Round Table on the Environment and the Economy was established. One of its first tasks was to establish a Task Force on Education, with a strong orientation to including young people more directly in decision making.
1991	The organization Learning for a Sustainable Future (LSF) was established, with a mandate to incorporate sustainable development into education policy across all provinces and territories. The LSF strategy has focused on advancing ESD policy in Canada, supporting educators and young people through workshops and resources, and working with teachers and business and community organizations to facilitate sustainability action projects.
1991	The Halifax Declaration committed Canadian university leadership to addressing sustainable development within academic teaching and research, and across the operations of universities.
1992	ECO-ED: World Congress for Education and Communication on Environment and Development, Toronto: a major international event in which thousands participated in knowledge exchanges about new directions for sustainability education
1993	ECO-ED led to the creation of the Canadian Network for Environmental Education and Communication.



1993	The <i>Établissements Verts Brundtland</i> movement begins; over 900 institutions currently participate in Quebec.
1997	The international francophone forum " <i>Planet'ERE de l'Éducation relative à l'environnement dans une perspective de développement durable</i> " took place in Montreal.
2000	CMEC published its foundation report, <i>Educating for Sustainability: The Status of Sustainable Development Education in Canada</i> , under the leadership of Manitoba Education, Training and Youth.
2005, 2006	Learning for a Sustainable Future, Manitoba Education, and Environment Canada initiated a Canada-wide program of work on the decade, encouraging the formation of multi-stakeholder ESD working groups in each province. This led to the establishment of ESD Canada, a council of ESD experts hosted by LSF.
2005	CMEC is represented on the UNECE Steering Committee on Education for Sustainable Development.
2006	CMEC publishes the document <i>United Nations Decade of Education for Sustainable Development (2005–14): Canada's Response to the UNESCO Questionnaire</i> .
2007	CMEC publishes the <i>Report to UNECE and UNESCO on Indicators of Education for Sustainable Development: Report for Canada</i> .
2008	CMEC releases <i>Learn Canada 2020</i> , with ESD as a core activity.
2008	CMEC established the Education for Sustainable Development Working Group (ESDWG).
2009	The 5 th World Environmental Education Congress, held in Montreal, gave nearly 2,200 stakeholders from 106 countries the opportunity to join forces in exploring new ways by which we can live more sustainably.
2009	CMEC is represented on the UNECE Expert Group on Competences in Education for Sustainable Development.

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- i Government of Alberta, *Land Use Framework* (December 2008) Pg. 33
<http://landuse.alberta.ca/AboutLanduseFramework/Default.aspx>
- ii Louv, R. (2005). *Last child in the woods: Saving our children from nature deficit disorder*. Chapel Hill, NC: Algonquin Books.
- iii Ipsos Reid Public Affairs, *Provincial Polling on Environmental Education and Market-Based Instruments Final Report* (March 2009) Pg. 33 <http://www.abcee.org/polling/>
- iv Government of Alberta, *Inspiring Education – A Dialogue with Albertans* (April 2010) Pg. 23
<http://www.inspiringeducation.alberta.ca/>
- v Government of Alberta, *Action on Curriculum – About the Project* (March, 2011)
<http://education.alberta.ca/department/ipr/curriculum.aspx>
- vi Government of Alberta, *Inspiring Education – A Dialogue with Albertans* (April 2010) Pg. 2
<http://www.inspiringeducation.alberta.ca/>
- vii Alberta Council for Environmental Education, *Working with Alberta Education to Advance Environmental Education* <http://www.abcee.org/albertaeducation/>
- viii Ministerial Order #016/97, *Teaching Quality Standards Applicable to the Provision of Basic Education in Alberta* (May, 1997).
<http://education.alberta.ca/department/policy/standards/teachqual.aspx>
- ix Alberta Council for Environmental Education, *Encana Environmental Education Resource Center* <http://www.abcee.org/resources/>
- x Alberta Council for Environmental Education, *Working with Alberta Education to Advance Environmental Education* <http://www.abcee.org/albertaeducation/>
- xi Alberta Council for Environmental Education, *Enhancing Teacher Professional Development* <http://www.abcee.org/teacherpd/>
- xii Alberta Teachers' Association, *Global Environmental and Outdoor Education Council* <http://www.geoec.org/>
- xiii Alberta Teachers' Association, *Global Environmental and Outdoor Education Council (GEOC) 2010 Symposium* <http://www.geoec.org/conference/index-2010.html>
- xiv Alberta Council for Environmental Education, *Cenovus Energy Environmental Education Leadership Clinic* <http://www.abcee.org/leadershipclinic/>
- xv United Nations Decade of Education for Sustainable Development, *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability* (2005-2014)
<http://unesdoc.unesco.org/images/0014/001433/143370e.pdf>
- xvi Chesapeake Project, *Integrating Sustainability Across the Curriculum* (May 2009)
http://www.sustainability.umd.edu/content/curriculum/chesapeake_project.php
- xvii Emory University's Sustainability Initiative, *the Piedmont Project* (2001)
<http://sustainability.emory.edu/page/1021/Piedmont-Project/>
- xviii Northern Arizona University's *Piedmont Project* (1998)
<http://www.greenguide.nau.edu/ponderosa.html>, <http://www2.nau.edu/~ponder-p/>