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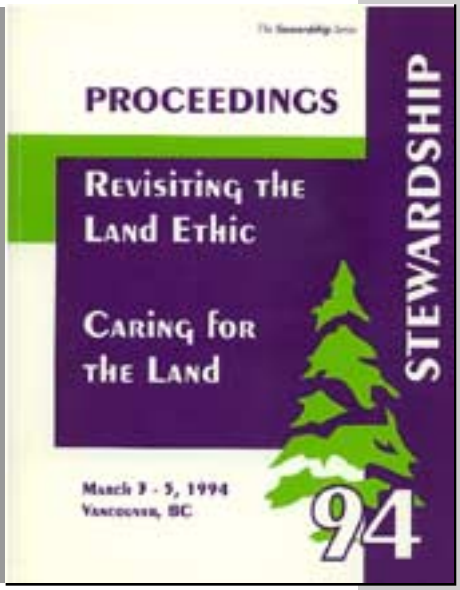

Proceedings
Revisiting The Land Ethic
Caring For The Land

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STEWARDSHIP '94

Revisiting the Land Ethic
Caring for the Land

PROCEEDINGS

March 3 - 5, 1994

Coast Plaza at Stanley Park,
Vancouver, BC

Editors:
Loralee Delbrouck
Nora Layard

The Environment Advisory Committee of the Vancouver Foundation has awarded a grant to publish and distribute the Proceedings and the summary of recommendations from the Stewardship '94 Symposium.

The Committee's goals are to support processes that assist in the resolution of broad environmental issues arising in BC. To that end, the Committee:

- supports processes that involve the affected constituencies in their planning, management and implementation;
- assists the development and implementation of strategies achieved through consensual processes; and
- supports research projects, the need and methodology of which are seen to be well founded by the affected constituencies.

1994 marks the 75th anniversary of the Vancouver Foundation! In this anniversary year, the Foundation's influence on British Columbia has been celebrated by organizations from every sector and every corner of the province.

The Stewardship '94 partners greatly appreciate the Vancouver Foundation's contribution towards the work of the Symposium.

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A successful conference is very much due to the hard work and contributions of the sponsors, volunteers, and staff.

STEWARDSHIP '94 was no exception - it was shaped by many hours of volunteer commitment by a dedicated steering committee. The actual event was supported by many enthusiastic volunteers and hard working staff. And **STEWARDSHIP '94** would not have been possible without the commitment of funding resources from the sponsors.

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PREFACE

STEWARDSHIP '94 began with a series of conversations with -- and about -- landowners asking for help in protecting the natural resources of their land. As the circle of discussion broadened, it became clear that, while there were many exciting initiatives underway, it was often difficult to get information and assistance. To meet this practical need, STEWARDSHIP '94 was born, providing a forum and focus for landowners, for people wanting to know more about stewardship, and for those who could offer help.

It also became apparent that many government representatives, charged with the maintenance of wildlife and ecosystems, were challenged by the legal and actual limitations posed by the boundaries between crown and private land. The frustrations of working with limited statutory tools and ever-decreasing funds have led to an increased awareness that it is the voluntary commitment of landowners which will result in sufficient habitat being protected in the long term. And so, STEWARDSHIP '94 also became a forum for those who are learning to interact with landowners in new and positive ways.

The impetus of the Symposium needs to be carried forward. Strands of the work are being picked up by various initiatives, including:

- a stewardship coordinating group, spear-headed by the Ministry of Environment, Lands & Parks and Wildlife Habitat Canada, under the Stewardship Pledge Program announced by the Honourable John Cashore at the Symposium;
- community-based workshops sponsored by the Federation of BC Naturalists;
- the Greenways initiative;
- training programs for municipal staff; and
- local backyard habitat programs.

The current challenge is to convey the stewardship message of caring for all our land and water, to as many people and organizations as possible. The papers contained in these Proceedings offer many important insights and practical ideas. The road is difficult and the stakes are high; the clear message from the Symposium is that we cannot do it alone.

Finally, the Steering Committee itself became a shining example of the value of partnerships between different levels of government and non-governmental organizations. Over the course of some eight months of planning, the committee exchanged information about programs and aspirations, hatched exciting new initiatives, and generally forged valuable new working liaisons. And we had fun doing it!

I thank everyone for bringing **STEWARDSHIP '94** from those initial discussions into reality!

Nora Layard
Symposium Coordinator

STEWARDSHIP '94: SUMMARY AND RECOMMENDATIONS

Revisiting the Land Ethic

After grappling with the many complex issues involved in moving towards a truly sustainable land ethic, symposium delegates identified the following key factors:

- The generally prevailing land ethic places humankind in a position of authority and autonomy over nature, resulting in the anthropocentric view that land, and the natural resources it provides, are at the service of human beings. Consequently, economically-driven values have become the predominant forces in determining how land should be used. Such short-sighted values are increasingly life-depleting, rather than life-supporting. In moving towards a sustainable land ethic in which humankind blends with -- rather than exploits -- the natural environment, spiritual, aesthetic and practical values must be considered in tandem with economic needs.

- The new ethic therefore will stem from the understanding that humankind is a humble component of a natural system, working in harmony with other species. Many challenges are strewn across the path towards a sustainable land ethic. These include conflicting values between community and the corporate sector; the unequal distribution of wealth and power; and the traditional corporate and political structures currently supporting unsustainable land use. The ecological -- and, ultimately, the economic -- bottom line for sustainable development is, however, that humankind must learn to live on the 'natural income' (the interest), generated by remaining stocks of self-producing 'natural capital'. Otherwise, society's heavy economic reliance on land means that the depletion of this resource will spell economic disaster. The strongest argument for a new land ethic is that it will make a better, rather than a more *painful,* world in which to live. This will be characterized by ecological and geopolitical stability, and greater opportunities for social and economic equity.

- Identifying common objectives and values will increase the potential for realizing a healthier land ethic. Support and education will be needed to encourage people of all ages to understand the implications of our ecological footprint, and to embrace changes in lifestyle, consumption, and resource use.

- The conflicts, impasses and difficulties in communication involved in bringing about positive change will create an increased need for negotiation, mediation, tradeoffs and compensation mechanisms.

These needs will have to be met in such a way that wise and sustainable land use becomes an obvious and mutually-beneficial option for all concerned.

Stewardship in British Columbia

Symposium delegates highlighted many exciting stewardship opportunities, including the following:

- There is a high level of public support for wildlife conservation and people are beginning to move beyond their individual self-interests, to an understanding of their role as an integral - rather than distinct - part of nature;

- Most landowners want to 'do the right thing', and want to care for their land, but they need help in fulfilling their good intentions.

- Some municipal governments are starting to recognize the need to incorporate conservation planning into their official community plans. This positive trend could lead to the development of an infrastructure to support stewardship programs.

