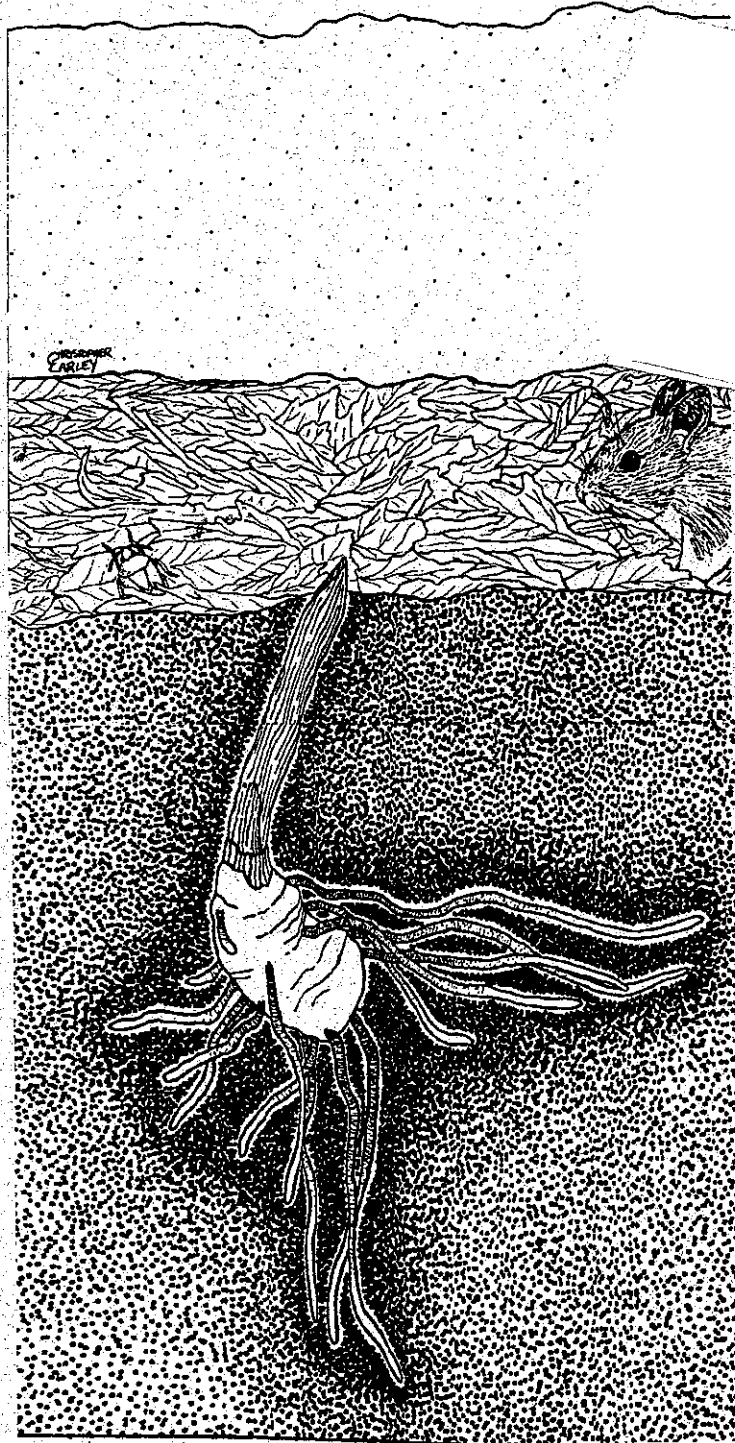


Pathways

THE ONTARIO JOURNAL

OF OUTDOOR EDUCATION

Volume 7, No. 6
October/November, 1995



*Trillium
Rhizome over
wintering*

Pathways

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"To a person uninstructed in natural history, his country or sea-side stroll is a walk through a gallery filled with wonderful works of art, nine-tenths of which have their faces turned to the wall."

Thomas Huxley

This issue challenges outdoor educators to put nature interpretation back in place as a foundation of outdoor education. Suitably, it follows an issue on storytelling, for good interpretation is very much a matter of good storytelling. Interpretation presents accurate information in a context, and motivates and provokes participants to do something with their new-found knowledge. Armed with that knowledge, they may move from awareness to understanding, and eventually to commitment and action. These are the goals of nature interpretive experiences.

It is our conviction that good solid nature interpretation, carried out by skilled and knowledgeable naturalist-teachers, has a much reduced role in outdoor education than it once had. More importantly, it is our conviction that nature interpretive experiences are critical components in the process of connecting children with the natural environment. We can all agree that forming this connection, this emotional bond, with the planet, is a crucial part of developing a strong, committed and lasting environmental ethic.

Observation, intuition, conversations with leaders in the field and examination of copious activity materials lead us to this conclusion. Even ignoring recent budgetary attacks, many of today's outdoor education programmes have a very small natural history component, and if it exists at all, it is often incidental rather than carefully planned and executed. Nature interpretation may be a half-day session in a 3

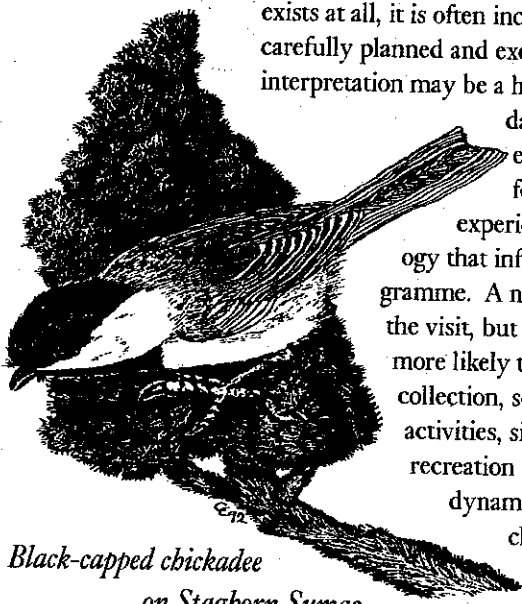
day residential experience, rather than a foundation for the experience, and a methodology that infuses the entire programme. A nature walk may start the visit, but the ensuing days are more likely to be filled with data collection, sensory awareness activities, simulations, games, recreation skills and group dynamics exercises. In the classroom, nature

education takes a back seat to environmental education and global education, and teachers are left trying to instill a love of nature vicariously. This is not to undermine any of these other activities, all of which have recognizable social and educational values. However, when a recent biology and education graduate was told, after being hired by a reputable outdoor education centre, "Don't worry about not knowing much about the plants, mammals, birds, insects, soil or sky. What's important in outdoor education is developing awareness and appreciation of nature.", the alarm bells of a giant paradox ring clear in our minds.

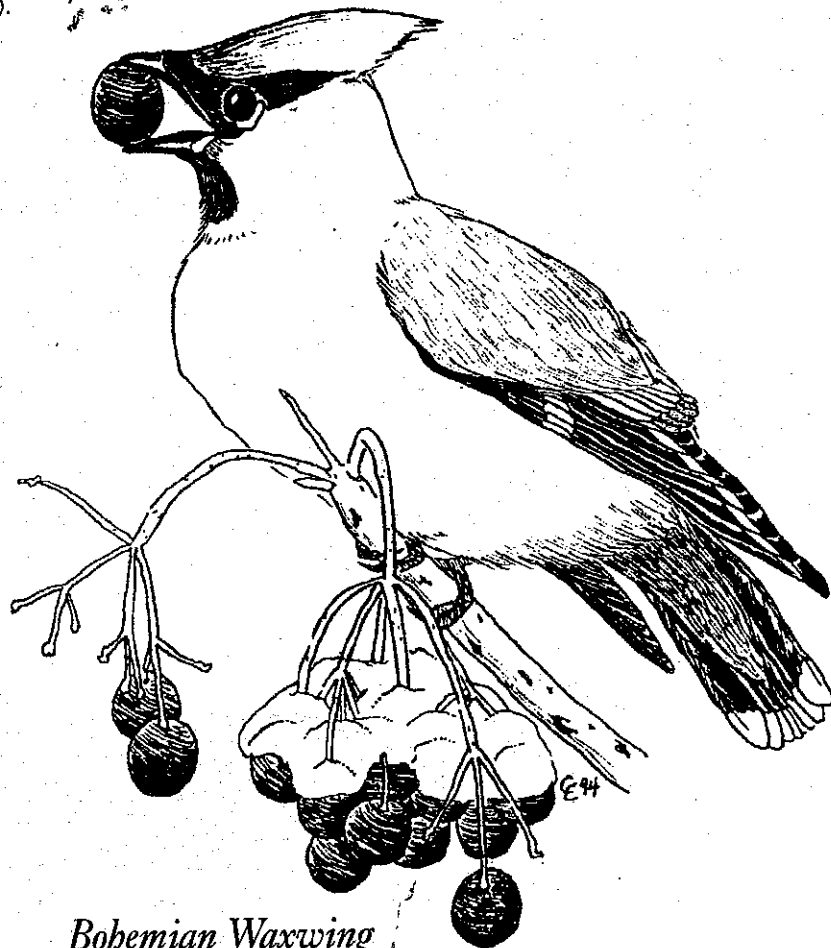
This issue examines that paradox. It begins with two features by university faculty who teach nature interpretation, and feel strongly that we, as educators, need the deeper understanding of the natural world that comes through a solid knowledge base. We've asked leading naturalist-teachers (and we apologize to the many that we know we've missed, or couldn't reach during the summer months) to share their own favourite tips and techniques in a much expanded Backpocket section. The development of a good naturalist is a lifelong journey, and so we've also provided a bibliography of natural history and interpretive references and contacts that all of us can use to help expand our repertoire of knowledge and skills. We hope that this issue of Pathways opens a dialogue that can continue in subsequent issues - send us your library suggestions, tips and tricks and book reviews.

In the late 70s, Steve Van Matre felt that traditional forms of outdoor education had failed to connect children with the natural world. Have its replacements done a better job? Perhaps we need to reexamine our roots and our own natural history and interpretive skills, and see where we can use newer interpretive techniques to better deliver critically important material.

Clarke Birchard and Barb McKean



This issue features the art of Chris Earley, Interpretive Naturalist at The Arboretum, University of Guelph. Chris feels, "that sketching is the best way to learn about an organism and its habitat. Because you have to focus on a subject to draw it, you will always learn something new about it, no matter how familiar it is. Most adults stop drawing when they are young, and I encourage them to start again. Field sketches do not have to be masterpieces to portray a nature observation, and they provide a record that can always be referred to." He uses his art in interpretive signs, brochures, and workshops, and also uses his drawing abilities to show subjects and relationships that are not easily observed (see his drawing of the overwintering trillium rhizome).



*Bohemian Waxwing
on European Highbush Cranberry*

This will be my last Outlook as the President of the Council of Outdoor Educators of Ontario, as my three year term of office has come to an end. This has been an educational and rewarding experience for me. I would like to sincerely thank all of those people who worked with me on the Board of Directors during these years for volunteering their time, energy, and ideas.

The past three years have been very interesting ones for the organization. We have gone through a lot of changes in a short period of time. The most dramatic change was a drop in our membership after the ECO-ED conference in Toronto, which was followed by a year of apathy, when interest in the events of the organization seemed to be at an all time low. From this, we had a most successful annual conference at Camp Arowhon in 1994, with two thirds of our members participating.

Fiscal restraint has had a dramatic effect on outdoor education within the province as a number of centres were closed and others have had their staffs reduced in size. The people working in these locations have had to work very hard to maintain the best possible educational programme that they can under very difficult circumstances. We all owe a debt of gratitude to them for their dedication to the ideals of outdoor education and their hard work in keeping the programmes operating.

The focus of this year's annual conference was the classroom teacher. The majority of our

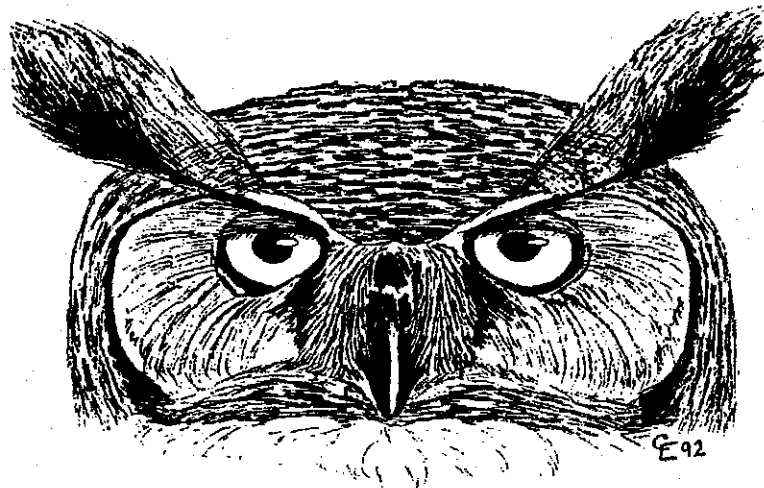
members are classroom teachers, and I believe that this is a fact that we should always remember. We need to do as much as we can to help these people see that outdoor education can be integrated into the regular curriculum and that it can enhance and enrich the student's experiences. Wherever possible, we should encourage teachers to get their students outdoors.

It is very evident that a few members of the organization do a majority of the work in seeing that conferences and workshops are held and Pathways is published. These people are the true heart of COEO. They seldom receive the recognition that they justly deserve. You all know who you are, and I thank you most sincerely for all of your efforts on our behalf. For the rest of the membership, all that we can ask is that you support at least one COEO event during the year. The sharing of ideas at a small evening gathering within your own region can be a very rewarding experience. Make a commitment this year to attend or host one of these sessions, and become an active member.

COEO may not be a large organization but it is unique. I do not know of another volunteer organization that has more dedicated members. With the people that we have in COEO, I know that outdoor education is in fine hands and that it will continue to be a viable part of the education system within our province.

I extend my best wishes to all of you for a successful year ahead.

Glen Hester, COEO President



KNOWING YOUR FRIENDS

No spring returns but that I wish I might live again through the moment when I went out in the woods and sat down with a book in my hands, to learn not only the name, but the ways and the range and the charm of the windflower, *Anemone quinquefolia* (Peattie, 1935, p. 15).

We live today, many of us, in a bewildered state — amputated from wildness (Cohen, 1993, p. 3). The peril of such a state was recognized long ago by the sage of Walden Pond — for “in Wildness” avowed Thoreau, “is the preservation of the World” (Thoreau, 1950, p. 613). The wildness of which Thoreau speaks is mystery and freedom incarnate. To be wild is to be entire, flourishing, self-perpetuating, and ripe with adaptive potential. When we catch a glimmer of it, it empowers, energizes and refreshes. It is the stuff of experience, borne of moments of incandescent particularity that vanish at the first hint of cognition. It is as visible in the eye of a Black-capped Chickadee as it is audible in the spine-tingling howl of a Timber Wolf. It can be sensed as slow and abiding as the erosion of bedrock or as joyously bubbling as the song of a Winter Wren. It tugs at our very roots and harkens to a time — not long ago — when our immediate survival depended on our paying attention to it. “Wildness,” says Gary Snyder, “is not just the ‘preservation of the world,’ it is the world” (Snyder, 1990, p. 6). Our (that is, *Homo sapiens* and many of the 5-30 million species which with we share the blue planet) health and very survival now rest on the ability of the modern, industrialized, computerized people to focus anew on the wild — to become re-wilded.

