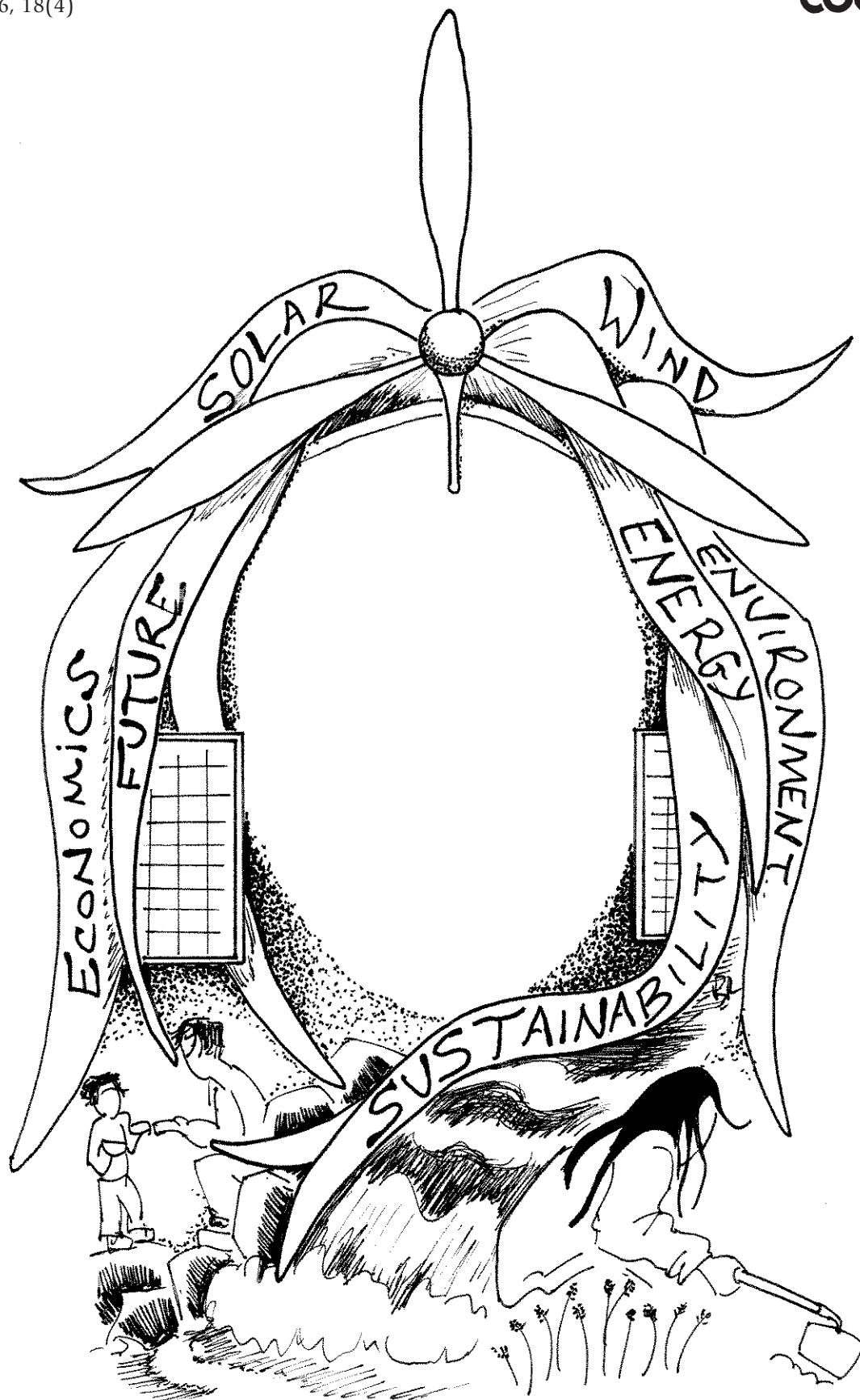
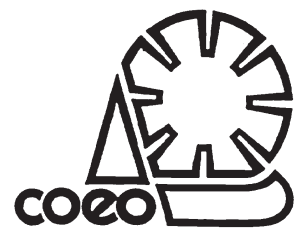


# Pathways

THE ONTARIO JOURNAL OF OUTDOOR EDUCATION

Summer 2006, 18(4)



# Pathways

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The Council of Outdoor Educators of Ontario  
1185 Eglinton Avenue East  
Toronto, ON M3C 3C6

## Our website address:

[www.coeo.org](http://www.coeo.org)

## COEO

Formed in 1972, The Council of Outdoor Educators of Ontario (COEO) is a non-profit, volunteer-based organization that promotes safe, quality outdoor education experiences for people of all ages. This is achieved through publishing the *Pathways* journal, running an annual conference and regional workshops, maintaining a website, and working with kindred organizations as well as government agencies.

## Contributions Welcome

*Pathways* is always looking for contributions. If you are interested in making a submission, of either a written or illustrative nature, we would be happy to hear from you. For a copy of our submission guidelines, please contact Randee Holmes, Managing Editor.

If you are interested in being a guest editor of an issue of *Pathways*, please request a copy of our guidelines for guest editors from Randee Holmes, Managing Editor.

If you have any questions regarding *Pathways*, please direct them to Bob Henderson, Chair of the *Pathways* Editorial Board. If you'd like more information about COEO and joining the organization, please refer to the inside back cover of this issue or contact a Board of Directors member.

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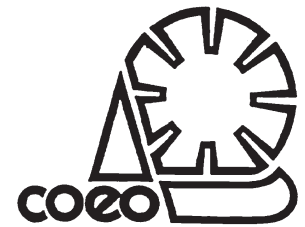
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*Pathways* is published four times a year for The Council of Outdoor Educators of Ontario (COEO) and distributed to COEO members. Membership fees include a subscription to *Pathways*, as well as admittance to workshops, courses and conferences. A membership application form is included on the inside back cover of this issue of *Pathways*.

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This summer issue of *Pathways* is dedicated to exploring sustainability and how it relates to us as educators. Many entries were submitted by outdoor and experiential education (OEE) teacher candidates at Queen's University in the Faculty of Education and from associate teachers, classroom presenters and others who have in some way influenced our thinking on this topic.

The first article is by Bruce Pardy, an environmental law professor who outlines the complexity of the term sustainable development. Bruce offers educators valuable advice on ways to effectively use classroom assimilation activities. OEE students listened to Bruce at a campfire by Gould Lake. The next feature moves away from the parameter of laws and policy to the other end of knowledge spectrum. Miranda Currie addresses the connection between faith and sustainability with a discussion about spirituality education. Our third feature article is a personal account of one man's experience in helping to develop sustainable fisheries. Wade Leonard outlines how his business is evolving into educational opportunities for students and educators.

We have two spotlights on individual programs that emphasize sustainability in their curriculum. The first addresses a public education program, and the second a college program. Our centrefold picture we hope you will be proud to post in your office or outdoor centre! We left the sky blank so that so you can have as much fun as we did creating an ideal caption for the image.

Also included is an inspiring story about two educators who have dedicated their retirement years to living a life of minimal impact and a sustainable lifestyle. At the Environmental

Education and Communication fall conference, Elise Houghton spoke on the extent to which the Ontario curriculum addresses sustainability. Her word count statistics clearly demonstrated what the government values. We approached her to write for *Pathways* to share her findings with a wider audience.

Joanne Prokop, a high school student, shares her thoughts on Bruce Pardy's *Animal Farm Revisited: An Environmental Allegory*. Erin Crowe invites us to think about sustainability every time you reach for your Gorp bag.

As the UNESCO Decade for Sustainability has recently begun, the Dean of Education at Queens' University, Rosa Bruno-Jofré, invited Elizabeth May from the Sierra Club of Canada to speak to students about teaching towards sustainability in the classroom. Beth Dasno shares her notes on Ms May's presentation.

It may be hard to find hope in these times of increasing global environmental awareness. Many might think that environmental sustainability is perhaps an unobtainable cultural shift. Our final submission is therefore a creative piece by Mercedes Rogers about how to make the impossible possible.

Dealing with the realities of climate change and many other environmental issues can frequently result in feeling overwhelmed with little reason for optimism. We hope that this issue provides a little bit of clarity for you on the issues and provides a boost of encouragement to continue to persevere in your niche of outdoor education.

*Angela Burns, OEE 2005/06 student, and  
Zabe MacEachren, OEE Coordinator, PhD,  
Queen's University*

**Sketch Pad** — OEE student journals frequently incorporate illustrations and reveal the hidden talent of individuals. Artists for this issue found the time within their final busy days of teacher education to grace these pages with wonderful images. Special thanks go to K8 McLennan, Tara Casey and Brian Reid for sharing their talents with *Pathways* readers.

Another summer is before us and we are all making plans to enjoy it. I hope everyone has a wonderful summer filled with the best this season can provide. I also hope that many of you will give thought to the coming fall. The fall is the beginning of a new year for COEO and a new year always brings some change. My challenge to you is to find a way to be a part of it.

Lots of people look forward to the fall conference when COEO members gather together for fellowship and sharing of ideas. We renew old friendships and start new ones. Many people share with me how much they get out of the conferences and *Pathways*. They value the connections they provide to the larger whole of the outdoor education community. This is wonderful but there is more to COEO than just the conferences and *Pathways*. There are lots of activities we are involved in to promote outdoor education.

We partner with other organizations regarding shared causes. We advocate in support of society (school boards, the government and the general public) recognizing the value of outdoor education in an effort to ensure as many people as possible can have such experiences. We seek to help others understand what we already know. Our programs strive to create better people and a better world through new understandings. I'm very proud of what our small organization has been able to do.

We are in good shape as an organization. Our membership is in a position of growth. Our connection to kindred organizations is strong and we want to continue building these

relationships. We are moving forward and seeing the benefits of our actions in many ways.

Some people have given a lot to COEO for many years in many ways. They may have organized conferences and workshops, been involved with *Pathways* or served on the Board of Directors. They may have been a voice in the dialogue figuring out what we are all about.

As summer winds down and the fall begins, some people who have been very active the past few years will be looking for a break. They will have done their share in creating the success that COEO is now enjoying. We will need new people with new energies to keep our momentum going.

If you are a longtime COEO member who has seen a lot of change in our field we need your perspective. If you are new to COEO, perhaps just starting out in your career in outdoor education, we need your drive and vision. We will need you so that COEO can continue to thrive. Whether you are down in Windsor, up in Thunder Bay or North Bay, over in the Ottawa Valley or sitting in the middle of Toronto, COEO needs dedicated people who wish to see outdoor education thrive throughout the province. If you think you have something to offer to COEO, or wonder what your contribution could be, I encourage you to take some time to contact me or another member of the board and find a role for yourself. It's OUR organization and will only continue to be as good as we are all prepared to make it.

Shane Kramer

## Board of Directors Meetings

DATE	TIME	LOCATION
June 3, 2006	9:30 am – 4:30 pm	TBA
September 16, 2006	9:30 am – 4:30 pm	TBA

## Sustainable Development: The Status Quo Masquerading as Environmental Progress

by Bruce Pardy

Consider an imaginary place where physical violence is the norm. People go around hitting each other over the head with sticks. They do it often. They do it to intimidate, to settle scores, and to punish those they do not like. The use of force is widespread. The strong and powerful use it to their advantage over the small and weak, who are terrorized and unable to defend themselves.

Imagine that in this place there is no law that prohibits the use of force. Hitting others over the head with sticks is not prohibited. Finally, there is a proposal to change the law. This suggestion is met with agreement from some, but with much resistance from others, for predictable reasons: (1) strong people are empowered by the use of force; (2) changing the law would mark a departure from the way people are used to having things; and (3) saying that change is necessary amounts to criticism of a way of life and those who have a place in it.

Imagine the efforts that might be made against the creation of an effective law prohibiting the use of force. Violent means might be used to resist, of course, but consider this question in the legislative sense. There are at least two strategies that those opposed to change could adopt to frustrate the effectiveness of a new rule against violence. The first would be to try to make the new rule vague and contextual. They might say that any rule against the use of force should not be absolute, but flexible. Prohibit force, yes, they would say, but do it in a way that does not offend community values and takes context into account. They might propose the following rule:

*No one may use force against another unless the situation makes it acceptable.*

Or alternatively,

*No one may use force against another if the nature or extent of the beating offends the sensibilities of the community.*

These rules allow the use of force to continue. That is because their prohibition is based upon community standards, or in other words, upon what people generally do. At the time the new law is developed, what people generally do is beat each other up with sticks. In order for the law to be effective, it must describe a rule that departs from existing community standards. Indeed, that is the purpose of creating the new law. (If it did not depart from what people generally do, there would be no need for a new law.)

