

# HOW A LAND USE ETHIC WOULD AFFECT THE INTEGRITY OF THE FOREST RESOURCE

An address given at Selkirk College, Nelson, B.C.,  
to a meeting of British Columbia professional foresters

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(Robert Harrington is author of "To Heal the Earth," and  
"Testimony for Earth: A Worldview to Save the Planet and Ourselves.")

## Selected Quotations from Robert Harrington's Address

*Looking at our ecological attachments even more broadly it is quite evident that we are mining not only today's forests but are also mining the forests of antiquity. Tonight, there are hundreds of petroleum carrying tankers at sea. Each one of them is laden with the residues of the oldest death on earth - the death of the primordial forests that grew in the infancy of the planet. Oil tankers, like logging trucks, are in the business of transporting the final remains of forests. Tonight, you drove here in a vehicle propelled by the distilled juices of those ancient forests which were delivered by an oil tanker, to a modern crematorium called a refinery. We live in a world where everything is connected not only in the three dimensions we commonly think of, but also in the fourth dimension we call time.*

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*Even scientists studying the complex problems of our times are saying that the responsibility of individuals to the public interest must supercede responsibility to any organization. They contend that the basic status of a citizen in a democracy makes clear the expectation that an individual will not quietly go along with company or government policy if it is illegal or unjust. Reference has been made to the important Nuremberg decision that came into effect in the trials following World War Two. The Nuremberg decision said that the defence of "just following orders" was not acceptable.*

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*Obviously, modern logging has no relationship to the real meaning of the word integrity as it appears in the [B.C. Professional Foresters'] Code of Ethics. Equally obvious is that one of two things should happen. Either a radical change should be made in modern forestry to preserve the integrity of the forest resource, or the Code of Ethics should be changed so that it would not pretend to a nobility of purpose that is so obviously ignored in practise.*

In accepting an invitation to speak tonight on the subject of a land use ethic, or more simply of a land ethic as I shall refer to it, I realized that there might be certain parallels between Daniel walking into a lion's den and my own appearance before this group. Before commencing on the topic, I will attempt to show you the perspective from which I shall try to approach it. Foresters, I assume, are very much like other people. There are an unpredictable number who feel that what they are doing is exactly right and that any suggestion of a change to the status quo is unwelcome. Another group, possibly the largest, will feel that the present pattern of activities is acceptable but will also allow that there is always room for improvement. And there is probably a third group that will be unhappy and will feel there is a genuine need for substantial improvement.

My own views will naturally clash with the views that some of you hold. They will seem reasonable to others; and to some they may seem to be in keeping with the long-term sustainability of the forests and of the planet as well.

However, I am very impressed about one thing; namely that we are here tonight for the purpose of discussing ethics. We know, intuitively at least, that the changes taking place in our society are progressing at a dangerous speed. To protect ourselves, mainly from ourselves if we think about it, we are starting to think about restraints. These restraints, known as ethics, are meant to put boundaries on our behaviour or to let us know that there are points beyond which we cannot go. We use restraints regularly - restraints such as seatbelts, governors on motors, brakes on cars, railings on stairs. The use of a land ethic to govern our behaviour toward land is probably nothing more than an evolutionary need. Hopefully, we are in the first stages of moving off on a newer, better path.

For many years we have been hearing warnings about human behaviour. H.G. Wells claimed that, "Human history becomes more and more a race between education and catastrophe." When Mahatma Gandhi was asked what he thought of civilization, he pondered deeply for a few moments and then answered, "It would be nice."

Of course, Gandhi's observation cannot really be faulted. Living in a world where nuclear powers speak of their arsenals in terms of overkill and keep escalating their might so that they move from having enough explosive power to kill everyone in the world ten times over, to twenty, thirty and forty times over; it does become difficult to make a claim for having a civilized world.

We can look at our chemical industry in a similar fashion. Recently the U.S. Environmental Protection Agency published a statement that pesticide pollution is the most urgent environmental problem in the U.S.A. Steven Schatzow, chief of the EPA's Pesticide Division stated:

Pesticides dwarf the other environmental risks the Agency deals with. The risks from pesticides are so much greater because of the exposures involved. Toxic waste dumps may affect a few thousand people who live around them. But virtually everyone is exposed to pesticides.

I don't know how many of you have read T.S. Eliot's poem, "The Hollow Men." It concludes with the lines, "This is the way the world shall end: Not with a bang, but with a whimper." So, if the nuclear threat is the Bang, then pesticides or hundreds of other toxic chemical substances may prove to be the Whimper.

The simple fact though, is that almost all our various problems are focused on the ethical dilemma in which we live. I would like to quote E.F. Schumacher, the late Rhodes Scholar and economist, who called specific attention to the lack of an ethical base in today's society.