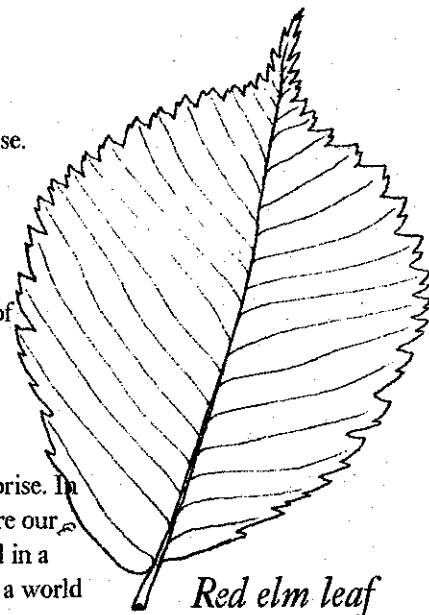
To become re-wilded is to recognize the vital role of non-human others in human learning and ontogeny.

There is a profound, inescapable need for animals that is in all people everywhere, an urgent requirement for which no substitute exists. This need is no vague, romantic, or intangible yearning, no

simple sop to our loneliness for Paradise. As hard and unavoidable as the compounds of our inner chemistry, it is universal but poorly recognized. It is grounded in the way that animals are used in the growth and development of the human person, in those priceless qualities which we lump together as “mind”. (Shepard, 1983, p. 54).

This should not come as a great surprise. In fact, to think otherwise would be to ignore our biocentric legacy. Human beings evolved in a world of other animals and plants, not in a world of machines and concrete. “Seeing with a naturalist’s eye is neither eccentric nor artificial” (Nabhan and Trimble, 1994, p. 21). Our worlds was “peopled” by their presence as much as it was by our intra-specific kin. The surprise would be if a few generations of urban living could erase the 99% of our history that we lived as gatherer-hunters. The aesthetic, intellectual, cognitive, developmental, and spiritual need to affiliate with other forms of life, has recently come under the name biophilia — a love of living beings (Wilson, 1984; Kellert and Wilson, 1993). Call it what you will, there is an acute need for us to have non-human individuals as members of our worlds. Furthermore, lest I be accused of advocating one homocentric paradigm over another, re-wilding implies a spirit of reciprocity — the development of relationships that Barry Lopez (1983) calls “principled agreements” (p. 14).

A metaphor that seems to have great potential in helping us to be re-wilded, is the metaphor of “friends”. Approaching non-human others from the aspect of friendship maintains the capacity for wildness in them and in ourselves. This is different, for example, than the metaphor of kinship whereby pets are subsumed within the human cultural fold, or the metaphor of artifact that makes factory farm animals part of the industrial complex and Blackburnian Warblers no more than visual resources (Sabloff,



Red elm leaf

"It is equally true, however, that when I learned the song of the wood thrush in my childhood, the bird became my familiar and my friend, who through my life reminds me of his presence with his voice."

A fundamental characteristic of wild friends is that they are of a place.

1991). Our friends are important because of what they are to us not for what they can do for us. We enjoy them for their utter dedication to being what they are and in allowing them this freedom, we set ourselves free.

Think for a moment of a close friend, perhaps your best friend. Chances are you have a mental picture of that person and you are probably feeling warmed by the re-cognition. It would also be safe to hazard that you associate a name with that friend. A name that allows you to address your friend, speak of them to other mutual friends, and to label a field of cognitive and affective memory that delineates your experience of that person. There is nothing proprietary in your knowing this name. It is a word that is associated with what the person is to you and vice-versa. Now consider this passage from the naturalist John Livingston:

When I identify a bird song as that of a wood thrush, I am thereby not only demonstrating my skill and knowledge but also my ability to categorize the animal, thereby reducing it to an inanimate cipher within a greater abstract taxonomic classification. It is equally true, however, that when I learned the song of the wood thrush in my childhood, the bird became my familiar and my friend, who through my life reminds me of his presence with his voice. It pleases me to welcome the old friend returning after a long winter's absence. If I did not know who was singing, there could no doubt be some aesthetic appreciation of the sound, which unlike many bird songs happens to be euphonious to the human ear, but there would be none of the intimate pleasure of personal re-cognition. My childhood experience of the bird, and its lifelong annual reinforcement, ensure that each spring's re-cognition of our relationship is more satisfying than the last. What I celebrate is not merely the existence of the wood thrush, however; it is my connection to him. My bond to him. My self in him (Livingston, 1994, p. 129).

The Wood Thrush is John Livingston's old friend. The vernal re-connection ties him to the same earthly cycles that have seen thousands of generations of Wood Thrushes return from their winter (actually our winter) in the neotropics. Again, there is nothing proprietary here, only an awareness, nay a celebration, of relationship.

The point I want to make here is that John Livingston's old friend is not just "that spotted bird that I like to hear in the spring" in the same way that my best friend is not just "that person from Athabasca". This would be ludicrous. His friend is Wood Thrush, *Hylocichla mustelina* a song bird from the family Turdidae which signifies its familial relationship with such birds as the American Robin and Eastern Bluebird of North America, the Forest Robins of Africa, the Blackbird of Europe and the Magpie Robins of Southeast Asia. The Latin appellation comes from the Greek words for 'wood' and 'thrush' and the Latin word for 'weasel', referring to the reddish-brown colour of the bird. The name 'Wood Thrush' is not just the label for an object, it is the symbol for a field of experience and set of relationships.

A fundamental characteristic of wild friends is that they are of a place. To a naturalist, such friends are the place. When a naturalist visits a new geographical location he or she makes the acquaintance of the indigenous biota. They become new friends that are learned by name and through their relationships to the plants and animals already in the experience of the naturalist. Home, then, is where dwells the naturalist's first-learned or natal flora and fauna. The power of a naturalist's natal biota was made clear to me when I recently made a trip with a friend to his boyhood home in the central Appalachians. Of course he showed me the ball diamond where he learned to throw an unhittable fastball, we dined on pizza from his high school hangout, and we drove past the little house where he lived the better part of his youth. We have all experienced such home-town tours; their narrations sprinkled with the obligatory, "Gee, I remember the field as bigger than that". It was not until we hiked the streams of the local park, however, that I saw what home really meant to him.

You need to picture a large man, perhaps greying and displaying a significant "middle-aged spread". This is not the lanky and nimble pitcher who once coiled and launched his fastball at the local diamond. As we ambled the path he grew visibly more excited. "There!" he would shout, pointing to some high Sweet Gum, "Kentucky Warbler!" No bend in the trail failed to yield another old friend to whom I was joyfully introduced. Then he dropped to the mossy forest floor in a slump. His ursine form splayed on elbows and knees. My first thought was cardiac arrest from all of the excitement, too much pizza and the strenuous hike. My fears were quickly allayed when I heard him whisper softly, "well hello little newt. It is good to see you again. I don't believe we've met for nearly 35 years." At first I felt embarrassed to be present, like someone who has walked in on two lovers. For a moment there was only newt and man in the universe. Then he looked up at me and smiled, "Michael," he said, "this is the Red Eft, *Notopthalmus viridescens*, the terrestrial stage of the Red-spotted Newt, isn't he beautiful." I looked down to see an almost translucent orange amphibian cradled gently in his large hands. We sat down there in the moss, the two of us, and he told me stories — resplendent in their newt-ness — as the eft continued his journey through his mossy forest. My old friend was truly at home and his old friend became my new friend. The new friend has a name which allows me to share the story with you and aids in my knowing the Red-spotted Newt (who you should really meet if you have not yet had the pleasure). That name resonates with meaning, experience and wildness. The power and significance of natal (or at least childhood) flora and fauna to our personal development cannot be over-emphasized.

Kenneth Nyberg (1984), in a thought-provoking essay on nature interpretation, suggested that if "God had wished for there to be interpretive programs He or She would have labelled trees and rock formations in the first place" (p. 154). Ah, but there's the rub — interpretation and outdoor education should be about far more than sticking labels on things. Naming as an end in itself is worse than useless,

it is pernicious in its ability to turn people away from nature study. Some interpretation and outdoor education fell into the monomania of nomenclature and thus left its constituency thoroughly uninspired and wallowing in a Latin morass. Permit me another comparison.

We have all been to conferences or parties where we enter a room full of strangers and somebody decides that we should be told the names of all these people. In mind-numbing succession, each individual blurts out their name and then returns to whatever they were engaged in before we entered. If you were to turn and leave the room at this point, you would likely not remember any names and would surely not consider any of the group to be among those you counted as friends. You might also decide never again to return to that group. On the other hand, if you were to strike up a conversation with one of the delegates or guests, you might learn something of them and they of you and, in time, this meeting may grow into a friendship. So, too, with nature interpretation and outdoor education. Our aim should be to share our sense of wonder and introduce our charges to a few of our friends. We are cheating learners if we fail in this regard. If we can kindle a lifelong relationship and help to foster the knowledge of natal biotas, I can think of no more meaningful and rewarding accomplishment.

Much that happens today under the title of outdoor education, environmental education and interpretation deals with developing an awareness of concepts and abstractions. Children learn of food chains, communities, ecosystems, and these things come to be more real to them than Leopard Frogs, Earth Worms and Birch Trees. Furthermore, there are environmental education programs that have dispensed with labels altogether (i.e. Earth Education) so that all non-humans are reduced to 'bird', 'animal' and 'flower'. I agree that much nature-study was not being taught very well, but to throw the baby out with the bath water is to cheat our students out of a wonderful world of unique friendships. The same trend continues into college and university. I took an undergraduate course in ornithology where the vast majority of the class

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We no longer know who our neighbours are and thus they have no meaning to us. All the abstractions in the world cannot create the relationships that are the root of responsibility. One cannot love an ecosystem. The time has come for a revitalization of nature interpretation, good old-fashioned natural history.

could not recognize more than a dozen species of local birds. I then attended a graduate school of environmental studies where the situation was even worse. Park supervisors are shocked and dismayed at the lack of basic environmental literacy in the students they hire as summer interpreters (Risk, 1986). What we proudly deem the "information age" may be more a "moment of deep ignorance.... An Unenlightenment" (McKibbin, 1992, p. 9). We no longer know who our neighbours are and thus they have no meaning to us. All the abstractions in the world cannot create the relationships that are the root of responsibility. One cannot love an ecosystem. The time has come for a revitalization of nature interpretation, good old-fashioned natural history. Let us join with environmental educator Mike Weilbacher (1993) in his call for the "renaissance of the naturalist" because, as he states, "only a nation of naturalists can confront and solve the overwhelming ecological problems that loom in our near future" (p. 4).

The kind of natural history needed is at once an evocative science and a delineating art. It blends the cognitive with the affective and exercises both sides of the brain. It is a two-eyed environmental education. It is a delightful dance of mutually reinforcing emotional response and factual learning. This type of natural history becomes a way of knowing. The naturalist and essayist, John Burroughs, recognized this need when he suggested that "When we look upon Nature with fondness and appreciation she meets us halfway and takes a deeper hold upon us than when studiously conned" (Burroughs, 1912, p. 250). He then goes on to discuss the joy of knowing and summarizes his thinking with this sentiment: "To enjoy understandingly, that, I fancy, is the great thing to be desired" (Ibid., p. 251). I can think of no more worthy goal for outdoor education and interpretation than to have our learners enjoy understandingly (Cable, 1992, p. 8). Let us restore natural history to its rightful role in outdoor education and interpretation.

REFERENCES

- Burroughs, J. (1912). The gospel of nature. *In Time and change*. New York: Wm. H. Wise.
- Cable, T.T. (1992). To enjoy understandingly. *Legacy*. 3(2):8-9.
- Cohen, M. (1993). The process of counseling with nature. *The Humanistic Psychologist* 21:3.
- Kellert, S.R. and Wilson, E.O., eds. (1993). *The biophilia hypothesis*. Washington: Island Press.
- Livingston, J.A. (1994). *The rogue primate*. Toronto: Key Porter Books.
- Lopez, B. (1983). Renegotiating the contracts. *Parabola* 8(2):14-19.
- Nabhan, G.P. and Trimble, S. (1994). *The geography of childhood: why children need wild places*. Boston: Beacon Press.
- Nyberg, K.L. (1984). Some radical comments on interpretation: a little heresy is good for the soul. In G.E. Machlis and D.R. Field. *On interpretation: sociology for interpreters of natural and cultural history*, pp. 151-156. Corvallis, OR: University of Oregon Press.
- Peattie, D.C. (1935). *An almanac for moderns*. New York: G.P. Putnam's Sons.
- Risk, P. (1986). The incompetent interpreter-a new university product. *Journal of Interpretation* 2(1):27-32.
- Sabloff, A. (1991). Re-ordering the natural world: human-animal relations in a Canadian urban setting. M.A. Thesis, York University.
- Shepard, P. (1983). The ark of the mind. *Parabola* 8(2):54-59.
- Snyder, G. (1990). *The practice of the wild*. San Francisco: North Point Press.
- Thoreau, H.D. (1950). Walking. *In Walden and other writings of Henry David Thoreau*, pp. 597-632. New York: Random House [originally published in *Atlantic Monthly*, June 1862].
- Weilbacher, M. (1993). The renaissance of the naturalist. *Journal of Environmental Education* 25(1):4-7.
- Wilson, E.O. (1984). *Biophilia*. Cambridge: Harvard University Press.

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THE LIGHT WHICH EXPERIENCE GIVES¹

Nothing ever becomes real till it is experienced—even a proverb is no proverb to you till your life has illustrated it.

Keats

If you have spent any time in the company of a child, you will have no doubt been asked, "What's that?". The object of this question can range from the simple to the complex — from the identity of a plant, animal, or machine to a complex phenomenon such as a sunset, thunderstorm, or computer. The question is nevertheless often quite easy to answer. After all, as an adult you have time on your side. You "know the place." You have probably asked a similar question of someone else and filed the information away to be retrieved in situations like this. The "what" question does not only come from children. We often find ourselves answering similar questions when in the company of adults. This is especially true when the questioning adult is in unfamiliar territory. A walk in the woods, a swamp, or field will generate the inevitable, "What bird's that?" or "Do you know what kind of plant this is?"

An encyclopaedic knowledge of the world around us is often viewed with awe by others. The holder of knowledge is to be respected. This reverence for knowledge has greatly influenced what we teach and how we teach it. Our curricula are models of cognition and our teaching environment is set up to facilitate the transmission of existing knowledge. As Gough (1989) points out, traditionally the learner is dependent upon the teacher, and learning activities are heavily weighted towards paying attention, rote performance, and memorizing. Teaching activities incorporate the distribution of structured knowledge and teachers very often employ lecturing and demonstrating. In this knowledge-oriented teaching, one often feels a

great responsibility to know the answer. Many of us take pride in being able to give information, or know the answer, and bask in the warmth of the respect that our knowledge brings. It is a double-edged sword, however, because when one's credibility is dependant upon the transmission of facts, we may fear the question for which we do not know "the answer". While leading a hike, we may quickly walk past a strange plant, or not "hear" the unfamiliar bird song. In the classroom we may deflect an unanswerable question. Unfortunately, our fear leads us to miss opportunities to learn with the questioner. In these situations we could demonstrate how we would go about discovering the answer, thereby reinforcing the lifelong learning process. We could encourage the questioner to focus on how they might discover the answer. For example, we could ask them to give the object a name themselves. This might lead them to look more closely at the object, or categorize it based upon how it looks or what it does. In this way, they would begin to understand that there is much more to learning than being given the answer. They would begin to interpret — to discover how what they are learning about fits into the world that they know. Interpretation, which is a process that is not based upon the delivery of facts, makes it easier to take the questioner beyond the "what" question. By its very nature "what" implies one answer. For many questions there is no one answer, and indeed the answers may even change. Think of a sun which was once thought to orbit the earth, and continents that were once thought to be stationary.

