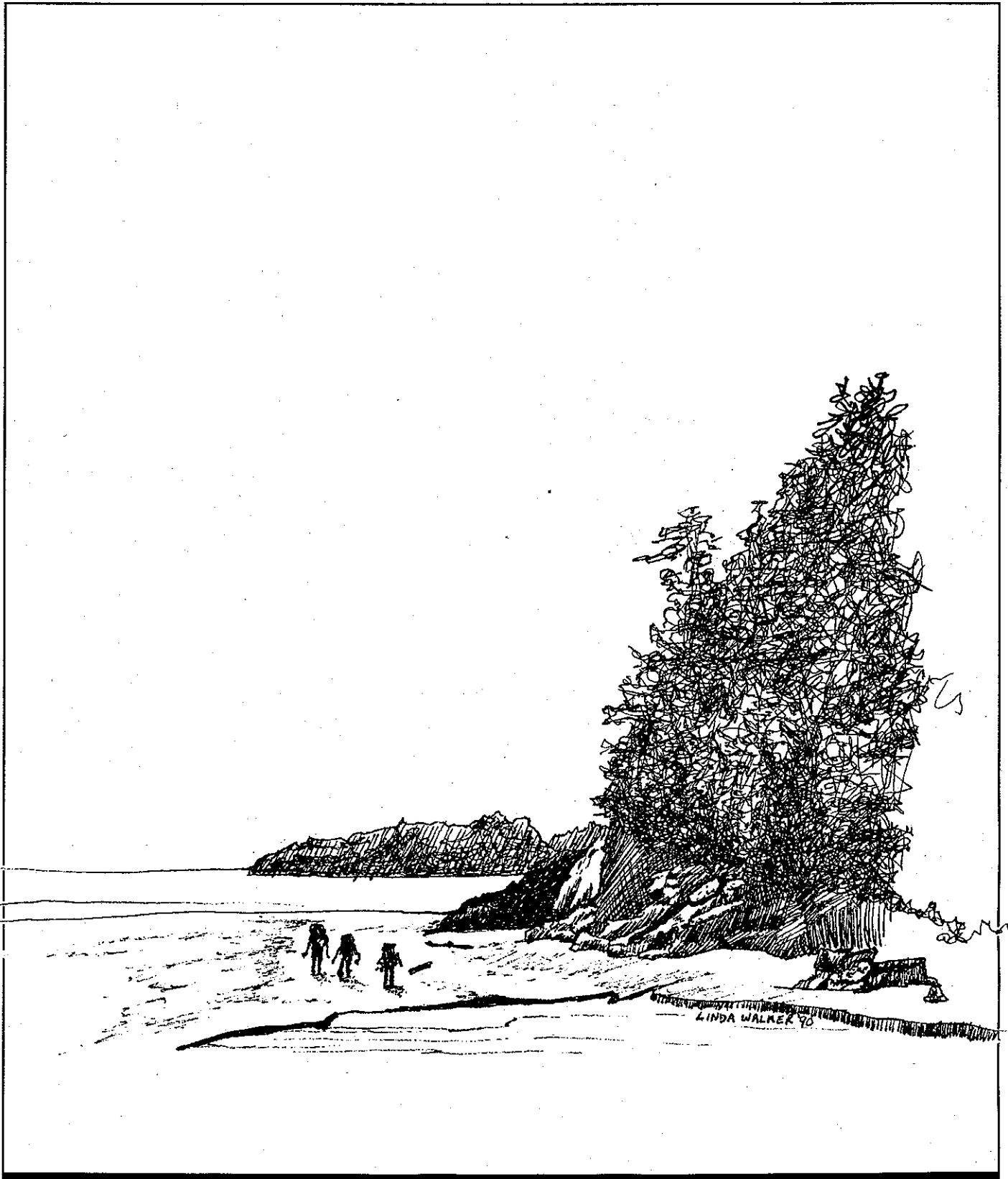


Pathways

Volume 3, No. 3
April, 1991

THE ONTARIO JOURNAL OF OUTDOOR EDUCATION



Pathways

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April, 1991

THE ONTARIO JOURNAL OF OUTDOOR EDUCATION

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Features

Outdoor Education in the Educational System • by Mark Whitcombe	5
Food Chains In and Around the School • by Ralph Ingleton	8
Picnic of the World • by Bill Cook	9
The Great Outdoors in Urban Secondary School Programmes • by Ralph Ingleton	10
Goldenrod Gall Math • by Mark Whitcombe	12
Earthlens • by Mary Jeanne Barrett	16
Beaver, Developers, and Beaver-Developers • by Jiiva Somerville and Mark Whitcombe	18
Take an Idea and See Where It Leads You • by Bud Wiener	21
Notes from LochGailhead, Scotland • by Jiiva Somerville	18

Columns

Editor's Log Book • by Mark Whitcombe	2
Outlook • by Kathy Reid	4
Backpocket Metro Toronto Zoo Resource Kits	18
Tracking Good News for Water and Sports Enthusiasts	25
On the Land Hysteria — Lyme Disease • Owen Roberts	26
Explorations Adventure in Outdoor Education • by Bert Horwood	28
Reading the Trail A Positive Example • Reviewed by Skid Crease	30
The Positive Revolution • Reviewed by Mark Whitcombe	32
Prospect Point The Alternative "Vacation"?! • by Sandee Sharp	35

State of the Art

Cover art is by Linda Walker, a regular contributor to *Pathways*.

Pathways is printed on recycled paper.

A significant discussion about the meaning of outdoor education has been carried on in these pages over the last few issues. I have argued, along with others, that outdoor education is mainly a methodology of using the outdoors to achieve educational goals. To illustrate this, the present issue includes a variety of sample lessons that use the outdoors to enrich and extend the curriculum. Note that many of the lessons are distinctly environmental in outlook. Note, too, that many of them have a distinct meta-lesson or message about our environment: we are part of our environment.

Two recent Canadian scholars have central points that raise questions that we need to consider. Marshall McLuhan said that the medium is the message. If our medium, our method, is to be involved directly with our surroundings, learning from them by direct personal interaction, what is that message that we inherently communicate to our students? How does our method 'massage' our students? From the perspective of the late Northrop Frye, what is our outdoor education mythology, and how does it influence what we do and how we are perceived?

I believe that through our well-developed outdoor education methodologies of active and integrated learning, and with our

experience in working with groups and focussing on personal and group interactions, we have a major contribution to make to the broader educational system in these troubled times. This could be another avenue for discussion.

The Editorial Board welcomes several new members, as we undergo another of our periodic changes. Clare Magee, from Seneca College, brings a wealth of wisdom and experience from the realms of camping, of recreation, of skills, and of personal development. Arnis Pukitis, from York Region, brings a strong environmental knowledge, as well as an interest in literature for younger readers. Strong contributions such as these are always welcome! Dennis Hitchmough will continue to be the chair and anchor for the Editorial Board. The editorial production of individual issues of *Pathways* will be shared among the members of the Board, who will act as guest editors. Our purpose is to both distribute the workload, and to broaden the range of our voice.

Please join the authors represented in this issue in continuing to make *Pathways* your voice for outdoor education in Ontario.

Mark Whitcombe,
Guest Editor

Letters to the Editor

Dear Editor:

Some new and some familiar voices greeted me from *Pathways* as I returned home from work today. I was anxious to begin reading. Congratulations for putting together such a well-balanced, informative issue. The journal keeps getting better.

I didn't get very far, however, when I had to stop reading to write this letter. It's about the tremendous power language

holds over the way we think about our world. Half way through the second page of "The Environmental Novel: Exploring the Possibilities", by Dennis Hitchmough and Bob Henderson, my stomach began to tighten. I, as a woman, was being excluded — *disenfranchised*, if you want the fancy term. The authors claimed that "the [novel's] actual story itself is not as important as the view that it creates of man and

his interactions with the natural world." Do only men interact with the natural world? Do novels only deal with male issues? Perhaps that very limitation, that exclusion of another point of view, provides insight into the root of our current environmental crisis. As long as we continue to exclude the voices of half of our own species, we will have a difficult time speaking for the wolf, the frog, or the tree.

The English language often challenges us as we try to include both genders in our writing. Yet gender-inclusive language can make a powerful difference. Later in the same article the authors write: "Human activities are too easily separated from nature's activities." Why not continue the trend and change "Mankind" to "Human-kind" or "people" against, for, and with nature? The words may feel rather cumbersome at first, but they begin to fit comfortably once we get used to the extra syllable, and more importantly, the idea that we all have a voice that deserves to be heard.

When we change our vocabulary, we change our attitudes and perceptions. I have watched it happen in thirty seconds. When my students substitute "wow", "awesome", and "bodacious" for the words "ew" and "yuk", their perception of pond critters begins to transform. One can't call something bodacious, and not slide in for a closer look, or start listening to its voice. Perhaps some day we will recognize the value in native languages which had no gender indicators and which gave life to the wolf, frog and tree instead of relegating them to disenfranchised and silent "its".

Mary Jeanne Barrett

The Evolution of Pathways

Volume 3, number 1 marked a new evolutionary step in the development of *Pathways*, *The Ontario Journal of Outdoor Education*. Before we moved too far down this new trail, I felt it was time to ask the opinion of our members about the changes in format. Therefore 100 surveys were distributed randomly into the Journal as they were being mailed. Of the 100 requests for feedback, 7% were returned. Although small, this is the greatest response to a call for letters we have had to date. All the members were quite positive about the changes. They liked the look, the new size, the paper weight and the types of information published. Two members pointed out that the articles were quite academic in nature and hoped that this would not be carried to the extreme. I believe that a review of the last two issues, volume 3, number 2 and 3, will lay these fears to rest. The content of the first Journal was more a reflection of the material that had been submitted than an attempt to become academically focused.

We try to choose articles that are of interest to our members. Unfortunately, this is harder than it seems at first glance. Think about the membership for a moment. We have one of the broadest, most diverse readerships of any Journal; all the way from classroom teachers looking for hands-on material to professors making us aware of new research.

The *Anee* was always the voice of COEO. It reflected the moods and interests of the membership. Unfortunately, success breeds change and our little one-person "basement cut-and-paste" moved aside to allow for a more efficient production process. I miss the *Anee* at times but as all the Editors of that Journal will remember, late hours hunched all alone over a typewriter, wondering if you have enough material, is not much fun.

Help us make *Pathways* "the voice of COEO." Send your comments or articles to *Pathways* today.

Dennis Hitchmough,
Chairman, *Pathways* Editorial Board

The most recent meeting of the Board of Directors of the Council was held February 8, 1991 in North York.

Chuck Hopkins and Joan Thompson were welcomed by the Board, and presented an overview of the COEO/NAAEE international conference planned for the fall of 1992.