In ethics, as in so many other fields, we have recklessly and wilfully abandoned our classical-Christian heritage. We have even degraded the very words without which ethical discourse cannot carry on, words like “virtue,” “love,” and “temperance.” As a result, we are totally ignorant, totally uneducated in the subject that of all conceivable subjects, is the most important. We have no ideas to think with and therefore are only too ready to believe that ethics is a field where thinking does no good. Who knows anything today of the Seven Deadly Sins or of the Four Cardinal Virtues? Who could even name them? And if these venerable, old ideas are thought not to be worth bothering about, what new ideas have taken their place?

At present there can be little doubt that the whole of mankind is in mortal danger, not because we are short of scientific and technological know-how, but because we tend to use it destructively, without wisdom. More education can only help us if it produces more wisdom.

It is not unusual today, if one brings up the subject of ethics to hear the statement made that there are no ethics - that ethics are totally relative - and that when one speaks of ethics, the best question to ask is to say, “Whose ethics?” In other words, ethics as a viable area of thought is very frequently dismissed. This view is often held in the business world.

As Fritjof Capra states in his recent book, The Turning Point:

Many corporate leaders, in fact, believe that corporations are value-free and should be allowed to function outside the moral and ethical order. This dangerous notion was expressed quite candidly by Walter Wriston, who chairs Citibank, the second largest bank in the world. In a recent interview, Wriston made this chilling comment: ‘Values are topsy-turvy ... Now college students have a mixed dormitory, men live on one floor and women on the next, and they all sit around worrying about whether or not General Motors is being honest...I believe that there are no institutional values, only personal ones.’

It is also not unusual today to dismiss the ideas of antiquity and to claim that they have no effect upon us because we are living in a new age, an age of rapid communication and transportation, an age of sophisticated technology, wherein the only ideas of relevance are ideas that originate in the modern culture. You probably remember statements made not many years ago that no one over thirty is to be trusted - that dates from the age of the flower children in California. As parents some of you have probably experienced your children’s ideas that you are hopelessly old-fashioned and that the judgments of the peer society are the only judgments that matter.

So, to avoid the charge of being hopelessly old-fashioned, we will look for a moment at the subject of ethics from the standpoint of a couple of textbooks published in the 1980’s.

In one such book, five different grounds are established for the identification of ethical outlooks upon life. You will probably find that you interchange these grounds indifferent situations. You may even find that you use different grounds in different parts of your life - - for example you may apply one ethical outlook in your own home, another in your daily business with the outside world, and still another when you think of yourself as a professional forester.

The first of these ethical approaches is one that we all share to some extent; however, one philosopher claims that we don’t cultivate this ethical stand to the extent that we should. It is called ethical intuitionism and has to do with what we sometimes call a “gut feeling” about a thing or situation. It is also referred to as “moral intuition,” and sometimes as “conscience.” In one place in

the Bible, it is referred to as “the still small voice” that is within you. This is the voice you hear when you find someone’s wallet lying in the middle of the street. It is the voice Glen Masson heard - and listened to - when he recently turned over a winning lotto 6/49 ticket worth \$3.78 million to the rightful owner, when he could have just as easily claimed it as his own and no one would have known.

Another ethical view is called the “Deontological” view and it affects you if you subscribe to a set of moral principles that forbid you to lie in any situation. Your wife for example may appear in a new dress, sporting a new hairdo, and ask, “How do I look?” Regardless of how you really feel, your moral intuition tells you that the most important thing to do is to reassure her and make her feel that she looks very nice. If your ethical stance is a deontological one which forbids you to lie, your answer will not be based on any desire to protect her or to spare her feelings. Your answer will be based solely on the moral principle you hold, that you must not lie in any situation. You may say, “hideous,” and be in the doghouse for a very long time; or you may be “political” in your answer, saying “fantastic,” and assume that your wife will interpret the word in one of its meanings while you may be thinking of one of the less flattering definitions of the word. You might reassure yourself that you answered in an appropriate manner and that “fantastic” is a true answer even though you meant grotesque, but in this instance you have hedged on your own principles. A person adept at this sort of thing should probably be thinking of moving out of practical forestry and into the Ministry.

A third ethical outlook is known as the Divine Law approach. With this approach a person accepts injunctions laid down by a presumably higher or divine authority, rules such as the Ten Commandments. A person in the forestry business who subscribes to such a moral code might have to skip the second chapter of the book of Genesis where we are told that the principal reason for putting Adam and Eve on earth was to “Dress and keep the Garden.” It seems unlikely that D-9’s and feller-bunchers would fit well into a Garden of Eden philosophy.