Beyond the "what" question is the much more intellectually challenging "why" question. With a simple word "why" the questioner is asking for something very complex: clarification, understanding and meaning. The questioner is

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¹ From Samuel Coleridge (1772-1834). "If men could learn from history, what lessons it might teach us! But passion and party blind our eyes, and the light which experience gives is a lantern on the stern, which shines only on the waves behind us!" (18 December, 1831)

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understanding and meaning. The questioner is in fact asking for an interpretation. Interpreting is far from simple since it involves how we make sense of things. Our interpretations are built upon the foundation of our experiences. Interestingly, our interpretation will itself be interpreted by another person, coloured by both their own experiences and the context of the situation. Indeed, "interpreter" is used interchangeably with "language translator". The meaning of a phrase is not simply its language equivalent. For example, since the verb "to remember" is translated in French as "se souvenir," the phrase "Je me souviens" is translated as "I remember". However, when seen on Quebec license plates the phrase is open to interpretation within a context of culture, history, emotion, pride and passion. Thus the intellectual challenge of responding to the "why" question is dependent upon: i) our ability to build abstract concepts from concrete experiences, ii) our ability to convey effectively our interpretation to the questioner, and iii) the questioner's ability to relate to our abstract conceptualization of the phenomenon, based upon their own experiences.

Offering an interpretation is more complex than stating "facts" since the former requires abstract thought, whereas the latter requires only recall. While the ability to recognize something and to learn its name is helped by direct experiences with the object, it is not a necessary component in the memorization process. We can learn a great deal about something without directly experiencing it. This is why the classroom is such an accepted place to teach, it is an ideal place to sit and be taught, and to sit and practice. For example, I knew what a blue whale was before I ever saw one. However, it was not until I experienced a blue whale — saw it move in the water, heard and felt the spray from its blow, that I sought to understand how it fit into my ideas about nature. My experience with the whale enriched the conceptual fabric of my world. Without experiences we cannot fully develop our own abstract concepts of the world. Yes, we can learn about other's concepts. We can read about the philosopher's perspectives on the world, memo-

rize them and restate them without ever having experienced the phenomenon to which they pertain. But our ability to interpret them is, I believe, greatly hindered by the lack of related experiences.

The Experiential Learning Cycle (Kolb, 1976) supports the relationship between experiences and abstract conceptualization. Figure 1 shows the four steps in the learning cycle: i) concrete experience, ii) reflective observation, iii) abstract conceptualization, and iv) active experimentation. The link between experience and conceptualization (interpretation) in Kolb's model is reflective observation. That is, that reflecting upon our experiences leads to the development of a concept about them. An example is the value of a diary (reflective observation) in helping us to interpret (abstract conceptualization) our experiences (concrete experiences). Active experimentation describes our testing new ideas or concepts, a "Let's try it out and see how it fits", if you will. This test or experimentation leads to new experiences and the cycle begins again. So, we can see that when we are trying to make sense of our world; when we are looking for the meaning of things, we are interpreting that which we experience. As educators we need to take a very careful look at the learning experiences that we are providing our students. The classroom is an excellent forum for learning "the three R's". However, is the classroom the best place to help students develop an understanding of nature? An exploration of experiential learning theory and its intrinsic role in interpretation certainly leads me to conclude that it is not.

One can think of a number of disciplines where we look for essential meanings. Art, music, literature, history, culture, and language come to mind as fields or areas of study that are ripe with theories and methods of practice. For example, psychology is the interpretation of people's thoughts and actions, the practice of which is very much based upon theories. If there is one area that has been the subject of interpretation it is surely nature. A recognizable body of theory and practice regarding Nature Interpretation is supported in the literature, in

the existence of interpretive organizations such as Interpretation Canada, the National Association for Interpretation and the Council of Outdoor Educators of Ontario and thousands of practitioners throughout the world.

Interpretation Canada has defined Nature Interpretation as: "A communication process designed to reveal meanings and relationships of our natural heritage to the public through firsthand experience with an object, artifact, landscape or site." (Peart, 1978). Here we see the elements of interpretation that I have spoken of earlier. This definition tells us the "how", but what is missing in this definition is the "why". Just what are Nature Interpretation's objectives? Freeman Tilden (1967) states that interpretation is more than "... simply to communicate factual (sic) information." Aldridge (1972) goes even further when he states that interpretation should "... awaken a desire to contribute to environmental conservation." Brown (1971) puts the objectives of interpretation quite explicitly: "... (interpretation) stimulates discourse on environmental problems and results in environmental reform... it motivates to action... it questions value systems, folk heroes, and conventional wisdom." Hoff (1986) argues with passion the need to question value systems and to change what he calls our "unecological actions." He writes:

... the natural world has a great deal to teach inquirers who approach it with respect... It is clear by now that the uncaring application of superficial scientific knowledge is destroying the functional integrity of our planet... At the same time, the social and spiritual symptoms of humanity's growing alienation from the earth could hardly be more obvious. Yet their cause is largely ignored. And in the current atmosphere of technology addiction, conservatism, and apathy, popular attention is turning even further from natural laws.

The major problem... is that most of the public awareness that does exist today is stuck on the intellectual level. We are told that the unecological life is

"wrong" and "bad." Yet the unecological actions go on and on. One does not know and protect the natural world merely because one's mind is told one should — that it is "good for ecology," and so on. One knows and protects the earth when one loves the earth.

For years the public has been inundated with clinically detached reports on the value of the natural world... These presentations have had little significant effect. Few people learn to love the earth by reading them, for they neither contain nor communicate any such emotion.

The challenges that the definition and objectives of interpretation present are many. An obvious one is related to providing firsthand experiences. How do we, for example, incorporate experience in the out-of-doors into the learning opportunities of elementary and secondary school students? What is the minimum number of hours of out-of-door experiences necessary for effective interpretation? We must also remember that while firsthand experiences are the basis of interpretation, the "simple" act of providing firsthand experiences will not guarantee that the objectives of Nature Interpretation are met. We risk taking our students into the forest but not helping them to "see" the trees. As educators we must develop skills related to providing firsthand experiences that will meet Brown's (1971) objectives of "stimulating discourse on environmental problems... and motivating to action."

There are six words or phrases in Interpretation Canada's definition of nature interpretation that identify the areas where skills can be researched, developed and practised: i) communication, ii) process, iii) design, iv) meanings and relationships, v) public, and vi) firsthand experience.

Communication

A simple model of communication contains four elements: sender (interpreter), message (interpretation), receiver (participant) and feedback. Communication is extremely complex,

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related to various aspects of each of the four elements listed above. Interestingly, in effective communication the role of sender and receiver is constantly changing, dependant upon each person's skill in "reading" the feedback. This is a result of the experiential basis of communication with respect to both the initial sender and receiver. The receiver's interpretation of the sender's message depends upon their own experiential repertoire which is very much dependant upon such things as the participant's age, socio-economic background, past experiences, and motivation. We must take all of these into account when we communicate with participants/students.

Process

The word process implies time, and interpretation cannot effectively meet its objectives after one experience. A person's interpretation of what they experience will change over time, dependant upon the cumulative effect of new experiences. The object of nature interpretation, i.e. nature itself, is constantly changing from both a seasonal and on-going perspective. In contrast, facts themselves are not time dependent and certainly with respect to adolescents and older individuals, are independent of age and experience. In the field of interpretation, dealing with the process is a major challenge.

Design

Interpretive activities must be planned. Objectives must be clearly stated and techniques, media, and timing planned for. Evaluation criteria must be developed and the interpretive experience evaluated. The results of the evaluation are used to further improve the effectiveness of reaching nature interpretation's objectives.

Meanings and Relationships

Ecology is the study of the interrelation-

ships between living organisms and their environment, i.e., the nature of the world. If interpretation is to lead to environmental reform through action, it is important that the actions are not the "unecological actions" Huff (1986) laments. Nature interpretation helps the participant gain an appreciation and understanding of ecology through sound, experientially-based activities.

Public

While many of us are active in offering learning experiences for elementary and secondary students, the fact that nature interpretation is a process means that people of all ages should be involved. As mentioned above in relation to communication and process, the interpreter must take into consideration the age, sex, socio-economic background, educational background, motivation to participate, grouping (i.e., whether the participant is alone, with one other, fourteen others, with their family etc.). Research is required into the effect of specific "groupings" in meeting the objectives of nature interpretation.

Firsthand Experience

Interpretation is an experiential learning experience. Concrete experience is necessary for interpretation to occur, but it is only one of four elements in the experiential learning cycle. Interpreters must research and further develop ways of incorporating reflection, abstract conceptualization, and active experimentation into the interpretive opportunities which they plan. The aspects of communication, process and design are important considerations in the planning of firsthand experiences.

A recent report by Finger (1993) emphasizes the importance of firsthand experiences with nature in leading to environmental action. His research showed that learning about the environment, rather than resulting in environmental action, becomes the only form of "environmental behaviour". In other words, when we learn about the environment without

environmental experiences, our actions are simply to want to learn more: "more knowledge will not translate into corresponding behaviour." (Finger 1993). His first of four recommendations regarding future environmental education practice and policy based upon his research is:

Nature experiences seem to be a necessary condition for any type of environmentally responsible behaviour . . . It is therefore imperative that nature experiences be provided, especially to the ones who, in our increasingly urban environment, are not able any longer to experience nature on their own. Nature experiences should, in particular, be provided, for the youngest generation.

As educators involved with providing learning experiences for not only the youngest generation but for all ages, we need to think hard and act upon Finger's recommendation. Act, not with more personal study, but outside, with students.

REFERENCES

Aldridge, D. 1972. *Upgrading Park Interpretation and Communication With the Public*, Second World Conference on National Parks. Grand Teton National Park, Wyoming.

Brown, W. E. 1971. *Islands of Hope*, National Recreation and Park Association, Washington, DC.

Finger, M. 1993. *Environmental Adult Learning in Switzerland*. Teachers College, Columbia University: Centre for Adult Education, Occasional Papers Series No. 2.

Gough, N. 1989. From epistemology to ecopolitics: renewing a paradigm for curriculum, *Journal of Curriculum Studies*, 21: 225-241

Hoff, B. 1986. *The Singing Where the Willows Grow: The Mystical Nature Diary of Opal Whiteley*, Penguin Books, New York.

Kolb, D., I Rubin and J. McIntyre, 1979. *Organizational Psychology: an Experiential Approach*. Prentice-Hall, New Jersey.

Pearl, R. 1978. Definition of Interpretation. - 5(2): 3-6

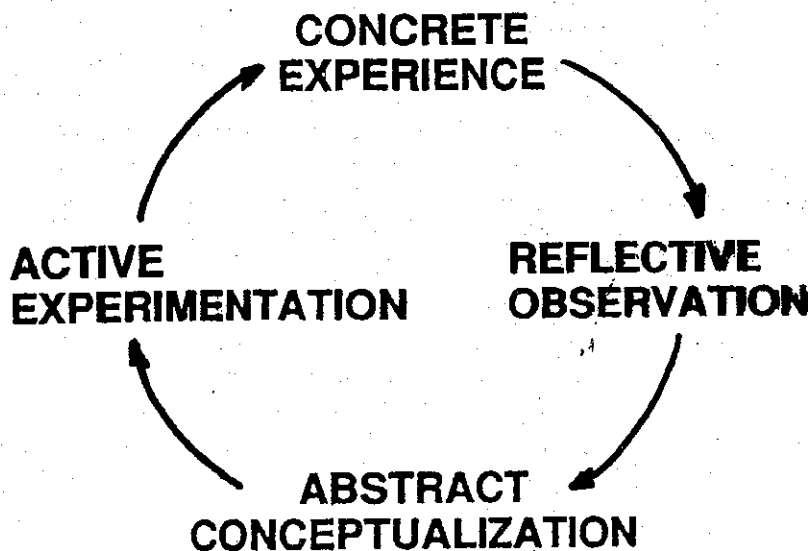
Tilden, F. 1967. *Interpreting Our Heritage*. University of North Carolina Press, Chapel Hill

Professor Alan Watson is Director of The Arboretum at University of Guelph. Alan has been interpreting at The Arboretum and as a trip and course leader in various locales in Canada and abroad, since the mid 1970s. He also teaches nature interpretation at the University of Guelph.

Nature interpretation helps the participant gain an appreciation and understanding of ecology through sound, experientially-based activities.

Nature experiences seem to be a necessary condition for any type of environmentally responsible behaviour

EXPERIENTIAL LEARNING CYCLE



THE KORTRIGHT CENTRE FOR CONSERVATION

...where students have intimate and exciting experiences with nature, in the natural environment.

...provide visitors with direct contact with nature, guided by nature interpreters who can reveal the meanings and inter-relationships of whatever comes to hand.

On this May Monday morning at the Kortright Centre for Conservation, 10 classes arrive from six different schools and five different Boards. At lunch time, many of these classes will return to their schools, and be replaced by afternoon classes from other schools and other Boards. Tuesday, Wednesday, Thursday and Friday will all bring similar large numbers of students. Saturday will bring eight groups of Brownies and Girl Guides, and Sunday almost as many, plus a birthday party. In addition to all the groups reserved for two hour guided programs this week, about 600 members of the public will drop in, mostly on the weekend.

Is the Kortright Centre the assembly line of outdoor education? We are perched on the fringe of Canada's largest city, are built to accommodate large numbers of people, and work hard to attract them. Certainly there are noisy crowds indoors at morning check-in and again at lunch. Our indoor teaching areas are not so private as smaller centres. But a transformation occurs outdoors, where students have intimate and exciting experiences with nature, in the natural environment.

Grade 9 students wade in a stream, feeling the currents that shape the mucky pools and stony riffles, the sandbar, the twisting meanders, the tangled floodplain, the broad valley.

Grade 2 students watch, bear and smell hundreds of honeybees held by a beekeeper just centimetres from the ends of their noses (on the other side of a window screen).

Grade 12 students turn stream stones to find insects they never dreamed were there. One student spots a tiny non-descript "minnow" sheltering in a crevice, scoops her dip net, and places the fish in a plastic chamber. Viewed now from the side (as most other fish would see it), it is revealed in all its living colours as a rainbow darter.

Students from several primary and junior classes dip sieves into our ponds to catch a close look at the diversity of shapes, sizes, legs, gills and movements within. They are amazed to see that a water strider

can fly from their pail, that a diving beetle will seize a tadpole before their eyes, that a leech can cling so firmly, and that such a tiny speck in the pond is actually swimming.

Grade 11 students listened to an audio tape to learn how to inventory forest interior birds by their songs, and now hear a real ovenbird calling nearby, and a wood thrush singing in the background.