Toronto '92 — A Global Conference on Environmental and Developmental Education is scheduled for October 14-21, 1992, at the Metro Toronto Convention Centre. That's right — mark your calendar now!

The conference agenda is impressive. A variety of pre-conference sessions (Oct. 14-17) will engage participants, including international students and educators, public information officers, media personnel and indigenous peoples, on themes of common interest. The environmental education conference (Oct. 17-21) will bring together participants from various backgrounds and regions of the world to discuss relevant issues and to plan for the future.

During the same time period an environmental policy exchange, or trade fair, will take place, designed to encourage governments, corporations, municipalities, non-governmental organizations, etc., to present their environmental policies and to explain their progress and plans for implementation. A variety of concerts and other cultural events involving the visual and performing arts and entertainment will continue throughout the conference programme.

Toronto '92 will attract delegates of various backgrounds and homelands. Educators will have an opportunity to: meet with representatives of government, business and industry to promote the understanding of environmental issues and to disseminate information on the environment; to determine curriculum gaps and assist in developing cooperative relationships of governments, industry and educators in bridging these gaps; and to explore innovative means to communicate the message of environment and development, especially through the use of new technologies.

The Council and NAAEE are not alone in sponsoring this exciting event. Through Chuck Hopkins' endeavours, we welcome the involvement of the Canadian Commission for UNESCO and the UNESCO Canada/Man and the Biosphere Information and Training Network.

Toronto '92 is just over a year away. Many more tireless hours of organization are ahead for Chuck and Joan, and so many others who have volunteered their time and energy. The Council is very supportive of Toronto '92 and we wish all those involved the best of success.

*Kathy Reid,
President, COEO*



Outdoor Education in the Educational System

by Mark Whitcombe, with notes from John MacEachern

On January 15, 1991, about 30 outdoor education staff from the Toronto area gathered to discuss the role of outdoor education in the educational system. The meeting was organized by John MacEachern acting for the loose group of residential outdoor education centre supervisors from north and west of Toronto who meet informally several times a year to share common problems and solutions. Erica Rimkus of the North York Board acted as facilitator for the day.

Our goals included developing a common understanding about the field we work in, and trying to determine future directions in which we might go. After some paired goal-setting, we worked in small groups to define various terms. We had considerable discussion about these definitions as they were presented to the whole group. Then, in small groups, we were led to examine the strategic assumptions we hold. What needs does the programme fill? for whom? How is the programme delivered? From this we attempted to tease out implications for the system, and therefore what directions we should be heading in. The day was stimulating, mind-numbing and too short! What follows are some notes that hopefully shed some more light on the on-going discussion about outdoor education.

Definitions and Comments

Outdoor Education: *a method of learning outdoors to achieve educational goals.* It began in the 1930's with an emphasis and focus drawn from youth camps and conservation authorities applied in an educational

setting. It has moved from being traditionally youth-oriented to including more adults, cultures and languages. It has traditionally been leader-centered with the teacher not necessarily being the expert, but it is now moving toward more student-centered activities. Historically, outdoor education involves experiential, experimental and recreational activities. It is now placing greater emphasis on process as well as content.

Environmental Education: *education involving an understanding of biotic, abiotic, cultural, social, and technological worlds, together with the development of values and ethics.* It is an educational commitment to positive, responsible action demonstrating care and respect. It has a history going back to Bill Stapp in 1969. Environmental concerns were also expressed at the U.N. Stockholm Conference of 1972. They have been reinforced by a number of conferences and commissions, including The Club of Rome, the Belgrade Charter of 1974, the Tblisi Conference of 1977, The Brundtland Commission of 1984 and the Conference on "Our Common Future" of 1987. The Toronto '92 Conference being planned for COEO by Chuck Hopkins and others will continue the thrust. The pattern of leaders in the area taking advantage of opportunities has been noteworthy. The addition of awareness, values and ethics is a significant new contribution.

Conservation Education: *education in the wise use of natural resources.* This is education about resource management and various related interpretations such as stewardship. It usually deals with the natural environment, as opposed to the

The addition of awareness, values and ethics is a significant new contribution.



urban or built environment. The traditional pattern has been one of an expert lecturing, showing or demonstrating and then leading an activity. Conservation education is the historical basis for a lot of what actually happens in outdoor education. Conservation education is often supported by government agencies or non-governmental organizations, and is not entirely based in the formal education system. Lately, groups such as the World Wildlife Fund have done a great deal of development in this area.

Experiential Education: *a process of learning by which participants become directly involved in an active interaction with the material to be learned followed by an opportunity to reflect and share what they gained from the experience.* In our field, experiential education implies an interaction with the natural environment, though in the broader context of the whole education system, the interaction is more generally considered to be with any aspect of the world beyond the classroom walls, (i.e., co-op education.)

Environmental Studies/Science: *part of the curriculum that is subject-oriented and provides a specific set of learning objectives and units of study.* It may or may not include a "field" component. The outdoors may be used to illustrate or expand concepts and to develop field skills. Environmental studies ideally should contain a values approach strategy.

Adventure Education: *education contributing to growth through perceived physical and emotional challenge followed by an opportunity for self- and group-appraisal and support.* The skills involved can lead to life skills and leisure pursuits. The sequence of action, reflection and sharing is similar to the sequence in experiential education.

Global Education: *an awareness of the interdependence of all people including the economic, political, cultural and environmental*

systems. The focus is on developing global perspectives. Global education is the development of knowledge and skills to facilitate change. It does not necessarily have any "field" component. Global education has roots beyond outdoor / environmental / conservation education, and is closely linked with topics such as Peace Education, Human Rights Education, and North-South Development Education.

Assumptions, Implications and Directions

Following the morning session on expectations and definitions we were asked to consider "What has changed to impact outdoor education?" as well as "What is happening in other areas that influences what is happening in outdoor education?" We were to consider such influences as student populations, school structures, educational philosophy, technology, curriculum, programme delivery, societal issues and staffing. We were also asked to consider what knowledge, skills and attitudes students will have as a result of their outdoor education experiences.

The following assumptions were expressed:

- There will be fewer dollars available from the tax base for outdoor education programmes.
- The multi-cultural, multi-lingual nature of our students will increase.
- The diversity of wealth amongst the population will increase.
- The emphasis in schools will be more on learning process and learning styles.
- There will be a greater emphasis on environmental issues.
- There will be an increased demand for outdoor experiences.

- Our profession is aging, and showing a reluctance to accompany students on field trips into the natural environment. New teachers entering the field better represent the multi-cultural nature of our student population.
- There is an increased demand for social and group interaction programmes.
- Technological changes are making greater demands on our system. We are becoming electronic thinkers.

The following were implications for the system as demanded by the above assumptions.

- Programme delivery will have to change to reflect the multi-cultural, multi-lingual, activity-based requirements of the system.
- Staff training will need to increase, will need to consider all changes, and will need to learn to manage change.
- Lack of funding could produce a loss of clientele.
- Clientele will demand more from the "expert" in the area of ethics, knowledge and lifestyle.
- It is now, more than ever, necessary for the outdoor educator to impart confidence and knowledge to the classroom teacher.
- Environmental Studies will need to fill a gap in the curriculum as perceived by the educational community, including Boards of Education and the Ministry of Education.
- More help will be required in the organization and delivery of outdoor education / environmental education programmes.

Some of the directions in which we must go:

- Increase the awareness of all clients about multi-cultural issues.

- Maintain and use the unique features and diversities of the various "Centres" to achieve goals.
- Involve more collaboration with clients, through increased planning and time.
- Strengthen our role as a service.
- Develop a marketing strategy.

Some personal thoughts from Mark Whitcombe on the meeting: There was a wide range of opinions aired, with more commonality expressed than I had expected. For me, some of both the overlap and the separateness of the various areas was clarified. An understanding of the historical roots certainly helped me to sort this out. Personal biases were expressed — by each of us— with some changes, and some intransigences... I left with many things remaining vague and undecided, particularly from the last half of the day. There is much more to do. I think many may wish to differ with the definitions we have reported above. It may be more worthwhile to work to map the overlaps and commonalities, as well as the differences. Perhaps the greatest challenge, whatever one's own leanings, is to pursue the strategic assumptions, their implications, and our future directions further, much further. The past is important, but the future is where we will all be, and soon.

Mark Whitcombe works at Sheldon Centre for Outdoor Education, for the East York Board.

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Food Chains In and Around the School

by Ralph Ingleton

They will come to know that plants, animals and the soil are equally important to their well-being.

Tracing sources of favourite foods can help students realize that people depend on each other in a co-operative world. They will come to know that plants, animals and the soil are equally important to their well-being.

The big ideas include: 1) describing and illustrating the inter-relationships of a food chain; 2) an awareness that all forms of life depend upon each other; 3) that sunlight is the source of almost all energy on earth.

Experience I - The Lunch

Have students draw pictures of food they eat for lunch. Post a typical picture list of a lunch menu for one day.

In small groups, have students trace each food product back to its original raw resource and the elements that allowed it to live and grow.

Example:

soil + water + sun + air → grass → cow → milk

In this way the students learn that everything is linked together and that ultimately all food comes from soil, air, water and sunlight.

Create a small bulletin board showing in pictorial form the various links to a hamburger or popular food item.

Experience II - Schoolyard Detective

There are many food chains in a schoolyard but it will take a real detective to find them. In this activity students will be taken outdoors for a short time in to a defined area of the schoolyard. Using their knowledge of food chains they can discover new ones. Explore the area looking for plants and animals that form links.

Example:

soil + water + sun + air → leaves → earthworm → robin
soil + water + sun + air → leaves → leaf hopper

Look for gulls, pigeons, wild birds, worms, pill bugs, insects, squirrels, cats, amphibians, reptiles, snails, slugs, toads, trees, weeds, grasses, bushes, moss and flowers. Include observations such as robins or gulls eating worms or anything else that relates directly to a food chain. Have children look for clues, e.g., feathers, bits of fur, chewed branches or seeds, nuts, cones, insect skeletons, egg cases, cocoons, tracks and droppings.

After returning to the classroom with the observations and non-living clues, record them in a small display.

Important - do not pick or take any living thing.

Have students make up a card for each observation or clue. Each animal, plant or parts of, relates in some way to one another. Each card represents one connection in the specific relation known as a food chain. To assemble the "schoolyard food chain" connect each thing appropriately with the others using yarn. Ask students to predict what changes will occur in the food chains when the season changes.

Go outside during each season to check out predictions and record the findings each time and make comparisons.

Follow-up

To demonstrate the links of a food chain, a classroom aquarium illustrating pond life or a terrarium demonstrating a particular land habitat would give children an excellent opportunity to understand the dynamics of a miniature ecosystem.