- Many good examples of stewardship programs currently exist and these can serve as models for future initiatives.

- Greenways can play a key role as part of a regional growth management strategy by providing a mechanism to conserve environmentally-sensitive areas, provide buffers between neighbourhoods, and enhance community aesthetics and identity.

Delegates also noted many difficult challenges, including:

- Rapid development is taking place in the Lower Mainland, the Thompson/Okanagan, the east coast of Vancouver Island, and the Kootenays. This is further endangering many critical and sensitive areas which require immediate action if they are to be protected.

- Many landowners are forced to sell their land; even if they want to be good stewards, they may not have the financial resources or good health to continue to care for their land.

- In some areas, as opportunities for land purchase and land use are diminished, distrust is increasing between land owners, users, managers, and the public.

Voluntary Stewardship Programs

Speakers and delegates discussed their experiences with stewardship programs, and noted that there are several principles and observations that can help to shape new programs:

- For private landowners, stewardship is a voluntary commitment and should be respected as such by those promoting stewardship concepts.

- Stewardship programs are an educational process for landowners, providing them with information about options and opportunities, and with support for action. Information must be presented in a form that is easily accessible, practical and easy to use.

- All stewardship programs must respect the landowners' rights and interests.

- Many experts within non-government networks or government agencies are available to assist landowners to identify natural features, develop management strategies, and help secure covenants or other legal designations. These include naturalists, government officials, and university researchers.

- Accessing stewardship resources and information can be confusing for landowners. A single channel -- a 'One-stop shop' approach - is needed.

- Landowners should be kept informed and up to date about local stewardship activities. The program represents a partnership with the landowner, and good two-way communication and trust are critical. Without the landowner's support, there IS no program.

From the conservation agency)s perspective, delegates noted:

- To be effective, stewardship programs should be community-based and self-sustaining.

- Formal commitment from stewardship participants is necessary to secure the long-term protection of habitat. Local communities, government agencies and non-governmental organizations also need to formally commit to their involvement.

- Resource agencies and conservation groups need to allocate permanent staff time and resources to support stewardship programs. Staff will need to be in the field, developing a dose rapport and understanding with landowners.

- Senior government agencies need to ensure that global, national and provincial conservation objectives are harmonized with efforts at the regional and local levels.

In discussions about the role of communities in providing support for stewardship concepts and activities, people noted:

- Community support for stewardship programs is vital and a variety of methods can be used to promote involvement. These include frequent mailings, the development of 'one-stop shop resource centres, extensive media coverage, and training programs and
- workshops.

- Public recognition of landowners' efforts to protect habitat is very important. This can be achieved through promotion in the local press (e.g. media interviews with landowners), by awarding plaques, or by organizing special public events to honour stewardship participants.

- Recruitment and training of committed and enthusiastic volunteers are important to the success of stewardship programs.

- Local awareness can often lead to financial support for programs. By involving private landowners, the real estate industry, agriculture, businesses, and local and senior governments, networks can be developed to secure funding for viable programs.

- Festivals and other community events can help sustain awareness of important stewardship issues. The Brant Festival in Parksville, for example, helped mobilize communities to engage in partnerships which led to habitat being protected.

- Local initiatives, such as backyard wildlife sanctuaries, can be established to involve community members at a personal level. Sanctuaries can benefit resident, seasonal and migrating wildlife, provide opportunities for close contact with nature, function as outdoor classrooms, and add to local wildlife resources.

- Community land trusts can be valuable mechanisms to provide support to stewardship programs. They are apolitical community organizations, and can raise funds, promote awareness and secure community commitment. In some areas they have been the most effective means of interfacing with the private landowner.

Because the beliefs and values of today's youth will determine the nature of decisions made tomorrow, it is crucial that children also be involved in the educational and community programs. Children need to be introduced to the value of the three 'C's -- caring, concern and connection. The Okanagan Water Stewardship Project serves as a role model for this.

The Role and Significance of First Nations

In their respect for the land and its high emotional and spiritual value, aboriginal peoples remind us that all creation has a spirit, and it is through the spirit that native peoples communicate and maintain a close relationship with the earth and all living things.

Considerably more support must be given to the stewardship of First Nations' lands. Many threatened and endangered plant and animal species are found in such areas. Many aboriginal people know the wildlife and natural resources in their community, and their knowledge and commitment should be acknowledged and valued.

Corporate Stewardship -- Industry's Important Role

Symposium delegates realized that companies and industry have a crucial role to play in the stewardship of natural assets. From the individual farmer and real estate developer, to the multi-national forest companies, landowners and managers can meet conservation objectives while continuing to provide livelihoods and revenue.

The following points were highlighted by the delegates as key factors in reform at the corporate level:

- Companies need to strike a balance between environmental and economic imperatives in order to remain competitive and sustainable in the long term.

- Many land managers are already committed to maintaining the ecological integrity of their land, and their commitment needs to be recognized by their industry and the community at large.
- There is a need for increased dialogue between communities, industries and the conservation community in order to improve communication, circulate information about stewardship practices and build trust between sectors.

- Planning tools and incentives are required for residential and industrial land development so that habitat values can be identified and protected b-d= development begins.

- Programs to promote stewardship concepts, and to recognize good examples of stewardship by the land development community, are needed.

- A forestry industry stewardship program should be initiated, including improved government services for private forest operators.

- The provincial forest tenure system should be examined in the light of conservation and stewardship needs, and forest reserves established to ensure a defined and sustainable forest land base.

- Programs which encourage farmers to develop environmentally-sound agricultural practices should be enhanced and reinforced. Farmers who are already practising good stewardship should be recognized.

- Awareness and appreciation of the important linkages between agriculture and wildlife needs to be encouraged, and support for the agriculture land-base increased by activities such as buying locally-grown produce.

Beyond Voluntary Stewardship

For many British Columbians, the land is their biggest life-long investment. The long-term success of landowner programs therefore may depend on the level of outside support and other available incentives - such as grants or tax rebates. Restrictive covenants, land bequests in a will, endowment funds, and donation of an insurance policy or of land are other options for ensuring the long-term conservation of biological diversity. In the final analysis, compensation for lost opportunities may be required.

There is a need for taxation rules to be revised in a number of ways. The power to choose between forest and residential land use should be shared among private and public interests, including a Forest Land Commission, guided by sustainability and stewardship goals. Forest conservation should qualify for the same tax benefits as timber production, and there should be policies to ensure that the 'Managed Forest' classification not be used as a tax shelter while holding land for real estate speculation. Tax benefits should be equalized between agricultural and forestry use, and standing trees on residential land should not be taxed.