Adult recent immigrants in an English as a Second Language class are guided on a nature walk to see some of the plants and animals symbolized on Canada's flags and currency, and to make connections with the nature of their new home, and its own mix of "native" and "introduced" species.

The Kortright Centre's very reason for being is to provide visitors with direct contact with nature, guided by nature interpreters who can reveal the meanings and inter-relationships of whatever comes to hand.

Kortright is operated by the Metropolitan Toronto and Region Conservation Authority. Conservation Authorities are unique to Ontario. All thirty-eight have mandates to manage the natural resources of their local river watersheds. River watersheds are defined by nature's boundaries, and so watershed management is necessarily based on ecosystems — fitting human activity into natural ecosystems, while protecting or restoring the function of those ecosystems. The residents of each region are stewards of their own watershed properties, and the taxpaying funders of much of the work of Conservation Authorities. It is critical that they understand and appreciate a watershed ecosystem, its many vital components and processes, and its web of inter-relationships. Providing a nature interpretation programme helps us achieve this.

Many Conservation Authorities offer a "conservation education" programme of some kind. These usually operate through formal or informal partnerships with local school boards. Day centres and residential centres offer programmes as diverse as outdoor education itself: some skiing, canoeing, orienteering or

other outdoor recreation skills; some cooperative activities and social development; some art, games, and simulation activities; some data collection, science experiments and global education. But the cornerstone is first-hand experience with nature, guided by a nature interpreter, to connect with the local environment. We get to the grass-roots of ecosystems by digging in grass and roots. We make contact with trees, insects, chipmunks, fish, forests, marshes, swamps, and streams. Classroom teachers tell us that this part of their visit is what their students remember most vividly through the school year.

Regardless of your particular mandate, such experiences are a powerful tool to help your students connect with, learn about and appreciate the environment. I encourage you to learn about the natural history of your area, to get to know some common plants and animals and how they interact with one another. Then seize every opportunity to take your students out into the environment — for skills, games, art, natural history, or whatever you like — and infuse your new knowledge into their experiences. Nature presents many teachable moments, if you and your students are there and prepared to accept them.

As a teacher, you already have skills to communicate. Become a bit of a naturalist too. Spend time in nature. Your reference tools might include local interpretive programs, naturalist club outings, books, audio tapes, video tapes or CDs. The knowledge you gain is

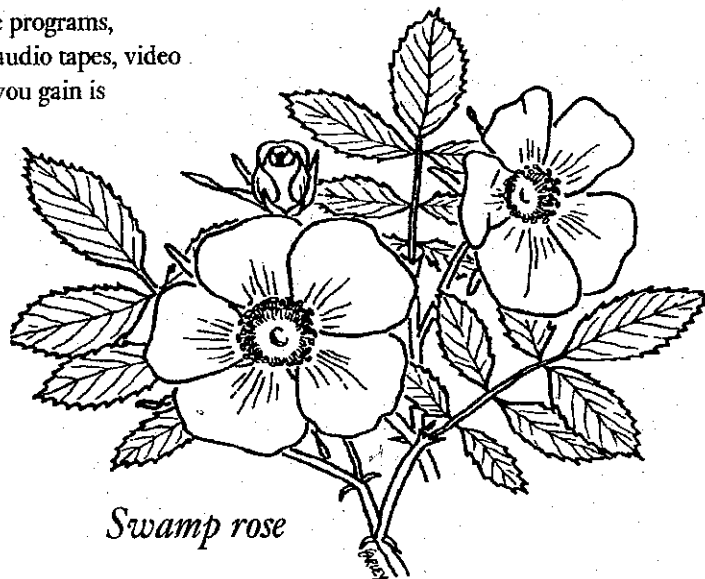
invaluable. You will see plants you used to pass by, recognize bird songs you never used to hear, and find or even attract other animals you never saw before. You will appreciate each and every week of the passing seasons, for the arrivals, departures, blossoms, sounds, scents and colours it brings. You'll soon discover how to adapt your knowledge to groups of young or old, and to enrich the outings of a large class or your own family. Be there, and be aware.

Will the lessons of outdoor education be forgotten with other childhood pursuits such as jumprope and pogs? The Kortright Centre doesn't want to take any such chances. Adults don't have fewer outdoor learning opportunities than children. Kortright makes its greatest efforts to create guided programmes, trails, displays and promotions to attract adults and families on their leisure time, and organized groups whenever it fits their schedules. But that would be a whole other article.

Peter Attfield is responsible for water interpretation programs at the Kortright Centre for Conservation. In his spare time he volunteers for Interpretation Canada and local environmental projects, and continues to develop naturalist skills.

But the cornerstone is first-hand experience with nature, guided by a nature interpreter, to connect with the local environment.

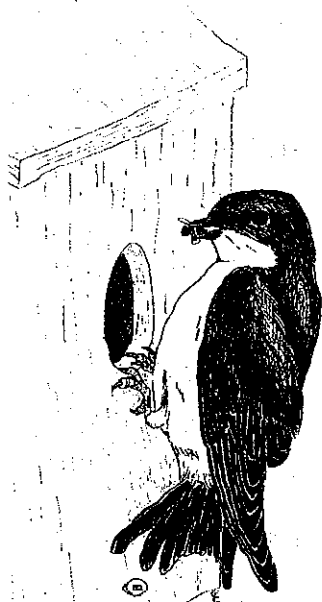
Spend time in nature... You will see plants you used to pass by, recognize bird songs you never used to hear, and find or even attract other animals you never saw before.



Swamp rose

MY LIFE AS A CAT: THE IMPORTANCE OF CHILDHOOD EXPERIENCES OF NATURE

...the profound connections to other life I felt as a child...



Tree Swallow

I used to think I was a cat. Seriously. Around the age of nine or so, I became convinced that I was a feline mistakenly stuck in a human body. The evidence? My taste for milk, my need for substantially more sleep than my family and friends, and, most significantly, my strong feelings of affiliation for my fellow felines. Upon announcing my suspicions to my family and my best friend, however, it became obvious that they did not regard this as a possibility; eventually they were able to convince me that I was, alas, completely human. As an adult, I no longer harbour doubts about my species identity but I nonetheless retain a strong affinity for all life feline.

I share this anecdote not as an example of the follies of my childhood but as a demonstration of the profound connections to other life I felt as a child. Like most children, I learned to devalue these feelings and hence buried them deep within me for a long time; unlike many other people, however, I have since had the good fortune of recapturing some of what was lost.

There is a growing body of literature on the importance of childhood experiences with nature to healthy development (Carson, 1956/1965; Cobb, 1969; Kellert & Wilson, 1993; Livingston, 1994; Shepard, 1982; Wilson, 1984). In 1969, Edith Cobb wrote a much-cited essay exploring childhood experiences of nature and the development of genius. She concluded that between the ages of five and 12, "the natural world is experienced in some highly evocative way, producing in the child a sense of some profound continuity with natural processes" (p. 124).

Building on Cobb's work as well as that of Paul Shepard (1982), Canadian naturalist John Livingston (1994) has proposed a theory of development in which experiences in, with and of nature are considered essential. He suggests that all animals move through an alternating

cycle of bonding events and times of increased independence. First, after birth, infants are aware of their individuality but quickly form an intimate bond with their caregiver(s). As toddlers, children become more autonomous than begin to feel profound connections to nonhuman nature; this is the time described by Shepard when:

The unfiltered, unpolluted air, the flicker of birds, real sunshine and rain, mud to be tasted and tree bark to grasp, the sounds of wind and water, the calls of animals and insects as well as human voices — all these are not vague and pleasant amenities for the infant, but the stuff of which its second grounding, even while in its mother's arms, has begun (1982, p. 7).

In puberty, children again go through a cycle of autonomy followed, ideally, by a feeling of connection to their own species, the natural communities of which they are part, and, eventually, the cosmos. Only at this point is a person considered fully mature.

Like many theories of development, it is proposed that most people are thwarted in their striving for their full potential, often because of the society in which they live. In this model, it is the failure to bond with nature and with the cosmos that Livingston suggests is at the heart of environmental degradation.

If Livingston is on to something here, and I suspect he is, outdoor educators have a vital role to play in fostering healthy human development by providing opportunities for children to encounter and begin to develop relationships with other life. For it is nature experience and natural history, according to David Orr, that "promotes the capacity not only to see but to observe with care, understanding, and above all else, with pleasure" (1992, p. 136).

Livingston makes the point more power-

fully than I ever could, so I will close with a passage I suspect will be evocative for many of you:

For some of us, the experience of non-human Nature is the most vivid recollection of young childhood. Not the cognitive, but the affective experience.... I mean the dissolution of the ego-centred self, as when one was drawn close, ever closer and at last into the gold-flecked eye of a toad, or when one melted into black earthy humus, laced with wintergreen, on a cool forest floor. Or when one's cry of joy was transposed into gull clamour by a sea wind pungent with the scent of rotting kelp. When one sought, and found; when one relinquished, and was free. (1994, p.197)

BIBLIOGRAPHY

- Carson, R. (1956/1965). *The Sense of Wonder*. New York: Harper & Row.
- Cobb, E. (1969). The ecology of imagination in childhood. In P. Shepard & D. McKinley (eds.) *The Subversive Science: Essays Toward an Ecology of Man*. Boston: Houghton Mifflin.
- Kellert, S.R. & Wilson, E.O. (1993). *The Biophilia Hypothesis*. Covelo, CA: Island Press.
- Livingston, J.A. (1994). *Rogue Primate: An Exploration of Human Domestication*. Toronto: Key Porter.
- Orr, D. (1992). *Ecological Literacy: Education and the Transition to a Postmodern World*. Albany: SUNY.
- Shepard, P. (1982). *Nature and Madness*. San Francisco: Sierra Club.
- Wilson, E.O. (1984). *Biophilia: The Human Bond with Other Species*. Cambridge, Mass: Harvard.

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...it is the failure to bond with nature and with the cosmos that Livingston suggests is at the heart of environmental degradation.

Explore New Territory!

Create Your Own Adventure!

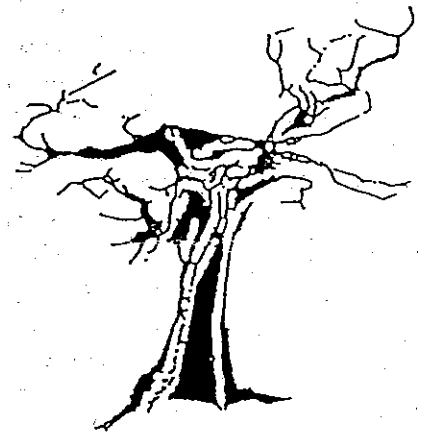
Assistantships in Outdoor Education
Northern Illinois University

Graduate teaching assistantships* are available in Outdoor Teacher Education at Northern Illinois University for the 1996-97 school year, beginning in early January or Mid-August. The assistantships involve outdoor teaching at Lorado Taft Field Campus, Oregon, Illinois.

Because the teaching is primarily with public school students and university juniors and seniors, priority is given to those applicants who have had several years of experience in the elementary or secondary schools or nature and outdoor centers.

The assistantships pay a stipend of \$411/month for 9 months, include a waiver of tuition for 3 semesters, and partial room and board for nine months.

For applications and further information contact Dr. Knapp, Lorado Taft Field Campus, P.O. Box 299, Oregon, IL 61061. (815) 732-2111.



*In order to be awarded the Graduate Teaching Assistantship, you must apply to the Graduate School and be accepted.

Editor's Note:

Rather than a single Backpacket activity, we've asked some of Ontario's leading interpretive naturalists to share their favourite tips, tricks & hints for nature programming. Feel free to send in your own favourites for future issues of *Pathways*.

BINOCULARS AS MAGNIFIERS

Binoculars are good for more than making distant objects appear closer. By reversing them and looking through them at objects only a few centimetres away, they work as magnifying lenses.

SCAVENGER HUNTS

Adaptable to almost any subject or theme, Scavenger Hunts are a great tool for getting students to explore an area. They may be more than just collecting objects, but also information. In fact, my scavenger hunts focus mostly on information collection since thousands of students collecting natural objects leads to a pretty picked over part. Two items that I usually include in all hunts are the following:

- 1) Collect something that does not belong in nature.
- 2) Describe something interesting or unusual that you found.

"WHAT'S IT CALLED?" SYNDROME

A fear that most teachers have when in the outdoors is the dreaded question, "what is it called?" How do you deal with it? If it is a plant or animal, I often ask the student to give it a name, but one that describes some physical feature or behaviour. For example, a "Spotted Aphid Eater" might be a name given to an insect that others would call a ladybug. This forces the student to look closely at the object and note features that might be useful in looking it up later to find its "real" name. It also gives the student a chance to learn more than just the name, but also to observe a bit of its role in the environment which is probably more important than just knowing its name. I often use this technique even if I do know what "it" is called.

COEO Treasurer Ian Hendry is the Interpreter for Credit Valley Conservation Authority at Terra Cotta Conservation Area.

I SPY

This familiar activity is great because you can play it anywhere and it can really open your group's eyes about the world around them. The trick is not to be restricted to colour, or even to what you can see. Here are some examples:

-I spy with my little eye something that lives on a tree (moss, bark beetle or squirrel in a forest)

-I spy with my little eye something that would feel rough (bark or pavement in a schoolyard)

-If I smell my little nose will tell of something that is like pickles (dill in a garden)

-I hear with my little ear something that is chirping (a cricket in a field)

Try hard to include senses other than sight. Discuss the object, sound or smell when the correct answer is given. Names of plants and animals are not important; you could even have the student who guesses correctly to think of a fun name (such as the pointy-headed red bird for a cardinal). Traditionally, the student who guesses correctly gets to pick something for the next "I spy with...." However, if there was a particular focus or subject to be covered, you could give all the clues. You could try the following examples:

-give clues to form a food chain (sun, acorn, chipmunk)

-give clues to encourage classifying objects (fallen leaf, rotting log, dead flower)

-do a memory game at the end ("who can remember, in order, all of the answers?")

-play the game in many habitats or communities to look for differences and similarities.

There are countless variations of this oldie-but-a-goodie game. You can plan it before a hike to a local park or spontaneously play it while your group is waiting for the bus.

Chris Earley is the Interpretive Naturalist for the Arboretum, University of Guelph.



*Downy Woodpecker
on Goldenrod ball*

SIMPLE TECHNIQUES STILL WORK

"What's in the bag?" one student asks, eyeing my green field bag with curiosity.

"Bowls," I reply.

And thus begins the group's adventure into the world of tiny creatures. Today, we are doing an insect study, and in order to give the students as much of a hands-on experience as possible, I find that the use of ordinary wash basins or bowls is very effective. Many of the tiny critters around us are difficult to see at the best of times. So, we visit a low tree or bush, hold the bowls under a leafy branch, shake firmly but gently, and — behold — the sudden appearance of a host of previously unseen inhabitants delights even the most reluctant of participants. White or light beige in colour, the bowls allow the critters to be easily observed and the students can readily spot the different characteristics. The wash basin size is good because it is big enough to catch several small animals as they drop from the plant, yet small enough to be easily handled. I usually have the students work in small groups of 3-5. (Car groups work well if parents have brought the children. Not only are the children able to form their groups quickly, but it allows the parents to be involved as well, and most of the time they enjoy the activity as much as the kids. Each student has a turn to shake a branch, and by using bowls, I find students who would otherwise be hesitant to touch or hold an insect, will be comfortable, as they can observe their discoveries in a non-threatening manner. The bowls are also safer in many ways for the insects, as chances of them being injured or crushed are reduced (and if you wait for "dollar days" at your local department store, they are quite economical).