The second approach that those resistant to change might take is to attempt to make the new law specific and complicated. Instead of a generally applicable rule that prohibits the use of force, they might propose an extensive list of particular rules for particular situations, such as the following:

1. *No one is to beat another with a stick in the parking lot of an arena after a hockey game.*
2. *No one is to use a stick with force in order to get a better place in a cashier's line.*
3. *No one is to beat a sibling with a stick on the sibling's birthday.*

And so on. The result of a long list of particular instances where the use of force is prohibited is to permit the use of force in all other circumstances. It is okay to beat others after a baseball game. One may use force to get a better seat on the bus. You can take a club to your brother if it is not his birthday.



Either of these alternatives—the vague rule based on social acceptability or the list of specific rules—would successfully prevent a general prohibition against the use of force. A rule far more effective at preventing violence, of course, is

*No one may apply force against another without the other's consent.*

To this rule might be added carefully defined exceptions such as provocation, self-defence, and medical necessity. The rule would be effective because it is simple and generally applicable. Occasionally, scenarios will arise that do not fall cleanly inside or outside the rule, but for the vast majority of situations, the rule provides a clear signal about what is legal and what is not.

This imaginary scenario introduced at the beginning does not reflect current laws and attitudes towards physical violence. Unfortunately, it does reflect present laws and approaches to environmental issues. Instead of an environmental rule or principle that clearly describes what is legal and what is not, both versions of rule avoidance described above can be found: vague notions of environmentally “appropriate” behaviour based upon social acceptability, and extensive lists of specific prohibitions for specific situations. Neither kind of rule is any more effective in defining an environmental bottom line than in defining assault and battery; neither establishes concepts upon which environmental protection can be based. In short, environmental law suffers from a plethora of good intentions and a paucity of concrete principles. The best, and worst, example of environmental “non-principles” is sustainable development.

In 1987, in its report *Our Common Future*, the World Commission on Environment and Development recommended sustainable development as a strategy to combat the world's accelerating environmental problems and the growing divide between rich and poor

countries. Sustainable development was defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Since then, sustainable development has become one of the dominant concepts in international environmental law.

Unfortunately, sustainable development has not established a predictable idea about where the line is to be drawn between conflicting interests. It incorporates environmental, social, and economic concerns, but it does not prioritize them, or define their relationship. If harvesting an area of forest creates 100 jobs and adds \$10 million to the local economy but destroys the forest, is that sustainable? If replanting trees to replace the ones that are cut will replenish the supply of trees but forever change the forest ecosystem, is that sustainable? If the only choices are to cut down the forest or shut down the company, which of those choices does “sustainable



development” require? Instead of articulating a priority or defining a hierarchy, it merely describes ideals—a protected environment, a developed economy, and an equitable social structure. However, it does not prescribe a way to resolve conflicting priorities so as to reach those ends.

Sustainable development resists definition. Indeed, it is the best example of the ambiguous concepts that have become embedded in environmental discourse, not in spite of their vagueness, but because of it. Sustainable development allows hard questions to be avoided instead of confronted. Rather than leading to a new approach, sustainable development reinforces the uncertain, ineffective, and un-revolutionary nature of environmental law.

### Teaching about Sustainability and Sustainable Development

Environmental philosophy is long on grand thoughts, such as sustainable development, and short on concrete principles. In order for a principle to really work as an instrument of environmental protection, it needs to be able to resolve actual disputes between real people. Students should be challenged to take the environmentally appropriate inclinations that they express (“We should respect the Earth’s limits,” “Human beings should act with respect towards other organisms,” “Sustainable development is the key to a clean and equitable future,” and so on) and apply them to fact scenarios to find out what they really mean.

Effective scenarios, and the ones that are the most realistic, are situations that involve irreconcilable conflicts between competing notions of the way the world should work. For example, teachers can formulate hypothetical situations that place the interests of local populations against the health of the resource on which the local economy depends, like the forestry scenario described in the section above. Environmental conflicts often involve struggles between two sets of rights. If one person wishes to build a three-storey home on

his own plot of land, but his neighbour objects because of the “environmental effects,” is the neighbour really concerned about the environment, or about preserving the attributes of her own property, such as a pleasant view? Under what circumstances should neighbours be able to interfere with private activities on private land? Other effective scenarios place environmental goals in realistic context and require students to make hard choices and be precise about the decisions that they think are appropriate. For example, sometimes environmental goals are in conflict with other broad social objectives such as economic development in poor regions, nationally and globally. If raising the standard of living of the world’s poor creates demand for resources that is three, five, or seven times higher than it is now, should the standard of living of the world’s poor be raised? (This could well be the result, as the demand that the developed world places on global resources is substantially greater per person than it is in the developing world.) What if doing so threatens to push human civilization over the “environmental cliff”? Environmental protection and social equity are commonly characterized as complementary goals, but they often are not. Reality can be a challenging and interesting place when students are attempting to formulate philosophies and approaches to achieve environmental progress.

In summary, environmental education sometimes requires scepticism and tough questions. Unexamined environmental platitudes are not nearly as valuable to students as the understanding that results from honest examination of what sustainability really means.

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*Bruce Pardy is an associate professor in the Faculty of Law at Queen’s University, Kingston, Ontario. This piece is partially adapted from his 2005 article, “In Search of the Holy Grail of Environmental Law: A Rule to Solve the Problem,” International Journal of Sustainable Development Law and Policy 1 (1), 29–57.*



# Sustainability and Spirituality: A Call to Outdoor Educators

by Miranda Currie

## Introduction

As educators we touch the lives of young people everyday. We attempt to spark imaginations and satisfy curiosities. We make a committed effort to guide the minds, bodies and spirits of each child, down their own unique path. As outdoor educators, we facilitate opportunities that allow the mystery of nature to touch the hearts of young people whenever possible. In the outdoors, we problem solve real life situations, explore our physical environment and allow the wonder of the landscape to permeate our being. However, with this opportunity comes responsibility. As outdoor educators, we have an obligation to teach towards ecological sustainability by nurturing a sense of stewardship for the planet upon which we live.

Our practices in education, sustainability and spirituality are, at their philosophical core, holistic. Spirituality is a very important and beneficial aspect of a holistic approach to education and sustainability. So, why as outdoor educators do we often hesitate to include elements of spirituality in outdoor programs? What are the barriers to including aspects of spirituality in outdoor programming and how can we overcome them?

## Sustainability: What Is It and Why Is It Important?

The term sustainability is somewhat of an ambiguous term. Due to this ambiguity there can be many interpretations depending on the industry represented. Population, climate change, ecological diversity and energy use are all issues of sustainability, but what is sustainability?

In 1987, Gro Harlem Brundtland, then the Prime Minister of Norway, commissioned a study, entitled *Our Common Future*, that

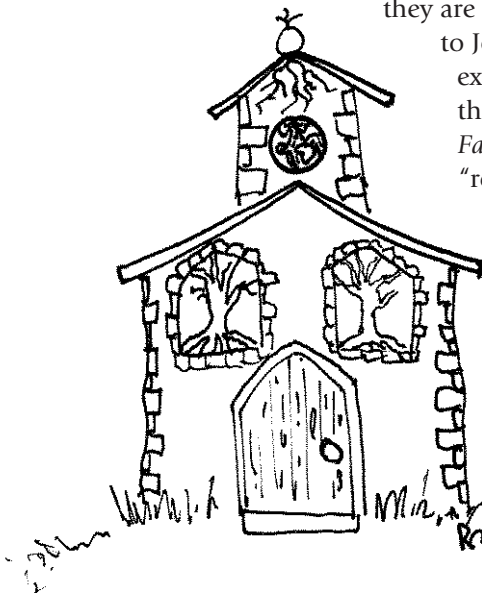
defined sustainability as “development that meets the needs of the present, without compromising the needs of future generations to meet their own needs” (Brundtland Commission, 1987, p. 8). This definition has become widely accepted and used by governments, corporations and the general public as the solution to our current ecological crisis. We must become sustainable in order to survive!

The best definitions of sustainability include not only environmental considerations, but also social and economic factors. In the past, economic factors have tended to trump many other aspects of a decision-making process, including environmental and social implications. Now we are beginning to ask the important questions such as “what will happen to *people* as well as the *environment* if we take this course of action?”

The concept of sustainability is intrinsically holistic in nature. Our Earth is a vast and complex system of interconnections, so great and complex that our human brains are not capable of comprehending it in its entirety. Sustainability deals with the whole planet! As outdoor educators we attempt to bring the wonder of the vastness and interconnection of our planet to students we serve by creating a sense of stewardship and caring for the Earth. In turn, this sense of stewardship provides the foundation for the conservation of ecological balance, by avoiding the depletion of natural resources.

## Spirituality: What Is It and Why Is It Important?

From cosmic new age to dogmatic preaching, there are many perspectives on spirituality. Frequently, religion and spirituality are perceived as synonymous terms when, in fact,



they are quite different. According to John Dewey, the father of experiential education and the author of *A Common Faith* (1989), the term “religion” signifies a special body of beliefs and practices having some kind of institutional organization. Furthermore, the term religion is often associated with the negative connotations of indoctrination.

Religion as a system of faith and beliefs may be seen as confining because of its inherent institutional organization and principles, yet it is these same principles and organizational structure that provide the foundation of a caring community that nurtures growth in its members. In contrast, spirituality often carries a connotation of openness to new ideas and ways of thinking of oneself in relation to the surrounding world, without being institutionalized, yet may not hold the same type of social community support inherent in religion. Ideally, as outdoor educators we want to promote openness to new ideas and our connection to the natural world, while still providing a caring community in which to grow.

For the purposes of this article, spirituality (which may encompass religion) is that which pertains to the spirit or soul of a person as the seat of moral nature. It is how we decide what is important to us as humans. A sense of spirituality “may include an insightful relationship with oneself and others, a strong personal value system, and meaningful purpose in life” (Gookin, 2003, p. 31). There is a tendency for people with a positive sense of spirituality to have increased self-esteem, self-efficacy, self-comfort and self-reliance. A spiritually strong person feels empowered in life’s purpose and can thus act in a calmer state of mind (Gookin, 2003).

### What Is the Connection Between Sustainability and Spirituality? Why Is One Important to the Other?

Sustainability and spirituality are both intrinsically holistic in nature; both are concerned with the interconnection of the universe and how we as humans interact in that connection. Traditionally, sustainability is thought of as having to do with the ecological interactions of the planet, but as mentioned earlier it is also concerned with the social impacts as well as economic implications for the future. When we explore our own sense of spirituality we often contemplate the universe and our purpose in it. We make decisions for the betterment of ourselves *and* the world around us.

Mahatma Gandhi once said, “We are able to fill the needs of the whole world, but not the wants of one small village.” Anil K. Rajvanshi from the Nimbar Agricultural Research Institute in Maharashtra, India supports the notion that a positive sense of spirituality gives a certain perspective on life that can aid in sustainable development. When we strive to live a more spiritual life, one more in tune with the world around us, priorities tend to change from happiness through the acquisition of material possessions to happiness attained from mental peace. This decrease in material consumption (especially in North America) is necessary for sustainability. A positive sense of spirituality also gives us a compassionate view towards nature. This compassion limits exploitation and helps foster a sense of stewardship towards nature. Humans are responsible for taking care of nature, and in turn nature will provide what is needed to survive. Again, this spiritual sentiment echoes the definition of sustainable practice.

Often, as outdoor educators, we find ourselves enjoying the beauty of the surroundings in which we teach. No comparison can be made to the joy we may feel in witnessing a beautiful landscape or the changing of the seasons. It is no secret that humans recover rapidly from stress when they are exposed to pleasing natural environments. When we allow students to

experience this same deep sense of appreciation for their natural surroundings, a sense of conservation for the future is also instilled.

In many religions of the world, respect for nature is held in high regard and the philosophy of simple living and high thinking is taught. Many great thinkers of our time have lived simple lives; Einstein and Gandhi are both wonderful examples. Rajvanshi suggests that a combination of high technology and spiritual growth will promote a new paradigm of sustainable development. Herman Greene and Thomas Berry have both written about entering into what has been coined an Ecozoic era, where sustainable technology and a new eco-spirituality will be necessary to reverse the ecological crisis we are currently facing. A positive sense of spirituality urges humankind to treat one another with respect, as we ourselves would like to be treated. This sentiment is also reflected in many religions of the world. It helps us live in harmony with one another and work toward a common goal—the conservation of the Earth's resources.

### **What are the Barriers to Including Spirituality as Part of a Holistic Approach to Outdoor Education?**

Spirituality is an important part of a holistic approach to education and promotes the concept of sustainability. Why, then, do we often hesitate to include spiritual elements in programming? As educators can we morally impose our spiritual beliefs upon students within the context of public education? Bob Henderson (1999) argues that, “at its most fundamental, educating students with moral goals seems like telling them how to live” (p. 234).