Covenants are a useful tool in stewardship programs but they raise several important issues:

- Section 215 covenants for conservation can already be held by government but there is a real need for non-governmental organizations to be allowed to do likewise. This can be achieved by legislation pending under Bill 70. (Editor's note: this legislation has since been passed.)
- A major challenge in implementing covenants is that they have not yet been sufficiently tested in court. Drawing up necessary legal documents presents a challenge.
- The impact of covenants on local planning is another aspect of concern. How will a covenant affect the community, neighbours, the characteristics of the neighbourhood, and property assessment?
- In the event of non-compliance by a landowner, a course of action needs to be determined. Over the long-term, who will monitor and enforce covenants?

With the establishment of covenants and other land tenure agreements, there is a need to determine how to cope with challenges such as liability risk, vandalism, non-compliance and the broader challenge of meeting ongoing costs.

There is a need to 'untax' nature through the improvement of charitable donation and income tax rules. At this time, donating a piece of land may be less advantageous than donating a painting of that same piece of land.

Government legislation and regulations to support stewardship principles need to be encouraged. For example, endangered species legislation is urgently needed, and the Forest Practices Code will need to demonstrate the government's commitment to protecting habitat and biodiversity

A Stewardship Strategy for BC

STEWARDSHIP '94 provided a forum for discussion among those interested in stewardship of our land. Although a definition of stewardship did not emerge from the symposium, expressions such as 'caring for the land', 'commitment towards nature, and 'caring for home', were used to convey the concept.

People participated in STEWARDSHIP '94 either because they own land and were looking for information or assistance, or because they work with landowners and need support and information. Although the symposium did not provide a means for reaching consensus on these recommendations, many significant ideas emerged as recurrent themes.

1. A Stewardship Strategy for BC is needed. Such a strategy should include action from both the bottom up, and at the provincial and federal levels.
2. At the Symposium, Environment Canada, the Ministry of Environment, Lands and Parks, and Wildlife Habitat Canada made commitments to the Stewardship Pledge program. This program will begin the process of researching, planning and implementing an umbrella stewardship program.
3. For the general direction and guidance of stewardship programs in B.C., an umbrella network of cooperating governmental and non-governmental organizations is urgently needed to:
   - work with government to develop conservation policies,
   - provide technical advice,
   - provide a network for exchanging information,
   - and secure funding for conservation activities on private land.
4. Model stewardship projects do exist in British Columbia, and several projects are planned. Symposium speakers shared their experiences, stressing the need for programs that are:
   - voluntary,
   - tailored for the community,
   - by the community,
   - well-publicized,
   - and long-term in perspective.
5. While it was clear that stewardship may mean different things to different people, delegates noted that it involved a definite commitment by landowners to respect and protect the biological resources of their land. For stewardship to be included as a meaningful conservation tool for those charged with ecosystem management, stewardship commitments must be undertaken

with serious intent, and for the long term.

6. Much work remains to be done on the development of an ecological framework for British Columbia, particularly for lowland settlement areas. Lack of information has led to confusion over which lands need specific conservation action or protection.

   Symposium delegates identified the need for strategies to:

   - Compile accurate inventories of the kind of conservation work needed. Additional funding and support are required in order to assess such inventories. Cases need to be carefully built for those areas selected for attention.
   - Establish criteria for what should be protected. Regional planning exercises and local conservation strategies (such as the South Okanagan Conservation Strategy), can help in determining these, and the Protected Areas Strategy is working on criteria for areas of provincial significance.
   - Assist regional planning exercises, official community plans and local conservation strategies in determining local and regional priorities for protection and stewardship.
   - Secure additional funding and support for the preparation and assessment of biophysical inventories. The CORE experience has demonstrated the need for up-to-date, accurate and accessible information.

Conclusion:

STEWARDSHIP '94 demonstrated that people are seriously questioning the prevailing land ethic and struggling to embrace a new, sustainable ethic. At the same time, they are committed to the concepts of stewardship that are embedded in an emerging land ethic, and in many areas are already engaged in exciting and innovative projects.
The challenge ahead will be to continue to identify what landowners need in order "care" for their land, and to provide a solid platform of funding, services and regulatory powers to support landowners, governments and conservation agencies as they work together to protect our province's wildlife habitat.

Keynote Address:

At Home in the World

Dr. Stan Rowe, New Denver, B.C. **Thursday, March 3, 1994, 7:30 - 8:10 pm**

An early creation myth, at least 4500 years old and a strong influence on the Hebraic legend of Genesis, comes down to us from the Babylonian civilization that prospered on the rich alluvial floodplain of the Euphrates River in Mesopotamia, now Iraq.

In the beginning, so the story goes, river met sea in a misty estuary whose intermingled clouds, fresh water and salt water gave birth to fertile silt, from which in turn sprang the gods of earth, sky and horizon. Thus from water came all other material things of the Earth: land and soil and finally "humus-beings" - for "human" and "humus" are derived from the same earth root in the ancient Sanskrit. We are made of star-dust, on Earth also known as clay.

The maker of this myth had an obvious affection for the fertile alluvial plain on which she lived and so, appropriately, she merits the title, "the first alluvial fan."

Earth scientists today are rephrasing the creation story, tracing the genesis of the watery world, with its land and air, to dynamic forces that still continue under a flaring fire-storm sun: wobbles in the axis of the spinning planet, magnetic wanderings, meteorite impacts, volcanic outpourings, crustal plate migrations, glaciations, energy and material exchanges between sea and air, and, accompanying them all, the pervasive influence of organisms that apparently were present in microscopic form on Earth almost from the beginning.[1]

Environmental Problems are People Problems

A sudden leap in influences by organisms accompanied the appearance on the world stage of Homo sapiens, the hyperactive featherless biped with the big brain. Our meteoric rise to power and dominance on this planet stems from a mastery of technology: first, the uses of tools and fire, then the culture of animals and plants, and, most recently, the control of fossil fuel energy for industrial purposes. Without really understanding the how of it, people--5.7 billion strong and growing--have suddenly become a potent geologic force on a par with volcanoes and earthquakes but more destructive, rapidly and perilously changing the face of the Earth.

Faced with so-called "environmental problems" that are really people problems, governments are baffled as to what prescriptions should be legislated. Opinions differ widely. Many pages of our newspapers are devoted to stories of environmental deterioration caused by too many people and too much industry. Turn, however, to the business sections and find hand-wringing reports decrying the slowness of economic growth. We read that we ought to act more altruistically toward the poor and the powerless, toward the developing countries and the environment, yet individualism and privatization are elevated to the status of supreme civic virtues. While thoughtful people suggest that the progressive road into the future is cooperation, the aggressively competitive route is far more popular in the world of real politics. Close to home, worries are expressed about the environment of the Lower Fraser Valley but, actions are neither taken to curb the in-migration of more and more people nor to dampen the exponential growth of the energy and materials that they use.