Ralph Ingleton runs North York's Forest Valley Outdoor Education Centre.

Picnic of the World

by Bill Cook

"The world would be a lot better place to live if we just had a few more picnics."

Tom Chapin, from his tape, *Mother Earth*

We don't have to simply talk of having a global perspective on the world. In our multi-cultural community, students can have a picnic of the world right here and now. I use Tom Chapin's song, "Picnic of the World", to set the tone for a day of sharing in the outdoors at my centre.

Method

The students are sitting in a circle outside, or inside on a rug. I start by asking about picnics. My questions may include: What are picnics? Why do we go on picnics? Where do we go? What's the best time for picnics? What do we like to eat on picnics? What problems do we come across? (ants, wet weather,...) What words come to mind when you think about

picnics? (fun, laughter, togetherness,...)

If we had a picnic of the world, who would we invite? Where would we go?

Why?

We can have a picnic of the world here, now! *You* came from around the world. At this point, I play Chapin's song, and the kids raise their hand when the country of their ethnic origin is mentioned.

Pass picnic food around at the end of the song.

Students are excited to hear their country mentioned in song, and are amazed to discover that their classmates do come from around the world. The activity allows the children to celebrate their roots, and to share and celebrate their uniqueness. It truly becomes a picnic of the world!

Bill Cook teaches at the Jack Smythe Field Centre for the Peel Board.



PLAN NOW TO JOIN US FOR COEO's 21st ANNUAL CONFERENCE!

- THEME:** The Great Outdoors: It's Closer Than You Think!
Featuring: David Stokes... Reaching For Connections and much, much more.
- WHERE:** Canterbury Hills in the beautiful Dundas Valley, Ancaster, Ontario
- WHEN:** Thursday September 26th - Sunday September 29th. 1991
- INFORMATION:** COEO '91 Conference
Camp Canterbury Hills
Box 7068 Ancaster, Ontario, L9G 3L3

The Great Outdoors In Urban Secondary School Programmes

by Margot Peck

"Outdoor experiential education" is a mouthful. What is it? How can it be incorporated into an urban Secondary School setting where few existing outdoor areas are within easy reach? If you like the outdoors and have the energy and enthusiasm, the solutions may be easier than you may think.

Outdoor experiential education is possible in the urban setting and the addition of outdoor 'experiential' education can benefit any Physical Education programme. After all, the key to learning is by experience and exposure to all the possibilities the subject has to offer. The outdoor ed can take the form of a single unit or a complete curriculum within itself. Flexibility in programming is the key to offering students the most valuable experiences possible.

Many Boards have outdoor centres where schools can book time and participate fully in all that the facilities have to offer. These centres sometimes have limited time to use and unfortunately, not all boards have outdoor education centres out of which to base a programme. As an alternative, there are various local areas just outside of the city that can be accessed. Getting there can sometimes be limited by budget or time restrictions. However, this can usually be overcome by careful planning, and, of course, determination.

So what can we do with what may seem like limited outdoor opportunities in urban Secondary Schools? Walks are a simple yet very effective form of exercise that can become a positive experience in the outdoors. Walks can be used to orient the students to the area around the school. For example, a park or wooded area can be used

to incorporate cooperative games or challenges. A closer look at waste in our environment can take place. A wooded area can be used to develop an orienteering programme involving map and compass. Generally, a walk can do wonders to open up all kinds of possibilities whether they are student-generated or teacher-generated.

Orienteering is an exciting activity that will add not only the skills of map and compass but also the benefits of physical fitness and group work. A simple exercise that can be used to introduce the idea of orienteering is a rhyme and riddle course. You create riddles for various areas around your school and place symbols at these areas. The students must solve the riddle to discover the area, then go there and write down the symbol. Orienteering can be done within your own school, using the various hallways and classrooms. This is a fun yet effective way to introduce them to orienteering. It also provides them with a good base for continuing into map and compass skills and the possibility of an eventual meet in a local wooded area or conservation area.

Local conservation areas also provide an interesting area for a hike or nature walk. They are in close proximity to many urban schools. Let the students brainstorm to come up with a variety of conservation area activities. How about slogging through a bog? Get out there and get dirty for an afternoon discovering a swamp or bog. There are many spin-offs to bog-flogging like swamp tag, or how about hide and seek in a swamp. These are messy endeavours, but fun experiences that allow students to see a swamp or bog up close and take a look at its inhabitants. [Editor's note: Great care

must be taken to minimize the environmental impact of each outdoor excursion.]

Canoe tripping is one of the ultimate outdoor experiences. It would be great to incorporate the benefits of a canoe trip experience into every Physical Education course. In urban areas this is not easy to do. There are some great alternatives. Why not use your school swimming pool or local recreation centre pool to introduce canoe skills as well as canoe safety? Paddling strokes and safety procedures can be covered as well as games and races for fun and practice. This gives the student an introduction to canoe skills. This experience can provide a good preparation for a planned canoe trip experience or a day outing to a local marshland.

Cross country skiing is an excellent outdoor experience that can be done in your own school field. There may be sources of equipment available at your fingertips within your own community. Instruction is available also by contacting local organizations specializing in this area. Similarly, local cross country skiing areas often

provide school packages for day outings on trails. These programmes often provide lessons, rental and trail skiing within a package deal. As well, you can introduce snowshoeing in much the same way.

Outdoor experiential education is not limited to specific programmes or environments. It is right out your back door if you take the time and energy to look at what is available. The amazing thing about outdoor experiences is that they have no physical barriers. Opportunities are all around us if we just take a look. Planning ahead, using all your resources and organizing your time are the keys to opening students eyes to outdoor experiences. So if you enjoy outdoor pursuits why not add them to your programmes at school? The possibilities are endless.

Margot Peck is the Head of Girls Phys. Ed. at Harwood Secondary School in Ajax, where she has been including outdoor education in Phys Ed programming for six years.

COEO Calendar

- | | |
|-----------------|--|
| March - May '91 | — NIU Environmental Quality Education, Ottawa |
| April 20/91 | — Rock Climbing at South River |
| May '91 | — Central Region Ropes Course |
| May 3-5/91 | — Spring Celebration at the Frost Centre |
| May '91 | — Eastern Region Spring Celebration |
| June 6/91 | — Central Region Barbecue - Lake St. George |
| Aug. '91 | — Wetlands at Tiny Marsh |
| Sept. '91 | — 21st Annual Conference |
| Oct. '92 | — NAAEE/COEO Joint Conference on Environmental Education |

Goldenrod Gall Math

by Mark Whitcombe

An example of the application of mathematics to a real-life situation.

Goldenrods are one of the most common plants of old fields in eastern North America. For thirty or forty years after a field is no longer cultivated, goldenrods dominate the plant life. One of the most common species is Canada Goldenrod.

There is a complex food web that is based on goldenrods. One of the intriguing parts of those feeding relationships is a sub-web based on a fly whose larvae cause a gall on the goldenrod. There are a number of insects, spiders and birds that either prey on, or parasitize the fly. There are also some insects called inquilines that feed on the gall tissues, taking advantage of the available food and shelter, without seeming to affect the fly at all. There are other insects and spiders that use the galls as a site for various activities, such as storing paralyzed prey, rearing young, or merely hiding. (see Figure 1.)

Very little is known about the detailed biology and ecology of these organisms. The literature reports that the gall seems to have little effect on the plant. However, very little actual research seems to have been done on the relationship between the plant, the fly, and the other organisms.

The Study

This study was designed for a group of top-capability Grade 10 and Grade 11 Mathematics students as an example of the application of mathematics to a real-life situation. Basic measurements of the galls

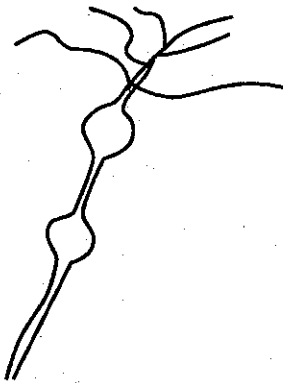
growing on some of the local clusters of goldenrods were gathered. (see the sample Worksheet.) This information was entered onto a computer spreadsheet — a fancy number-crunching application. Several simple statistical analyses were performed. The results can be presented in three ways: tabular form; statistically analyzed; and in graph form. (The spreadsheet was initially set up on a Macintosh computer using Microsoft Works 2.00a, and then considerably improved using Wingz 1.1. If you have registered copies of either of those applications, and would like a copy of the spreadsheet as set up, send a blank disk to the author at the address listed in the front of the journal.)

One of the purposes is to show something of the value of mathematics as a powerful tool that illuminates other fields of knowledge, as opposed to math as a subject of pure knowledge in and of itself. There are many other possible goals for this study, such as finding out something about the actual ecological relationships of the organisms involved, or learning about the methodology of scientific research, or learning statistical methods.

Mark Whitcombe works at Sheldon Centre for Outdoor Education, for the East York Board.

Figure 1

GOLDENROD BALL GALLS



-gall formed by plant, probably in response to mechanical irritation by fly

-fly lays egg on surface of plant in June

-egg hatches and larva burrows into plant, stimulating gall formation

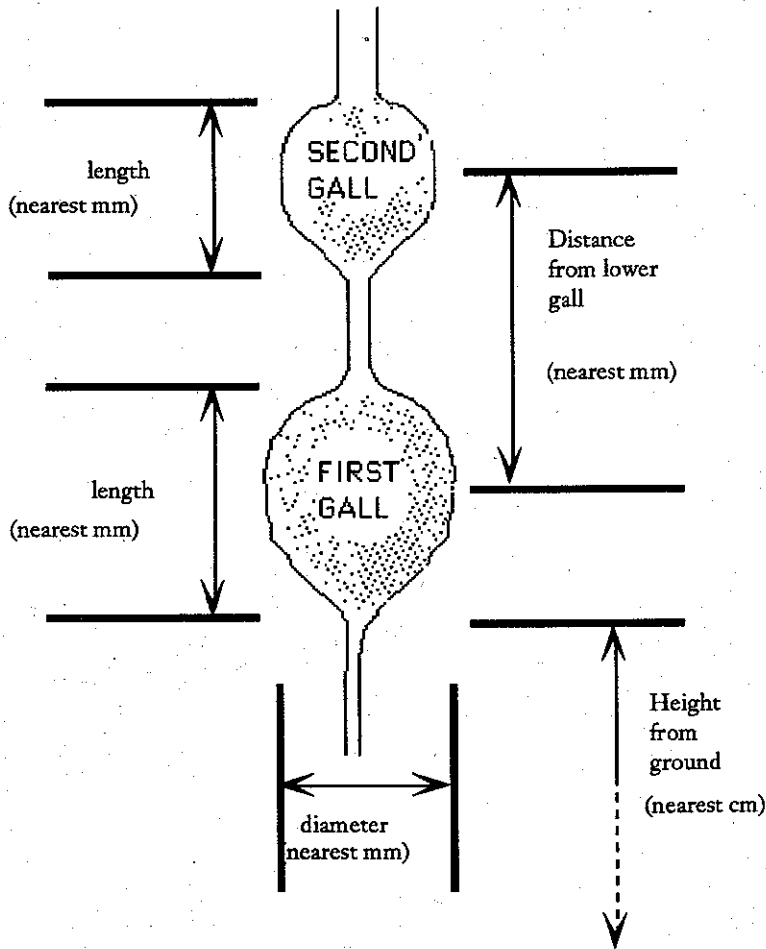
-larva digs tunnel almost to "skin" of plant in fall

-pupates in April/May

-emerges in May/June

-12 species reported as parasites or "inquilines" (living in gall without affecting fly)

MEASUREMENTS



INHABITANTS

FLY LARVA



- 5mm
- larva featureless
- larva white
- pupa brown

BEETLE LARVA



- 3-4mm
- white
- tapered
- ?parasite?