A fourth approach to situations is known as ethical egoism, and it is based on one simple question: “What’s in it for me?” It is a very self-centered way of looking at the world and is not common to an extreme degree in very many people. Even in the situation of the wife and new hairdo there would be no moral onus to consider her feelings. If in your particular mood of the moment, your self-interest was best served by giving a flattering response, the entire motivation would still be that core of self-interest which is at the heart of every situation. In the case of the wallet or the lottery ticket, a person who makes moral decisions by asking, “What’s in it for me?”- would obviously claim both as her or his own. In general, this outlook is referred to as one which is often held by the very young but is usually grown away from as the person matures.

The last outlook I will cover is known as utilitarianism or the utilitarian ethical outlook. It is reported to be doing very well on planet earth at this time. Utilitarianism recognizes that people in general seek things such as pleasure, happiness, wealth, power, knowledge and social prestige. If you are a utilitarian your ethical responses will be those that promote or maximize these norms or values. There is a problem here, in that short term values often topple long term considerations and qualities that cannot be easily measured are often traded off for others that can be quantified and recognized as giving immediate pleasure. With this viewpoint it becomes easy to sacrifice fresh air for present energy needs, or fresh water for its ability to hide, dilute or absorb pollution in various ways. In a similar manner, soil can be mined through excessive fertilization and irrigation to

promote maximum yields now, without consideration of the subtle effects of long term degradation. I am sure you can see how our present method of forest management fits into the utilitarian outlook.

At the extreme end of utilitarianism is the concept that the most important goal in life is pleasure and everything must fall before that goal. People with such a view are known as hedonistic utilitarians.

Let's go back to the thoughts of Schumacher's that we spoke of earlier. In particular, let's think about his idea that we are in mortal danger "not because we are short of scientific and technological know-how, but because we tend to use it destructively, without wisdom." That we are not employing wisdom in our actions is evident in the fact that we make light of many serious warnings about the danger our actions are having on the life support systems of the planet. It is easy to dismiss these ideas by calling those who vouchsafe them "prophets of doom." Some people scoffed many years ago when an eminent scientist suggested seriously that Homo sapiens be added to the I.U.C.N.'s red list of endangered species. Some people have also scoffed at the detailed studies of such scientists as the Ehrlichs, Barry Commoner, Gordon Rattray Taylor, Dr. Samuel Epstein and others who claim that we cannot survive unless we address environmental problems.

Many people scoff, even today, at the thousands of peace marchers who fight one way or another against nuclear insanity.

Yet these same people would feel just a tiny bit uncomfortable if they had several tons of fused dynamite in their basements. What we don't realize consciously, as one commentator expressed it:

"Is that when we stopped worshipping the old values we substituted two powerful new gods, technology and profit, and we have never deviated for one instant in our slavish devotion to these two marketplace idols. We never question that we should do anything, as long as it is profitable and technologically possible."

To tell the truth, there is no possibility of an effective land use ethic as long as we think the way we do. Anyone objectively looking at the pollution of the oceans, or of fresh water, or the pollution of the skies or at the ruthless assault on earth that characterizes the forest industry today, can see that our society has no land ethic.

In fact, people at all levels are beginning to recognize this fact. The truth of this is born out by an April 27th, 1987 report of the United Nations sponsored World Commission on Environment and Development which stated:

"Humanity's inability to fit its activities into the patterns of the clouds, oceans, greenery, and soils of the earth is changing planetary systems, fundamentally. Many such changes are accompanied by life-threatening hazards. This new reality, from which there is no escape, that we must fit our activities to the limitations of the planet, must be recognized - and managed."

The 21-nation committee expressed strong hopes for growth based on policies that sustain the environmental resource base, but also said: "the Commission's hope for the future is conditional on decisive political action now to begin managing environmental resources to ensure both sustainable human progress and human survival."

In regard to land itself, the committee said the following:

“Each year another 6 million hectares of productive dryland turns into worthless desert. Over three decades this would amount to an area roughly as large as Saudi Arabia. More than 11 million hectares of forests are destroyed yearly, and this, over three decades, would equal an area about the size of India.”

Speaking also of the death of forests and lakes from acid precipitation, and of the increase of atmospheric carbon dioxide, of the destruction of the ozone layer and the toxic substances in the human food chain and of the increasing amount of these toxic substances entering ground water beyond reach of cleansing, the World Commission admits that it is impossible to separate economic development issues from environment issues.

What we are looking at in this report of the World Commission is a simple statement of the fact that we must have a land ethic. It is also a statement of the fact that we presently don't have one. I think it is important to realize that the term land ethic has to refer to land, water, soil, air, indigenous life of all kinds. We live in an interwoven, intermeshed biological whole that in inconceivable ways we don't even begin to understand.