It seems to me that the answers to global problems will evade us as long as we seek them within our social tradition. Ecologically speaking, that tradition is a failure. Needed is a larger perspective, a view floodlit by beacons situated outside the Western people-centred culture. And science, without intending to, is providing just that larger-than-human vision.

Homo sapiens: With or Against the Earth?

Not many years ago the world seemed steady and secure, a dependable platform whereon the cycles of day and night, new moon and full moon, spring and fall, life and death, were repetitively dramatized in tune with the central human pageant. "All the world's a stage," wrote Shakespeare, "and all the men and women merely players."

Today's appreciation of the world in its cosmic setting suggests that the stage itself is creatively evolving, ever-changing, in unison with the organisms on and in it. The world is a leading performer, a star of the show, and not just a decorative backdrop that casts in relief humanity's role. The play goes on and on, marvellous and surprising, continuously written and rewritten by the genius of all of its participants.

The physical and biological sciences are revealing the vital vigour of our planet and the interrelationships of all its parts. At the same time the unexpected environmental effects of technologies that these same sciences have generated are forcing a new consciousness of the intrinsic worth of the beauty and freshness of the natural Earth. Through the use of science/technology, human enterprise has enriched us and contributed to our welfare, but with high costs to the Earth-source, costs that can no longer be deferred.

Here is the dilemma: physical and biological knowledge--essential for our sympathetic understanding of the surrounding world--also provides the means by which it is polluted, degraded, and threatened with total destruction. The misused power of science/technology underlies the human-induced global problems that during the last decade have turned international attention to environmental protection, to sustainable development and to conservation planning for land and water and resource use. The intent of all such strategies is to ensure the continued prosperity of the human race by "green" growth and development, doing what we have always done but more carefully, cleaning up pollution as fast as we make it. I do not believe that this is the solution. It is not enough; we will still lose the game unless the old destructive rules are changed.

At the moment no clear resolution of our predicament is in sight. Radical corrections in culture result from new radical ideas, from new insights, new beliefs. The solution to the present quandary is not beer can recycling, backyard composting and planting trees to soak up CO2, useful though these interim measures may be. The solution is a deeper and more profound vision as to what "environment" really is, enlightened by affection for the place that is home to us, guided by a more comprehensive evaluation of ourselves, of where we are and of how we have come to be here. Perhaps the two most important questions that everyone should ponder are:

(1) Who on Earth do you think you are? (An uncaring element of the plague that is destructively sweeping the globe, or a health-care worker on Earth's behalf?)

(2) What on Earth are you doing? (Practising the highly immoral "work ethic" and advocating "jobs at any price," or attempting to live lightly on the land?)

Needed: a Whole-Earth View

Psychologists tell us that the phrase "Seeing is Believing" is exactly backwards. It should be "Believing is Seeing," or "You see what you have been taught to believe." Throughout history, people have

viewed their surroundings through cultural lenses fashioned by past experiences and past beliefs. Parents and teachers outfit each babe and youth with cultural belief-spectacles that direct and colour a particular world view. Once formed, it becomes both self-evident and "right" for those born to it. Then the world views of other cultures seem strange and incomprehensible; we judge them to be primitive or idiotic compared to our own true perspective. Think of one's first reaction when exposed to a different culture, in real life or in anthropological texts. The way we, in our Anglo-dominated culture, perceive the world is assumed to be sane; alternative cultures are irrational, though perhaps of passing interest.

But what if our society and its cultural ideas are insane? This is the question that Theodore Roszak explores in his latest book *Voice of the Earth*.[2] Western culture, he argues, is sick; it expresses values of management and control over nature that are the heritage of the old patriarchs--warlords, chieftains, emperors--who took over the more women-focussed culture of 10,000 years ago. In the last 200 years, gathering strength from science and technology, the West's cultural goals have focussed on a War Against Nature. This pathological intent is expressed in purest form in the industrial city where people are separated from the realities of the green Earth from which they came and with which their ancestors intimately lived for millions of years. Existing in the virtual reality of TV and other mind-softening artifacts, city people need desperately to make contact again with land and water and organisms. They suffer from EDD--Earth Deficiency Disease--which lies at the base of popular concern for land stewardship, for gentler forestry methods, for wild areas, for more parks and preserves, for saving "biodiversity."

Signals from the Real World in the form of forest depletion, water quality deterioration, industrial pollution, increasing noise levels, questionable food, are obviously at odds with the promises and expectations of the world view constructed by our particular culture. We thought, wrongly, that our brand of "progress" really would make the world better and better. The time is right for a new look, a change to better glasses, keener insight, improved theories about where we are, who we are and what we should be doing.

Already we can envision in outline some parts of the emerging new look, for now we know the planet as a beautiful floating cell that supports people as self-conscious parts of its fertile skin. Could our sense of *time* be collapsed from earth's beginning to today, we would see in an instant our intimate evolution from, and relationships to, land and soil, air, water and all other kinds of organisms. These also are parts of the marvellous Earth-system, companions on an evolutionary journey whose end is unknown. It would become clear that in preserving the land we also save ourselves. As the Oklahoman said, expressing truth in ambiguity, "We've got to save our souls (soils)."

Could our *spatial* relationships here on Earth also be seen instantaneously, we would recognize the ecological dependencies that make foolish our attempts to dominate, control, manage and reshape the Earth-environment in the immediate interests of one single species among 30 million others. Waging war on the Earth environment for short-term gain brings long-term pain.

Today's appropriate "world view" is a new "view of the world," an outside perspective that reveals the Earth in a way that is truer and brighter, more vivid and more accurate than we formerly possessed. Already we have glimpsed a surrounding reality that is whole, a short step from holy, a world that lays claim to our loyalty because we are born from it and are dependent parts of it. It is not a "super-organism;" it is supra-organismic: a higher and more creative level of organization than the organisms it contains.

This vision challenges the assumption that we are justified in attempting to supervise and exploit all circumstances for limited human goals. It calls into question the widespread andropocentric belief (i.e., a belief fostered mostly by men) that the leading purposes of thought and action are to master and manage. It suggests that the civilized way to live is to take it easy, to put our motors in idle more often, to manage ourselves, and so far as the non-human parts of Earth are concerned, to let them be. This is, of course, the argument for preservation (as much as is within our power) of land and water and biodiversity. From this viewpoint, our duty is not to "improve" and "develop" but rather, through inaction or non-restrictive action, to promote and preserve the natural creativity of Earth, the source of life.