Educators must however consider that, like any new skill, students need guidance in finding their own spirituality. Teaching with emphasis on the fact that spirituality does not need to be narrow or rule bound, but that it can focus on “what it is good to be” as opposed to “what is right to do” (Henderson, 1999) helps to eliminate an imposing view.

A general sense of positive spirituality encompasses values such as caring, honesty, responsibility and respect, which can be applied in the context of education, sustainability and spirituality. Spirituality recognizes that there is something greater than ourselves out there, however what that ‘something greater’ is, is a matter of personal belief. Thus, respect of diversity *must* play a key role when discussing issues of spirituality. Beginning with a student-centred approach helps to avoid the pitfalls of preaching and indoctrinating as well as provides the group an opportunity to benefit from the knowledge and experience of peers (McGowan, 1997).

### **How Can We Include Elements of Spirituality in Outdoor Education Programs?**

Spiritual education arises from everyday events that provide spirituality for people, but more can be done. Outdoor educators need to advocate and provide opportunities to nurture the human spirit (Henderson, 1996). As outdoor leaders we allow students the opportunity to experience issues of spirituality as they relate to our common world, and particularly to nature. Studies have shown that physical tasks may also play a critical role in a spiritual experience (Gatto, 1999). Outdoor education regularly provides students with a physical challenge that may lead to spiritual growth. Some of these physical tasks include purposeful work to achieve self-knowledge and self-respect, genuine independent decisions, and tasks involving self-discipline and developing a sense of duty through meaningful service to others (Gatto, 1999).

There are many additional elements of outdoor education that are also conducive to spiritual growth. They include but are not limited to

- new surroundings that contrast with home
- opportunities for quiet and solitude
- opportunities to model positive values and behaviours
- opportunities to be confronted with oneself

- opportunities for closeness with other people in cooperative endeavours
- opportunities to observe and initiate positive gender role models
- opportunities for creative personal involvement and ownership of group process and outcomes
- encounters with predictability and uncertainty
- opportunity to experience nature: something bigger than oneself
- comparing and contrasting preset experience with past experience
- staff promoting the program as spiritual (and defining what that means) (McGowan, 2000).

Many resources concerning the inclusion of spirituality in outdoor education are available via the Internet. One worthy of mention is a resource booklet entitled *The Green Rule*, developed by an organization called Faith & the Common Good. This resource helps students discover the sacredness of creation within the world's faith traditions. The content of this booklet (which is downloadable free-of-charge) includes examples from numerous religions concerning how a positive sense of spirituality calls us to live in harmony with the Earth.

Through simple thought processes, such as encouraging students to think about how their food got to the table in front of them, or contemplating connection in nature, we can begin to incorporate spiritual elements into outdoor education programming.

## Conclusion

Sustainability is the solution to our current ecological crisis. A positive sense of spirituality can aid in a decrease of material possessions and resource consumption, while increasing care and compassion towards nature, both of which are necessary for the survival of planet Earth. As outdoor educators we have a special privilege and responsibility to instill a sense of wonder and stewardship for the Earth by engaging the mind, body and spirit of every

child we teach. Including spirituality as part of a holistic approach to outdoor education has proven beneficial to students' emotional well being as well as attitudes towards the environment. Through the inclusion of thoughtful student-centred reflection, physical challenge and opportunities for quiet and solitude, educators help create hopefulness for a new ecological era.

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Miranda Currie is from Thunder Bay, Ontario and has been studying at Queen's University in the Faculty of Education's Outdoor and Experiential Education program.

## Sustaining Recreational Fisheries

by Wade Leonard

When I was young I spent my summers at my parents' fishing camp on Bob's Lake, where the walleye was central to our activities. Like many Canadians, we spent countless hours cooking, catching and conversing about this species of fish. Today walleye are an integral part of my business and a potential centrepiece for sustainable education.

### Background on Fisheries

There are tens of thousands of lakes in Ontario and no two lakes are the same; they have different fish communities, different histories, different influences, and different human-induced pressures. Ensuring the sustainability and protection of fish stocks in recreational fishing areas (fisheries) is extremely complex, with many different interests at stake.

The role of protecting Ontario's fisheries belongs to the Ontario Ministry of Natural Resources. This agency has the responsibility to ensure the survival of fish communities and populations for intrinsic reasons. They are also responsible for ensuring that future generations of anglers benefit from fisheries. Protection is ensured through fisheries regulations, enforcement and education.

Because there are two million anglers in Ontario, fisheries need to be protected from the possibility of over harvest. The government has decided in many cases that the best way to restrict harvest is through limiting the number and size of fish that anglers can take. Anglers are complying with the various regulations by adopting catch-and-release methods of fishing. Whether you approve or disapprove of catch-and-release fishing, the reality is that many fisheries would simply collapse without this management strategy. There aren't enough fish to supply all

of the anglers in Ontario. If stocks collapsed there would be no biodiversity left in the lakes to protect. This would result in closing lakes off to anglers while stocks rebuild. Banning recreational fishing (the goal of some groups) would simply be impossible. There are 250,000 lakes in Ontario and government cutbacks are prohibiting conservation officers from effectively monitoring fisheries.

There is another strategy available for fisheries management and that is through the stocking of young fish. This seemingly straightforward idea of putting more fish in the lakes very quickly becomes complicated with issues of disease transfer, genetic fitness, fitness of the fish at the time of stocking, and user group conflicts.

One of the most-used criticisms against stocking is related to concern that the stocked fish will cause genetic harm to the native fish already in the fishery. In some cases (such as with walleye) this concern is unfounded. Two-thirds of the walleye stocks in Eastern Ontario's inland waters originated from stocking. Furthermore, many of the water bodies considered contentious for walleye stocking were created with the construction of dams in the early 1900s. A philosophical debate often ensues on this point, the crux of the argument being whether artificially created fisheries in artificially created water bodies can have inherent genetic integrity and, if so, whether that genetic integrity needs to be protected.

There are certainly positive benefits of stocking, and cases where the alleged detrimental effects aren't as apparent. Stocking serves to protect naturally occurring but threatened fish populations. It is used by natural resource managers to create fishing opportunities and divert fishing pressure away from more sensitive natural fish stocks. Thus it



helps to both indirectly protect biodiversity and provide fishing opportunities. Stocking isn't the answer for every fishery, but it is a tool for natural resource managers to help to sustain fish populations.

Walleye are the most sought after sport fish in Ontario with anglers traveling thousands of miles for the chance to catch one of the tastiest freshwater fish. Unfortunately, their great taste has also made walleye a fish that, once caught, is destined for the frying pan. Overfishing is just one of the threats facing walleye populations; habitat change, global warming, the introduction of exotic species, fish community changes and many other factors all impact its populations.

### **Saving a Fishery from Collapse**

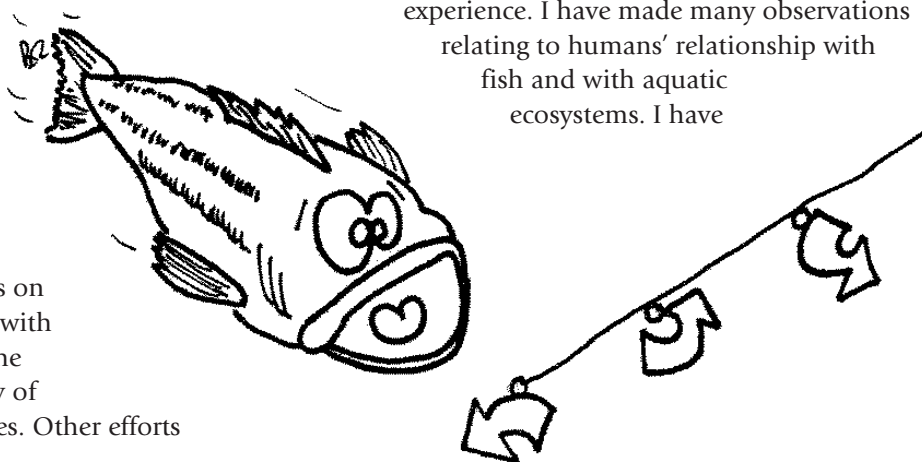
When the population of walleye declined in Bob's Lake during the 1980s the decline seemed to be very dramatic and long lasting. It appeared as though the walleye were disappearing from the lake. Anglers were complaining they had never seen the fishing as bad, and fishing lodge owners were losing business. It had become apparent to many that something dramatic had to be done to rebuild the walleye population.

Some fisheries biologists felt that walleye in Bob's Lake had a low level of recruitment (a low number of young fish replacing the fish being caught). In 1987, my father and grandfather began raising walleye in ponds on our family farm with the blessing of the Ontario Ministry of Natural Resources. Other efforts

aimed at rebuilding walleye populations by stocking had until this point been met with only marginal success. As luck would have it we stumbled on a method of rearing walleye that yielded exceptional survival rates once the fish were released into the lake. We found the key to raising the larger fish had to do with our ability to feed the walleye minnows during their entire time growing in our nursery ponds. As a result the walleye grew bigger than anyone could have predicted. We stocked them into the lake and two years later anglers were catching them by the score. Our program seemed to be an instant success.

We realized quickly that angler education was needed to protect the newly created fishery. We felt that anglers were catching too many of the small recently stocked fish. Since there were no government regulations to protect walleye of any size in our particular lakes something else would need to be done. My father set about asking anglers to release the small fish and give them a chance so that fishing would improve in the future. The word spread through the angling community; fish were caught and released instead of being caught and cooked.

My father and I have built a business based on the early success of our fish rearing experience. Running the business has been hard work; there have been a lot of good times and some things we'd rather forget. Overall, operating the hatchery has been a wonderful learning experience. I have made many observations relating to humans' relationship with fish and with aquatic ecosystems. I have





noticed how keenly interested most people and especially children are in fish.

The life cycle and daily habits of walleye dictate the rhythm of our activities. The yearly trips to the walleye spawning grounds to gather eggs for our hatchery have become a family tradition. Fish spawning time is an important event for many people, especially First Nations peoples. I have had many great opportunities to do my work while being in the river with native spear fishermen. Through being involved in egg collection, I have developed a sense of the incredible importance of fisheries in the lives of First Nations people.

I have seen the wonder in the eyes of both the young and the old in seeing the fish spawn out in the river. People from many different backgrounds are drawn to the rivers to witness this annual event and for many it is the only chance they will get to see the fish for the entire year. Spawning time has become one of my favourite times of year. After you've been at the spawn for a few years you can smell the fish in the river and it gets in your blood.

### Hatchery Operations

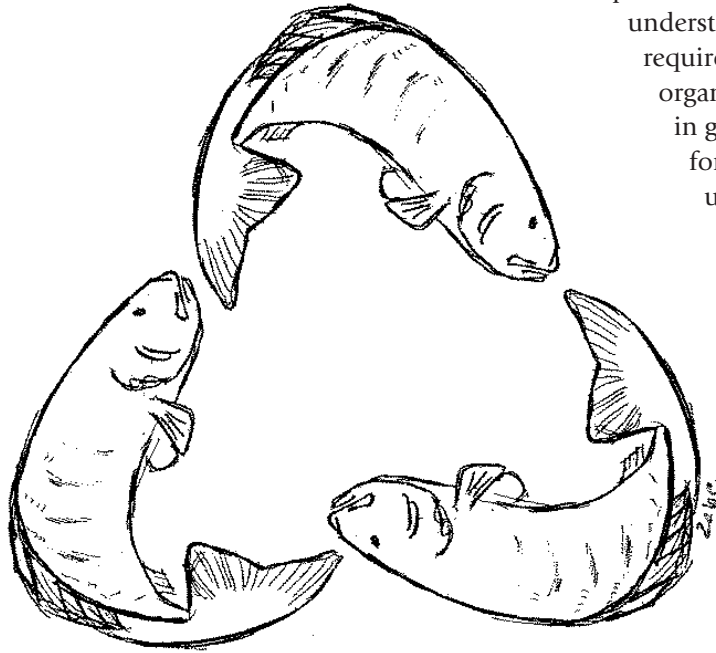
After the fish and/or eggs are brought back to the hatchery from the rivers another amazing transformation takes place. The eggs that were collected and subsequently placed in the hatchery jars turn into larval fish in a period of just days. Since the fish eggs are completely transparent the entire process of development can be observed under a simple field scope. The backbone, the circulatory system, the gills and the eyes are all readily visible and the stages of development can be easily viewed by even the most novice observer. We have had many school groups, local residents, and scientists from our local university at the hatchery, and they are always amazed at the process. Every time I see the development process I can't help but feel a little bit humbled and awed at viewing life in its most precarious of times.