INQUILINE



- 3-5mm
- white to yellow
- lots of frass

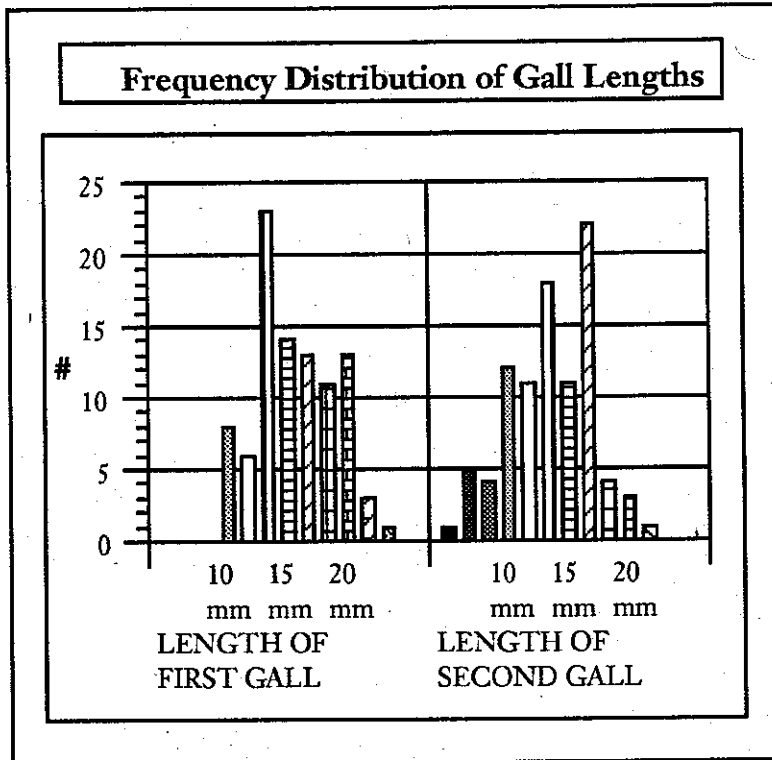
"WIRE"



- 2-3mm
- white to yellow

Some Results:

Some sample results appear below, shown both graphically and statistically.

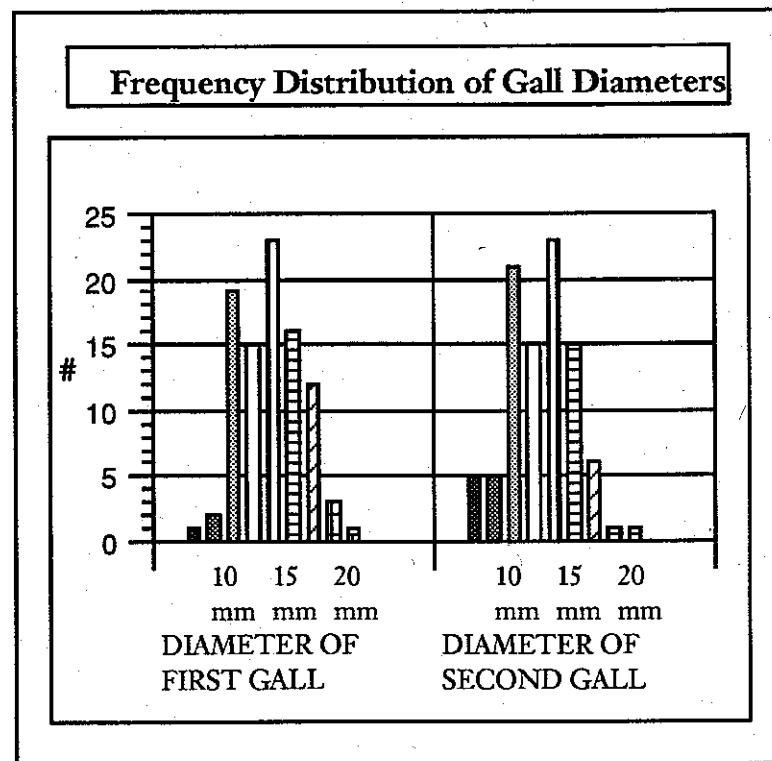


To the eye, the two populations of galls are distributed differently, with there being more small second galls. Clearly, second galls are generally shorter.

L1:L2 t-test

4.09 therefore *Accept*

The t-test result gives the same answer in statistical form: the two populations of galls are statistically different.



D1:D2 t-test

2.05 therefore *Accept*

Since the t-test result of gall diameters is higher than 1.96, we must accept that the two populations of galls are distributed differently.

This result is statistically significant, but is not so easy to see with the eye as is the difference between the lengths. Further research could now go on to investigate what the causes of the differences really are.

Earthlens

Mary Jeanne Barrett

To deal with issues and ethics as well as hard core ecology.

"No, I'm not coming back to Andover." Those, I thought, were my final words when last March I talked with Elwin Sykes, director of Andover Summer Session. Andover, as Phillips Academy is affectionately known, is a private co-ed boarding school in Massachusetts, a school where I began my teaching career and worked for a year and three summers. As much as I loved the place, I had convinced myself I wasn't returning. After five years of nomadic life, I was determined to stay put for the summer.

But I acquiesced to my own fatal curiosity; Elwin had an idea and I wanted to hear more about it. "Would you like to put together a program combining environmental studies and English?" he asked. I think we'll call it MOUNTAINS, and spend some time in the Whites in New Hampshire."

I called Elwin back at 6:30 the next morning and said "yes", then prepared to ship my life south for the summer to begin planning.

Since that first telephone conversation one year ago, the program, and my mind, have travelled on many wonderful tangents. The best, however, were to deal with issues and ethics as well as hard core ecology, and to bring the program to Ontario. EARTHLENS, as it is now called, will accept 12 high school students, run for five weeks, and take place mostly in Temagami, instead of in the States. On paper, the program looks like this:

EARTHLENS: Environmental Studies by Path and Paddle

"Humans did not weave the web of life; they are merely a strand in it." (Attributed to Chief Seattle)

Propelled by foot and paddle, students travel Canada's backwoods trails and waterways as they examine their relationship to the land, and the meaning of responsible stewardship on our home planet. Through field studies in science and the expressive arts, they investigate, first hand, human impact on the earth and probe issues for which no national boundaries exist.

Field studies focus on the ecological concepts of interdependence, diversity, carrying capacity, energy flow, adaptation and competition/cooperation — concepts which students apply as they grapple with such questions as: to what extent do humans have a right to change the environment? What is my role as a member of an ecological community? Is it important to maintain wild spaces? Is sustainable development possible?

On its way north, EARTHLENS makes brief stops in Toronto and the Niagara region, then settles near Orangeville where students begin to unravel the mysteries of aquatic and terrestrial ecosystems. The program's highlights, however, lay hidden in our final destination: Ontario's Temagami Wilderness — a setting where Native

Canadians, loggers, and one of North America's last old growth forests struggle to coexist. An extended canoe trip immerses students in a land dominated by ancient pines, loons, 3000 year old native trails, and clear-cuts.

In Temagami's forests, students conduct an environmental assessment; then they return to base camp and investigate the concerns of the region's citizens. They talk with Indians, loggers, environmentalists, canoe builders, government officers, tourism officials, cottagers, parents and children. While preparing for a simulated environmental hearing — a standard forum for resolving debates among conflicting interest groups — students learn skills ranging from interviewing and writing a brief to public speaking and critical thinking.

And like all explorers, they embark on an internal voyage — one of the imagination and the heart. Students' journals and field sketches capture both the moments and meanings of life as a modern voyageur. Readings from the works of great explorers and nature writers accompany students on their travels.

NOTE: Field research and travel depends on a high degree of cooperation,

flexibility, good humor, and academic commitment. Students should be prepared to spend large amounts of time living and working outdoors. Camping background is not necessary, but applicants must be comfortable outdoors and willing to meet the challenges of academic study in a setting dominated by land, water, weather, and group living. Participants must be able to swim.

This is the beginning; the rest remains to be seen. The staff of myself, Craig Boljkovac, Mary Henderson, and Jennifer MacLeod, as well as many generous advisors, are doing our best to make it happen. We'll keep you posted.

Mary Jeanne Barrett teaches with the Peel Board at the Finlayson Field Centre.



Metro Toronto Zoo Resource Kits

Introduction:

The Zoo's Resource Kits have been created to assist teachers in preparing for a class visit. These materials will also enable the teacher to plan classroom activities prior to the actual visit.

Material within the kit varies, depending on the topic, with some similar sections in each kit.

Background information, posters, brochures, booklets and study ideas will assist in developing a program to make your visit a rewarding experience.

There are presently six kits available from the Zoo's Education Unit. Following are the titles and a short synopsis of each.

THE ZOO will take you behind the scenes while explaining the Zoo's objectives and the day to day operation of this modern zoological garden.

AFRICA covers animals from all the major biomes of this continent. These include desert, savannah and rainforest. The animals of Madagascar are also looked at.

CANADA AND THE AMERICAS looks at the native species within the Zoo's collection of over 4,000 birds, reptiles, amphibians, mammals and invertebrates. Species that inhabit Central and South America are also examined.

VANISHING SPECIES is a very popular kit, dealing with the topic of conservation and what zoos are doing to solve the extinction problem. There are over 30 representative species at the Zoo that are threatened with extinction, unless the circumstances affecting their survival change dramatically. Current information is provided in this kit.