Earth's Creativity

Where "life" resides deserves careful thought, especially when the word is used in various political slogans. Whatever that mysterious organizing principle may be, its immediate source is clearly Earth, the Ecosphere. Ecology demonstrates that organisms and their earthly matrices are symbiotic and inseparable, differentiated only by our cheating sense of sight. A creative animating process, "life" is an expression of the Blue Planet and its 4.6 billion years of evolution. The Biological Fallacy, equating organisms with life, is the result of a faulty inside-the-system view.[3]

Consider the different experiences of seeing a system from the outside and from the inside. Looking through a microscope at a slice of plant tissue the student sees spaces bounded by walls and knows, from the instructor, that s/he is seeing unitary things called cells. Next, looking within, s/he is mentally prepared to see parts: nuclei, plastids, mitochondria, starch grains, streaming cytoplasm, particles dancing in Brownian movement. Note that the identification of parts is contingent on prior definition of the whole--as shown by a simple thought experiment.

Suppose that instructor and student, before seeing cells from the outside, were reduced to microscopic size and placed within a cell. The teacher hands binoculars to the student and asks, "What do you see?" Sight from within particularizes; lacking the outside perspective that reveals the whole, the student will see the cell contents as separate and unconnected objects. S/he might then logically identify the dividing, reproducing organelles as alive and their cytoplasmic matrix, vacuoles and plasma membrane as dead. The idea that the totality is alive, so obvious from the outside, is not apparent.

For thousands of years we people have been viewers immersed in the Ecosphere, deep-air animals living at the phase boundaries where air and water meet land, mistakenly identifying all manner of things as "organic" and "inorganic," "biotic" and "abiotic," "animate" and "inanimate," "living" and "dead." Dictionaries full of nouns show the efficiency with which we have thought the world to pieces. Around our ignorant taxonomy we have constructed religions, philosophies and sciences that fragment and departmentalize a global ecosystem whose "aliveness" is as much expressed in its improbable atmosphere, crustal rocks, seas, soils and sediments as in organisms. When did life begin? When the Ecosphere itself was born, if not even earlier. Thus what we have carelessly conceived as "environment," that which lies around us as soils, water, air and organisms, is in reality a complex ecosystem, the source and support of all life. This provides a new concept of LAND, elevating its ethical importance beyond ourselves. Thus we arrive at an ecocentric viewpoint, more inclusive than the biocentric one that tends to focus on organisms to the detriment of soils and sediments, air and water.

Planning for Land

In a paper titled "Land Use Planning and Sustainable Development in Canada," Nigel Richardson developed the thesis that we must look to the land and carefully plan its uses if ever we are to develop a sustainable society.4 The word land, wrote the author, is both ambiguous and value-laden. In its narrowest sense it means simply the solid ground beneath our feet which can be surveyed, cropped or built upon. But, in a more inclusive sense, more consistent with natural reality, the concept of land involves the entire ecosystem, the "natural order" which embraces landform, soil, water, air and living things. In this latter sense, land is an evolving volumetric system. Unfortunately the framework of Canadian law and other institutions conceive land in the traditional way, as only a horizontal, two-dimensional slice of Earth's surface, seen less as an ecosystem part of the ecosphere than as private property, commodity, source of income and profit, provider of recreation, means of waste disposal, and emblem of social status. In short, land has been conceived as a means to human ends rather than as a valuable thing-in-itself.

Such a traditional view of land cannot be reconciled with the reality that soil, water, air and living things form a single ecosystem in which, as in all systems, tampering with one element affects the balance of the whole. This reality, rediscovered recently by science, is hardly new to North America. It was recognized by the aboriginal cultures long before Europeans arrived. The 1977 Declaration of Nishnawbe-Aski by the Grand Council of Treaty #9 expressed the primeval sentiment in these words:

"We are one with nature, with all that the Creator has made around us. We have lived here since time immemorial, at peace with the land, the lakes and the rivers, the animals, the fish, the birds and all of nature. We live today as part of yesterday and tomorrow in the great cycle of life" (quoted by Richardson 1989, p. 39).

Here speaks the voice of the forager, the gatherer-hunter, the non-agriculturist. But, whether we call it "native spirituality," or an "ecological ethic," or a "land ethic," any optimistic prospect for humanity depends on acceptance of this or a similar view of the world. It means a new perception of land, not as primarily property and commodity, but as Earth's vital life-giving source. Note that this does not necessarily mean the termination of all private rights in land; it does mean 1) *widespread recognition of an overriding public interest in maintaining land-as-ecosystems in health and diversity,* and 2) *acceptance of the principle that land is not held absolutely but in trust for future generations of inhabitants, humanity coexisting with other life forms.*

A Land Ethic

The focus of this conference is Stewardship of the Land and the Land Ethic, the latter an outgrowth of how land is valued. The gist of my preceding remarks is that in over-valuing our species we have undervalued the land and everything else that is non-human. Western concepts about land, from John Locke to Adam Smith, from Thomas Jefferson to Marx and Engels, reflect its perceived worthlessness--until worked upon by human labour and "improved," or "developed." In the context of land's low valuation apart from human uses, a land ethic cannot help but be weak. Fortunately, values are not engraved forever unchanging on stone or gold tablets. Better understanding of our place in the world can effect a saving value change.

An example is the changed attitude to summer-fallowing in the prairie provinces. It used to be thought that a newly ploughed field, the soil turned over for a year's "rest," was a beautiful sight to see. Then studies revealed that the so-called resting soil was losing its precious nitrogen to the air and to the groundwater because removal of plants and their root systems left nothing to sequester and save the soil's fertility. Fallow fields began to look ugly. The attitudinal change was born from greater insight into Nature's workings.

This I believe is the hope for the future. The more we understand this planet, the better our value sense of it will be. Higher valuation of Earth, of its land in the inclusive three-dimensional sense, of its soil-air-water-organisms ecosystems, will also change the valuation of our species and ourselves.

We fall into an insidious trap in not setting our goals high enough. We strive for quantity when we should be setting our sights on quality. We are willing to settle for Sustainable Development in the economic interests of humanity when we should be demanding the Development of Sustainability for this planet. First things first--the needs of the creative Ecosphere before the wants of people.

To respect the world of creation supremely is not to demean our species but to value it differently: as a cooperating part of a larger and more important whole. Parts that cease to serve healthy functioning are pathological, such as cancer cells and tumours. By analogy, the function of humanity within the Ecosphere is to assure its healthy functioning: its preservation and sustainable conservation.

The truly ethical person of the future will be "At Home in the World"--a respecter of Earth, a lover of ecoregions, a caretaker and minister to the locality where s/he lives, both for private and public land. The New World View encourages a more generous appraisal of what surrounds us. As one kind of Earth ecosystem-linked creature, our future as a species depends entirely on the attitudes, the values, and the morality, that we project beyond people to the encompassing Ecosphere and to the part of it we call "land"--its marvellous landscape/waterscape ecosystems.

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3. 3Rowe, J. S. 1992. "Biological fallacy: life equals organisms." BioScience 42:6:394.