While the young walleye are developing, we prepare the ponds in anticipation of planting the walleye. Fermented organic fertilizers such as soybean meal are added to increase the amount of plankton in the pond for the walleye to feed on. The bacteria in the fermented feeds act as a food source for the tiny *Daphnia* (a form of zooplankton). The zooplankton population grows dramatically in the short amount of time leading to the walleye hatch.

The walleye continue feeding on the *Daphnia*, other kinds of plankton, and small invertebrates until the age of about 45 days. At this time they are about 2–3 cm long and have usually eaten all of the food in the pond. The walleye are then moved to other grow-out ponds where they will feed on minnows, or they are transferred to grow-out tanks and taught how to eat a prepared diet. By early fall the walleye have grown to about 20 cm long and weigh about 100 grams. The fish are harvested when the temperature of the water has cooled sufficiently.

From this stage walleye are taken to any one of the lakes that we have sale orders for and they are released. While we produce far fewer fish than many of the provincial hatcheries, the fish survive at a much higher rate. The high survival rate is due to the fact that the fish are so big when they are released into the lakes. Typically, the only way small fish die is by being eaten by larger fish; they don't usually starve to death and they don't usually get sick.

We have been selling walleye for stocking lakes since 1994. The year we started Leonard Walleye Culture and Research the government added walleye to the list of species that were eligible to culture and sell. That year we obtained the first licence ever issued in the province of Ontario to culture and sell walleye. We also stocked the first privately reared walleye to fisheries. We had to wait two years before the first reports started to trickle in from our customers regarding the stock being caught, but after those reports our



reputation for producing quality fish began to grow. Orders for our fish increased and within a few years we were selling to the provincial government.

Business looked really good for about five years until the government cancelled its orders and our fish production began to suffer through some exceptionally hot summers. Production fell and customers were upset when orders weren't delivered. We tried to offset losses through the addition of a bait business but it wasn't enough to fill the gap left by the loss in walleye business. This year I have had to go back to school to make up the financial gap.

### **Future Plans: Fisheries Education**

I plan to keep the business going and I am adding an educational component to the fish farm. From the experience of running my business I have come to the conclusion that most of the topics related to the field of aquatic ecosystems are misunderstood by the

public. Many people lack the basic understanding of the environmental requirements of fish, other aquatic organisms, and aquatic environments in general. I think that the best hope for improving society's understanding of environmental issues is by the education of today's students. To that end, the first of what I hope will be many classes arrived at the fish farm in May 2006 for a day of pond study. By performing water quality and biomass assessments students will gain some insight into how aquatic environments function.

A larger issue than fishery sustainability is the sustainability of the natural environment. These pressing concerns are looming ever more important to all of us at a time when the general public has never been more removed from understanding subjects such as food production. I plan to change the direction of the fish farm by developing a sustainable educational centre for fisheries, fish farming and other integrated agricultural operations. I am convinced that the best way to educate people on environmental issues and solutions to future food production problems is to show them a working model, a demonstration of what can be done. I picture the farm becoming a centre where students and the public can come and spend a day involved in the hands-on activities and farm chores; they will learn lessons from the Earth. With luck and good planning I will be able to keep my core walleye business going and help to educate the next generation on some of what I feel are very important topics.

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*Wade Leonard is from Hartington, Ontario and is a student at Queen's University in the Faculty of Education, in the Outdoor and Experiential Education program.*

## Teaching Sustainability at the Ryan Centre

by Walter Sepic

The grade five science unit on energy conservation from the Ontario curriculum is taught differently at the Ryan Centre, an outdoor education centre, than in a typical school.

Upon arrival at the Ryan Centre, students are welcomed warmly as they remove heavy clothing, look around with wide eyes and comment on the displays. Once seated, they are given a visual tour of the centre including the 106 mounted birds, three museum tables, mystery box, hands-on centre, and vermicomposter. There is also a reference library, photo album, guest book and adult comfort station. After their questions are answered and their snack finished, the students are encouraged to walk around and explore their surroundings.

When their curiosity is mostly satisfied and they are ready to focus, the unit of study starts right out of the curriculum guide with a discussion of the differences between renewable and non-renewable sources of energy, the pros and cons of each, fossil fuels, greenhouse gases, smog, respiratory ailments, climate change, global warming and related issues. Students are then asked for suggestions on ways to conserve energy at home, school, and the workplace, related to the family vehicle, and so on. The energy from this lively exchange is then steered toward renewable forms of energy where wind, water, solar, hydrogen, biomass, fuel cells, and other energy sources are discussed.

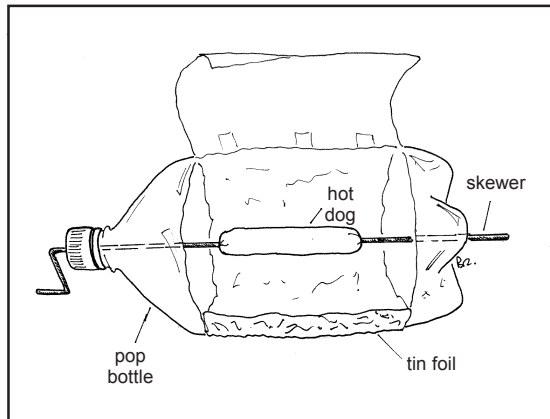
The students are then told they will take part in solar energy research. Working in teams, they will conduct an experiment to determine which colour of metal collector plate will give the most heat when exposed to sunlight. Activity sheets, pencils, clipboards, solar thermal boxes and thermometers are doled out and the students all exit the centre via the west

door with the glass side of the solar boxes facing north. Solar viewing lenses are employed here (#14 welding lenses) allowing the students to safely see the source of nearly all the energy on Earth—our sun. (Many oohs and aahs here.)

After temperature acclimatization, the box lids are closed and the starting temperature is recorded. On a signal, all the boxes are turned toward the sun. One team member's sole responsibility is to keep the box aimed so as to avoid any shadows on the collector plate. Another member reads the thermometer every 60 seconds and the third records the value on a graph. After fifteen minutes, a line is plotted and the difference between starting and finishing temperatures is calculated.

The students then are allowed to open the boxes and feel the hot collector plates. In winter, this is very enjoyable. (More oohs and aahs.) A quick collection of the data from the student scientists gives the average temperature gains for the four colours: red, green, black and grey. All assume, of course, that black will "win," but frequently the students are surprised, since after a few years, the score is tied, with each colour having three victories.





Next, the students are introduced to a large photo-voltaic panel—35 cm by 120 cm—that generates 22 volts at peak sunlight. This powers a 45 cm electric fan that cools the students on warm days. The panel is placed outside in the sun, kicking the fan into high speed, blowing a good breeze on the students. On cloudy days, the students are surprised that the fan still turns.

Lunch time arrives quickly. After a washroom break, the students sit down to eat, where they receive a brief explanation of passive solar architecture. Those who brought a garbage free lunch have their names placed on a list from which several winners will be chosen to receive small prizes such as tree seeds, heritage issues of National Geographic, wetlands colouring posters or back issues of *Skynews* astronomy magazine.

After lunch, it's trading time. Students who brought natural artifacts may trade with the outdoor education teacher from the "trade box." This program has helped the museum grow to cover more than three tables. Other students have a 20-minute recess.

A parabolic solar reflector is the next stop on the solar energy tour. Affectionately called the "solar hot dog cooker," its plywood frame supports a curved Lexan mirror that

focuses the sun's rays onto a narrow space near the centre where a stiff wire can hold five hot dogs. Students are allowed to place their hands along the narrow space to feel the sun's concentrated energy.

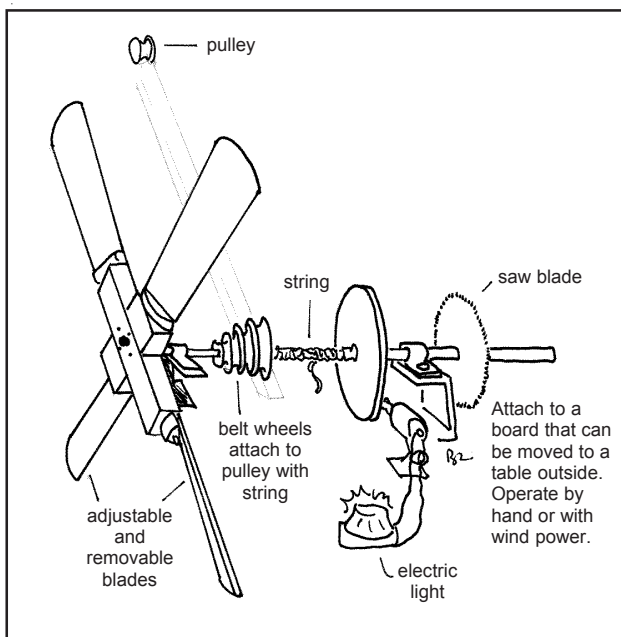
Last on the tour is the 'piece de resistance'—the solar wall. The Ryan Centre's entire south wall is covered by corrugated dark brown metal, filled with tiny perforations. When the air space behind the wall reaches four degrees higher than the temperature inside, a differential thermostat directs electricity from a roof-mounted PV panel to three electric fans, drawing the warm air into the building. This not only warms the building, but also brings in fresh air, pressurizes the building against cold infiltration, and moves the warm air from the ceiling to the lower areas. Students are encouraged to get a close look at the wall; while they are indoors, the wall often activates during lessons.

The unit of study concludes with a hands-on demonstration of a variable pitch multi-function windmill. A one-metre-square plywood base holds the assembly, which consists of a steel shaft supported by bushings. At one end is a hub that holds four wooden blades. These blades come in three lengths: 30, 45 and 60 cm for winds of different speeds. The students help install the blades. They are fastened with wing nuts and can be set at any





angle. The shaft also holds a step pulley, a saw blade, a wooden foam-backed wheel and a flexible cable on its other end. The saw blade is used to cut cardboard, and the foam-backed wheel turns a bicycle generator, which illuminates a light bulb. The step pulley holds a cord that passes through a pulley on the end of a metre-long wooden arm, or crane. A weight is lifted off the ground as the cord winds around the pulley. The flexible cable on the end of the shaft has a three-jaw chuck and drill bit. The students are allowed to drill holes in the wooden base while the shaft turns. Thus, the windmill is an excellent visual demonstration. It can saw, generate electricity, lift weights and drill holes. The students are told that its applications are limited only by human imagination.



Their trip ends with a review of the day (including a reminder to help their families conserve current energy supplies and push for renewable energy sources), the revealing of the mystery objects and the draw for litterless lunch prizes. The class then heads for the 3:30 pm ferry with wishes for an enjoyable ride back to the mainland.

It is hoped that the students' discussions, hands-on experiences, and observations of functioning models give them a clear

understanding of practical conservation measures as well as the current use of, and the potential for, renewable sources of energy for a sustainable future.

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*Walter Sepic is the champion teacher behind the formation and directing of the Ryan Centre. The Ryan Centre is a portable classroom in the backyard of Sacred Heart School on Wolfe Island near Kingston. The centre is unique in its island location. Historic Kingston, its waterways, nearby islands and the ferry ride have added to its educational potential. Energy conservation is one of forty units offered. All materials used to fabricate the models were purchased with a grant from the Shell Environmental Fund.*

*Editors' Note: It is hoped that the Algonquin District Catholic School Board will change its present plan to cut staff support for this centre after June 2006, and will ensure continued support for Walter's efforts to teach sustainability and outdoor education in the following school year.*









## Captioning Our Centrefold

by Angela Burns and Zabe MacEachren

In the fall of 2005 the Queen's University outdoor and experiential education (OEE) students traveled north of Kingston to Gould Lake to investigate a rumour about whether you could pull a waterskier behind a canoe. One student from the OEE class owns a waterskiing business and had mentioned that when she teaches children the boat travels very slowly. When asked if it was as slow as a canoe, she thought it might well be. Later we also heard that in the past a few camps had attempted to pull young children on waterskiis with a canoe. Although we brought a light and athletic grade seven student with us that day, we were also curious to see if we could have success with an adult.

The photo on the previous pages is proof that sometimes scepticism can be overcome or challenged. At first we had a lot of fun trying to come up with a caption for the photo. Then we realized that if we left the photo blank, we could share the fun and you could use it as a poster with students to create your own suitable captions. Below we have shared some of our favourite ideas.

1. Does your school/centre/lake have a gang problem? A new cultural phenomenon is taking hold of north-woods country. If you answer 'yes' to many of the following questions, you may have an infiltration of a Voyageur Posse.

Do the people in question sport gang colours like a sash or ceinture fléchée? Are they throwing out gang signs and symbols (sometimes by banging paddles on gunwales and shouting loud incoherent songs and rhymes)? Are they tearing up and down your lakes and tagging their new gang territory with their canoe wakes? Are you wondering what they are on, what kind of fuel is supporting their waterskiing and wakeboarding addictions? Do you suspect a hidden agenda

of promoting the burgeoning sub-culture of sustainability? Don't be alarmed; these posesses are relatively harmless and they may let you join them with minimal eco-initiation.