ANIMAL ADAPTATIONS covers the structural and behavioural adaptations of animals. Some of these are readily apparent to the observer and the purpose can be deduced through careful observation and reasoning.

SECONDARY KIT is the most recent addition to the Zoo's teacher resources. This kit will assist the teacher in giving a focus to a class visit to the Zoo. There are activities for students from 9 to OAC, all based on the theme of human impact on the environment and how this relates to the Zoo.

The present Resource Kits were first developed in 1984 and were subsequently revised in 1986. The most recent revisions commenced in 1990 and continue this year. The kits are now bound in a three ring binder which makes updating easier and more cost efficient for the teacher. Minor changes will be mailed to the purchaser free of charge and when major revisions are completed, teachers only have to purchase the contents and not the binder. The kits, with the exception of the Secondary unit, are written to be used at the Junior level but can be easily adapted by the teacher for use at any other education level. Many of the goals outlined in *Science is Happening Here: A Policy Statement for Science in the Primary and Junior Divisions 1988*, have been incorporated into the Zoo's materials.

For Further Information

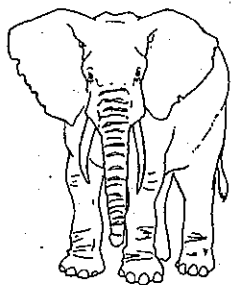
If you would like additional information on purchasing the Resource Kits or on any other teacher resource or program, contact the Education Unit at (416) 392-5944/45 and request a copy of their school programs brochure entitled "Learning Adventures".

THE DIET GAME

(from The Zoo Resource Kit)

To keep healthy, you must eat the proper foods from the four food groups. Like you, our animals must have a balanced diet. To create the correct menu, our nutritionist and his staff must find out what foods the animal eats in the wild and what special vitamins and minerals it requires. They then plan meals for our animals based on foods that we can obtain to meet these needs.

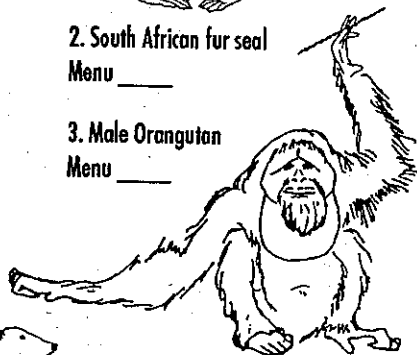
Match the Zoo animals with their diets and then answer the questions.



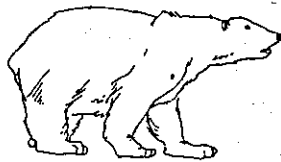
1. African elephant
Menu _____



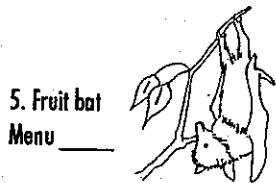
2. South African fur seal
Menu _____



3. Male Orangutan
Menu _____



4. Polar bear
Menu _____



5. Fruit bat
Menu _____

MENUS

Menu 'A'

18 kg. monogastric cubes
10 kg. hydroponic barley grass
Timothy hay
Tree branches
Carrots

Menu 'B'

10 g. Carnivore mix
30 g. Gelatin diet
60 g. Bananas
20 g. Oranges
15 g. Figs
15 g. Grapes
02 g. Supplement powder

Menu 'C'

4 kg. Meat mix (horsemeat, beef liver, tripe, udder, lungs & spleen)
.3 kg. Co-op dog chunks
1 kg. Herring
1 kg. Hydroponic barley grass
50 mg. Thiamine
1 beef shank (weekly)

Menu 'D'

200 g. Sunflower sprouts
50 g. Peanuts
100 g. Grapes
One Banana
One Cooked yam
Two Tomatoes
1/3 Onion
One Hard boiled egg
One Apple
One Orange
Purina "monkey chow"

Menu 'E'

4 kg. Herring
2.18 g. Salt
150 mg. Thiamine
16 IU Vitamin E

Questions

1. You keep your teeth healthy by brushing them after you eat. What purpose do you think the beef shank (bone) serves in Menu 'C'?
2. Seals live in the ocean. At the Zoo we keep them in a freshwater pool, so we have to give them a special supplement in their diet that our water doesn't have. What would this be?
3. Food for our animals costs \$1,545.04 per day. How much does it cost to feed our animals for one year? How much does it cost to feed your family for one day?
4. Which menu(s) belong to a carnivore (meat eater), a herbivore (plant eater) and an omnivore (both meat and plants)?
5. List what you might eat from each of the menus. What type of animal are you?
6. Can you name the four food groups that humans need?

Answers

- | | |
|-----|--|
| 1-A | 1. Gnawing these items helps clean teeth and gums. |
| 2-E | 2. Salt |
| 3-D | 3. \$563,939.60 |
| 4-C | 4. Carnivore-E; Herbivore-A & B; Omnivore-C (menu D could be that of an omnivore or carnivore due to the presence of the egg and monkey chow.) |
| 5-B | |

Beaver, Developers, and Beaver-Developers

by Jiiva Somerville and Mark Whitcombe

This values lesson was part of an assignment for a Northern Illinois University course with Cliff Knapp, entitled Teaching Environmental Values. Leslie Peel and Leighann Hobson helped in the field-testing of this lesson.

Outline

The purpose of this environmental values lesson is to illustrate the application of biocentric ethics to resolving a conflict between humans and other parts of an ecosystem. We hope to "trap" the students between two sets of preconceived values, one pro-beaver, and the other anti-developer, and then lead them to see beaver as developers. The resolution of this dissonance will more clearly place the beaver in its full biocentric role. We will then ask the students to weigh the rights of the various parts of the ecosystem (including beaver, trees, trout, and humans, as well as others) in reaching a decision about what, if any, management is acceptable in this biocentric framework. The concepts to be covered are: a biocentric interpretation of an ecosystem; the application of biocentric ethics to resolving a conflict between humans and other parts of ecosystem; an application of a biocentric ethic to the use of a renewable part of the ecosystem.

Lesson Outline

Lead the students through writing a cinquain about beaver: "beaver / 3 adjectives describing beaver / 3 adverbs describing beavers actions / 3 words to describe own reactions to or feelings about beaver / synonym for beaver"

Hike past old beaver site, showing old

lodge / dam site / ditches / stumps.

Hike towards new beaver area. On way, state that "developer has put bid on property."

Write cinquains about developers: "developers / 3 adjectives describing developers / 3 adverbs describing actions of developers / 3 words to describe own reactions to or feelings about developers / synonym for developers"

State that the beaver can be viewed as a developer. Visit present site, with that point of view in mind. Begin with quietly approaching site, looking for beaver. Examine lodge, dams, cuttings, slides, ditches, measurement of extent of cuttings, etc. Project into future what area will look like if beaver are left undisturbed.

Write cinquains about beaver as developers: "beaver as developers / 3 adjectives describing beaver as developers / 3 adverbs describing actions of beaver as developers / 3 words to describe our reactions to or feelings about beaver as developers / synonym for beaver as developers"

Discussion of value changes, if any.

Discussion of what the thresholds for future possible management might be. What does the future hold for this area? Is it permissible to manage the beaver? What forms might that management take? Does it make a difference if beaver are considered as a nuisance, as opposed to an on-going renewable part of the ecosystem?

Discussion of whether we should allow an on-going beaver trapping programme here, as a demonstration of the use of a renewable part of the ecosystem? What is the value of beaver? of the other parts of the ecosystem? What is for the best good of the whole ecosystem?



Take an Idea and See Where It Leads You

by Bud Wiener

An outdoor education lesson plan

Setting: Resident Outdoor Education Centre

Clientele: University students in teacher education

Time: Two and one-half hours to three days (optional)

Context: Elementary education majors at N.I.U. spend three days at Lorado Taft Field Campus as part of their required pre-service preparation program. The Taft program is an integral part of the clinical experience in the third semester.

Rationale: This activity is based on the experiential philosophy of John Dewey, and specifically his methods of dealing with ideas and their relationship to experience (J. Dewey, *Democracy and Education*).

Educational thought and practice for a good many years, and particularly in the past ten to fifteen years, has been dominated by teacher goals, teacher directedness, teacher decisions, teacher-determined content, teacher evaluation, and teacher power over students. This seems to be as true in outdoor teaching and learning as in the classroom.

"Take an Idea" is an example of *student involvement* in what is to be learned and how, and the teacher's role as facilitator.

Method Outline: Students are introduced to Dewey's philosophy on thinking and ideas. For a three day experience this would be in-depth prior to arrival at the centre or during the first day. If this exemplary lesson is to last only two and one half to three hours, the introduction and stage setting will be limited.

Students are provided a one page guide

sheet and instructions on how it is to be used. It contains the following four sections:

1. Your *IDEA* ! Describe it. What is its focus? Are there questions that you want to address?
2. What *actions* will you take to carry out your idea?
3. How will you report what happened to you and your idea?
4. What further actions are needed? What new ideas come to mind?

Parts 1,2,3 are completed prior to the students going outdoors on their own. The instructor/facilitator assists in clarifying the idea and how it can be addressed. But the responsibility is always with the student.

Part 4 is completed following the outdoor period.

This lesson will have a different dimension if it is the central focus of the three day experience as compared with a few hours or one day block of time.

Students prepare their presentations to share with the group, noting highlights, insights, changes that may have happened, and where their ideas might lead them.

The group discusses the experience and implications for using such an approach with children. The instructor continues in the role of facilitator throughout the discussion.

Content: The student-determined content focuses on "that which can best be learned in the outdoors" (L.B.Sharp), particularly in the Taft campus resident setting. The instructor may provide information about the possible opportunities in the group discussion, or individually with each student who needs assistance.

An example of student involvement in what is to be learned and how, and the teacher's role as facilitator.

Dr Morris (Bud) Wiener is the Faculty Chair of the Outdoor Teacher Education Faculty of Northern Illinois University. He has a long association with the professional development of outdoor educators in Ontario.

Notes from LochGoilhead, Scotland

by Jiivo Somerville

Aug. 29, 1990:

It is early morning. My loch and glen are silver-grey and windy. The wind is coming up the loch from the south and carries thick low clouds full of rain. A fine day to be at home quiet and warm, looking out the window and beginning my journal.

I know I shall have to learn to love the wind as I do the sun. Sometimes warm and fresh, today it is harder driven and makes noise round the house. The lone gull is crying his protest and the moored boats pull steadily at their moorings. Many whitecaps are telling me we may not be sea-kayaking (canoeing, as it is known here) today with our students.