The prestigious biologist Paul Weiss put it this way:

“We can assert definitely on the basis of strictly empirical investigations, that the sheer reversal of our prior analytic dissection of the universe by putting the pieces together again, whether in reality or just in our minds, can yield no complete explanation of the behaviour of even the most elementary living system.”

John Muir made an unforgettable statement about the interlinking of nature when he defined ecology as pulling up a dandelion and finding that everything else is attached.

The fact of the matter is that we do live in a world where everything is attached to everything else. We fail to realize that what is happening to the seas, the lakes and streams, the air, the soil, and likewise the forests, is also happening to us. In 1964 the World Health Organization determined that environmental factors cause 60 to 80% of all cancers. Many scientific bodies have since concurred. More recently, upon sober analysis, the president's Toxic Substances Strategy Committee, representing 18 federal agencies in the U.S.A., reported that 80 to 90 percent of all cancers may be environmentally caused.

Looking at our ecological attachments even more broadly it is quite evident that we are mining not only today's forests but are also mining the forests of antiquity. Tonight, there are hundreds of petroleum carrying tankers at sea. Each one of them is laden with the residues of the oldest death on earth - the death of the primordial forests that grew in the infancy of the planet. Oil tankers, like logging trucks, are in the business of transporting the final remains of forests. Tonight, you drove here in a vehicle propelled by the distilled juices of those ancient forests which were delivered by an oil tanker, to a modern crematorium called a refinery. We live in a world where everything is connected not only in the three dimensions we commonly think of, but also in the fourth dimension we call time.

The forests that are being torn asunder by modern technology are also related to that phenomenon we call climate. Climate in turn is related to the fact that deserts are following in the footsteps of man at the rate of 6,000,000 hectares per year. Forests are, of course, known as stabilizers of climate. This has been understood for many years and I could give many examples. I will mention just one and ask you to think of our local weather experiences of the past few years, in relation to

this description. I am reading this excerpt from a paper presented to the Connecticut Academy of Arts and Sciences, in the year 1799:

From a careful comparison of data; it appears that the weather, in modern winters, (in the United States) is more inconstant than when the earth was covered with wood at the first settlement of Europeans in the country; that the warm weather of autumn extends further into the winter months, and the cold weather of winter and spring encroaches upon the summer; that the wind being more variable, snow is less permanent, and perhaps the same remark maybe applicable to the ice of rivers. These effects seem to result necessarily from the greater quantity of heat accumulated in the earth in summer since the ground has been cleared of wood, and exposed to the rays of the sun; and to the greater depth of frost in earth in winter, by the exposure of its uncovered surface to the cold atmosphere.

Detailed recent studies show that clearing land increases runoff and decreases evapotranspiration in comparison to still forested land in all seasons of the year. Thus, deforestation changes the water-bearing characteristics of the land, and when on a large scale, of the climate as well, we are certainly robbing future generations for today's short-term profits.

I hope that this example might help to indicate how inextricably land use and ethics are related, particularly because a real ethics is not a matter of short-term thinking.

Let's face it. Right now foresters are up against a storm of public disapproval. The ethical intuition of the public is stating clearly that what it is seeing of forest land use is horrible. The Forest Minister's news release of Sept. 15, 1987 points out that automation is one of the causes of the loss of thousands of jobs. While mechanization may make a few millionaires, it will leave many other as paupers. The public, in short, is also suffering from employment loss, the root cause of which is maximization of profit for big industry. There is no ethic either toward land or toward workers. This must change for two reasons; workers need the dignity of jobs and land is too precious to be abused. A new era in forestry must begin; one that is life-sustaining toward land and one that sustains society through meaningful employment.

Most people recognize that the world appears to be moving from one crisis to another. How aptly the Chinese have symbolized the word crisis as providing either danger or opportunity. Here at home the wonderful cornucopia of North American resources is almost empty. We have mauled the continent nearly to death and now are belatedly beginning to realize that something was done wrong. The unfortunate truth is that too many things have been done wrong in one way or another. We are recognizing the meaning of "sin in haste, repent at leisure!" We have a great and wonderful technology in some ways, but we have left technology in swaddling clothes, and now that it is an overgrown specimen and still hasn't become house-broken we are living in a sea of choking, toxic wastes that are literally threatening to kill us.

It is no longer simply the case that we should have some sort of land ethic. It is no longer simply the case that we should respect nature more than we have. To put it in the vernacular, there is increasing evidence that we must "shape up or ship out." On the prairies some farmer's wives, according to the National Farmers Union, are describing themselves as chemical widows, their husbands having died from one or another agricultural chemical. The Senate Standing Committee on Agriculture, Fisheries and Forestry has said that soil erosion is a national problem requiring national attention. It has urged that environmental education take place in schools from primary grades through

secondary school, and it says that the time is now. The chairman of that committee says that what we have now is not conservation but conversation.