2. How to keep your outdoor education program afloat!

3. Primitive forms of eco-challenge.

4. Is this rope stretching?

5. Is this sustainable? (for the paddlers!)

6. Full steam ahead for sustainability. Leave the industrial revolution with its carbon emissions behind.

7. How fun is sustainable living?

8. How much fun is sustainable recreation?

9. Should Canada propose this as an Olympic sport?

10. Where there is a will there is a way!

11. Who needs horsepower when you have person-power?

12. If the Voyageurs could see us now!

12. Who said we couldn't get her (it) up?

13. The cost of a boat for waterskiing: \$90,000. The cost of gas: \$1.10/litre. The cost of sustainable waterskiing: Priceless!

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*Angela Burns and Zabe MacEachren both paddled hard at various times to support this sustainable form of water skiing. Zabe admits she let her students, full of youthful energy, make most of the attempts for success while she played the researcher's role by watching from the dock recording data with a camera.*

## The Energy House at St. Lawrence College

by Angela Burns

Many of us see the great vision that is a sustainable culture. Many of us also see the multitude of ways that we are not taking the bull by the horns and making it happen. We are waiting. We are waiting for the government to keep its promises. We are waiting for corporations to change their ways and become both economic and environmental leaders. We are waiting for citizens to overcome their apathy and go a deeper shade of green. It's at times like these when we need to hear about those that are taking bold steps and putting everything on the line because they believe that they are part of the solution.

Alternative energy technologies are slowly taking hold in communities across Canada and around the world. It doesn't take an economist to realize that our current energy sources are not going to last and that they are taking a toll on our planet. If our vision is to have widespread usage of alternative energy systems, who is going to build them? Who is going to fix the systems when they break

down? Where are we going to find knowledgeable people to install them, and retrofit our houses and offices? Like many of you, those at St. Lawrence College in Kingston, Ontario has seen the future of sustainable living, and they've answered the call before it was made.

The Energy Systems Engineering Technician (2-year)/Technologist (3-year) Program is in its first year at St. Lawrence College, with an initial enrolment of 35 students. Although there are a couple of colleges in Ontario that offer similar programs, St. Lawrence is the only one that primarily focuses on efficiency and renewable energies. Steve Lapp, the Program Coordinator, told me that St. Lawrence College "gave [the program] this name because there is still stigma around renewable energy as a sort of fringe activity and we didn't want the course to have that kind of stigma attached to it. We wanted it to be a mainstream technical component of college program options."



Humber College and St. Clair College have announced similar programs in the last few months. Steve adds that, “the colleges see the changing social fabric and that [the time] is coming. Colleges have to be three or four years ahead of the changes so that there are graduates ready to service the need. There is a little bit of envisioning where you imagine a society where there is market demand, and where people know about renewable efficiency more than they do now, but I think most people would agree that that’s coming. It’s just a question of how big and how fast it comes.”

Steve explained that, as energy prices rise, businesses and the general public are going to have to do more to cut their costs. They will need assessments and consulting advice on what to do and how to implement these changes. The primary market at the moment is in renewable energy equipment for homeowners who want to save money and go green by living off the grid. Another market is people who have land with no hydro access such as cottages. “That market right now is serviced mostly by self-taught people,” Steve says. St. Lawrence graduates will come out with specific training to do designs and installations. They know the products and the technology. This program may also be taken by electricians and other professionals who want to expand the repertoire of services they can offer.

Because there isn’t a guaranteed market for graduates, the college and the students are taking a leap of faith. Steve agrees: “That is a real tribute to the management of the college, that they had the vision to do this, and took the risk of spending money, hiring faculty, and building a facility. . . . You don’t know how many students you are going to get, how long they will stay, where or if they will get jobs or what exactly the jobs are because it’s a brand new field. A lot of discussion went into where the graduates are going to fit into the workforce before going ahead with the program.”

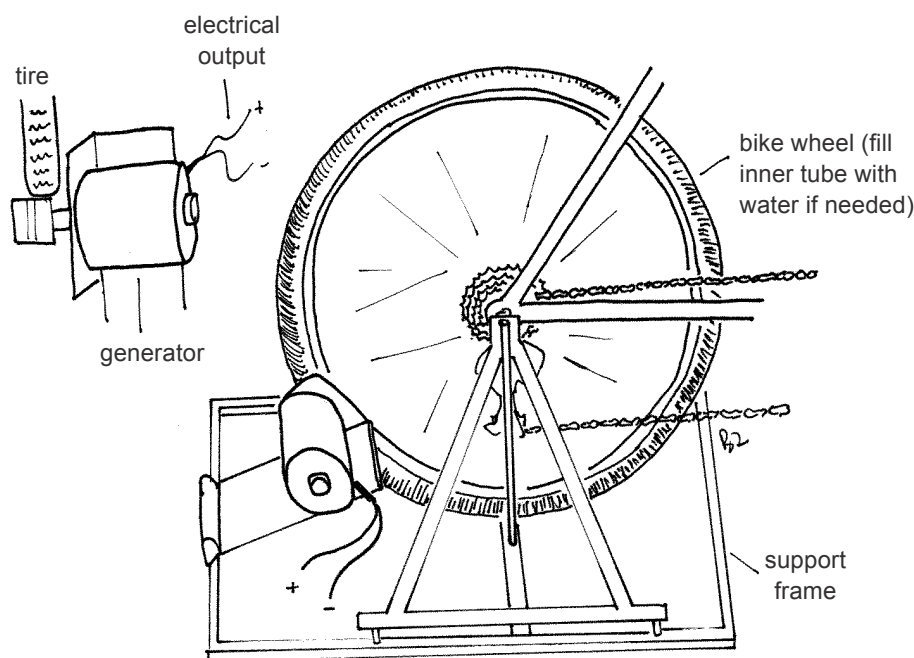


Why did it happen at St. Lawrence? Steve thinks it’s the right combination of people in the college at the right time, and that Kingston is probably the right community in terms of politics. Groups such as the Kingston Wolfe Island Farm and a few businesses in town have created momentum around renewable energy.

The Energy Systems Engineering Program is not only experimental but also experiential. Students spend much of their classroom time in a matched pair of converted portables that were donated by local school boards and were refurbished for the program. The “Energy House” is off the grid and is not only an example of energy creation, but also a lesson in energy conservation, setting an example to students.

Steve gave me a tour of the facility and explained, “It was really important to the college to build this facility where the students could live what they were learning, and live with the technology they were learning about.” Most classes are spent in the portable. Everything in the portable (with the exception of the propane heater) is powered by the sun,

### Creating your own Bicycle Pedal Power



including the projector and all the lights. It is hoped that by this time next year the portables will be completely off-grid with the help of geothermal and wind energies. Most of the technology for the classroom was donated by the Ministry of Energy of Ontario, Natural Resources Canada, or private vendors who either donated equipment or offered a substantial discount.

Creating a classroom was a huge undertaking, and it is constantly evolving. But creating a curriculum was an even greater feat for Steve, a mechanical engineer who was originally hired as a consultant and later hired as the coordinator for the program: "There is no road map for what we are doing. There is no curriculum, there are no guide books. Even finding text books is a challenge. You can get books but often they are not appropriate to use for teaching."

A primary long-term goal of the Energy House is to have both elementary and secondary schools from the Kingston community come for a day or half-day program to learn about

sustainable technologies. Steve is also hoping to run a week-long summer camp to capitalize on the amazing resource that is sitting empty for a few months of the year. Steve wants to provide an opportunity for kids to "have hands-on learning about energy and the environment." Steve wants kids to realize that the choices people make in their lives have an impact on the environment.

The Energy House and the Energy Systems Engineering Program are two inspiring examples of how educators are looking to make sustainability a mainstay in education. A sustainable future is obtainable when ideas and ideals are carried through by forward-thinking teachers and students.

For more information on the Energy House, visit <http://energyhouse.ati.sl.on.ca/index.html>

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*Angela Burns is a student at Queen's University in the Faculty of Education, in the Outdoor and Experiential Education program.*

## Walking the Talk: Sustainability in Education

by Kim Wallace

I was recently in the Mattawa area for a student teacher placement. My associate teacher invited me and a colleague to meet two retired school teachers living “off the grid.” When we arrived, it took us a good three to four minutes to walk up the driveway. Although it had been cleared of snow, the spring weather mixed with the early morning temperatures had turned the driveway into a 200-metre luge track. At the time, it didn’t occur to me that the driveway had been shovelled by hand. As we neared the house, I saw a Honda in the car park. I wondered how often they drove it or if they used alternative fuel. Parked beside the car were a couple of well-used bicycles with attached baskets.

A dog barked from the woods. Another came to meet us. Nancy and Murray greeted us at their front door. A slim couple, their physical appearance reflected their lifestyle: no excess. Both were immediately friendly and welcoming.

The couple bought the land 11 years ago. They wanted to save a local watershed area and so bought 400 acres surrounding Boom Creek. Passionate about their protected space, they began our tour and explained to us through their home how they walked the talk of environmentally friendly Earth beings.

On the south facing side of the house are 12 solar panels on a freestanding structure. The freestanding structure allows the couple to rotate the panels to face the sun. Murray says that having a solar panel flat on the roof is futile; you can’t clean the snow off in the winter. At a time of year when solar hours are few, they want maximum sun absorbing time and can’t afford to wait while the snow melts off the panels. Also visible from this side is a wind generator on an old TV tower next to the house. In the basement, three 1,350 amp

batteries store about three to four days’ worth of energy generated by these devices. The batteries weigh 300 lbs each and cost about \$1,100 a piece. A backup generator is close by, stored in an old summer cook shack. The generator is for the cold, sunless months. The couple usually doesn’t spend more than \$75/year (\$25/month x three winter months) on gas for the generator. Not bad for a year’s worth of heating and electricity. Nancy mentioned that this past winter was the most challenging to date because of the lack of sun for four months (only eight hours in December).

Also on the south side of the house is a wood frame and plastic-walled greenhouse. Close by and still covered in snow is a garden. In March signs of life were beginning to show. The old outdoor kitchen with a wood burning stove had now become their sugar shack. Nancy and Murray were excited about the birds sucking sap from the trees that morning; it was a sign of work ahead. Nancy was also keen about a gardening co-op that someone in her community had proposed for the upcoming season. They would be trading their crops with the neighbours, keeping food local and safe from unknown pesticides and chemicals.

The wood shed is close to the house, and we were told that all wood was cut by hand. No chainsaws at this house. As a retired couple, I wondered how long they would be able to shovel and chop wood. They showed no immediate signs of slowing down though. Murray mentioned his concern about wood burning and humbly acknowledged the pollution that this creates. He is thinking about alternatives, but for now the wood is used for cooking in the indoor wood burning stove, which keeps the house heated in the winter. The stove is also close to some pipes and helps to heat the hot water for showers. They use a solar hot water heater in the summer.



Up on the north side of the house is the water pump. There is an insulated underground tank. It is gravity fed and the couple must pump the well. Giving the pump about 300 pumps every two days helps to keep the tank up and the silt out of the water. The couple saves rainwater in barrels for their gardens. Murray lets us know that this is one of the simplest changes that people can make if they want to help: collect rainwater for the garden and lawn. "Using fresh water to water the lawn and clean the driveway just doesn't make sense," he says. I am moved that the couple also saves their shower water in buckets, which they use to flush the toilet into a septic system.

Inside the front doorway is the fridge. It is a SunFrost from California, which they bought about 11 years ago for \$3,000. It is a direct current (DC) appliance and the condenser is reasonably located at the top of the appliance; the cold air naturally settles rather than using more energy to blow the air up through the fridge. Did you ever think about that? Why are fridges built with the condenser at the bottom?

Most of the main floor of the house is set up with DC appliances and lighting, however the basement and upstairs do have alternating

current (AC) lights. All are hooked up to the battery. The chimney is inside the house to add to the heat value in the winter. The walls and roof are securely insulated. On that March morning, the couple woke up to a house temperature of 15°C while it was -14°C outside. By the time we arrived, after the breakfast cooking, the house was at a comfortable temperature. The house has triple-glazed windows on all sides except the south where they are double glazed. The double glazed lets the passive solar heat in. The windows are well sealed with foam.

The couple eats locally as much as they can. They have given up pineapple and other foreign fruits, except for bananas. Sprouts grow on the counter and they make fruit leather in the summer in a homemade dehydrator made from an old dresser. The blender used for the puree is operated by a hand-crank. They have an assortment of dried seeds on the table and Nancy offers us a delicious mix of sunflower and pumpkin seeds from one of the jars. We talk briefly about what industries might lose when more people buy locally. The truck driver who comes from California has a family to feed too. There are no solutions offered in our discussion, just

suggestions that perhaps buying locally would change the nature of a truck driver's job and he or she would be able to remain closer to home and spend more time with his or her family. Jobs in society would adapt. They always have.