4. 4Richardson, Nigel. 1989. "Land Use Planning and Sustainable Development in Canada." Ottawa: Canadian Environmental Advisory Council, Environment Canada.

Stan Rowe worked as a research forester with the Federal Forestry Service for two decades, first in the western boreal forest and then as the Ottawa coordinator of silviculture/soils research for the provinces and territories. From 1967-1985 he taught wildland ecology and forest geography at the University of Saskatchewan while pursuing research on forest fires, permafrost terrain and peatlands. His recent book Home Place deals with environmental ethics.

Setting the Stage for Stewardship PRIVATE

Thursday, 3 March 1994, 7pm - 9pm

The opening session introduced the main themes of the Symposium and challenged us to examine our preconceptions and beliefs about our ecosystem home, our land and our communities.

Chair: Earl Anthony, Regional Director General,
Environment Canada, Vancouver, B.C.

Why a New Land Ethic?
Dr. William Rees, School of Community and Regional Planning, UBC

Introduction: Yes, Virginia, there is a "Land Ethic"

When we first began to explore the potential level of interest in a conference on land stewardship and the need to "revisit" the land ethic, several people commented that they or their organization would be interested in a symposium that dealt with land use conflict, land management, or land economics, but that they wouldn't be as keen to debate the ethical dimensions of humankind-land relationships. Apparently they thought that such a focus would distract us from the real issues.

On one level, this was a perfectly reasonable response to a general question by serious people personally committed to better land stewardship. On another level, however, it may actually reflect one of the primary causes of the mounting crisis in land and resource management in B.C. and the rest of world. The prevailing worldview driving our western industrial culture is so hard-nosed, analytic, and practical that it virtually precludes serious discussion of the ethical and moral dimensions of human behaviour. Indeed, the dominant approach to land virtually ignores any values that cannot be quantified and priced in the marketplace or through other means.

What is often forgotten is that this position itself represents a well-developed "land ethic"--the set of principles and beliefs, values and facts that governs society's overall relationship to the land. Far from swaying us from the "ethics" question, therefore, these initial interviews actually helped to convince some of us that we had an obligation to help raise society's implicit ethic to consciousness, to examine its role in the present land/resource conundrum, and to open the door to consideration of other perspectives.

Alternative Perspectives on Land

The View from the Mainstream

As suggested above, ours is a culture in which economic logic and language have come also to dominate social and political life. Talk about land and the conversation quickly turns to location and price. Land has been thoroughly commodified, just another consumer item for an ever-expanding market.

And it is a diminished kind of "land" that we talk about. Stripped of all beauty and life, urban land has been reduced to little more than horizontal space, a substrate to build upon. Even agricultural land--once treated with special reverence--is succumbing to the logic of the marketplace. With the rise of agribusiness, most wealth generated by the food sector is in value-added "manufacturing." This helps to trivialize farming as way of life and to marginalize agriculture as economic activity. In today's economically "rational" world, defence of farmland for farming is seen as defence of inefficiency, as protection of the competitively weak. Agricultural land is just another tradable good and farming must compete for it with other uses.

And so it goes. While every school child is taught the economic value of so-called "natural resources," many people remain unaware or uncaring about the unpriced ecological functions and life-support services provided by wild nature. Last (and often least) on the list of values are the wilderness, aesthetic, and spiritual values associated with natural landscapes. All in all, it seems that modernization and urbanization have distanced many of us psychologically as well as spatially from the land that sustains us. This prevailing vision is a relentlessly anthropocentric one, rooted in our cultural sense of separateness from the land and our belief that we dominate and control nature. But another perspective is beginning to emerge which, while still anthropocentric, better reflects human ecological reality. *This perspective sees humankind as a functional component of the landscape and seeks to understand both our changing role in, and our dependency on, nature*. It recognizes that however much we would like to deny it, humankind exists in a state of obligate dependency on the land and natural functions.

The Ecological View

The emergent ecological vision is driven by a gathering sense of urgency. In the space of just a few decades, humankind has gone from playing a bit part to becoming the major player on the world's ecological stage. The four- to five-fold increase in world economic activity since the Second World War has produced an unprecedented level of material and energy exchange between the ecosphere and the human economic subsystem. As a result, humankind is now the dominant consumer species in all the world's major ecosystems. The human enterprise already directly uses or otherwise diverts 40 per cent of terrestrial and 25 per cent of marine photosynthesis to its own use1 and, the demand for non-renewable energy and material commodities is rising exponentially.

Of course, the laws of mass balance and conservation dictate that the entire energy and matter flux through the human economy must return in altered form--as pollution and waste--to the ecosphere. Thus, as a consequence of material growth, the sheer volume of human-induced resource and waste flows is now capable of seriously disrupting global life support functions essential for civilized existence. From the ecological perspective, therefore, the most important sustainability-related question is whether primary production and waste assimilation by the ecosphere are adequate to sustain the anticipated material demands of the economy indefinitely. Remarkably, conventional analysis is blind to these physical flows and cannot even ask, let alone answer, this question.2

On "Natural Capital"

Accelerating global ecological change has forced some economists to reconsider the conventional model. Most importantly, they have begun to recognize that many forms of natural resources must be treated as unique forms of productive capital with properties that set them apart from manufactured capital. These are mostly renewable forms of natural capital that perform vital life support "services" for which there are no technological substitutes and the loss of which would be irreversible. In these circumstances, human consumption or use of such "assets" should not jeopardize the functional integrity of remaining stocks, or reduce them below some ecologically critical minimum level.

Unfortunately, persistently negative global ecological trends suggest that humanity may already have crossed that critical line.[3] Ecologists and enlightened economists are

increasingly able to argue that the world may have reached the point at which the marginal (damage) costs associated with natural capital depletion exceed the marginal benefits of resultant jobs and commodity production. In these circumstances, further growth of the material economy is, in fact, "anti-economic growth" that ultimately "makes us poorer rather than richer!"[4]

A Necessary Condition for Sustainable Development

The ecological bottom line for sustainable development can thus be stated as an economic metaphor: humankind must learn to live on the interest (the "natural income") generated by remaining stocks of self-producing "natural capital" (see Box 1). Any human activity dependent on the consumptive use of bioresources cannot be sustained indefinitely if it consumes not only annual production, but also erodes essential natural capital stocks.[5]

Natural capital refers to "a stock [of natural assets] that yields a flow of valuable goods and services into the future." For example, a forest and a fish stock can provide a flow or harvest that is potentially sustainable year after year. The stock that produces this flow is "natural capital" and the sustainable flow is "natural income." Natural capital also provides such services as waste assimilation, erosion and flood control, and protection from ultra-violet radiation (the ozone layer is a form of natural capital). These life support services are also counted as natural income. Since the flow of services from ecosystems often requires that they function as intact systems, the structure and diversity of the systems may be an important component of natural capital.