Even scientists studying the complex problems of our times are saying that the responsibility of individuals to the public interest must supercede responsibility to any organization. They contend that the basic status of a citizen in a democracy makes clear the expectation that an individual will not quietly go along with company or government policy if it is illegal or unjust. Reference has been made to the important Nuremberg decision that came into effect in the trials following World War Two. The Nuremberg decision said that the defence of “just following orders” was not acceptable.

I would like briefly to trace a few of the ideas that have been presented in favour of a land ethic, ideas from modern times as well as those that were developed long ago as reflective individuals saw the impact of human desires on the planet. A well-known biologist, Charles S. Elton, aware of the increasing assault of modern industry on the planet, advised in 1958:

“From now on, it is vital that everyone who feels inclined to change or cut away or drain or spray or plant any strip or corner of the land should ask three questions: what animals and plants live in it, what beauty and interest may be lost, and what extra risk will changing it add to the accumulating instability of plant and animal communities.”

In truth the concept of a land ethic can be traced back considerably farther than modern times. For example, two of the Old Testament prophets, Isaiah and Ezekiel, taught that it was both immoral and unprofitable, in the long run, to despoil the earth.

I'm afraid, in all seriousness, that we who think we are so practical, are among the most impractical people in history. I say that we are impractical since we have chosen to eliminate from our thought the collective wisdom of great minds which, it is now being made evident, had a much greater consciousness of the earth and of all life than we have today. I note even in the B.C. Professional Foresters code of ethics, that there is a statement, which if interpreted holistically, would do much to help in the cure of environmental problems. It is this:

“He will endeavour to keep well informed in his field of knowledge and will engage in such a field only when his training and ability render him professionally competent.”

What I mean about a holistic interpretation is simply this - when you are working with the natural world you are working with a complexity so vast that it does require the development of knowledge about as many as possible of the phenomena we sometimes call the “web of life.”

The greatest among the Roman emperors is sometimes considered to be Marcus Aurelius. It is interesting, in speaking of the web of life, to consider a quote from his Meditations, one of the very famous pieces of literature that is considered a classic even today:

“Always think of the universe as one living organism, with a single substance and a single soul; and observe how all things are submitted to the single perceptivity of this one whole, all are moved by a single impulse, and all play their part in the causation of every event that happens. Remark the intricacy of the skein, the complexity of the web.”

I would like to comment that modern quantum physics and systems biology are arriving at conclusions very similar to those intuited by Marcus Aurelius.



Even in his time the scorched earth policy was applied in warfare, and it was not unusual for invading armies to ravage the land. Later in the Meditations, he wrote:

I travel the roads of nature until the hour when I shall lie down and be at rest; yielding back my last breath into the air from which I have drawn it daily, and sinking down upon the earth from which my father derived the seed, my mother the blood, and my nurse the milk of my being - the earth which for so many years has furnished my daily meat and drink, and though so grievously abused, still suffers me to tread its surface.

Most of you probably know that the great modern statement concerning a land ethic was made by a forester. In fact, Aldo Leopold's, Sand County Almanac, published in 1949 has been referred to as a modern classic. What is quite interesting about Leopold is that his convictions about the necessity of a land ethic evolved during his career as a forester and were not put into words until shortly before his death. Leopold died fighting a brush fire on a neighbour's farm, shortly before his book was published.

A graduate of Yale Forestry School, Leopold went to work for the U.S. Forest Service under Gifford Pinchot and was assigned to the Southwestern part of the U.S., in the district that included New Mexico and Arizona territories. From an early career in which his recreation consisted of the pursuit of predatory animals, wolves and cougar in particular, Leopold moved through many thoughtful stages in his life to the point whereat he became the founder of the discipline we now call wildlife management. Somewhere in the mid stage of his life he became intensely aware that human beings had great responsibility for unwise land use. Earlier we spoke of ethical intuitionism and it is interesting that Aldo Leopold wrote a paper entitled, "Conservation is a Moral Issue," in which he wrote the following:

Possibly in our intuitive perception, which may be truer than our science and less impeded by words than our philosophies, we realize the indivisibility of the earth - its soils, mountains, rivers, forests, climate, plants, and animals, and respect it collectively not only as a useful servant but as a living being.

This is an interesting statement in view of the fact that the systems biologists, of whom I spoke earlier, in the very outward fringes of biological research are now speaking of consciousness as a characteristic of all living material. They assign a rudimentary form of awareness, which they call mentation, to every living cell and it is not unusual to see references to what they call the "mind of the environment." They note that these mental functions become more complex as living organisms increase in complexity. I can refer you to many excellent books that have been written on this subject, and suggest that you might want to look into some of them.