My first impressions of Scotland were that it reminded me a lot of both Vancouver Island and the Yukon. Fireweed blossoms everywhere. The mountains, (hills, as they are affectionately known) are low and so old they are mostly rounded over, treeless and craggy. The lochs are deep and cold dotted with sailboats and little rowing dinghies. My loch, Loch Goil, has a naval base on it and occasionally I see a small ship slowly moving in from open waters. The loch as an interesting bottom profile for submarines to play in.

Oct. 1:

A short month and a whole lifetime of experiences have travelled through me since I began my journal. Another calm reflective moment has arrived and I return to these pages.

I promised comments about life round LochGoilhead — as though a few pages could bring to you the silver moist mountains or the golden sides of the glen when

long shadows bring the end of day, or the earthy cold air that the wind brings to tell me winter waits. No two hours look or feel the same. Life is slow and full.

Ardroy is a residential Outdoor Pursuits Centre for the Fife Regional Council Education Authority. The Centre as a physical presence is neither large nor impressive. About 20 years ago an old house was converted into a dormitory, kitchen and dining areas, a common room for students and a lounge for staff to meet or relax. Two other basic buildings contain dormitories and classroom/office space. The grounds are small, reaching from a shingle beach on the sea loch to the narrow road above. C'est tout!

Maintenance staff are assisted by various technological and other modern conveniences. Sheep are the lawnmowers busy at work on the small patch of lawn in front of the house. Somewhat unreliable, they tend to come and go on no fixed schedule.

My colleagues, on the other hand, are superbly reliable and together with the visiting classes of students form the heart of Ardroy. Let me introduce them to you.

John Fisher, the "Field Studies" man, who will leave no stone unclimbed in his search for rare new flora with a group of budding botanists.

Linda Leyland, who conducts sessions on rodent hair styling.

Godfrey Todd — or Goff, as he is known. His job supports his real passion in life: hill-racing. Welsh, you know!

John Endicott, head teacher, who said a photo of him would cost me another night "on-duty" in the dorms.

This dedicated and professional group forms a major part of my working life here,

and I feel quite fortunate. What skills I'll be able to develop to take home!

Quite seriously, the only reason I am able to poke fun at them is because I consider them all to be quite outstanding. John Fisher and I share ideas about ecology-based programming with enthusiasm. Most of the centre's programmes are geared towards outdoor pursuits so I think he enjoys having someone to brainstorm with. Goff is very patient with my tortured attempts to understand the abseiling (rappelling) rope set-up, or to crawl my way up the Carrick ridge. Under his influence I'm doing a fair bit of orienteering — have even joined an orienteering club and entered some competitions. Interesting to note that the experience of getting lost is so universal.

The change in pace from a field studies focus of ecology and history and geography to one that includes kayaking, abseiling and hill-walking (when will they ever feel like mere hills, I wonder) has been invigorating. I particularly feel like that when for instance a wind suddenly blows up on the loch scattering 6 kayakers to all points of the compass and I discover that I have forgotten my tow ropes; or an obese young girl turns herself upside down while abseiling and bawls like a beached whale; or when I come upon two young girls on an orienteering course, one of whom is chest-high into a bog hole and all I can do is laugh. All of the above are genuine I assure you.

The language barrier is another challenge again. When pants are really trousers and underwear are really pants and I tell a group of boys to take off their wet pants and put them in the boot hall sink so I can put them in the spin dryer, the horrified looks tell me I've blown something again. They are generally very good at translating for me, but occasionally will ask "Miss, can we talk Scottish again?"

Took me a whole day to figure out I was Miss!

Lochgoilhead itself is a village of about 300 people who appear to make their livelihood servicing each other locally or from sheepfarming. There are only 3 farms in this area, one of which is about 7,000 acres. Mountain soil is very thin and the terrain is so hilly that crops are out of the question. Each sheep needs roughly 2 acres to survive on pasture.

Actually the sheep are the most entertaining feature of the landscape. Literally everywhere, they bleat and baaa incessantly as they waddle away/run away, their pudgy tails all in a flap. Their wool can be found on fence posts, tree branches or matted in clods in peat bogs high in the hills. The sheep themselves look like dirty old matted rugs you'd be wanting to toss out. How does anyone ever clean the sheared wool by hand?

Oct. 15:

One of the first things I did when I awoke from my jet-lag fog back in July was to climb up to a small height of land above the town to get a look at my surroundings. A scotch mist was pelting down on me. I felt rather disconnected from everyone who knew anything about me and for just a moment I had apprehensions about feeling truly contented in a damp rather isolated corner of the world. I don't believe I actually felt joy in my heart at being here until I walked up into the streams and heather amongst the dripping spruce, pulled out the penny whistle M.J. gave me as a "going somewhere away" gift and began to play the only song I know — "Amazing Grace." Then with the notes singing over the hills, my spirits took flight as well and I felt happy and joyful. All along the trail I held it in my hand piping myself onward, feeling warm and

*They listen
silently and
smile when it's
all been said —
they realize
they've created
something
unique.*

comforted and accompanied by many good hearts.

Jan. 21, '91:

Here's an idea I have picked up here although I'm fairly certain it's not unique to Scotland. During the evening programme at Ardroy, students create a tape/slide presentation of their days activities. The slides are not photographic images, but rather artistic renditions of students kayaking, abseiling, or mountaineering, etc. To set a mood and help creative juices flow I begin the endeavour with a guided imagery re-experiencing the day. With students heads resting comfortably on their arms and eyes closed, they awake again in the morning, recalling their first thoughts as they dressed for a new day of adventure. Were they apprehensive thinking about their upcoming abseiling session? Were they excited about what might be in their small-mammal live traps? I take a few minutes to go through their whole day providing opportunities to focus on skills learned, sights, sounds, feelings, friends, struggles, insights ...

Upon opening their eyes I ask them to give me a word or phrase which encapsulates something important or striking about their day. I record words like "brilliant", "touched a shrew", "scared at the top", "knackered", "saw the wind blow" on a large sheet of paper so they can see the rich tapestry that was their day. Then I read it to them, each word on its own line, as I would piece of poetry. They listen silently and smile when it's all been said — they realize they've created something unique.

Having thought about the day and articulated some of our thoughts (I occasionally add my own) we move on to visual recording. (Editor's note: Kodak makes a blank opaque slide, the Ektagraphic Write-on Slide, specifically for writing and/or drawing on. Catalogue #140 9960; suggested price \$24.70 for a box of 100;

available in cartons of 5 boxes of 100 each)

The process seems to work well if students work out their drawing on a sheet of paper first, then draw it as small as the slide dictates (again, on the paper) before actually drawing it on to the slide itself. Coloured pencil crayons works well as does a plain lead pencil. As students complete a slide, they project them to check the clarity and effect of their picture. The ingenuity and originality of the drawings is always a treat for me.

Each slide has a short accompanying script which the student reads on to a tape once they have decided on an order of showing. We generally spend approximately one and a half hours from start to finish without feeling rushed or bored.

Think of the possibilities for presentations to other student groups, parents, teachers or for themselves as a keepsake of their day or week at the outdoor centre!

Feb. 4:

For several months I've been puzzling over what my role as an outdoor educator really is. While my responsibilities vis-a-vis my Centre are relatively clear, the broader definition of what my place in children's lives has been very vague. My personal need for commitment to a philosophy of life has pushed me to clarify: my ethics; practices I'm willing to include in my daily life; and the message I bring to students each day. I recognize that being a teacher/leader with young people has high impact possibilities inherent in the role and I have a need to feel well thought out, clear if you will, when I lead.

Jiiva Somerville normally works out of the Finlayson Field Centre, Peel Board. This year she has exchanged teaching positions with Liz Evans from Scotland.

Job Exchange to Scotland

Teaching in an Outdoor Education Field Centre? Want to expand your knowledge and experience?

Contact Liz Evans for a unique opportunity to exchange jobs to a residential centre in the Scottish Highlands September '91 to June '92.

For further information, phone Liz Evans:

w. (416) 453-3552;

h. (519) 942-0075

Good News for Water and Sports Enthusiasts

Paddler magazine has amalgamated with three American water sport journals; *Ocean Kayak News*, *River Runner* and *Canoesport Journal*. A California company, the Tanis Group, plan to release the first issue of the new North American *Paddler* in May, 1991. The intention is to bring the interests of rafters, sea and river kayakers and canoeists of all description together. The magazine will be geared to intermediate and expert paddlers. Currently, *Canoe*, primarily an entry level magazine, offers little Canadian content and is weak on environmental issues. John Dowd's *Sea Kayaker* is mainly a west coast journal. The Tanis Group plan a "big time approach" to capture the significant paddling readership. Subscribers from the Ontario-based *Paddler* will be

honoured. The publishers intend to offer lower advertising rates than previously possible in the other journals and actively solicit Canadian content. The new format includes an international calendar of events, a significant editorial and issues concern, a conservation-environmental update, extended and day use destinations, personal profiles and a commitment to more advanced skills and practices. The new *Paddler* should be a worthwhile addition to the development of environmentally concerned, informed recreational citizens.



Paddle down the Nonquon River

with Mike Whitmarsh

Saturday, April 27 from 10 a.m. to 2 p.m.

We will paddle through the Nonquon Provincial Wilderness area and visit the Nonquon Outdoor Education Centre along the way. This will be a leisurely paddle to enjoy the sights and sounds of Spring.

Please bring your own canoe, paddles, PFD and lunch.

Please call Larry Aiken at (416) 428-0125 to register and for more information. Cost is \$5.00.

Sponsored by COEO, Eastern Region

Hysteria

by Owen Roberts

Canadians are low-risk candidates for contracting Lyme Disease.



Owen Roberts is Assistant to the Vice-President at the University and Editor of *Research*, a publication of the University of Guelph. This article is reprinted, with permission, from the winter edition of the *Journal*.

"Lyme Disease hysteria" is far more common than Lyme Disease itself in Canada," says University of Guelph pathology professor Ian Barker.

Although the disease is gaining an increasingly high profile, Canadians appear to be at very low risk of contacting the disease, says Barker, a wildlife pathologist who has studied the tick-transmitted infection for the past four years.

There is a much greater risk of contacting Lyme disease in affected areas in the United States, especially coastal northeastern United States from Massachusetts to Delaware, Minnesota, Wisconsin and parts of the Pacific northwest. Since 1984, thousands of cases of Lyme Disease have been diagnosed in the United States.

Lyme Disease is caused by the bacterium *Borrelia burgdorferi*, which can result in debilitating chronic disease. It is readily treatable by antibiotics if diagnosed early, says Barker, but it's difficult to diagnose because it mimics many other conditions, such as rheumatoid arthritis and Bell's Palsy. People most prone to the disease are outdoor workers and outdoor enthusiasts.