There are two broad classes of natural capital: renewable natural capital, such as living species and ecosystems, is self-producing and self-maintaining using solar energy and photosynthesis. These forms of natural capital can yield marketable goods such as wood fibre, but may also provide unaccounted essential services when left in place (e.g., climate regulation). This class also includes replenishable natural capital (e.g., ground water and the ozone layer), forms which are non-living but, like living systems, are often ultimately dependent on the solar engine for renewal. By contrast, non-renewable forms of natural capital such as fossil fuel and minerals are analogous to inventories. They have no potential for renewal or replenishment. Any use implies liquidating part of the stock.

Because various forms of renewable natural capital are essential for survival, these forms are emphasized in our constant capital stocks criterion and in ecological footprint analysis to date (see below).

* Liberally adapted from R. Costanza and H. Daly. 1992. *Natural Capital and Sustainable Development. Conservation Biology* 1:37-45 (p. 37).

(*Box 1: On Natural Capital)*

The implications of what is, in effect, an absolute constraint on at least throughput growth6 are currently being explored through various interpretations of a "constant capital stock" criterion for sustainability. For present purposes we can state the constant capital stock rule as follows:

Each generation should inherit a stock of renewable natural capital no less than the stock of such assets inherited by the previous generation.

Ecologists and ecological economists are coming to accept that some version of this criterion is a necessary if not sufficient condition for sustainability.7

The Ecological Footprint: Land as an Indicator of Scarcity

The natural capital concept allows us to restate the primary sustainability question as follows: is there sufficient critical natural capital on Earth to accommodate the anticipated consumption and waste output of a much expanded human family without destroying the integrity and critical life-support functions of the ecosphere?

One way of approaching this question is through "ecological footprint analysis," a technique I have been developing with my students at UBC. Ecological footprint analysis is intended to show simply and graphically the physical dependency of humankind on nature and to produce a first estimate of the present and anticipated natural capital requirements of the human economy. It is based on the notion that most forms of material consumption and many kinds of pollution can be expressed in terms of the land/water area (i.e., the area of productive ecosystems) required to produce the associated resource inputs and assimilate the waste outputs. The total land area so "consumed" by a defined economy or population is the "ecological footprint" of that economy on the Earth.

Some important land uses recognized by this type of analysis are not acknowledged by the economy at all. For example, growing forests serve an important "carbon sink" function by sequestering the carbon dioxide produced by the burning of fossil fuels. This ecologically and economically critical function is neither priced directly nor reflected indirectly in market prices for lumber and pulp. Expanding on this approach, we could show that virtually all "undeveloped" land is fully in use as is even if we don't perceive it that way. My point is that all terrestrial ecosystems perform vital life support functions that are invisible to both ordinary perception and mainstream analyses.

Let me try to personalize the issue. Have you ever asked yourself how much land is necessary to sustain just you in the material style to which you are accustomed? Can we quantify our individual "connectedness" to the Earth? Our data suggest that considering our consumption of just food, energy, and forest products, the average Canadian requires almost five hectares of ecologically productive land in continuous production. While most people probably haven't given their "personal planetoids" a moment's thought, the case could be made that they should care about the quality and status of those five hectares as if their lives depended on it!

These data should also give us pause whenever we hear about the rapid "urbanization" of the world's population. From the ecological perspective, despite the migration of people from the countryside, wilderness and "rural" lands are more heavily used than ever. Cities are simply nodes of concentrated consumption separated from widely dispersed areas of production/assimilation. While we are used to thinking of cities as geographically discrete places, most of the land occupied ecologically by their residents lies far beyond their borders. A city's ecological footprint is typically at least an order of magnitude greater than that contained within municipal boundaries or the associated built-up area. For example, Figure 1 shows that the population of the B.C. Lower Mainland appropriates the productive capacity of a land area 22 times larger than its home territory.[8]

Figure 1: The Ecological Footprint of the Lower Mainland
(see attached figure)

The Vancouver-Lower Fraser Valley region appropriates from nature the ecological production of a land area at least 22 times larger than the Lower Fraser Valley itself.

Indeed, our analyses reveal that all industrial regions and even whole countries are dependent on vast land areas beyond their geographic borders for their sustenance. Through both commercial trade and natural biogeochemical cycles, such regions effectively "appropriate" carrying capacity from distant elsewheres that may not be ecologically stable or geopolitically secure. Thus, while conventional economics shows that many advanced high-income countries are economically prosperous and enjoy positive trade and current account balances, ecological footprint analysis shows that such regions are running massive ecological deficits with the rest of the world. (See Box 2 for definitions of terms related to appropriated carrying capacity and ecological footprints.)

Appropriated Carrying Capacity - The biophysical resource flows and waste assimilation capacity appropriated per unit time from global totals by a defined economy or population.

Ecological Footprint - The corresponding area of productive land/water required to support the defined economy or population (i.e., to produce its resource needs and assimilate its wastes) at a specified material standard of living, wherever on Earth that land may be located.

Personal planetoid - The per capital land/water requirement at a specified material standard of living.

Ecological Deficit - The level of resource consumption and waste discharge by a defined economy or population in excess of locally/regionally sustainable natural production and assimilative capacity (also, in spatial terms, the difference between that economy/population's ecological footprint and the geographic area it actually occupies).

Sustainability Gap - A measure of the decrease in consumption (or the increase in material and economic efficiency) required to eliminate the ecological deficit of the global economy.

Box 2: A Family of Area-Based Sustainability Indicators

Implications for Ethics and Land Stewardship

The problem is that not all regions on a finite planet can be net importers of productive capacity. For global sustainability, some regions must be net exporters. Unfortunately, as noted above, the human economy in its present configuration may already be failing this simple test. Accelerating global change indicates a dangerously growing imbalance between consumption and production--aggregate consumption by humans already exceeds sustainable natural income from the ecosphere (i.e., the aggregate ecological footprint of the human enterprise is already larger than the "resource" base).

Since this situation exists while a quarter of humanity still lives in poverty, it follows that wealthy nations--and individuals--appropriate more than their equitable share of the planet's carrying capacity. There is simply not enough "natural capital" on Earth to support the entire human population at European or North American material standards using existing technology. This adds a troubling intra-human moral element to our discussion of land ethics. Are we willing to contemplate mechanisms to bring about a fairer distribution of our ecological wealth? Without recognition of both the ecological and social dimensions of global carrying capacity, the so-called "environmental crisis" and accompanying geopolitical tension can only intensify with growing human populations and rising material expectations. Indeed, the increasing competition for remaining stocks of natural capital (land and the ecological functions of land) explains much of the environment- and development-related tension between North and South and between rich and poor everywhere.