To Leopold, there was one glaring truth. "We abuse land," he said, "because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

Of course, this is the basic concept that lies at the root of ecology - the fact that land is an intricately interwoven community which will sustain us as long as we keep it intact. Every wildlife biologist in the world knows that the fastest way to destroy a species is to destroy its habitat. Well, we are on our way to doing just that with our own habitat, and that, alone, is enough reason to modify our ways while we are still able to do so.

Leopold looked upon one thing as crystal-clear. He claimed that “our bigger-and-better society is now like a hypochondriac, so obsessed with its own economic health, as to have lost the capacity to remain healthy.” As he said, “The whole world is so greedy for more bathtubs that it has lost the stability necessary to build them, or even to turn off the tap.” “Nothing could be more salutary at this stage,” he said, “than a little healthy contempt for material blessings.”

I don't know that you like what I am saying, and I can't do your thinking for you. Nonetheless, what I am trying to do here is to illustrate some of the kind of thinking that is necessary if a land ethic is really to be considered.

I remember seeing some log jams on rivers that were still being driven when I was a boy in the east. Perhaps it is for that reason that I found Aldo Leopold's reference to a key log in the whole process of arriving at a land ethic, a particularly interesting concept - and very true.

In his words: “The ‘key-log’ which must be moved to release the evolutionary process for an ethic is simply this: quit thinking about decent land use solely as an economic problem. Examine each question in terms of what is ethically and aesthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.”

Now I want to ask you to do something. I would like you to focus on the word integrity while I repeat that last statement and then consider it in terms of part of the B.C. Foresters' Code of Ethics.

Here it is: “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”

And here is the statement from the Code of Ethics:

“The member will, in all aspects of his work, regard as his first responsibility, the maintenance of the integrity of the forest resource, the protection and enhancement of the productive capacity of the resource, its perpetuation; and the improvement of its utility and value to society.”

Now, let us define the word integrity, which is a part of Leopold's observation and of the foresters' code of ethics. In Webster's New Twentieth Century Dictionary, the unabridged second edition, the first definition of integrity is as follows:

The quality or state of being complete; wholeness; entireness; unbroken state.

Obviously, modern logging has no relationship to the real meaning of the word integrity as it appears in the Code of Ethics. Equally obvious is that one of two things should happen. Either a radical change should be made in modern forestry to preserve the integrity of the forest resource, or the Code of Ethics should be changed so that it would not pretend to a nobility of purpose that is so obviously ignored in practice.

Preserving integrity does not mean that forest harvesting could not take place. It does mean though that the forest base would be protected and that nature would be respected as the originator of forests and man as what he is, the beneficiary. The realization as well expressed by George Perkins Marsh whose magnificent understanding of forests and ecological relationships caused him to write: “Man has too long forgotten that the earth was given to him for **usufruct** alone, not for

consumption, still less for profligate waste.” In looking up the word usufruct we find that it refers to the use of property belonging to another without injuring or destroying that property.

In his History of the Peloponnesian Wars, written about 400 B.C., Thucydides described how the earth was ravaged. The Lacedaemonians, he said, defeated the Megarians in battle, then cut down the trees and went home. In short, they made war not only upon their enemies but upon the land.

That was profligate waste.

Westar [the forestry company] now speaks of cutting down unwanted pulp logs in TFL [Tree Farm Licence] 23 and leaving them in the bush. That, too, is profligate waste. It may be justifiable in modern short-term economic thought. But it is not justifiable in terms of planetary ecology. It ignores the ecologic function of “unwanted trees” which while remaining alive continue to regulate soil moisture, to help retard the rate of snow melt, to transpire water vapor which returns to the earth in the form of rain. It fails to recognize their value in providing wildlife habitat, their assistance in the global recycling of water, oxygen, carbon and nitrogen, and their control over soil erosion, and the provision of habitat for insect-eating birds.

Those trees, left growing, would carry on their age-old functions which predate the arrival of man on the planet. Their continuous function of protecting the earth is recognizable, even in the most rudimentary form of land ethic.

The only kind of economics that can account for trees being cut and left, when they are not vitally needed, is the economics of extinction.

George Perkins Marsh also noted the severe impact of overcutting in the east in these words:

“Man has felled the forests whose network of fibrous roots bound the soil to the rocky skeleton of the earth, but had he allowed here and there a belt of woodland to reproduce itself by spontaneous propagation, most of the mischief which his reckless destruction of the natural protection of the soil has occasioned would have been averted.”