Does it work? The excited chatter as groups share their findings and the smiles on their faces, combined with their expressions when uniquely coloured or shaped creatures crawl before their eyes, inches from their nose at times, is a good indication that this simple technique does still work! *Editor's note: An old bedsheet works well too!*

*Ontario Section Chair for Interpretation Canada,
Steve Bowen has been Teacher/Naturalist at the
Royal Botanical Gardens' Nature Centre since 1985.*

NATURALISTS' POCKETS

Naturalists' Pockets is a no-cost, low-tech activity suitable for children and adults. The activity requires no setup, and yet it is very effective in helping participants become more observant of the world around them and in helping the leader develop a spontaneous interpretive style.

Objectives:

- i) to help people become more observant.
- ii) to help develop a more inquisitive mind in both the participant and leader.
- iii) to foster sharing of ideas and experiences.
- iv) to emphasize and reinforce the concept that all aspects of nature are important.
- v) to help the leader demonstrate the relationships between all components of the environment.
- vi) to foster a conservation ethic.

Themes:

The thought of interpreting just about anything that will fit into someone's pocket might be rather intimidating. After all, they might have picked up one of those insignificant little things that we tend to overlook and not bother learning much about. If you think that this might be a problem, the following may help alleviate the anxiety:

*Don't worry about the name of the thing.

*Say to yourself, "Is this animal, vegetable, or mineral?" This is half the battle, once you have determined this you're off to the interpretive races.

*Have a couple of "predetermined" themes in mind for Naturalists' Pockets. These might include:

LIFE CYCLE: What stage of a life cycle is



Hemlock

this thing in... what was it, what will it become?

FORM AND FUNCTION: Why does this thing look like this? What else does it look like, and is this similarity coincidental or deliberate?

YOUR VERY OWN: Very often people in the group will "have" something just like the thing from someone's pocket—exactly the same, ie they picked up the same thing; something similar, eg. we all have bones, hair (fur), skin etc., which can be compared to the occupant of someone's pocket.

ENERGY: How is this object related to an organism's energy requirements and/ or expenditures?

Disclaimer:

This activity does encourage people to pick up (remove) objects from the environment. At the beginning of the activity it should be emphasized that living things and things that are "attached" are not suitable for Naturalists' Pockets. Also, there should be some discussion regarding the return of Naturalists' Pocket items back to the environment.

On Being Observant:

When we lose our innocence — when we start to feel the weight of the atmosphere and learn that there's death in the pot — we take leave of our senses. Only children keep their eyes open. The only thing they have is sense; they have highly developed "input systems", admitting all data indiscriminately... you must walk with a child — a child will pick up everything.

Annie Dillard:
A Pilgrim at Tinker Creek.

*Alan Watson is Director of
The Arboretum, University of Guelph.*

SCALES AND SCARS

A favourite forest activity of mine is to get people to guess the age of a maple sapling. I

usually choose one that is a bit taller than I am and quite gnarly and twisted. Most kids — and adults, too — will guess, "Three years old," "No, five!" "No way!-four!" Some brave soul will venture, "Ten?," most often having to endure the raucous laughter of the rest of the group — "No way! That little thing?"

Truth in the natural world is often much stranger than we believe. These saplings may be in fact as old as the maple trees around them — 100 years old or more! And without really looking at the saplings and understanding some basic tree biology, this fascinating point and the consequent understanding of forest dynamics, is missed.

THE NATURAL HISTORY

Every August, maple trees develop terminal and lateral buds preparing for winter dormancy and for the growth spurt in spring. Bud scales, really just modified leaves, cover and protect the embryonic bud inside.

As the spring begins, the enveloping bud scales loosen and drop off, allowing the buds to burst out. Where the bud scales once were, there are scars left. In the case of the terminal buds, the scars ring the twig as a series of tiny ridges and are often visible for several years until the growing twig expands enough to blur the scars.

We all know about counting the annual rings of a tree to determine its age. It is likewise possible to count the terminal bud scars to determine the age of a twig. By counting the scars left by the terminal bud scales, it is quite easy to estimate the age of a sapling.

In an ordinary maple sugar bush in Ontario, saplings of two to three metres in height are often as old as the mature trees of 100 years and more. In just the top 10 centimetres of growth, it is often possible to count 10 or more terminal bud ring scars. Beyond that the scars are difficult or impossible to determine, but it is nonetheless possible to estimate that the sapling is as old as the mature trees around.

So, what is the explanation? Most forests in southern Ontario are at least second-growth and often third-growth timber. In the case of our

sugar bush at Sheldon, the forest was clear-cut in the 1890s (probably by the new owners, to pay for their recent purchase). It was likely virgin bush then, and being the "back forty," it was left to grow back directly into forest. Since then, it has been used for summer grazing (there is another fascinating tale to be spun out of the pattern of vegetation on the forest floor...), for firewood, and lately, as the locale for our forest and maple sugar programme. The trees are all straight-boled, with no branches until well up towards the canopy. They are almost all too crowded, with small crowns and small root systems. By coring some and by counting the rings on others that we have cut, we know they are all about a century old. There are many very scraggly saplings and many dead saplings as well. Very commonly in the heavy shade of a mature bushlot, these saplings grow very slowly, barely hanging on to life. They are competing with each other for root space and for sunlight, but above all, they are over-shadowed both literally and figuratively by their big siblings. The forest floor is also quite covered with maple seedlings about 20 centimetres tall. (When we count the terminal rings scars of these, many of them are surprisingly old as well!) My educated guess is that after the bush was cut, the mass of seedlings and saplings shot up. Those that by good fortune were well rooted were able to get a jump on the others, and were soon towering above them, shading them out, and getting even farther ahead. This situation would be self-reinforcing: the big would get bigger and the weak, weaker. So many of our twisted and tortured saplings are the same age as our big mature trees — 100 years old!

MARK WHITCOMBE works at Sheldon Centre for Outdoor Education — where there's no stigma to being a "well-informed botanist."

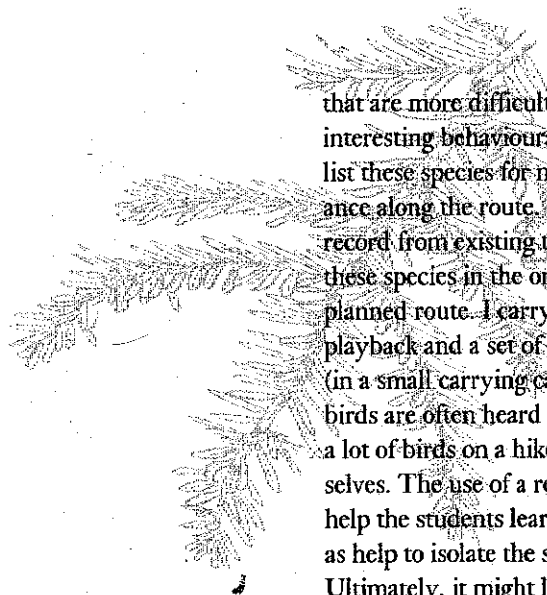
LEADING BIRD WALKS

Introductory birding hikes I have attended in the past have been for the most part rapid fire

identification sessions. The interpreter casually and quickly identifies every bird seen or heard en route. Students are often left overwhelmed not only by the sometimes difficult and challenging task of finding the bird, but also by the number of species present, the birds' names, songs, calls, flight patterns, etc. Once it has been located, quick glimpses of an unidentified bird are often just that, quick, thereby increasing the possibility of frustration. I often wonder after bird hikes how many students go away frustrated and more confused than before the hike and rarely, if ever, pick up a pair of binoculars again. More happily, I hope that they will venture out again perhaps on their own to bite off an appropriate amount of bird information to chew on and digest.

As someone who has led birding excursions, I have no doubt that I have been guilty of spitting out identifications without realizing that the information is too much, too fast for the class. Recently, I have tried to meet the needs of students more (and feed my ego less). Before even heading out the door, it is wise to spend a few minutes explaining techniques used to properly focus binoculars. Remember the old "close right eye, focus using the centre focus ring, close left, open right eye, focus using the right ocular piece" trick. It is also dangerous to assume that students of any age might be adequately experienced at spotting birds with binoculars. Again, practice spotting stationary objects in the classroom or outside before the main birding event is highly recommended.

The best tip I can offer though, is to first reduce the amount of information one plans to deliver (keeping additional info in mind for more advanced groups). In my enthusiasm, I have tried to make instant experts of keen students by inundating them with information; the effort was counter-productive. After I have determined how much information to deliver given the time available, the size and grade level of the group, the time of year, the location, etc., I walk the route a few days before the event to get a sense of the species present and the location for each. From the species present, I select a sub-set: some that are easily identified, common, some



Hemlock

that are more difficult to identify and some with interesting behavioural or ecological aspects. I list these species for myself in order of appearance along the route. On a tape cassette, I re-record from existing tapes the song/calls of each these species in the order they appear along the planned route. I carry a small Sony walkman, playback and a set of Realistic compact speakers (in a small carrying case). A good number of birds are often heard before being seen. In fact, a lot of birds on a hike may never show themselves. The use of a recording along the hike can help the students learn the birds by song as well as help to isolate the species in a full chorus. Ultimately, it might lead the student to the bird for observation with binoculars. This strategy works best when birds are busy setting up territories, and is less effective during the peak of migration when birds cannot be counted on to stick around long. I must stress that the use of tapes should be with the utmost of care. It is possible to drive birds off territories by playing a recording more loudly and incessantly than the real thing can sing. Used very sparingly, as a means to teach the song and not as a tool to draw the bird in (and eventually away), it can be an effective aid. With specimens at my disposal, I also carry carefully packed study skins and pull them out to use in conjunction with the illustrations in field guides. It helps to have several field guides available; two to three students per guide is ideal.

To ensure that everyone is looking at and identifying the same bird, I ask a student who has obviously located the bird to call out the field marks and identifying features. In that way, a student that might be viewing a nearby Chipping Sparrow would not be able to misidentify it for the Song Sparrow that the rest of the class is focussed on.

Birding or birdwatching is not as easy as it looks. There are several very complicated skills, in addition to the identification aspect, that need to be developed to make students competent with and interested in the activity. The best two pieces of advice I offer:

Do not try to teach them everything you know about birds on one hike.

If you use tape recordings, do so with the utmost of care, especially during the breeding season.

Even more challenging (and rewarding) than birding itself, is trying to teach the skills to a group of keen students. Remember, it is not necessarily the early bird that gets the worm, but more often, the persistent one!

CHRIS LEMIEUX teaches at the Leslie M. Frost Natural Resources Centre. He honed his bird walking/watching skills as a naturalist at Point Pelee National Park and while leading natural history tours everywhere from Iceland to Trinidad.

CRITTER CANS

A couple of years ago, our environmental education programmes went mobile. The challenge was to help urban and inner-city kids become more aware of nature in their own community.

We use "Critter Cans" as part of an introduction prior to a nature hike around the school yard. The unusual "wildlife clues" inside help prepare the students to see beyond the clutter of the city so that they are better able to discover the secrets of the natural world that are just below their feet.

Critter Cans are easy to make and extremely adaptable to many different types of themes. All you need is a can with a lid (cardboard hot chocolate cans are great!) colourful pictures or drawings to decorate the outside, some artifacts to put inside and you are all set.

Since our Critter Cans were first developed around a wildlife theme and the "clues" that animals leave behind, we decorated our hot chocolate cans and lids with collages of wildlife pictures placing three to four artifacts in each can. Clues included things like chewed pine cones or walnuts, feathers, insect galls, etc. More delicate items such as owl pellets and porcupine quills were placed in small containers to protect them.

Besides the various artifacts in the Critter Cans, you could include a pencil, clue card, and magnifying glass —kids like to play detective!

The nice thing about this activity is that they can reflect any theme you want. Here are some other ideas:

- | | |
|-------------------|--|
| Seed Dispersal | - different types of seeds
- sorted by how they travel, etc. |
| Sensory Deception | - things to touch, taste, see, hear, and smell |
| Natural Cycles | - water cycle, energy systems (food chains)
- seasonal themes
- geology, archaeology |

Kids can participate by coming up with their own themes and designing their own cans.

EXTENSION:

Hot Chocolate cans also make great Star Cans; just punch the pattern of a constellation on the bottom of the can, include some information on the outside, cut a peep hole in the lid, and voila — the night sky is at your fingertips!

Beth Stormont is the Teacher/Naturalist for Hamilton Region Conservation Authority

MAKING THE ABSTRACT, CONCRETE

Interpretation is largely good storytelling, and while a skilled interpreter can paint a vivid picture of almost any subject using words as paint on the canvas of the mind, the rest of us can always use a little extra help.

Taking along a shoulder sac or day pack filled with "stuff" may make some interpreters feel like a pack mule, but I find that it is more like a security blanket. I know that I have the elements with me that will help weave the story strands that I will develop into a thematic hike.

What do I take along? It depends on the theme. Field guides, magnifiers, laminated photos (from old nature calendars and magazines), and a piece of flexible whiteboard and markers are standards, but props add substantially to the weight (or at least the bulk!) that I cart with me.

For a fall programme, I bring a leaf prop that will help illustrate how the degradation of one pigment reveals another lying underneath; in winter, giant carpet-underpadding snowflakes and snowcatchers will illustrate how crystals form and fall; a balloon can demonstrate spring-singing frog calls; and a life-sized drawing of a 5 kg carp will help develop a sense of why these non-native fish have such a devastating impact on our summer wetland plants. What I choose to carry is limited only by my imagination (though my stamina sometimes influences the decision!)

Lots of lugging for little effort? Not if it makes my stories clearer and more memorable to students (or adults) on a guided walk. Too often we rely on words and concepts that are laden with meaning to those immersed in the subject, but almost unintelligible to the layperson (especially if they are not conceptually ready for something so abstract). Used skillfully, good props are an important part of any interpreter's tool kit.

Barbara McKean is a past-chair of Interpretation Canada. She coordinates interpretation for Royal Botanical Gardens.

THE PSYCHO SCAVENGER HUNT!

An exciting way in which to review subjects when your participants are not very enthusiastic!

One of the tools used extensively in outdoor education is the scavenger hunt. Although this technique is very successful with both primary and junior levels, intermediate and senior students tend to get off-task easily, especially when left alone. Many times students have been sent out for extended periods, to return with the assignment only partially completed.



Hemlock

PSYCHO SOIL SCAVENGER HUNT

Organic Material-Animal
50 points-A feather
100 points for ...
A strand of spider web
Some hair from a mammal
150 points-Animal droppings
200 points-A worm casting

Organic Material-Plant
100 points each
A seed
A piece of fruit
A piece of decomposing log
Last year's leaf!

Soil Formation
50 points for ...
A handful of "A" layer soil
A piece of parent material
(Limestone)
100 points for ...
A handful of "B" layer soil
A piece of a different type of
parent material (Granite)

Food Chain
A live animal that eats leaves
A live predator of decomposers
150 points each!