Family pictures and children's artwork decorate the walls and tell their own stories. The couple has the same furniture from



marriage 36 years ago giving the house a cottage feel—relaxed and comfortable. An ungulate’s jaw rests on a post roof beam. The cat walks along another. Nancy offers us cookies that she baked in the wood burning stove. They are delicious. We marvel at her skill for baking so perfect a cookie in a wood-fuelled oven.

The basement is cold. Murray has an old TV that Nancy makes him keep down here. They have a freezer in the basement as well, and stocks of organic and dried food in jars. Like many other homes, an old exercise bike sits in the corner, being used as a hanger for various items. The washing machine is a small Danby. They use Eco-disks and biodegradable soaps to wash the clothes. Nancy prefers the American brand, but is choosing the Canadian brand to walk her talk of buying local.

The couple hadn’t always planned this lifestyle. In fact, they were going to build a big luxury home. The change came when their son, who is now a Hindu low-level priest, came home from summer camp at Bark Lake years ago. First he educated them about the toilet jingle, “If it’s yellow, let it mellow,” and then he suggested that they didn’t need to pollute the lakes with the new outboard motorboat they had recently bought. Slowly, the changes took place and their alternative energy research began. They gradually grew from what they thought they needed to what they have.

The couple explains that their lifestyle is a lot of work. It takes work to maintain it. They need to keep wood stocked, turn the solar panels toward the sun, pump the water, and clear the 200-metre driveway. (Nancy laughs heartily when she tells us she was away for the last big winter snowfall). It is easier now that both are retired. Murray reveals that although some people might see all this as a sacrifice, “If you like what you are doing, it’s not sacrificing.” Murray goes on to explain how he is awaiting breakthroughs in solar panel efficiency. There have been very few advances

in this technology in terms of efficiency over the years. He wants to see batteries that need less charging.

I hope to be able to discuss and explore what I have learned this morning with students in my future. I hope I can excite students to educate others about the ideas and explore them on their own. People like Murray and Nancy help to sustain our environment and above all, by sharing their knowledge, they help to ensure the education of future generations.

I find observing the lifestyle of Murray and Nancy inspiring. Despite being self-sufficient, they continue to be connected to the community through volunteerism and community projects. They are modest. They don’t want attention for their efforts. They just want to do what they can to help preserve and protect the Earth that gives them all that they need. On the way out along the driveway, Murray lets us know, “It helps to know there are others out there. It keeps us going.” As we pass the car park, the question is asked. Murray and Nancy don’t use alternative fuel for the car. They do have a recipe but they don’t know where they would get the oil. Preparing the fuel would require more energy use. As an aside, Murray adds that electric cars still need to be plugged into the grid. He explains that they try to ride their bikes when they can and use minimal fuel.

My next step will be to send this article and a letter to the Dean of my Bachelor of Education program at Queen’s University requesting that more focus be placed on teaching educators about environmental and ecological sustainability. I hope others will do the same and lobby for more leadership in this area. Sustainability goes a long way when we educate our educators.

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*Kim Wallace is from Jasper, Alberta and has been studying at Queen’s University in the Faculty of Education, in the Outdoor and Experiential Education program.*

## The Backcountry Bioregional Challenge

by Erin Crowe

The recent announcement of the Wal-Mart giant launching an organic food line has put a new twist into the concept of sustainability. This move obviously signifies that those who have been demanding access to organic foods have been heard and in numbers that have been deemed profitable. However, it seems counter-initiative to buy organic veggies from a corporate giant. Are these organics sustainable and will Wal-Mart be purchasing from local growers?

As corporate America increases the ease with which we keep our kitchens organic, a new emphasis on bioregionalism needs to be addressed. To keep from being overwhelmed by this issue, which I often feel, I decided to start small and address my consumption one product at a time. Upon a recent winter camping trip with my OEE class in February I took a closer look at my bag of Gorp. Not one item in it was from Ontario, let alone Canada (see Table 1).

This was especially concerning because of my background in cranberry farming. There are two commercial cranberry farms in Ontario, neither less than two hours from where we were camping. In fact there were probably cranberry plants in some of the wetlands we were snowshoeing over. It saddened me to think that the nuts and fruits I was so enjoying and needing for nourishment probably cost more energy to produce and get to me than I received from eating them.

Alas, what are the alternatives to Gorp on the backcountry trail? A more traditional snack called pemmican seemed worthy of consideration. Created by the Cree and Métis, the pemmican recipe, which consists mainly of dried meat and cranberries, has evolved over thousands of years. This combination provides calories in a portable, lightweight and highly compact form made suitable for travellers. Cranberries and meat are both readily available in Ontario, so if you are up for a bioregional challenge on your next adventure . . . start to rethink your Gorp!

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<http://aboutpeanuts.com/every.html>  
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[http://collections.ic.gc.ca/notukeu/pemmican\\_e1.htm](http://collections.ic.gc.ca/notukeu/pemmican_e1.htm)

*Erin Crowe is from Bala, Ontario and is a student at Queen's University in the Faculty of Education, in the Outdoor and Experiential Education program.*

**Table 1: Items in my Gorp bag and the average distance they took to reach me in Toronto, Ontario.**

Gorp Item	Location Produced	Distance Travelled to Reach Consumer
Peanuts	US: Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Texas, Oklahoma, New Mexico Elsewhere: Asia, Africa, Australia, North and South America, India and China	Average distance from US: 1,213 km
Cashews	Brazil, Africa, India	From India: 12,514 km
Raisins	Mediterranean, California, Australia and Chile	Average: 3,513 km
Cranberries	Eastern and Western US and Canada	Average: 963 km
Chocolate	West Africa, Brazil, Ecuador and the Indies (where cocoa trees originate)	From Brazil: 8,162 km

## Some Musings on Canada, Climate, Sustainability .... and the Dilemma of Education for a Warming World

by Elise Houghton

There's uneasiness on the planet these days. There are scientific reports of melting glaciers and polar ice caps, of bleaching coral reefs, violent storms, and floods. There are bus-stop shelter ads featuring sad-faced polar bears, thin and tired from swimming ever-larger distances between icebergs. There are stories of never-before-seen birds in the Arctic, and melting permafrost that makes travel difficult for those habituated to predictable frozen-solid ground across the North.

Equally disquieting, there is news coverage of the suppression of scientific climate change reporting. James Hansen, US climate expert and long-time director of NASA's Goddard Institute for Space Studies, said that officials at NASA headquarters had ordered public affairs staff to review his coming lectures, papers, postings on the Goddard website and requests for interviews from journalists. But despite media controls and personal warnings, Hansen has continued to speak out. He maintains that significant emission cuts could be achieved with existing technologies; he cautions, however, that without leadership by the United States, climate change would eventually leave the Earth "a different planet."

"We have to, in the next 10 years . . . begin to decrease the rate of growth of CO<sub>2</sub> emissions," Hansen remarked in an interview with *60 Minutes*. "And then flatten it out. And before we get to the middle of the century, we've got to be on a declining curve. If that doesn't happen in ten years, then I don't think we can keep global warming under one degree Celsius and that means . . . there's a great danger of passing some of these tipping points."

Hansen points to government leadership as a key requirement in curbing greenhouse gas emissions. Unfortunately, the gap between the exigencies of climate change findings and government leadership appears to be widening. One of Conservative Prime Minister Stephen Harper's actions early in his mandate was to turn away from the former position on the

Kyoto agreement. Under Kyoto, Canada committed to reducing its greenhouse gas emissions six per cent from 1990 levels by 2012; Harper's Environment Minister Rona Ambrose pronounced this target "unachievable and unrealistic." Soon after, the *Globe & Mail* reported that "the new Conservative government has decided to slash spending on Environment Canada programs designed to fight global warming by 80 per cent, and wants cuts of 40 per cent in the budgets devoted to climate change at other ministries."

Environmentalists and some businesses express concern over these changes. Favouring a voluntary-only approach to cutting greenhouse gas emissions, "will commit Canada to a future of rising greenhouse gas emissions and worsening climate change," cautions the David Suzuki Foundation. The public too is growing more concerned about climate change. A just-released 30-nation GlobeScan poll reveals that nine out of ten Canadians now think climate change is a serious problem (with the number who describe it as "very serious" up to 57 per cent from 40 per cent in 2003). GlobeScan's president, Doug Miller indicated that these polls reflected "historic highs" and suggest that sensible proposals to reduce the problem would receive substantial public support.

It is not difficult to sense that we may be headed for a reckoning with the unintended consequences of our prosperity. Bill Rees, well known as one of the authors of *Our Ecological Footprint*, invites an examination of what he terms the "inherent unsustainability of *H. sapiens*." His choice of phrase invites some serious soul-searching. Are we, even with significant scientific consensus and documented societal recognition of a changing climate, unable or unwilling to change our ways? Is our slow reaction to this problem one of lack of knowledge—or lack of leadership?

This leads to the question of public education. Traditionally, public education has played a

central role in the creation of culture. Modern public education provides for the evolution of a nation's "cultural commons" with literacy, numeracy, an empirical scientific worldview, a historical and geographical identity, and, ideally, an appreciative taste of the arts and the humanities—and perhaps even nature—at its core. But a Western public education does more than this. In addition to knowledge, it provides students with the skills and the attitudes needed "to get ahead": to choose a life's occupation, earn a living, contribute to the local and global economies, and advance in earning potential. In this way, students become the citizens, earners and consumers whose purchasing power drives the spectacular economic growth that has characterized the 20<sup>th</sup> century. From 1900 to 2000 global Gross Domestic Product (the monetary measure of wealth) increased 19-fold, at an average annual rate of 3%. The goal of sustained economic growth lies at the heart of government policy, corporate earnings, and public prosperity. It also lies at the heart of the educational curricula that constitute the educational policy of growth-oriented nations.

### Education without 'limits'

How then does—or could—the notion of ecological sustainability fit with the goals of public education? In a growth-entrenched society, the notion of biospheric limits to human activity constitutes a nearly heretical stance to no-holds-barred economic activity. The very idea of proposing an educational philosophy of material restraint—based on equating terms such as "sufficient," "limits," or "less" with the concept of human well-being—is, for now, foreign to our economic and societal goals. We (like many complex societies before us) have lost the means of seeing ecological integrity as equal in importance to economic sufficiency. An examination of the Ontario curriculum makes a case in point. A word-scan of our provincial educational policy documents for Science and Technology (all grades, all courses), Social Studies and the Humanities (all grades, all courses), and the grade 9–12 courses in Business and Native Studies offers the following overall totals for six key words:

Climate Change — 13  
 Biodiversity — 15  
 Sustainability — 54

Sustainable Development — 15  
 Economy, economic, economics — 941  
 Limits (in economic activity) — 0

In education as in life, the concepts of sustainability, sustainable development, protection of habitat and biodiversity, and limits make uncomfortable bedfellows with a philosophy of unfettered, exuberant economic expansion. Environmental, sustainability and outdoor education in Canada remain largely the fruits of years of a labour of love by dedicated individuals who understand their enormous importance to young people and the future. As a society, however, we continue to designate environmental and sustainability education a "non-mandatory" subject. Understanding how to preserve and maintain the foundation of our lives is not yet considered an essential mandatory educational focus. Some serious reflection and work on the evolution of a philosophy of limits may be a necessary precursor to the development of educational policy that gives next generations a chance to consider ecological sustainability an option. Are we up to the task? And if not, are we willing to contemplate the consequences?

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*Elise Houghton can be found at many parent meetings, EEON gatherings or political events that try to place environmental and sustainability education at the forefront of educational policy.*



## Animal Farm Revisited: An Environmental Allegory

Pardy, Bruce. (1999). Animal farm revisited: An environmental allegory. *Victoria University of Wellington Law Review* 30 (1), 135–158.

Review by Joanne Prokop

The six principles of environmentalism are simple, precise, and explicit. They can all be summarized simply: “sustainability good, development bad.” To understand *Animal Farm Revisited: An Environmental Allegory* to its full extent, we must first take ourselves back into the 1945 novel *Animal Farm*, written by George Orwell.

Like in Orwell’s novel, *Animal Farm Revisited: An Environmental Allegory* is the story of a revolution, where the farm animals’ good intentions once again have gone astray. The same struggle of morality versus personal gain is present, but instead of a political battle for survival, there is an environmental battle for the sustainability of the ecosystem.

Imagine for just one moment that your moral beliefs put you into a position of power. Everyone is looking to you for advice. You are the one that the people look to for leadership. You’re the one whose ideals created this change. What is next?