The maintenance of the integrity of the forest resource would mean the extremely careful protection of the forest base. It would mean concern for the natural species mix and understanding of the age mix in terms of protecting of the soil from erosion. It would eliminate clearcutting because it would recognize the role of the forest canopy in the conservation of water and in the prevention of flooding through slow release of snow melt in spring. It would recognize the historical precedents created in other nations where over-cutting led to tremendous avalanches and flooding, as in France where the massive floods of 1856 caused the necessity of emergency reforestation of 76,000 hectares in the Alps, as well as the turfing of 28,000 hectares and the securing of hundreds of ravines by barriers.

The impact of clearcutting, on an absolutely staggering scale, may also be noted in the London Observer, dateline February 28th, 1988. Following last year’s flood disaster caused by forest removal in Bangladesh, this year’s disaster from clear-cutting appears to be taking place both in the city and the state of Rio de Janeiro. Throughout the area there have been at least 300 deaths and 60,000 left homeless as a result of clearcutting. Brazilian geologists and physicists say that the destruction of trees in the Amazon and in the state of Rio de Janeiro have increased by 20 percent the amount of rain flowing through big cities in the two regions. These same physicists and geologists point out that although there has been high rainfall this year, records show that there has been considerably higher rainfall in the past. One geologist, Luiz Carlos Mollion said, “Our problem

is man made. If you look at the areas affected in Rio, it was those where deforestation has occurred that suffered most.”

The mayor of Rio de Janeiro, Saturnino Braga, announced that the state will have to plant thousands of trees on the steep hillsides around that city.

Additionally, we should mention that prominent climatologists have stated that deforestation of the tropics is expected to alter the heat from the equator toward the poles and will likely lead to the expansion of deserts in the sub-tropics in both hemispheres.

Coming back to our local region, avalanches such as the one at Hills are just a warning of what the future will bring if we do not develop a realistic land ethic to govern our predisposition toward reckless and ruthless behaviour. Certainly foresters, ahead of all other people, should realize that forests are not merely an economic resource but are an ecological necessity for a multitude of reasons.

Maintenance of integrity of the forest resource would also mean concern for the continuance of the forest understory even to the mosses that cover the forest floor. It would recognize the fragility and importance of the forest soil resource and realize the danger of tearing it apart with enormous machines, the danger of burying topsoil beneath subsoil and the danger of soil compaction. It would express an understanding that does not now seem to be apparent: that soil is a living substance in which there are as many as a billion organisms per cubic metre. These consist of microflora and microfauna and some larger visible organisms, and these organisms function in soil pores and among organic matter in the upper few inches of the soil. It would recognize the ecological role of birds, mammals, amphibians, reptiles and other animals that are an integral part of the forest ecosystem and would not haphazardly extirpate them from one area after another. It would recognize the protection of climate afforded by forests.

It would also look with loathing upon the use of biocides, which make a lot of money for chemical companies, but may also lead to the eventual disappearance of many species, including our own, from earth. These substances are now resident in body tissues of living organisms even in the Antarctic. Foresters concerned with protection of forest integrity would pay considerable attention to these words of the Canadian Environmental Advisory Council:

“If the 405 currently registered pesticides were subjected to proper environmental studies, most would likely have to be withdrawn. In addition, it is unlikely that any new chemical pesticide would be registered.”

The same report states: “Pesticides are deliberate environmental poisons with profound effects on organisms other than the target, yet we lack a fundamental understanding of their environmental impact.”

Maintenance of integrity also means we would be in less haste to so egocentrically assume that men can play genetic roulette and make better trees than nature can make with its eons of experience.

In short it would be responsible forestry that would sustain life instead of recklessly squandering it. It would be the beginning of the Age of Professional Forestry, which has not yet started.

Let’s not forget that this matter of the maintenance of integrity is said to be the first responsibility of foresters. It should be that way, and foresters should live up to it. Frankly, I think that a lot of them would be happy to try to live up to it. More difficult? Of course! More worthwhile? Of course!

I would suspect that some very intelligent foresters participated in this first statement of a Code of Ethics and assume that they were fully aware of what integrity means. They must be horrified by the bombed-out, gutted devastation left in the footsteps of today's logging enterprises. There is absolutely no indication anywhere in these clear-cut ruins of what were once forests, that there is the slightest love or respect for land. As Leopold said, our problem is that we look upon land as a commodity.

Obviously, the integrity of the forest would be best protected by selective cutting!

If attention was paid to the integrity of the forest resource, foresters would become what they should be and what they already are in nations where forestry is more advanced. They would become the protectors of the forests, the spokesmen for judicious use of the forests, the wise guardians of a precious life-sustaining resource of importance to the survival of the planet. What's more, they could have total self-respect and not have to live in a world of equivocation and bureaucratic double-talk in which the integrity of the forest is of minimal consideration. Unfortunately, foresters are victims of political-industrial collusion which focuses on immediate reward to the exclusion of long-term considerations.