Decomposers I
100 points for ...
A piece of a live plant
150 points for ...
A piece of a fungus
200 points for ...
A piece of lichen
*Collect only small pieces, or
points will be deducted.*

Decomposers II
100 points for each live
decomposer you can collect!
Sow bug, millipede,
worm, slug, snails and more!
(Maximum 1,000 points)

The Psycho Scavenger Hunt is a great way to accomplish the above and have a lot of fun in doing so. Originally, this activity was developed to get students excited about soils, but it works equally well with all subjects!

The basic format is simple. Divide your class into groups of four to six students and have each group pick a name. This "game" consists of six rounds and lasts about one to one and a half hours. For every round, each group will be given an identical slip of paper listing a variety of things that they need to go find, collect, and return to the classroom, along with the point value for the items on the list (see examples). You will need to provide trays in the classroom for their collection and jars for catching bugs.

The FUN is that a short time limit is set, depending on the items to be found, size of boundaries, etc. Typically, two to five minutes should be allowed for each round. Keep score on the blackboard as you go.

Care needs to be given if students are to collect living creatures. There is obviously a need to discuss environmental friendliness and respect for nature before doing this activity. Encourage students not to damage living plants and to return animals back to where they were originally caught.

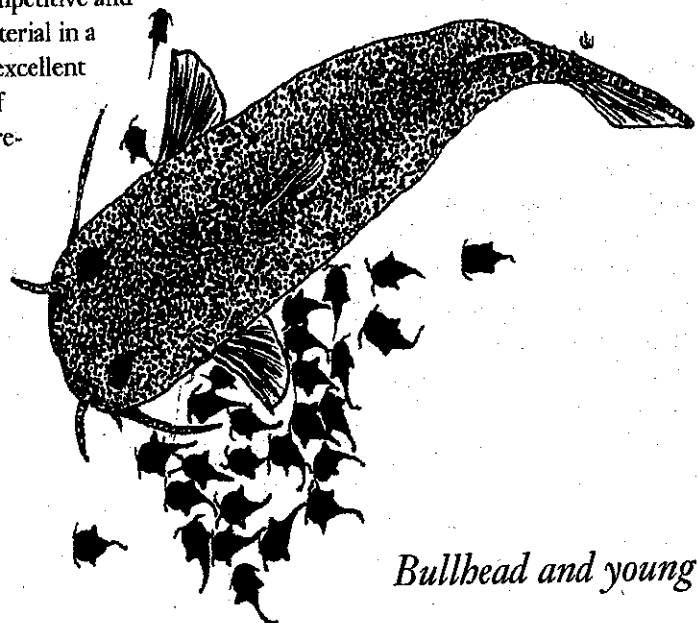
We have used this type of scavenger hunt with grades four to 11 and they all enjoy it immensely. It is highly competitive and effective way to review material in a hands-on manner. It is an excellent review for forestry (i.e. leaf types, etc.) and other nature-oriented topics.

The additional benefits of this lesson include the life skills involved with things such as group dynamics and time management. If you provide only the instructions necessary to do the activity, it is very interesting to observe the groups work out how they will optimize their time, and therefore their success. After the scavenger hunt, you can analyse why certain groups did better than others. Were they smarter? Better organised? More co-operative?

Depending upon the individuals in your class, some groups will have too many leaders and others will not have any. Some groups will manage their time and resources well and others will not, with those that co-operate invariably doing the best. Afterwards, a discussion can be held to talk about group dynamics, time management, and other social skills such as co-operation.

It is also possible to use a trail version of this by sending students out on short forays with a verbal list of things to find. This version is less competitive, as you will not be awarding points. Either way, it is important to remember to keep it high energy, positive, and fun!

Greg Meredith is a Resource Interpreter who works at the Guelph Lake Nature Centre for the Grand River Conservation Authority.



Bullhead and young

GREENPEACE TALKS

Greenpeace is going back to school. School presentations are available for all grades, including post secondary, through the Greenpeace Charitable Foundation in Toronto. You can select one of the following topics:

THE GREENPEACE STORY

Because Actions Speak Louder Than Words. This is the story of 25 years of environmental action. Yesterday and Today, what are the environmental issues?

NO NEED FOR NUCLEAR

How is nuclear power used? What are the alternatives?

CHLORINE-FREE FUTURE/ THE GREAT LAKES

Chlorine is the root ingredient in some of the most dangerous poisons. How can we clean up the Great Lakes?

CLIMATE CHANGE

What is global warming or climate change? Where do the greenhouse gases come from? What are the alternatives to fossil fuels?

OCEAN ECOLOGY

How does overfishing, trawling, driftnetting, whale plundering, the climate changing and land-based pollution affect the ocean ecosystem?

FORESTS FOR TOMORROW

Forests are the "lungs" of the Earth. How can we use the trees but still have a forest tomorrow?

DESIGN YOUR OWN

If you don't see your topic here, call anyway. Call Janet Sumner, School Talks Coordinator, Greenpeace Canada Charitable Foundation, at (416) 597-8408 to book your presentation.

Bill Mason: A Canadian Legend at the Outdoor Centre, Little Cataraqui Creek Conservation Area, Kingston November 5

(movies at 1:00 p.m.; slide talk at 2:00 p.m.)

Bill Mason died in 1988, leaving behind a legacy of books and films striking at the Canadian identity of wilderness and exploration by canoe. Jim Raffan has been gathering information about Bill Mason for a book due to be published in the spring of 1996, and he has stories galore! Beginning at 1:00 p.m., two of Bill Mason's movies will be shown: "Paddle to the Sea," and "Path of the Paddle: doubles whitewater." At 2:00 p.m., Jim will share his slides and stories about Bill Mason.

There is a gate fee of \$6.00 per vehicle at "Little Cat." Annual Passes are available for \$40.00.

For more information, call the Cataraqui Region Conservation Authority at (613) 546-4228 and ask for Gina Bernabei.

INTEGRATED PROGRAM SYMPOSIUM

A gathering of teachers presently involved with integrated programs

WHY? A chance to share ideas, a discussion of common issues, an exploration of the possibility of establishing an organization, and a lot of fun!

WHEN? November 3-5, 1995

WHERE? Camp Sidrabene, A Bronte Creek Project site in North Burlington ON.

WHO? educators currently teaching integrated programs

"SOURCES" FOR THE CONTINUING EDUCATION OF ASPIRING AND EXPERIENCED NATURE INTERPRETERS

A NATURALIST'S SOURCELIST

ORGANIZATIONS WITH COURSES, WORKSHOPS, AND FIELD TRIPS ON NATURAL HISTORY TOPICS

The Federation of Ontario Naturalists (FON):
355 Lesmill Rd., Don Mills, ON M3B 2W5 Ph
(416) 444-8419 Fax (416) 444-9866

FON offers a wide range of outings, field trips, and camps from half-day to several days' duration, on a wide variety of natural history themes, lead by naturalists. FON also develops and markets classroom resources for nature study-books, kits, posters, etc. and publishes *Seasons: The Magazine for Ontario Naturalists*.

Local Naturalists' Clubs:

Most areas of the province have field naturalists' clubs that offer indoor meetings with speakers and field outings on natural history topics. Contact FON to find the club nearest to you.

Other Organizations:

The following agencies offer seasonal programmes of speakers, workshops, courses, and outings to help develop natural history skills. Phone or write, and ask about programmes and membership:

The Arboretum, University of Guelph
Guelph, ON N1G 2W1 (519) 824-4120
Ext. 2113

Royal Botanical Gardens
Box 399, Hamilton, ON L8N 3H8 (905) 527-1158

Kortright Centre for Conservation
c/o MTRCA, 60 Shoreham Drive, Downsview,
ON (905) 832-2289

Your local Conservation Authority
Check the blue pages of your phone book

Provincial and National Parks

PERIODICALS MAINLY DEVOTED TO NATURAL HISTORY

Seasons: The Environment and Nature Magazine
The Federation of Ontario Naturalists (FON),
355 Lesmill Rd., Don Mills, ON M3B 2W5

Canadian Geographic
The Royal Canadian Geographical Society,
39 McArthur Avenue, Vanier, ON K1L 8L7

Nature Canada
Canadian Nature Federation, Suite 520, 1
Nicholas St., Ottawa ON K1N 7B7

The Raven
Algonquin Provincial Park, Ministry of Natural
Resources, Box 219, Whitney, ON K0J 2M0

Audubon Magazine
National Audubon Society, 700 Broadway,
New York, N.Y. 10003

New York Conservationist
New York State Department of Environmental
Conservation, 50 Wolf Rd., Albany, N.Y. 12233

Sanctuary
Massachusetts Audubon Society

Borealis
Canadian Parks & Wilderness Society

NATURAL HISTORY BOOKS FOR INTERPRETERS

General

Ackerman, Diane. *A Natural History of the Senses*. Toronto, New York: Random House, 1990. 0-679-73566-6

Bennet, Doug and Tim Tiner. *Up North: A Guide to Ontario's Wilderness from Blackflies to Northern Lights*. Markham, ON: Reed Books Canada, 1993. 0-409-91101-1

Cornell, Joseph. *Sharing the Joy of Nature*. Nevada City, CA: Dawn Publications, 1989. 0-916124-52-5

Cornell, Joseph. *Sharing Nature with Children*. Nevada City, CA: Dawn Publications, 1979. 0-916124-14-2

Forsyth, Adrian. *A Natural History of Sex*. Shelburne, Vermont: Chapters Publishers Ltd., 1993.

Lawrence, Gale. *A Field Guide to the Familiar*. Englewood Cliffs, N.J.: Prentice Hall, 1984.

Mitchell, John and the Massachusetts Audubon Society. *The Curious Naturalist*. Englewood Cliffs, N.J.: Prentice Hall, 1980.

Mitchell, John. *A Field Guide to Your Own Backyard*. New York: W. W. Norton & Co., 1985. 0-393-30301-2

Montgomery, Sy. *Nature's Everyday Mysteries: A Field Guide to the World in Your Backyard*. Shelburne, Vermont: Chapters Publishing Ltd., 1993. 0-9631591-9-4

Palmer, E.L. & H.S. Fowler. *The Fieldbook of Natural History*. Toronto: McGraw-Hill, 1975. 0-07-048196-2

Wilson, E. O. (ed.) *Biodiversity*. Washington, DC: National Academy Press, 1988. 0-309-03739-5

Ecology

Brown, Vinson. *The Amateur Naturalists' Handbook*. Toronto: Prentice Hall, Inc., 1980. 13-023721-3

Colinvaux, Paul. *Why Big Fierce Animals are Rare: An Ecologists' Perspective*. Princeton, NJ: Princeton University Press, 1978.

Finlay, Joy. *Winter Here and Now*. Edmonton: Aspen House, 1982.

Gayton, Don. *The Wheatgrass Mechanism: Science and Imagination in a Western Canadian Landscape*. Saskatoon: Fifth House Publishers, 1990.

Halfpenny, James & R.D. Ozanne. *Winter: An Ecological Handbook*. Boulder, CO: Johnson Books, 1989. 1-55566-0363-3

Hawke, David. *Wetlands*. Toronto, ON: Stoddart (Boston Mills Press), 1994.

Irwin, John R. *The Winter Woods*. Old Greenwich: Chatham Press, 1975. 0-316-81720-1

Karstad, Aleta. *Canadian Nature Notebook*. Toronto: McGraw-Hill Ryerson, 1979.

Marchand, Peter J. *Life in the Cold: An Introduction to Winter Ecology*. Hanover, NH: University Press of New England, 1987. 0-87451-416-7

Pielou, E.C. *After the Ice Age: The Return of Life to Glaciated North America*. Chicago: University of Chicago Press, 1991. 0-226-66812-6

Pruitt, Wm. Jr. *Wild Harmony: The Cycle of Life in the Northern Forest*. Saskatoon: Western Producer-Prairie Books, 1983. 0-888-33101-0

Smith, R.L. *Elements of Ecology & Field Biology*. New York: Harper & Row, 1977. 0-06-046328-7

Stokes, Donald W. *A Guide to Nature in Winter*. Boston, Toronto: Little Brown and Co., 1976. 0-316-81720-1

Botany

Brown, Lauren. *Weeds in Winter*. New York: W. W. Norton & Co. Ltd., 1976. 0-393-06Y11-5

Dobelis, Inge. (Ed.) *Magic and Medicine of Plants*. Montreal, Canada: Readers Digest Assoc., 1986. 0-89577-221-3

Erichsen-Brown, Charlotte. *Use of Plants for the Past 500 Years*. Aurora, ON: Breezy Creeks Press, 1979. 09690007-0-7

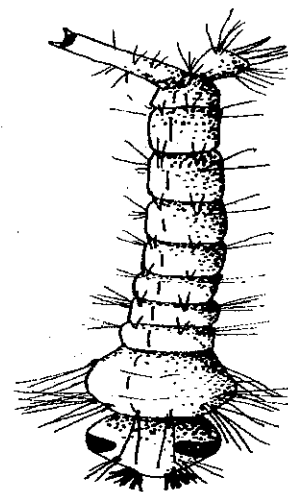
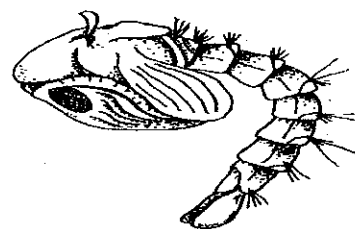
Headstrom, Richard. *Suburban Wildflowers: An Introduction to the Common Wildflowers of Your Backyard and Local Park*. Englewood Cliffs, N.J.: Prentice Hall, 1984.

Hickman, Pamela. "Wise" Series — *Plantwise*. Don Mills, ON: Federation of Ontario Naturalists.

Hickman, Pamela. *Ontario's Flora and Fauna Series — Introducing Flowers*. Don Mills, ON: Federation of Ontario Naturalists.

Hickman, Pamela. *Ontario's Flora and Fauna Series — Introducing Trees*. Don Mills, ON: Federation of Ontario Naturalists.

Hosie, R.C. *Native Trees of Canada*. Rev. Ed. Markham, ON: Fitzhenry and Whiteside, 1990.



Mosquito larva

Jones, Pamela. *Just Weeds: History, Myths and Uses*. Shelburne, VT: Chapters Pub. Ltd., 1994. 1-881527-58-1

Klein, Richard. *The Green World: An Introduction to Plants and People*. New York: Harper & Row, 1979. 0-06-043703-0

Kricher, J.C. and G. Morrison. *Eastern Forests (Peterson Field Guides)*. Boston, Mass: Houghton Mifflin Co., 1988. 0-395-47953-3

Pielou, E.C. *The World of Northern Evergreens*. Ithaca, N.Y: Comstock Publishing Associates.

Roth, Charles E. *The Plant Observer's Guidebook: A Field Botany Manual for the Amateur Naturalist*. Englewood Cliffs, N.J: Prentice Hall.

Scott, Jane. *Botany in the Field: An Introduction to Plant Communities for the Amateur Naturalist*. Englewood Cliffs, N.J: Prentice Hall.