In Ontario, Barker and his research team have found *Ixodes dammini*, the tick that carries the disease, at only one location — Long Point on Lake Erie.

In a study for the Ontario Ministry of Health, the researchers examined 22 locations to determine the range of the tick. Only two were found to contain the tick — and both were at Long Point.

"The tick was not even found in areas on the mainland close to Long Point," says Barker, "and it does not appear to have a widespread distribution in Ontario. It is not

a serious problem in Ontario, except for inappropriate public concern."

Barker is currently working on a study for Health and Welfare Canada to determine ways of preventing the disease and to gain a better understanding of the tick's biology. It is unclear whether the tick is spreading in Canada, he says. And researchers still have a lot to learn about the diagnosis of the disease and the transmission biology of the tick.

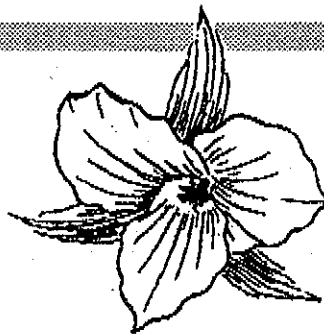
The only distinctive clinical sign of Lyme Disease is a bull's-eye rash around the tick bite, but only 50 to 60 percent of infected persons develop the rash. Blood tests may also be inconclusive, because of false positive and false negative reactions. The disease is not contagious from person to person.

Lyme Disease has also been implicated in arthritis and myocarditis in dogs, arthritis and abortion in cattle, and ophthalmic disease, encephalitis and arthritis in horses, says Barker. But these problems have not been recognized in Ontario to date.

The best prevention of Lyme Disease is better public awareness in affected areas, he says. Information is available from medical officers of health, the Ministry of Natural Resources and Parks Department personnel.

People enjoying the outdoors in Ontario are unlikely to encounter a Lyme Disease tick, says Barker. But he does advise those concerned about the disease to wear insect repellent and long pants and shirts, to brush any ticks off and to conduct tick searches on their bodies at the end of a day outdoors. If the tick is removed within 24 hours, transmission of the infection is unlikely, he says.

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Adventure in Outdoor Education

Bert Horwood

*Ego fears
tend to be
stronger than
fears of
physical hurt.*

Adventure is the silent partner in outdoor education. The feeling of adventure puts the edge on outdoor learning and makes it special. Many outdoor educators hope that classroom teachers will be able to sustain that spirit of adventure back home. Classroom teachers who are also outdoor teachers may have the best of both worlds.

Much has been written to promote adventure with safety in outdoor education. Most of that literature is based on the experience of leading practitioners best exemplified by Project Adventure. There, the focus is on fun, on adventure as motivation, and on integration with curriculum.

But relatively little attention has been paid to the unpleasant driving emotion of adventure — fear. There are two reasons: In general our society does not like to discuss fear. We are taught that big girls and boys aren't afraid. However, the core of adventure is fear. Young children show the importance of fear in their play. Dennis T. Patrick Sears wrote, "It is one of the delights of childhood to wade in the pools of imagined terror." If we are to understand better how the spirit of adventure animates outdoor education, we need to learn more, and be less afraid, of fear.

Alan Ewart has studied the relationship between fear and learning. His work, and that of others, confirms the experience of most outdoor teachers: There is an ideal level of fear or anxiety to generate excitement and attention. Too little means the event is dull, too much results in evasion or paralysis. In the extreme cases, intense fear can do lifelong harm.

Robert Chisnall was impressed by the negative fear reactions he had observed as an instructor when people were compelled

to participate, against their wills, in adventure activities. Later, as a graduate student, he undertook to discover some of the factors which would yield a productive, pleasurable level of fear in participants in an unusual adventure activity.

Chisnall designed an event combining a mountaineering technique, the Tyrolean Traverse, with the fad of bungee cord jumping. He called it "The Dynosoar." Participants, harnessed and helmeted, jump into a ravine. They are attached by climbing rope through the harness to the pulley system of a Tyrolean Traverse. The Dynosoar motion thus combines a vertical drop with a lateral swing as the pulley runs out over the ravine. The whole system is very elastic, bringing the soar to an easy stop. A recovery rope (previously fitted) is used to haul the jumper back to the take off point. At the time of the research, so few people had ever done this event that it was new (and scary) for all participants.

The research involved trials with volunteer participants. Each person was observed at the time of the jump and was either interviewed or asked to complete a questionnaire afterwards. Some participants were interviewed weeks after their jumps as well. In addition, novices in rock climbing were questioned about their reactions to other adventure activities.

Chisnall found that people experienced two kinds of threats. One was the threat to life and limb, the fear of physical injury. The other was a threat to self esteem and status, an ego threat. Ego fears tend to be stronger than fears of physical hurt. Both kinds of fear contribute to the total experience.

Some factors which made fears manage-

able were awareness and sensitivity of instructors, being in a small group, and a supportive social environment. A key element in achieving the ideal level of fear is the instructor's ability to assess the status of each student.

Chisnall's and Ewart's research has lessons for all outdoor teachers who value the spirit of adventure. The lessons apply to obvious events like ropes courses and also to fear of the bush, of bug and bog, of sleeping in a strange place among strange people, for examples. Fear can be either the silent spice or secret spoiler of any activity.

The trick for teachers is to find ways to work with students' fearfulness. This means being more open about our own fears. It also means that every aspect of our work might well be viewed through stu-

dents' eyes to find places where fear and safety, especially in self esteem, is out of balance. Each outdoor education experience should provide the ideal adventure.

Reading

Ewart, A. (1986). Fear and anxiety in environmental education programs. *Journal of Environmental Education*, 18(1), 33-39.

Chisnall, R. (1990). *A Qualitative Study of Adventure Education: Ego Versus Safety*. M.Ed. Thesis, Queen's University.

Bert Horwood is an outdoor educator at Queen's University who admits to having very sweaty palms and trouble breathing when he made his Dinosaur jump.

A key element in achieving the ideal level of fear is the instructor's ability to assess the status of each student.

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A Positive Example

Reviewed by Skid Crease

Paradise Won: The Struggle for South Moresby Elizabeth May. McClelland & Stewart Inc., Toronto, 1990

There are occasionally books written which become "primers" for a field of study.



There are occasionally books written which become "primers" for a field of study. *The Lorax* by Dr. Seuss would be a primer on the dangers of excessive consumption of natural resources; *The Redesignated Forest* by Chris Maser would be a primer on forest ecology; *The Turning Point* by Fritjov Capra would be a primer on who we are, how we got here and where we might be going. Similarly, classics like Rachel Carson's *Silent Spring* and Aldo Leopold's *Sand County Almanac* would be considered cornerstone reading for environmental educators.

Paradise Won by Elizabeth May is one such book. It wins attention on several counts: it is Canadian; it is current; it shows the incredible dedication and passion that a small group of people can bring to saving a piece of wilderness; it probes the convoluted relationships between corporate interests and provincial and federal governments from an insiders perspective, and it is a success story. It is also written by a woman who is a role model of successful environmental action. She has translated theory into practice from stopping pesticide spraying in Cape Breton to protecting the temperate rainforests of Haida Gwaii.

It is in the telling of the story, however, that Elizabeth May succeeds most effectively. I had already read her shorter account of this incident in her chapter in *Endangered Spaces* and was keenly aware of the outcome. Even knowing this, from the moment I opened the book until I finished it the next evening, I was completely captivated by a master storyteller.

The book opens with a hook introduction in which a co-worker teases Elizabeth that if she wrote the story of South

Moresby it would be as if it had all unfolded according to "some sort of giant cosmic divine plan." And that is exactly what follows. The first chapter begins with a symbolic story of a lone kayaker paddling through the mystical bays and channels of the Queen Charlotte Islands where an encounter with an eagle and a Haida man set a mythical tone to the book. She goes on to introduce each key player chapter by chapter as the story unfolds. It is like watching travellers upon the path of life selecting certain trails to follow that bring them all, at the critical point in time, to focus their energies and talents on the saving of South Moresby.

The variety of characters is as rich as the eodiversity of the Queen Charlottes. If you could find anything common in their backgrounds, it would be a love of the land that is the essence of deep ecology. The young Haida, Guujaaw, and Huckleberry (Thom Henly of *Rediscovery*) formed the "Islands Protection" organization in 1974 to save Burnaby Island from logging. From this community group began the origins of a thirteen year battle that would mobilize Canadians from coast to coast to support the South Moresby Wilderness Proposal. They were joined in the struggle by John Broadhead (*Islands at the Edge*), Paul George (Western Canada Wilderness Committee), Colleen McCrory (Governor General's Conservation Award winner in 1984) and Vicky Husband (United Nations Global 500 Award 1988), to name but a few. Of critical significance was the participation of Miles Richardson and the Haida nation in establishing the logging blockades that drew international attention to the South Moresby cause.

This group of environmental activists is joined by an array of supportive politicians like Charles Caccia, John Fraser, Tom McMillan and some fascinating eleventh hour allies in the form of Don Mazankowski and Dalton Camp. Add to this mix the theatrics of Premier Bill Vander Zalm and Prime Minister Brian Mulroney, the pro-logging stance as exemplified by Frank Beban, R.L. Smith and the Red Neck News, corporate manipulation of the political process, and government conflicts of interest, information and ethics and you have all the intrigue of a Robert Ludlum novel.

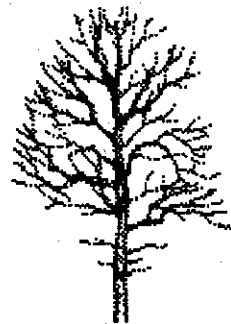
Within the fascinating story of the creation of the national park at South Moresby are the lessons to be learned from *Paradise Won*. The first deals with the process of how to save an endangered space. It all begins with a deep love of the land that transcends any short term economic relationship. From there it is simply a question of following a typical Bill Hammond positive action plan: state your wish (We want to save South Moresby!), do your homework (How does Western Forest Products calculate the value of the timber resource?), probe the force field (Which politicians can be counted on for support?), and so on until the wish comes true. This story is typical of Elizabeth May's own credo for winning in the protection of the environment: "Be unrealistic in your goals, establish a like-minded support network and don't compromise."

The second lesson concerns forestry practices in Canada. The book clearly establishes that the forest products industry in Canada will do anything to justify its over-consumption of our natural resources by whatever removal technique is most economically viable. In a scathing paragraph on our country's silvibusiness ethic, May states: "Studying forestry in Canada is not likely to lead to environmentalism as

Canadian forestry schools tend to concentrate on how to maximize economic efficiency in producing the species desired by the industry. [Canadian] Foresters like to say that modern silviculture is just like agriculture: You plant a crop, spray it, harvest it. The fact that this approach results in monocultures of even-aged trees, vulnerable to insects and disease, with a simplified ecosystem that drastically reduces species diversity, is not an important consideration."