If integrity was a concern, the ethical intuition of the public would no longer need to be offended by statements such as the following which was made by a Westar official recently when their current five-year plan was announced: "We have to cut down the old forests in order to get new ones growing." The forests that are being ravaged today were grown without the help of humans, by forces of nature that we do not appreciate at all. It is also not only the old forests which are removed in total - the second growth forests are also flattened.

And in reality, why does all this happen? It does not happen because we have good forest management. It happens because the large corporations know that they can make more money - more profit - through capital intensive styles of logging, in which earth-devouring machines throw men out of work so that a handful of people in our society can stuff their pockets with the riches of the world for which they are willing to destroy the planet.

We have not yet realized that the craving of money beyond need is as dangerous a psychotic manifestation as any social disorder that has ever existed on earth. We also do not realize that money is only a symbol for the real value created by the existence of resources. While corporations complain that they cannot maintain standards and must be given special breaks in order to employ as few men as they can, they actually create massive dis-employment by not using the labour-intensive means that would protect the forests and also provide employment. Certainly, it is time for corporations in general to develop consciences and to start concerning themselves with the well-being of society and with the health of the planet.

As it is now, it is not a bit unusual to pick up a book such as Capra's Turning Point: Science, Society and the Rising Culture, and read words such as these:

"The numerous horror stories of corporate behaviour in the Third World which have emerged in recent years show convincingly that respect for people, for nature, and for life are not part of the corporate mentality- On the contrary, large-scale corporate crime is today the most widespread and least prosecuted criminal activity. It is another necessary step in human evolution for industry to realize that the long-term integrity of the planet is of considerably more importance to all, than are short-term profits."

In the final analysis we also have to look to the top - to the question of whether or not we can have some signs of concern for land in Victoria, to politicians who will finally realize that they must stand on guard for Canada – for its waters, its soils, its air, its forests, and for the healthy well-being and wholeness of its people.

It is also up to governments to see that an ethic based on whole forest integrity is upheld. Apparently, government, at present, only supports profit making at whatever cost to the land or the future.

Today we are living with a fatal flaw in our thinking. Our conservation system, if that is what it could be called, is based entirely on economic motives, and according to these economic motives most species of the land community have no dollar value. Aldo Leopold makes this point by saying that of the 22,000 species of higher animals and plants where he practiced forestry, “it is doubtful whether more than 5 percent can be sold.” “Yet,” as he said, “These are members of the biotic community and if its stability depends on its integrity, which I think it does, they are entitled to continuance.”

He also spoke of the fact that “some species of trees have been ‘read out of the party’ by economics-minded foresters because they grow too slowly or have too low a sale value to pay as timber crops: white cedar, tamarack, cypress, beech, and hemlock are examples. In Europe (he claims), where forestry is ecologically more advanced, the non-commercial tree species are recognized as members of the native forest community, to be preserved, as such, within reason. Moreover, some, like beech, have been found to have a valuable function in building up soil fertility. There, in Europe, the interdependence of the forest and its constituent tree species, ground flora, and fauna is taken for granted.”

Leopold points to the absolute necessity of a land ethic and to the fact that it is a difficult thing to attain since both our educational and economic system are headed away from it. Part of the problem is that the modern person has become detached from nature and lives in a world of gadgets and middlemen. To many people land is nothing but the space between cities where trees and food grow. This attitude however is changing. The problems generated in large cities are becoming so immense that city people are beginning to flock from them at every opportunity. They are seeking the green places which they find necessary to restore their serenity and sense of balance. In their explorations into the countryside, they are discovering the great devastation our present logging operations are creating; they are discovering the truth behind the television ads, and the jargon they have been fed as “sustained yield,” and “forestry for the future.” It is this changing attitude which is making more and more people question the reliability of our forest service and the ethics of the people who represent that service.

Leopold stressed that a basic ecological comprehension of land is vital and that this does not necessarily come from education. “In fact,” he says, “much of what we call higher education seems deliberately to avoid ecological concepts.” This is because we have given economics such prominence that we do not want to look at any facts which might interfere with converting resources into dollars the fastest possible way. Another of his points is that an understanding of ecology doesn’t necessarily come from courses bearing that name. It can come from studying history and seeing what impact previous civilizations have had on land. It can come from geography, or climatology, or botany or agronomy.

But, as he says, “A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.”

In closing, I would like to read these words of a biologist, Dr. Marston Bates:

In defying nature, in destroying nature, in building an arrogantly selfish, man-centered, artificial world, I do not see how man can gain peace or freedom or Joy. I have faith in man's future, faith in the possibilities latent in the human experiment: but it is a faith in man as part of nature, working with the forces that govern the forests and-the seas; faith in man sharing life, not destroying it.