Soper, James and Margaret L. Heimburger. *Shrubs of Ontario*. Toronto, ON: Royal Ontario Museum, 1982. 0-88854-283-6

Stokes, Donald and Lillian. *A Guide to Enjoying Wildflowers*. Boston, Toronto: Little, Brown & Co., 1985. 0-316-81729-5

Stokes, Donald W. *The Natural History of Wild Shrubs and Vines*. Chester, Connecticut: Globe Pequot Press, 1981, 1989. 0-87106-638-6

Zoology

Brewer, Jo & D. Winter. *Butterflies and Moths*. New York: Prentice-Hall (Phalarope Books), 1986. 0-13-108846-7

Cadman, Michael D. et. al. and F.O.N. *Atlas of the Breeding Birds of Ontario*. Waterloo, ON: University of Waterloo Press, 1987. 0-88898-074-4

Dethier, Vincent. *To Know a Fly*.

Forsyth, Adrian. *The Nature of Birds*. Camden East, ON: Camden House Publishing, 1988. 0-920656-65-X

Forsyth, Adrian. *Exploring the World of Insects*. Camden East, ON: Camden House Publishing, 1992. 0-921820-49-6

Forsyth, Adrian. *Mammals of the Canadian Wild*. Camden East, ON: Camden House Publishing, 1985. 0-920656-40-4

Headstrom, Richard. *Suburban Wildlife: An Introduction to the Common Animals of your Backyard*. Englewood Cliffs, N.J: Prentice Hall, 1984.

Hickman, Pamela. "Wise" Series— *Birdwise*. Don Mills, ON: Federation of Ontario Naturalists.

Hickman, Pamela. "Wise" Series — *Bugwise*. Don Mills, ON: Federation of Ontario Naturalists.

Hickman, Pamela. *Ontario's Flora and Fauna Series — Introducing Insects*. Don Mills, ON: Federation of Ontario Naturalists.

Hickman, Pamela. *Ontario's Flora and Fauna Series — Introducing Birds*. Don Mills, ON: Federation of Ontario Naturalists.

Hickman, Pamela. *Ontario's Flora and Fauna Series — Introducing Reptiles*. Don Mills, ON: Federation of Ontario Naturalists.

Lawrence, Gale. *The Naturalist Indoors*. Englewood Cliffs, N.J: Prentice Hall, 1986.

Pyle, Robert M. *The Audubon Society Handbook for Butterfly Watchers*. New York: Charles Scribner's Sons, 1984. 0-684-18151-7

Resendez, Paul. *Tracking and the Art of Seeing*. Willowdale: Firefly Books, 1992. 0-944475-29-9

Roth, Charles E. *The Wildlife Observer's Guidebook*. Englewood Cliffs: Prentice Hall, N.J.

Runtz, Michael. *Beauty and the Beasts: the hidden world of wildflowers*. Toronto, ON: Stoddart, 1994. 1-55046-106-0

Stokes, Donald and Lillian. *A Guide to Bird Behaviour*, Vol. 1, II and III. Toronto, Boston: Little, Brown & Co., 1983/5/9.

Stokes, Donald and Lillian. *A Guide to Observing Insect Lives*. Boston, Toronto: Little, Brown & Co., 1983.

Stokes, Donald W. and Lillian. *A Guide to Animal Tracking and Behaviour*. Boston, Toronto: Little Brown and Co., 1986. 0-316-81720-1

Stokes, Donald W. and Lillian. *The Butterfly Book*. Boston; Toronto: Little, Brown & Co., 1991. 0-316-81780-5

Stokes, Donald W. and Lillian. *The Wildflower Book*. Boston; Toronto: Little Brown & Co., 1992. 0-316-81786-4



Tyning, Thomas F. *A Guide to Amphibians and Reptiles*. Boston; Toronto: Little Brown & Co., ca. 1992.

Wood, Richard H. *Wood Notes: A Companion and Guide for Birdwatchers*. Englewood Cliffs, N.J.

Evans, Howard E. *Life on a Little Known Planet*. New York: Dutton, 1968.

Geology, Astronomy, Weather

Chapman, L.J. and D.F. Putnam. *The Physiography of Southern Ontario. 3rd Ed.* Toronto, ON: Ministry of Natural Resources, 1984. 0-7743-9422-6

Dickinson, Terence. *Exploring the Night Sky*. Camden East, ON: Camden House Publishing, 1987. 0-920656-66-8

Dickinson, Terence. *Nightwatch: An Equinox Guide to Viewing the Universe*. Rev. Ed. Camden East: Camden House Publishing, ON, 1989. 0-920656-89-7

Dickinson, Terence. *Exploring the Sky by Day*. Camden East, ON: Camden House Publishing, 1988. 0-920656-71-4

Tovell, Walter. *Guide to the Geology of the Niagara Escarpment*. Georgetown, ON: Niagara Escarpment Commission, 1992.

THE INTERPRETER'S SOURCELIST

Organizations:

Interpretive Canada is the professional association for Canadian interpreters from coast to coast. Box 2667, Station D, Ottawa K1P 5N7.

Periodicals:

Intercomm

(Ontario Section of Interpretation Canada)

Interp-Edge

(An international journal by Interp-Co.)

Interpscan

(Interpretation Canada and Intercomm)

Interpretation (U.S. National Park Service)

Legacy (National Association for Interpretation, Box 1892, Fort Collins, CO 80522)

Books:

Edwards, Y. (1979). *The Land Speaks: Organizing and Running an Interpretation System*. Toronto: National and Provincial Parks Association of Canada.

Harn, S. (1992). *Environmental Interpretation: A Practical Guide for People with Big Ideas and Small Budgets*. Golden, CO: North American Press.

Heintzman, J. (1988). *Making the Right Connections: A Guide for Nature Writers. Interpreters Handbook Series*. Stevens Point, WI: UW-SP Foundation Press.

Knudson, K.M., Cable, T.T. and Beck, L. (1995). *Interpretation of Cultural and Natural Resources*. State College, PA: Venture Publishing, Inc.

Lewis, W.J. (1980). *Interpreting for Park Visitors*. Boulder, CO: Eastern Acorn Press.

Machlis, G.E. and Field, D.R. (1984). *On Interpretation: Sociology for Interpreters of Natural and Cultural History*. Corvallis, OR: University of Oregon Press.

Mills, E.A. (1990). *Adventures of a Nature Guide and Essays in Interpretation*. Friendship, WI: New Past Press. (Reprint of the 1920 classic).

Regnier, K., Gross, M. and Zimmerman, R. (1992). *The Interpreter's Guidebook: Techniques for Programs and Presentations*. Interpreters Handbook Series. Stevens Point, WI: UW-SP Foundation Press.

Sharpe, G.W. (1982). *Interpreting the Environment (2nd ed.)*. New York: John Wiley and Sons.

Tilden, F. (1967). *Interpreting our Heritage (rev. ed.)*. Chapel Hill, NC: University of North Carolina Press.

Trapp, S., Gross, M. and Zimmerman, R. (1992). *Signs, Trails, and Wayside Exhibits: Connecting People and Places*. Interpreters Handbook Series. Stevens Point, WI: UW-SP Foundation Press.

Veverka, J.A. (1994). *Interpretive Master Planning*. Helena, MT: Falcon Press.

Watts, May. *Reading the Landscape*. New York: The MacMillan Co., 1957. 57-6359

Zehr, J., Gross, M. and Zimmerman, R. (1992). *Creating Environmental Publications: A Guide to Writing and Designing for Interpreters and Environmental Educators*. Interpreters Handbook Series. Stevens Point, WI: UW-SP Foundation Press.

The Interpretation Publication and Resource Center is a comprehensive clearing house for current interpretive materials: P.O. Box 398, North Stonington, CT 06359. Phone: 1-800-328-4772, FAX: (203) 599-3107.

*This list was compiled by Clarke Birchard,
Mike Quinn and Barb McKean.
Your additions are welcome.*

NEW INTERPRETATION TEXTBOOK: A REVIEW

Douglas M. Knudson, Ted T. Cable and Larry Beck. (1995). *Interpretation of Cultural and Natural Resources*. State College, PA: Venture Publishing, Inc. \$35.95 U.S.

Interpretation of Cultural and Natural Resources sets a new standard for interpretation text books. It will swiftly become the leading interpretive manual in academic instruction and wherever interpretation is taught and practiced. In this text we have a successor to Grant Sharpe's *Interpreting the Environment* (1976 & 1982), an excellent textbook, but, in addition to being out of print, a book in need of a thorough update to reflect the many changes and advances in the field over the past 15 years. Knudson, Cable and Beck accomplish this modernization admirably, but they also go beyond Sharpe in providing a theoretical and conceptual niche for interpretation as an interdisciplinary art and science. The book is a skillful weave that incorporates current interpretive research and practice with highly relevant material from such fields as recreation and leisure studies, educational psychology, and communications theory.

"The *raison d'être* of interpretation," the authors tell us, "is to help other people gain a sense of place, to respond to the beauty of their environment, the significance of their history and their cultural surroundings" (p. 6). This statement captures the essence of interpretation and provides a foundation for what follows. The text proceeds from the notion that, "To be an effective interpreter, you need to have a command of your technical field, communications, human relations, learning psychology, and of sensitivity toward people who are in recreational settings" (p. xvii). The contents of the book then, are aimed at providing some of the background necessary to fulfilling those requirements.

The book is durably bound in a hard cover and illustrated throughout with black-and-white photographs. The lack of colour illustrations means that this is not a "flashy" book, but the

use of black-and-white has helped to keep the cost down to \$34.95 U.S. which is very reasonable for a 500 page text. With the exception of an innovative cover that blends natural and cultural history in a native "lizard dreaming" motif, the layout is relatively unimaginative. I found the chapter title pages and page headers gave the book a mediocre look that did not do the text justice. The book includes a good index-something that was absent from some of Venture's earlier texts-and a useful appendix listing a selection of interpretation agencies and periodicals.

The contents are divided into four sections, each of which is further divided into chapters. Section 1: *Interpretation* outlines and defines the field of interpretation and lists the agencies responsible for its delivery. Section 2: *Why Interpret* identifies the value of interpretation to both visitors and host agencies in a variety of settings. This section clearly establishes the social need for interpretation and provides theoretical and empirical evidence of the benefits of interpretation to agency, facility and park management. Section 3: *How to Interpret* is really the nuts-and-bolts of the book. It is comprised of nine chapters covering 225 pages. It begins with principles of learning and applies these to various circumstances and mechanisms of delivery, using both personal and non-personal methods. Section 4: *How to Manage Interpretation* describes the business side of interpretive programming, including: planning, provision of quality service, funding & fees, personnel management and evaluation. A section on volunteers and cooperating agencies is a particularly welcome inclusion. Each chapter has a brief summary of key principles and a complete listing of literature cited.

The strength of this book lies in the blend of theoretical and practical information. This makes it an excellent introductory and intermediate-level text for use in university and college programs (as it will hold student interest), but it also makes the book invaluable to the inter-

...sets a new standard for interpretation text books...

preter-practitioner. Two examples will serve to illustrate my point. First, there is a chapter on writing press releases, public service announcements, doing live interviews and generally relating to the mass media. Not only do the authors present the "how to's", but they buttress their suggestions and examples with contemporary communications theory. A second example comes from the chapter that discusses the role of interpretation in achieving management objectives. The authors cogently present oft-repeated claims related to the value of interpretation in achieving management goals and then they provide a summary of published empirical evidence to support their case. The structure of the book is such that anyone interested in a particular topic (eg. brochure design, first-person historical interpretation, use of multimedia) can turn to that chapter and attain the theoretical background and practical applications.

Perhaps one of the most valuable aspects of this text is its achievement in providing a foundation for interpretation in the field of recreation and leisure studies. This is important for at least two reasons. First, the bulk of interpretative programming is presented to the public in recreational settings and when people are seeking leisure. In other words, recreation and leisure provide the vital context for interpretation. It therefore behooves the interpreter to know something of the current thinking in the field. Second, many students of interpretation study their subject within post-secondary, recreation and leisure studies programs. This text will contribute, reinforce, and supplement concepts to which students are exposed in other parts of these programs. A few other positive aspects of the book include: the balance between cultural and natural history interpretation, the presentation of interpretation as quality service, and the overall portrayal of interpretation as respectable, admirable profession.

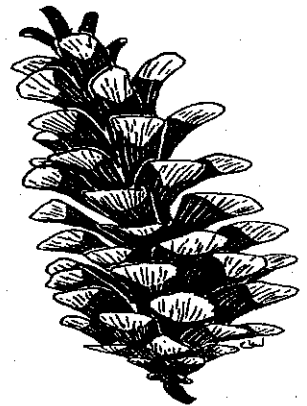
The drawbacks to the text are few, given its intended audience. My primary criticism is related to the lack of Canadian content. The book draws almost exclusively on U.S. examples. Anyone using this as a text in Canada will largely have to supplement or replace the

chapter "Who Offers Interpretation". The book is not entirely without mention of Canadian institutions, but they are primarily of the "addon" variety and not well integrated. (An exception is the generous use of Yorke Edwards' quotes throughout). If the book goes to a second edition, I hope that this deficiency can be remedied. Another weakness is in the lack of consideration of computer applications. There is a section on the use of "gadgets", but the wide ranging role of computers in everything from word processing to desk-top publishing, graphics and display-design merits more comprehensive treatment. Additionally, it would have been desirable to have much stronger attention paid to the history of interpretation (also lack of Canadian content) and presented near the front of the book. The concluding chapter contains some excellent information on the future of interpretation, but the presentation and organization is muddled and difficult to follow. Finally, I would have preferred if the authors chose not to use the word "resources" in the title and so liberally throughout the text. Such usage divides the planet into the two simple categories of people and resources, thus perpetuating the resourcist ideology that much interpretation strives to alleviate.

A well-written book on interpretation should itself be interpretive. (The principles of effective, inspirational, educative communication espoused and presented by the authors is best served if the text itself "practices what it preaches". In this regard I give Knudson, Cable and Beck two thumbs up.) The writing is clear, concise and interesting. The examples are carefully chosen, relevant and meaningful. In the final analysis this is a very good text that should find a home on the bookshelf of anybody that is in any way associated with interpretive services.

For more information or ordering contact Venture Publishing, Inc. 1999 Cato Avenue, State College, Pennsylvania 16801-3238 USA. Phone (814) 234-4561, FAX (814) 234-1651.

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White pine cone

ADVENTURES WITH DOUG: AN INTERVIEW WITH DOT WADE - PRAIRIE BOTANIST

This interview was conducted in Dot Wade's home in July, 1995. It provides a colourful perspective based on memories of "how it was" living with naturalist and teacher, Doug Wade, through some of the exciting years of growth, development, and change in nature interpretation and outdoor education.

Dot Wade celebrated her 81st birthday this year. She lives in a custom-built limestone house on a hillside prairie overlooking the Rock River near Oregon, Illinois. She and her husband Doug had this home built a few years after Doug joined the Faculty in Outdoor Teacher Education, Northern Illinois University in 1964. Doug retired in 1978; he died suddenly a few days after his birthday in 1987.

WIENER: Your husband had a rich background of life experiences, education, and leadership in the broad fields of outdoor education, conservation education, wildlife management, ecology, and nature interpretation before you and he arrived at the Taft Field Campus of Northern Illinois University. We might begin with your sharing some of the background highlights of Doug, the teacher-naturalist.