*Animal Farm Revisited: An Environmental Allegory* is a well-written article outlining the mind’s progression through the stages of acceptability. When are those actions no longer acceptable? When does the end no longer justify the means? Where do we draw the line as to what is acceptable and what isn’t?

As the story progresses, the reader sees the inevitability of what will occur. The animals will eventually get too carried away with their crusade and lose sight of their original goal. *Animal Farm* is a famous work that most have read at least once, if not more. The storyline is familiar, which is why the information presented sits so well with the audience. It is

only the environmentalist theme that is new to the reader.

The principles of environmentalism are very similar to the principles of animalism, in the sense that they were both designed with the best intentions. Unfortunately Napoleon (one leader) falls into the same trap the second time around as he did in the first novel. In order for the animals to remain free, they needed someone to make the difficult decisions, and that responsibility falls onto Napoleon. The article asks its audience, “When did Napoleon’s decision become environmentally inappropriate?”

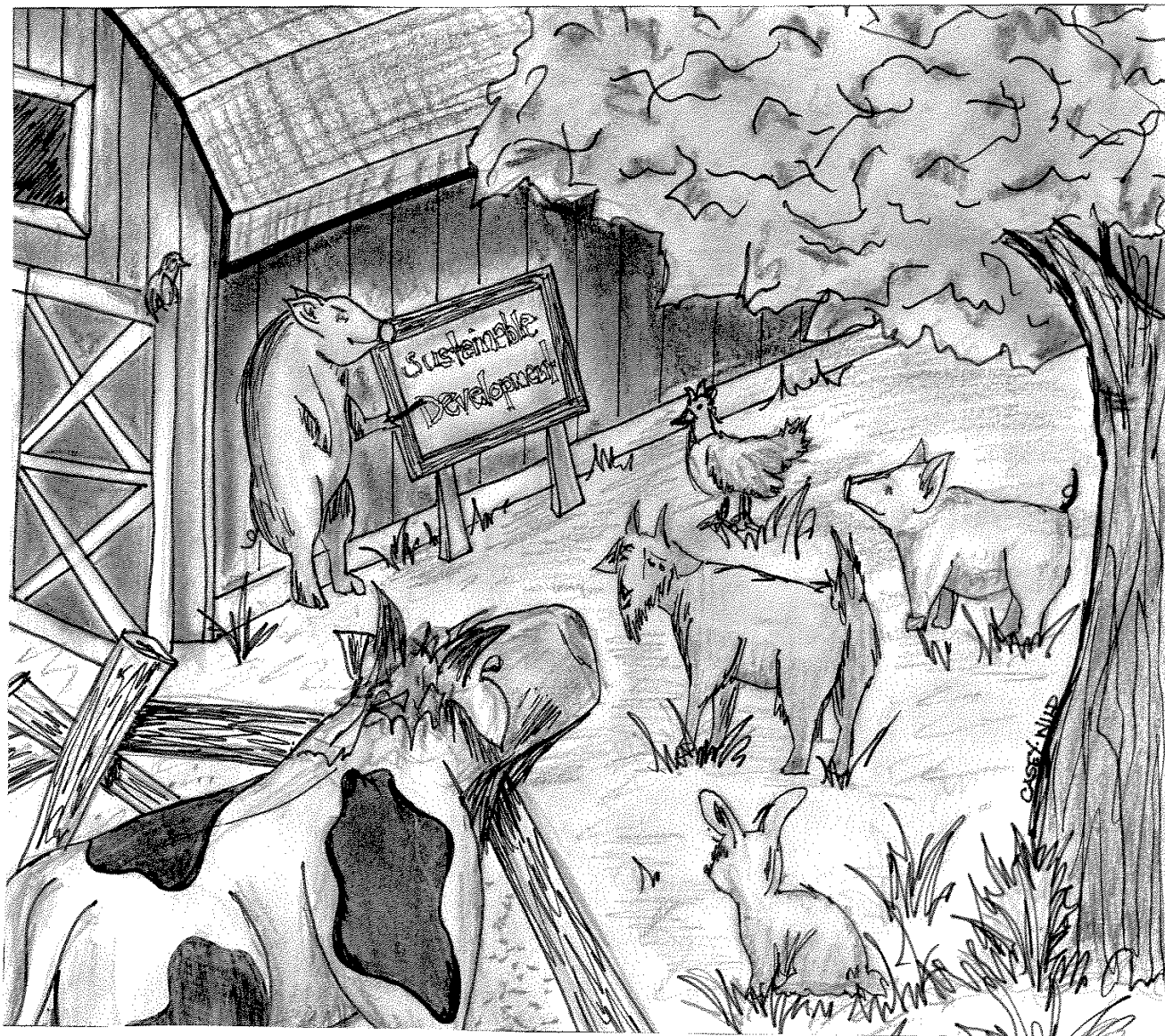
It may have been when he chose not to listen to Snowball, and pay the bank loan. Fighting could very well have been an act of environmentalism, however, is the animals’ survival not interlocked with that of the environment they are protecting?

If that is the case, then would the next logical place to question Napoleon’s environmental amorality be when the animals cut down their first load of wood to pay the bank? If not, then what about when they propose the dam to save energy, and become less reliant on corporate entities?

Napoleon’s heart is in the right place. He wants what is best for the farm, however, when reading this article what is most important to remember is that, when everything is interdependent, the suffering of one thing is directly connected with the suffering of others.

It would be interesting to see what happens beyond the *Animal Farm* predetermined





Bruce Pardy re-wrote George Orwell's well known story *Animal Farm* to incorporate a sustainable development theme and published it in a New Zealand Law Journal. If you send him an e-mail requesting a copy of "Animal Farm Revisited: An Environmental Allegory," he will send you a .pdf version to print and share with your students. You can contact him at [pardyb@post.queensu.ca](mailto:pardyb@post.queensu.ca)

ending. Napoleon made a decision that will be forced to come back to him. The way in which this decision comes back to him is a moral that the story lacks—that hurting the environment and your ecosystem is something that you can not run from; it affects every being.

This article is an inspiring story that also teaches a valuable lesson. The author captured

Orwell's style wonderfully, and managed to create a piece that would have done him proud.

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Joanne Prokop is a Grade 11 student at Appleby College, Oakville, Ontario. When she is not at school you can find her reading a book or sailing on Lake Ontario with the Canadian National Sailing Team.

## Elizabeth May Speaks to Sustainability Education

by Beth Dasno

The following points are highlights from a talk Elizabeth May, Executive Director of the Sierra Club, gave at McArthur Hall, Queen's University, April 18, 2006.

*Introduce a new issue by exploring the history of the environmental movement in North America.*

May referred to the example of the development of the Sierra Club. Through John Muir's determined efforts to get city-dwelling San Franciscans out into the wilds enjoying nature, he began a small hiking club that introduced city folk to the Sierra Nevada mountains. This hiking club formed the roots of today's Sierra Club, whose members have been working to preserve wildlife and wild spaces for over 100 years.

*Issues such as climate change can be overwhelmingly daunting and depressing for educators and students alike. May suggested a three-step approach that can be used to ease the weight of these heavy issues:*

1. *Start environmental education topics on a positive note by highlighting past success stories and providing examples of positive actions taken by regular citizens.*
2. *Explore solutions through interdisciplinary problem solving. Students should be encouraged to explore environmental issues on a cross-curricular level, integrating several subjects in order to acquire a holistic understanding of the issues. At the high school level, teachers should work in cooperation with other departments to enable this to happen.*

3. *Create the space for students to start implementing solutions! Apply solutions that the students have come up with on their own at a grassroots level. Through dynamic class projects, students can make positive changes on individual, school, family and community levels.*

*Nurture the idea of "intentional citizenship."*

May stressed that we should be using this term to replace "consumer society."

*Choose a definition and stick with it.*

May supported the use of The Brundtland Commission's (1997) definition of sustainable development (developed in 1987 by the United Nations Commission on Environment and Development): "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." She emphasized the importance of determining what our "needs" are.

*Get your students writing letters!*

Politicians often have a soft spot, deep down in their souls, for the desires of children and youth. In addition to boosting their profile, acting on suggestions made by young people can win votes and lead to great community initiatives. Letters from young people can be a driving force behind political decisions.

*Government, business, law and science must join forces in order to make sustainable development work.*



A shorter period of time should pass between accepting the science and implementing effective policies than currently occurs.

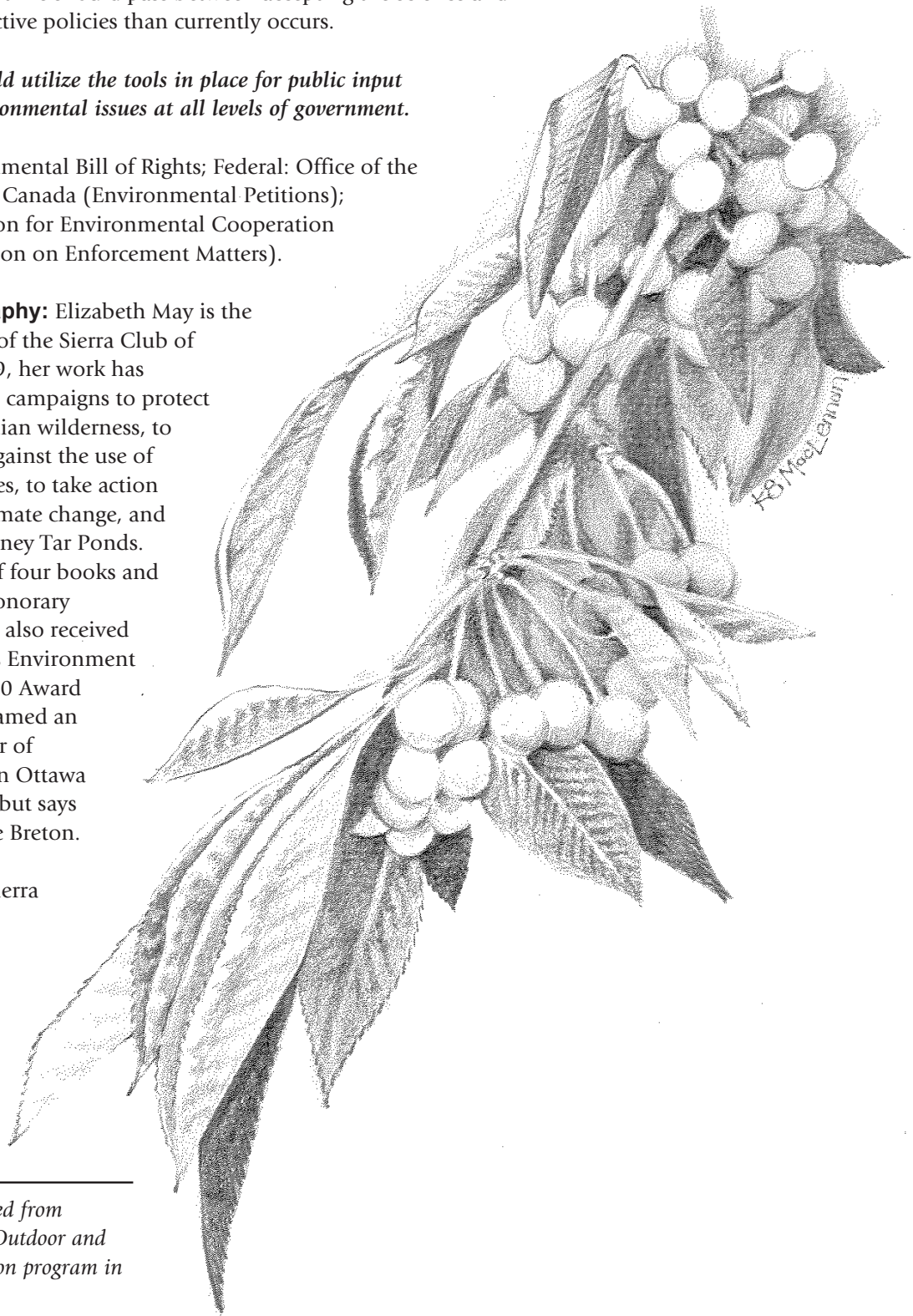
*Educators should utilize the tools in place for public input regarding environmental issues at all levels of government.*

Provincial: Environmental Bill of Rights; Federal: Office of the Auditor General of Canada (Environmental Petitions); NAFTA: Commission for Environmental Cooperation (Citizen's Submission on Enforcement Matters).

**Shortened Biography:** Elizabeth May is the Executive Director of the Sierra Club of Canada. Since 1989, her work has included successful campaigns to protect vast areas of Canadian wilderness, to promote by-laws against the use of dangerous pesticides, to take action on the threat of climate change, and to clean up the Sydney Tar Ponds. She is the author of four books and has received two honorary doctorates. She has also received the United Nations Environment Program Global 500 Award and in 2005 was named an Officer of the Order of Canada. She lives in Ottawa with her daughter, but says her heart is in Cape Breton.