Worth the price of admission to the book is the chapter that deals with how forestry companies inflate the value of a timber resource with calculations "done by qualified economists using accepted analytical techniques." Using this same process, John Broadhead and Thom Henly were able to calculate that "the value of the ancient murrelet colony to the economy of British Columbia was \$3.2 billion." This is environmental mathematics at its best.

The third key lesson to be learned from *Paradise Won* is how government works. The inside machinations of one interest group within the government (Environment) lobbying against other interest groups (Finance/Energy, Mines and Resources/Fisheries and Oceans) was stranger than fiction. Even more intriguing was the revelation of how Ministerial statements get crafted. From her position as senior policy advisor to the Minister of the Environment, May discovered that briefs that she had prepared for McMillan would be omitted or withdrawn in favour of another perspective from another member of the Minister's team (Environmental Protection vs. Canadian Parks). The final brief presented to the Minister could have been manipulated many times by staff members each influenced by opposing personal viewpoints or by private interest lobby groups. The Minister could then, unknowingly, publicly present a position



"The price of freedom is eternal vigilance."

which might leave his own staff reeling in disbelief and trusting members of the participating public feeling betrayed. The lesson: after hearing/reading a confused Minister's statements, get to the Minister directly to straighten it out; their sources may be playing power politics.

The ability of economic power to compromise the ethical decisions of government was portrayed throughout the book, as were corporate versus community concerns and consumer versus conserver interests within a community. But it was not a hopeless scenario. The South Moresby group engaged in the good fight and won. In their victory, they reinforced the old adage that, "The price of freedom is eternal vigilance."

Paradise Won provides us with a positive example that if we care enough and work hard enough we will be able to shift our

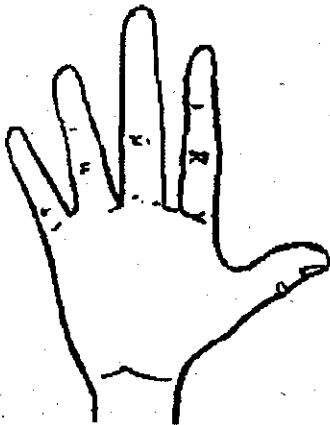
earth relationships from an economic to an ecological connection. I felt a strange sense of personal connection and celebration when I finished the book, far beyond the story told and the lessons learned. Perhaps that feeling is best summed up in Elizabeth May's concluding statement:

"And if it made sense to preserve those fragile islands at the edge, then it makes sense to preserve the gentle planet on which they float, somewhere between ocean wave and brilliant sky. Earth is calling us home."

Skid Crease is a Programme Leader at Mono Cliffs Outdoor Education Centre, and the driving force behind the Periwinkle Project. He is a former Editor of Anee, the precursor of Pathways.

The Positive Revolution

Reviewed by Mark Whitcombe



Handbook for the Positive Revolution

Edward de Bono, 1990, Penguin-Viking, London

"The power of the positive revolution will come from positive and constructive attitudes together with an emphasis on effectiveness. Power will also come from the exercise of perception to change values. The final power comes from an alignment of all these things in a growing number of people who feel that passivity and negativity are not the best ways of moving towards a better future.

The power is not just the power of a group of people but the personal power that arises from being positive and constructive." p165

Edward de Bono originally wrote this book for the Brazilian revolution as a handbook for direct personal action and small-group action. He advocates a revolution focused on people and based on the accumulation of individual efforts, a revolu-

tion that is process-based on creativity, design and effective action. Edward de Bono is one of the world's leading thinkers about thinking, creativity, and how to educate and develop these skills. He is the creator of the term "lateral thinking", the

developer of the CoRT Thinking Skills methodology, and of the Six Thinking Hats approach to flexibility in thinking.

The book speaks directly to us as we seek to use the tools at hand to achieve the changes we so clearly need. In keeping with its nature as a handbook, the Handbook for the Positive Revolution is short, somewhat gimmicky, and full of simplistic yet effective thoughts and methods. Its message deserves to be broadly understood and spread.

As opposed to the old traditional negative revolution, the positive revolution has no enemies. It is based on individual people, their attitude, perceptions, and values. The positive revolution is inspired by the opportunities offered by the information age to make information into power. The positive revolution has 5 basic principles represented by the five fingers of the widespread hand, one of the more effective symbols used by de Bono. The thumb represents "effectiveness", the combination of control over one's own actions and confidence and discipline, providing patience, perseverance and concentration. The index finger represents "constructiveness" and design, pointing the direction to follow. The second finger, the longest, represents the primacy of "respect" and human values. The third finger represents the steady progress of "self-improvement." "Today is a better day" is the new greeting of the positive revolution, showing the individual working to become a little better each day. The little finger, representing "contribution", shows that any contribution is valuable, no matter how small. De Bono uses the Zen image of the power of water, tiny drops of rain that in time accumulate to change the landscape.

De Bono also emphasizes the need for developing patterns of thinking that go beyond the traditional critical and argu-

mentative style of analysis to constructive and creative thinking. He outlines in a very simple fashion his Six Thinking Hats approach that categorizes thinking into different modes that are each appropriate in their own place, but that need to be worn in turn to achieve fully constructive thinking. The black hat is for negative, critical and judgemental analysis. The yellow thinking hat represents positive, optimistic and speculative thinking. The white hat is for the straight facts, figures and information devoid of the direct emotional reactions that come when the thinker is wearing the red hat. The green hat is for creative lateral thinking. The blue hat is for the process control and conducting of thinking, and for thinking about thinking. "We shall start with the white hat for the information, then the green hat for some approaches to the matter, then the yellow hat followed by the black hat on each approach, and finally the red hat to see what we now feel." (p116.)

The gimmick of the yellow paper and cover for the book derives from the positive nature of the yellow thinking hat, as does the informal name "the yellow revolution." While I personally find his six thinking hats to be a useful schema, and I like the symbolic shorthand of the five principles as represented by the widespread hand, I get fidgety when de Bono sets the book up as the "the yellow book", "the manual for the positive revolution". He uses no capitals in these phrases, but I have the uneasy feeling that he just might want to.

The value of the book is well beyond these minor carpings however. De Bono advocates a new basic education that will simplify the curriculum, making it more practical and at the same time broadening its scope. It would include reading and writing, the basic mathematics needed in ordinary life, thinking skills concerned

*The power of
water, tiny drops
of rain that in
time accumulate
to change the
landscape.*

Become contributors towards our own positive revolution.

with perception, practical action and working with people, an understanding of the local social and political institutions and mechanisms, leadership and effectiveness qualities, and skills required for further learning and specific skills geared towards useful action in particular regions. These are vague and sweeping ideas, but ones that deserve attention as the demands on our educational system get increasingly more complex.

De Bono makes a very strong point about the value of the actions of those who provide examples and lists of effective actions. I do think de Bono misses the point that (according to professional development experts) the most effective way to achieve deep-rooted change is to change behaviours first, and *then* to work on changing attitudes. Perhaps this is the value of those contributors who provide us with the examples of the ways we may act, enacting the chain of interplay between

beliefs and behaviour, empowering us to change our more fundamental beliefs.

The direct challenge from the *Handbook for the Positive Revolution* to us as individual COEO members is to become contributors towards our own positive revolution. How can we best use the outdoors with students to enrich and extend the curriculum? How can we better provide many of our students with perhaps their only direct and personal experience with the beauty and value of our surroundings? How can we best help to shape — through the power of the experiences that we provide — the basic perceptions and values of society? How can we be better aware of and use the implicit meta-lessons and concepts that massage our students as we work and learn with them in the outdoors: that direct personal experience is a very effective manner in which to learn; that the whole is at least as important as its parts; that as individuals working together we can accomplish more?



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The Alternative "Vacation"?!

by Sandee Sharp

The physical pain, fear and frustration experienced during my "course" was nothing compared to the trials and tribulations of returning home. In two weeks I have forgotten how to drive a car; I'm overwhelmed by the materialism in our shopping malls; dismayed by the litter and carelessness towards our environment, and thankful, so very thankful for flush toilets.

What could possibly be responsible for all of this? A vacation in Florida? Disney World? The Caribbean? No such luck. During my Quest for a "different" type of vacation I accidentally stumbled upon Outward Bound. Outward Bound is based on experiential learning — that is, learning by doing, and they offer courses for all sorts of folks. From the teens to the seniors, the business exec's to recovering battered women, it's all there, patiently waiting.

I enrolled in a 14-day course in Thunder Bay designed for teachers and other human service professionals. We spent the majority of our time canoeing and rock climbing, with some time set aside for assisting others (such as the half day spent at the shelter for the homeless or the seminar we led at Lakehead University for a group of students). Now I'll admit portaging an 35kg canoe through the forest or rappelling 30m down a rockface just might not be everyone's cup of tea, but it's far more than a canoe trip. There seems to be a certain mystique about Outward Bound and after living the experience (yes friends, I *more* than survived) I'm tempted to perpetuate that certain mysticism. The myth that should be confronted is that "only super jocks need apply". One certainly does not have to be a superb athlete, although true couch potatoes may feel that a two-storey

cottage which lacks an air conditioner and VCR is just about their limit of roughing it. If, however, you do exercise fairly regularly and enjoy the outdoors, it's certainly worth looking into.

I spoke to someone who had previously experienced Outward Bound and I quickly learned that each course is designed differently, with the characteristics of the group taken into consideration. With 10 strangers and 2 supervisors placed together, the group dynamics are anything but predictable. Our group began with a swamp walk and ended on the rocks course, with at least 25 pages of superb activities in between.

Why would I possibly want to offer myself as dinner for mosquitoes and various other insects? (Trust me, family reunions were organized with my arms as the main course!) To be totally honest, at just about 1.6m and somewhat of a featherweight, I wanted to be challenged — both physically and mentally. What I discovered was a truly supportive group that didn't reduce the intensity but encouraged me to achieve far more than I ever thought possible. If you look back to the beginning, you'll notice out of physical pain, fear and frustration, the missing key ingredient was fun. I laughed throughout the course as well, at times to ease the tension and many times for the sheer joy of it. Beginning to question my sanity? I quote:

"There is no such thing as a weird human being. It's just that some people require more understanding than others." (Tom Robbins)

Outward Bound may not be everyone's ideal vacation, but it's certainly given me a summer to remember!



Sandee Sharp teaches at Summit Heights P.S. in North York.

Special thanks to The Golden Slackrabbt Brigade '90.

[Editor's note: For more information please contact Canadian Outward Bound Wilderness School, (416) 787-1721]



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