WADE: One of Doug's earliest remembrances was of his first grade teacher who brought in the first pasque flower of spring. He loved that teacher, and it must have made a great impression on him. Sometime later he had been out roaming around with his friends, and he saw a pasque flower in bloom. He didn't know it by name, and he didn't tell the teacher that he had seen it. This was in 1915 and Beloit, Wisconsin was still a small town where you wouldn't have far to go to the open hillsides, and his family's home was on the edge of town.

I think that Doug did have an early interest in nature...encouraged by his father. His parents had come from England where his father had been active in Scouting. In Wisconsin, the family did a lot of camping. In the summers they would go up near the Boundary Waters

and camp. They loved to fish, but nobody ever hunted.

Doug graduated from Beloit College which is a small private liberal arts school. He had always intended to be a biology major and become a high school biology teacher. There were two professors at the college who had a profound influence on him. Dr. Brody was a biologist, and Dr. Welty was an ornithologist. It took Doug eight years to finish four years of college. He started at the University of Wisconsin in Madison as a freshman, but had a serious accident and didn't get to take exams. He quit school during the worst part of the Depression and ended up in Florida, Washington, and California in various jobs before running out of money and coming back to Beloit. He was a bit more grown up then, and serious, having been through some bad times. He was 23 and reenrolled in college, and that is when he met Professor Welty.

WIENER: How did Doug get to the University of Wisconsin for graduate studies?

WADE: A friend who had been at Beloit College was in Madison, then, and told Doug about Aldo Leopold becoming the Chair of a new graduate program in wildlife management in the College of Agriculture. Doug was quite thrilled about it because he was already familiar with Leopold, having read his recently published book (*Game Management, 1933*). Doug went for an interview with Leopold for a fellowship, and was accepted to begin in summer, 1935.

WIENER: We'll come back to your time in Madison, but please continue with Doug's career.

WADE: When Doug left Madison, it was to take a position with the Pennsylvania Department of Conservation to do research on fur-bearing animals. His next position was at the University of Missouri where he taught mammalogy and wildlife management, and he

also managed a wildlife area. In 1943, we left for Hanover, New Hampshire, where he became Naturalist-in-Residence at Dartmouth College. It was at the same time that Robert Frost was Poet-in-Residence, and they also had an Artist-in-Residence. It was during the war, and there was a Navy unit there, and he taught map reading and survival swimming. While there was already an Outing Club that focused on recreation, Doug started an Ecology Club. When Dartmouth closed out the in-residence positions in 1951, he had to look for another position. He had been a summer instructor for the New Jersey School of Conservation, working with in-service teachers. He was hired as the director, but that was a disaster year as he was involved in a desk job with too much politics. We stayed only one year and then went to Clemson University in South Carolina where Doug taught mammalogy and zoology, and managed a huge wildlife area. After three years, he was persuaded to become the information and education director for the South Carolina Department of Natural Resources.

Our next move was to Des Moines, Iowa, where Doug became editor of the Soil and Water Conservation Journal for the Soil Conservation Society of America. Then, in 1960, we made another move. We became landed immigrants in Saskatchewan, and Doug was in charge of information and education for the Department of Natural Resources.

WIENER: Any particular memories you have of living in Regina and being in Saskatchewan?

WADE: I loved it! I just went wild over it because the people were such nature lovers. There were older people who didn't care how cold it was, and you wondered how they could stand it. Most of them had a British background, and I had always known that the British were fond of nature...from way, way back. Through the Natural History Society of Saskatchewan, we went on outings with them and overnights in tents. Doug became president of the organization and began writing their newsletter.

Doug was very busy with his job. He was working with Jack McKenzie and others, as

school camping and teacher workshops were just getting started. He was also developing nature trails and writing self-guided trail manuals for the provincial parks. He hired another person to explore canoe routes and write manuals for them. His boss thought he was nuts. They were working hard on developing tourism to get Americans and Canadians from eastern provinces to come to Saskatchewan, and his boss thought nobody would come canoeing in Saskatchewan!

Once when we went up to Churchill, I remember that Doug was a bit critical of the town dump and where trash was being thrown in an area of beautiful wild orchids. He published something about it and then got a nasty letter from someone saying "those Americans should tend to their own business and leave us alone!"

WIENER: You left Regina and came to Taft Campus in 1964. Why do you think that Doug was interested in applying for the faculty position at Northern Illinois University?

WADE: Well, it just sounded fantastic! He had attended a national meeting in Michigan where he met the university president and the director of the field campus, and he heard what was happening there. We loved Canada, but we just didn't want to be landed immigrants forever. Doug was 55 by then and looking at his future. It seem that we shouldn't stay in Regina too much longer.

WIENER: We've covered a lot of history, but let's get back to the time when you met Doug at the University of Wisconsin in Madison...and fell in love. What was it like in that setting in the mid-30s with Aldo Leopold as Doug's primary mentor?

WADE: Remember I told you that Doug went for an interview with Leopold. It went fine, and he was thrilled to be accepted. I think that the work he had done on banding chimney swifts impressed Leopold, and the fact that he had been selling osage orange wood to archers for bows made an impression-Leopold's wife was the state champion woman archer.

Leopold was a fascinating person, very polite, very dignified, and very polished...a

perfect gentleman. He was so nice to you that you would just respond. He was educated at Yale University in forestry, and his first position was as a forester in New Mexico where he met his wife. He came to Madison as director of the Forest Products Laboratory. I remember that I was taking landscape architecture courses in the horticulture building, and our professor said there was a new, exciting professor that the university had hired and that we should pay attention to him. That impressed me, and then when I met Doug and found that he was Leopold's graduate student...wow! At that time, the university respected Leopold, but I don't think that he was widely known. He had not done much writing previously, but at Madison he was writing lots and lots of journal articles. All of the chapters in *A Sand County Almanac* (1949) had been his journal articles, and it was published the year after his death.

WIENER: Were Leopold's ideas generally accepted? Did he see the world differently from other professionals?

WADE: He had arguments with the Wisconsin Department of Conservation. He thought one thing and they thought another. Things like predators. They thought that they should be shot, and he didn't think so. He thought the issue was habitat, not predators. He was asked to publish a book on natural history in the mid-40s. He included his ideas on ecology, but the publishers said nobody would ever buy a book with all of that ecology stuff...it would be too boring. They liked the natural history, and if he would take out the ecology, they would publish it. There was no way he would do that.

Doug was learning a great deal from Leopold. It was hitting him like a star exploding, or a bomb. Doug read an awful lot, and Leopold would give his students natural history book references. All of the writings about ecological concepts and relationships were new to Doug. It was like awakening to another way of looking at things, and you could never be the same after that.

WIENER: Did Doug keep in touch with Leopold after he left Madison and took all of those various positions?

WADE: Yes, I kept all of their letters, and I gave them to the University of Illinois archives. Doug accompanied him on many of his lectures, and one semester did his slides for him. That way he heard all the lectures. Sometimes Leopold would be depressed and think that he was not getting his message across. Doug thought that was crazy. He felt that he was a marvellous speaker and that audiences loved him. He would later see Leopold at national conferences every year.

WIENER: Let's move to another topic. What was it about Doug's teaching style that made him such an effective interpreter? What turned students on to Doug?

WADE: There was just something about his personality. He was so friendly, and he had a kind and gentle approach that made it easy to meet him. And then, it was comfortable to talk with him and not threatening like some professors might be. So, people might be willing to listen to his ideas and engage in his teaching activities.

WIENER: When Doug went on field trips, he had a way of getting students involved. What do you remember about those trips?

WADE: He wanted people to enjoy observing and see the beauty in things. And then look at some of the problems of what was happening to the land and the natural environment...problems such as erosion and habitat destruction. He would pose questions to get them to observe more closely and to think about consequences. And for the teachers in his classes at Taft Campus, he wanted them to do projects that they could use in their own classes. If a teacher said to him, what do you want me to do to get a grade of "A," he'd lose his mind. He didn't want them to do something for him, he wanted them to do something that would be useful for them.

WIENER: Did Doug know his natural history?

WADE: Oh, yes. He read prolifically, and he had a fantastic memory. He was an avid reader and knew so many things about subjects in natural history. Students realized that no matter where they were coming from or what

kinds of backgrounds, they could get so much information from Doug. And he would help them extend their learning...where to go for further information and how to proceed with a project or problem. But it took a certain kind of student to respond to that approach, and other students might get turned off. He wanted his students to think through problems. And he didn't want them to use the library to look things up before his field trips. After they had experienced the real world, then they could go to the library.

WIENER: It always seemed to me that you and Doug were very much a team. How did that work? You the botanist and he the ecologist.

WADE: I always felt lucky that we were interested in the same things. What he liked to do, I liked to do; and what I liked to do, he liked to do. He was a better birder, and I might have been a little better at plants. We could go anywhere outdoors, anytime, and have a marvellous adventure together because of our interests. We enjoyed meeting the same kinds of people. Wherever we went, we could always find a nature club or birding group. We liked mountain climbing, we liked canoeing, and wherever we were, our interests seemed to focus together on nature and the outdoors.

I always enjoyed the classes he taught at Taft Campus, and going with the students on field trips. Doug felt that he needed me on the trail. I could always add a little more to the class with my botany and natural history background. Two people in the same field might have had an ego problem, but it didn't bother me that he was more outgoing. We worked together, and I was happy to be at the end of the line and follow him around. I think that is why I married him. He promised to take me camping! I think that if I had my own professional career, then there might have been conflicts, but that wasn't the case. Doug could always depend on me to help out with things that students wanted to know about plants.

WIENER: Dot, I have often heard you say that Doug was ahead of his time. What does that imply? And what do you think has been Doug Wade's legacy?

WADE: I remember when we were in Iowa in the 50s. One time, the Dean of the agriculture school at the university in Ames called Doug to come up from Des Moines to explain what all of this preservation stuff was about. Doug had written a chapter in a book for Iowa teachers. He was stating what he believed about habitat and preservation, and the Dean wanted to gain a better understanding of his ideas. Now, today, everyone is writing about prairies and restoration. It seems like environmentalists are doing what Doug did 20, 30, or 40 years ago. He was talking environmental ecology, and doing it before it became popular!

His legacy? I don't know. People thoroughly enjoyed courses with Doug, and many students were devoted to him. There is a long list of students who were at Taft Campus who admired Doug. I think that an informal place like Taft lends itself to forming relationships and friendships, and to forming lasting bonds. His legacy might be summed up in the words on a bronze plaque at Dartmouth College. In June, 1988, the year after he died, they had a memorial ceremony honouring Doug, and the plaque was placed in Robinson Hall. Here is what it says:

REFERENCES

Leopold, A. *Game Management*. New York: Charles Scribners, 1933, p. 480.

Leopold, A. *A Sand County Almanac*. New York: Oxford University Press, 1949, p. 226.

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IN MEMORY

**DOUGLAS EDWARD WADE,
1909-1987
Naturalist-in-Residence,
1943-1950**

Through precept
and example

Doug Wade instilled
ecological awareness
in Dartmouth minds.
His field trips sparked
life long interests and
productive careers.

He was a pioneer
environmentalist.

Doug's was a voice
in the wilderness
for the wilderness.

We are inspired by his life
and work. His vision of
enlightened stewardship
of earth's resources
is our goal.

TEACHER
MENTOR
FRIEND

How did it all begin?

For me, my career as a "naturalist teacher" was initially formed on childhood rambles with my family in Scotland. Memories flood back of moments which initially inspired and subsequently sustained my love of the natural world. Bats fluttering low overhead, geese migrating from the tundra of Russia, a fawn lying quietly in the dappled light of a spring woodland, or the shimmering spectacle of northern lights: all played their part. But what made those moments such formative and connective events? It was the role my father played, as a sensitive and romantic interpreter of nature. He caught my interest and transformed it through the opening of my senses to the rhythms, smells, and patterns of the life which surrounded me. With gentle coaxing he encouraged me to explore and appreciate the beauty of each new experience. In doing so, he touched my soul.

REFLECTIONS OF A NATURALIST TEACHER

Sharing my love of nature with others began at Camp Kandalore where I was employed as a camp naturalist. Under the guidance of Kirk Wipper, I learned the art of legend and history as tools connecting observers and the natural world. Kirk, with his knowledge of plants and their uses by peoples of the first nations, developed in me a sense of connections. As he walked the woodlands, he constantly created an interest in, and gave relevance to, the natural world — in an almost mythical way. The fact that several leaders in outdoor education in Ontario over the years (Jim Raffan, "Jake" Fallis, Norm Lightfoot, Craig MacDonald, Grant Linney, to name a few), passed under Kirk's spell, is no surprise.

Then it was Algonquin Park and Grant Tayler. In the surroundings of this flagship of Ontario parks, my daily life was touched by others enthused by the same desire to share the wonders of the natural world with park visitors. Grant Tayler was the master interpreter, who gave structure to much of what is known as "parks interpretation" today. It was he that developed in me a sense of "threads." The process by which people weave a variety of experience into a single image, or memory, is often dependent upon the ability of an interpreter to link and give a unified view of observed phenomena, the threads, as part of a wider picture. Each thread, or experience, has its own distinctive shade and colour. Until those attributes are woven by an artist, they have little meaning for the uninitiated. It is the weaving of the individual strands into the final image that gives meaning and connection to the individual observer; the process of discovery and understanding that creates the sense of wonder. Naturalist teachers are privileged to explore daily with others the never-ending miracles of living tapestries, woven over the countless millennia, that make our tiny planet such a special place to be.

Since those early days, I have been truly blessed in the ability to pursue a career in outdoor education that now spans more than 30 years. During that time, I have worked with a superlative group of colleagues in the best of all undertakings. Over those years and through those associations, I have come to feel that there is no greater challenge facing educators today, than developing with students a sense of place. This is what natural interpretation strives for.

It was Rachel Carson who mused on the

role of acts as the "seeds" which later in life produce knowledge and wisdom. If that is the case, then it is through the "soil" of the senses and emotions that these seeds are nurtured and brought to full fruit. The process must be one of discovery and understanding gained through first-hand involvement and observation. And childhood is the time to begin the planting and development of the soil.

Today, more than ever, as society becomes increasingly urban in its patterns of community organization, individuals must have contact with their roots. We are of the earth, not simply on it, during our life! Winston Churchill once said, "First we shape our buildings, then our buildings shape us." As society moves into a world of greater technological advances, we are in danger of losing our view of ourselves as biological beings on a living planet. Natural interpretation is a method of re-establishing positive contact with mother earth. By seeing, touching, smelling, and hearing the natural world, one becomes less fearful and more respectful of the complex systems that we depend upon both for physical and spiritual nurture. Ultimately, it leads to adults who through awareness, gain the knowledge, values, and skills with which to address the problems that confront a view of the planet centred upon the desires of *Homo sapiens*. Natural interpretation gives rise to a sense of wonder and confidence, not one of despair.

My career has taught me two things above all others. The first is the never-ending joy of discovery that children possess. They are not born afraid, but rather inquisitive and receptive to the stimulation of life which surrounds them. Exploration is the tool by which they learn. The naturalist teacher works, in the finest of classrooms, with the most fertile soils of the mind. Secondly, the colleagues and professionals with whom I have had the pleasure of learning and working, are ready and keen to assist students to discover the seeds of knowledge that surround them at every turn. They are a powerful team of committed teachers with the skills and understandings to open the mysteries of the planet for those who are ready to explore them.

The world is a wonderful place to be. Allow the children to find that truth too, and the future will be assured.

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