Revised from the Sierra Club of Canada website:  
[www.sierraclub.ca/national/media/item.shtml?x=871](http://www.sierraclub.ca/national/media/item.shtml?x=871),  
 Wednesday,  
 August 31,  
 2005

*Beth Dasno graduated from Queen's University Outdoor and Experiential Education program in the spring of 2006.*



## Up the Creek

*by Mercede Rogers*

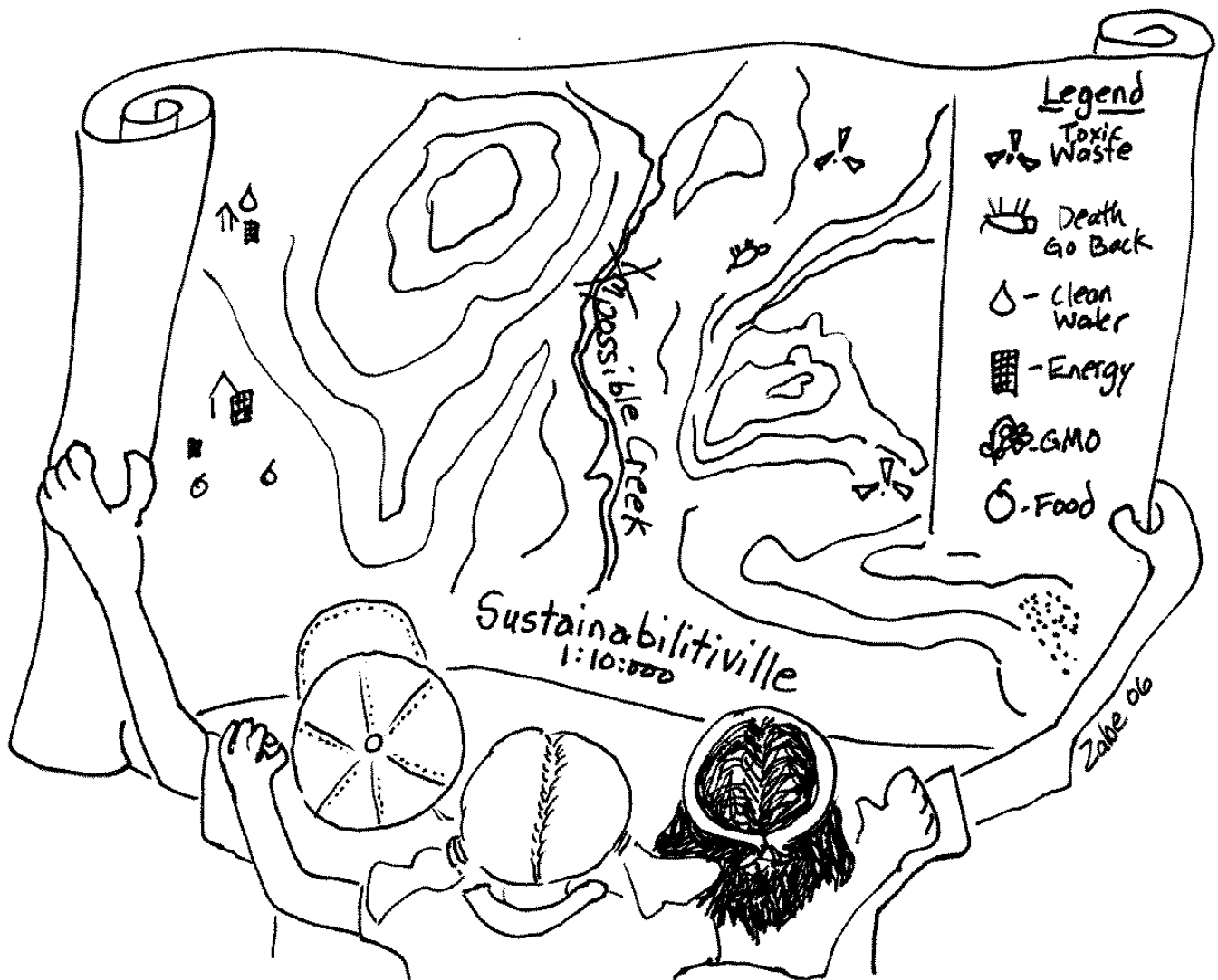
With almost two weeks of tripping behind us we had once again fallen into the natural rhythm of the wilderness and spent each day growing and laughing together. On this day, we were moving well when we came to a portage that many of us had had the pleasure of suffering through the previous summer. It was the sort of portage that refused to have a clear path: trees sacrificed themselves to block the way, the mud saw you coming and attempted to engulf you just as you were starting to get a hold of things—it was the type of portage that humbles you. Instantly chatter began amongst the group of past memories of the 3.5 kilometres of mud, bugs, hills, rocks and everything else that makes the Canadian wilderness so inviting. Needless to say, there was no shortage of stories to be told.

As some of the group took a look at the map, and others their surroundings, we all became aware of a small creek flowing into the lake just beside the portage. So naturally the talk turned to the possibility of dragging the creek in lieu of the portage. Part of the drive to drag came from one simple word on our map that had been written across the creek which read “impossible,” and the group saw that as an opportunity to learn something. Were we to trust this old map and its warning to us? Or should we venture ahead, spirits high and laughter abounding, and see for ourselves? Stu (my co-leader) and I stood clear of the girls as they weighed pros and cons and assessed the situation. The decision was made, so up the creek we went. Before we set off we discussed the idea that this was a choice we had made and now that it was under way we must stand by that choice and be accountable for whatever lay ahead. The girls were pumped and there was no stopping them.

The next four hours were spent dragging over branches and under logs, engaging in endless carry-overs, and enjoying countless falls and intense laughter. Each challenge brought wider grins to our faces because we knew that something special was happening. The wilderness is a powerful being that gives us the opportunity to see ourselves in a pure state and to face challenges with grace and beauty—at least sometimes. Although we were exerting ourselves physically, we were talking love, politics, school, life and learning about each other in that pure state. Four hours later, soaking wet, scratched and bruised, we knew we had made it through and although we knew that the portage may have taken less time, there was no place we would have rather been. We hopped back in the boats and, as Stu pulled out the guitar, we looked around at our muddy faces and were giddy with the energy of working hard and working together.

That night in the tent, with a cup of hot chocolate and a coy smile, I pulled out the day's maps and crossed out the “im” so the word beside the small seemingly insignificant blue squiggly line on our topo now read “possible.” I rolled over and showed it to Stu and without saying a thing we knew how awesome it was.

Many lessons were learned that day, but one of the most prevailing was the need to sometimes try the impossible, take the risks and work hard for something you want. The path may not always be easy, and there will always be another way around, but it's our choices that we must stand behind. That is where the excitement lies.



We still talk about that day—even though it was almost two summers ago—and you can't help but notice the excitement in our voices as we recount attempting the impossible and coming through the other side.

*Mercede Rogers is originally from North Bay and is a student at Queen's University in the Faculty of Education, in the Outdoor and Experiential Education program. This story is from a seven-week canoe trip through Northern Ontario and Quebec in 2004.*



## COEO Conference 2006: Outdoor Education with the Community, in the Community, for the Community

*"Integrating outdoor/experiential/environmental education in urban communities to promote a sustainable future."*

Those who were present in 2003 at the COEO annual conference at Paradise Lake may remember a major think-tank theme, as we put outdoor education in Ontario "through a looking glass." From the think-tank session the following recommendation was formed:

"If taking people to outdoor centres 'in the country' is . . .

- not financially sustainable by school boards
  - maintains accessibility barriers for most urban populations
  - continues the myth that nature is 'out there'
- . . . then let's get more outdoor education happening locally where it can be sustainable and be real in affecting lives."

Those who were at the 2004 gathering at Onondaga Camp may remember a recommendation to the COEO executive and board from the floor of the AGM: "To work toward more cultural inclusion in COEO and in Ontario outdoor education."

The time is now. COEO as an organization will launch two initiatives in 2006/07 to promote outdoor education with, in, and for urban environments. The two initiatives will be the 2006 COEO conference (September 29–October 1) and a winter 2007 theme issue of *Pathways* co-ordinated by editorial board members Allan Foster and Peter Goddard.

Located near the junction of Highways 407 and 427, on the bank of the Humber River (a designated Canadian heritage river) adjacent to the Humber Arboretum (Humber College) is the Humberwood Community Centre, and the Indian Line campground—the two conference base sites.

**Program:** Beyond the Friday introduction to an "accessible" urban outdoor education/recreation site, Saturday will see us selecting one of six travel packages to explore potential

barriers and actual urban-based outdoor education. There will also be an on-site program at the Humberwood Community Centre site. There will be a day end wrap-up where we share our respective experiences within the city (Vaughan, Brampton, Toronto, Etobicoke) to the larger conference group.

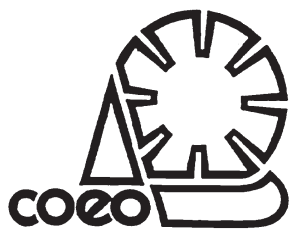
Sunday will involve the usual COEO AGM and meetings plus a set of concurrent morning conference sessions. Friday and Saturday night will see us interacting with and learning from community members from throughout the GTA, be they storytellers, dancers, community leaders and/or outdoor educators! We, your conference committee, promise something different, something important to the evolution of outdoor education in Ontario and relevant to a wider audience of "community" than we are accustomed to. Come and be a part of something long-identified as a needed direction/theme in Ontario outdoor education.

### Conference Objectives:

- Work toward more cultural inclusion in COEO and in Ontario outdoor education.
- Provide opportunities for all participants to gain relevant, practical cultural diversity education.
- Provide opportunities to learn practical and diverse cultural activities (games, songs, stories, etc.) that can be used in learning in the outdoors.
- Offer workshops relevant to formal (school) and non-formal education settings.
- Promote the value of urban green space and urban naturalization.
- Have presence and input from community leaders and community youth.

Registration information will soon be available through a COEO mailing, the COEO website and the upcoming newsletter.

*Your 2006 Conference Committee*



# The Council of Outdoor Educators of Ontario

## Membership Application Form (Please Print)

Name (Mr./Mrs./Ms/Miss) \_\_\_\_\_

Street Address \_\_\_\_\_

City/Town \_\_\_\_\_ Province \_\_\_\_\_ Postal Code \_\_\_\_\_

Telephone (\_\_\_\_) \_\_\_\_\_ Business (\_\_\_\_) \_\_\_\_\_

E-mail \_\_\_\_\_

### Type of Membership

- ☐ Regular \$50.00                      ☐ Student \$35.00                      ☐ Family \$60.00  
☐ Library \$60.00 (Subscription to *Pathways* only)                      ☐ Organizational \$100.00

Organizational memberships are for businesses, conservation authorities, outdoor education centres, etc. This rate will include one copy of *Pathways*, a Web link (if requested in writing), a maximum of three people at a member's rate for conferences and workshops, reduced cost of ad space in *Pathways*, and display space at conferences.

United States orders please add \$4.00. International orders please add \$12.00.  
COEO membership is from September 1–August 31 of any given year.

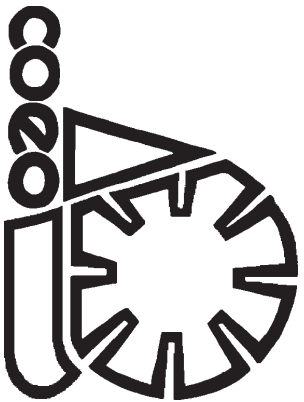
Please send this form with a cheque or money order payable to

### Council of Outdoor Educators of Ontario

1185 Eglinton Ave. East, Toronto, ON M3C 3C6

Each member of COEO will be assigned to a region of the province  
according to the county in which he or she lives.

Central (CE)	Niagara South, Lincoln, Hamilton-Wentworth, Halton, Peel, York, Simcoe, Metro Toronto
Eastern (EA)	Victoria, Durham, Peterborough, Northumberland, Hastings, Prince Edward, Renfrew, Lennox and Addington, Frontenac, Leeds, Grenville, Ottawa-Carleton, Lanark, Prescott, Russell, Stormont, Dundas, Glengarry
Northern (NO)	Parry Sound, Nipissing, Muskoka, Haliburton, North Bay, Patricia, Kenora, Thunder Bay, Algoma, Cochrane, Sudbury, Rainy River, Timiskaming
Western (WE)	Essex, Kent, Elgin, Lambton, Middlesex, Huron, Bruce, Grey, Dufferin, Wellington, Waterloo, Perth, Oxford, Brant, Haldimand-Norfolk



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