Nor are the ethical and stewardship issues entirely international. Ecological analyses may finally force recognition in resource and property law that we may actually have reached the point in some situations where the exercise of private development rights may result in greater public costs than private gains thus representing a net loss to society.9 Such uneconomic development might be associated, for example, with forms of forestry where the value of non-market common-pool benefits and life support functions destroyed through harvesting exceeds the corporate income gains.

As noted, the macroecological dependencies and inequities revealed by ecological footprint analysis are often invisible to the conventional models currently guiding national policy and international development strategies. These conventional approaches to global sustainability are based on large increases in economic growth and consumption, both to alleviate poverty and to produce the money wealth needed to care better for the environment. (The Brundtland Commission suggested a five-to ten-fold expansion of industrial activity would be necessary to raise twice the present world population to European material standards by the middle of the next century.) Unfortunately, ecological footprint analysis suggests that several additional planet Earths would be required to achieve this goal assuming prevailing material values and the technologies most likely to be available under present economic assumptions. These findings raise questions about global sustainability that have yet to be broached in the mainstream debate.

They also demand that land ethics and improved resource stewardship rise to the top of the sustainability agenda.

Notes and References

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5. W. Rees. 1990. The Ecology of Sustainable Development. The Ecologist 20:1:18-23.
6. Throughput growth is growth in energy and material consumption by the economy. It is, however, theoretically possible through efficiency gains to have increased GDP/capita without increasing throughput.
7. Alternate versions refer to a constant aggregate stock of natural and man-made capital or suggest that both forms should be held constant (or growing) separately. Our primary interest is in self-producing biophysical and replenishable forms of natural capital because these are essential to life and are the most ecologically relevant.
8. From: W. Rees and M. Wackernagel. 1994. Ecological Footprints and Appropriated Carrying Capacity: Measuring the Natural Capital Requirements of the Human Economy. In Investing in Natural Capital: The Ecological Economics Approach to Sustainability A.-M. Jansson, M. Hammer, C. Folke and R. Costanza (eds). Washington: Island Press. (Originally an invited plenary paper to the Second Meeting of the International Society for Ecological Economics on Investing in Natural Capital. Stockholm, Sweden [3-6 August, 1992]).
9. As early as 1819, the classical economist Lauderdale realized that private riches could expand while public wealth declined. (An Inquiry into the Nature and Origin of Public Wealth and into the Means and Causes of its Increase. Edinburgh: Archibald Constant and Co. 2nd ed.). (Cited in H. Daly. 1991. Steady-State Economics (Chapter 13). See Note 3.)

Dr. William (Bill) Rees is currently Director of the School of Community and Regional Planning at the University of British Columbia where he has been researching and teaching the ecological basis for economic development since 1970. Dr. Rees's planning and policy research focusses on the developmental implications of global change and the ecological conditions necessary for sustainability.

The Foundation of Private Land Stewardship in Canada

Dr. Caroline Caza, Wildlife Habitat Canada, Ottawa, Ontario

Wildlife Habitat Canada (WHC) is very pleased to be among the many sponsors of STEWARDSHIP '94, particularly as the foundation has been a leading advocate and supporter of private land stewardship programs in Canada throughout its ten year history. WHC, established in 1984 for the conservation, restoration and enhancement of wildlife habitat, is dedicated to the promotion of stewardship because we recognize that protected areas alone will not be enough to conserve the diversity of Canadian wildlife. Much of the habitat at greatest risk in this country lies outside of protected areas, on privately owned lands and therefore we must look to 100 per cent of the landscape to achieve our conservation objectives. In addition, without sustainable land and water management practices across the entire landscape, we will not protect the functional and structural integrity of natural systems (or artificial ones for that matter), as these systems know no park or political boundaries. Canadians are beginning to realize that we have to learn to fit ourselves into the natural landscape, rather than continuing to rely on natural systems to absorb, resist or adapt to the impacts of our activities.

Although we may be breaking new ground with this symposium on land ethics and land stewardship in British Columbia, voluntary stewardship on private land is most certainly not new in B.C. or anywhere else in Canada. It is important to remember that, while there have always been good land stewards, we have generally neglected to recognize those land owners and managers who understand that ownership includes responsibilities as well as rights and that these responsibilities extend to the conservation of soil, water, and biota. I would like to illustrate this point with a short story.

Recently, my boss talked with a prairie farmer about ways of promoting stewardship through recognition programs. This particular farmer has made a significant contribution to conservation through the way he manages his land. He has retained the natural wetlands on his farmland, he has not ploughed under areas with marginal capability for agriculture, and he practises a variety of conservation farming techniques, such as minimum tillage. He has done all these things without expectation of reward or recognition for his efforts.

However, shortly before his conversation with my boss, the farmer had looked across from his farm to his neighbour's farm, and had seen a ceremony taking place. There was a provincial minister participating in the ceremony, as well as representatives from the United States. A large sign was being erected on the man's property to mark the event. The purpose of the ceremony was to recognize the man for his conservation efforts. The farmer was mystified as his neighbour had never practised any conservation-oriented land management. He had drained and ploughed under all his wetlands and marginal lands years before. What was he being recognized for now? The farmer learned that his neighbour had entered into an agreement with a conservation organization to re-establish, at their expense, a small wetland on the neighbour's property.

Over the next two days, we will be hearing about many stewardship initiatives under way in B.C. and throughout Canada. The point of my story is to emphasize that the basis for stewardship programs is the commitment of individuals to the program objectives. Success will depend on the willingness of individuals to participate. Participation must be supported and recognized and we should consider starting with those citizens who have practised conservation-oriented land management without programs and incentives. The real challenge for the conservation community is to foster the stewardship ethic. Wildlife Habitat Canada is attempting to do this by supporting agencies which:

- provide landowners with information about habitat and conservation values on their land, and assist them in identifying ways of meeting their land management objectives while conserving land, water, and wildlife

- change policies that act as disincentives to conservation on private lands and begin to deal with the real costs of development
- create policies and programs that encourage and enable landowners to make decisions that conserve natural resources and the functions of natural systems

This is a very exciting and somewhat turbulent time for those concerned with habitat conservation in Canada. Governments are struggling to address growing public concern with rising deficits, declines in meaningful and secure employment and, at the same time, the management of natural resources. Although financial constraints have encouraged new approaches to conservation which include stewardship and partnership programs, there is also an increasing demand for stronger legislation and regulations for the protection of the environment. It is important to develop an effective conservation strategy that can combine both of these approaches to conservation. This may be difficult because stringent laws and the enforcement of minimum environmental standards do not create the same atmosphere of co-operation and innovation as programs aimed at encouraging landowners to integrate voluntarily conservation with other land management objectives, although the two approaches are by no means mutually exclusive.

It is our hope that this conference will help to identify the opportunities and priorities for private land stewardship in B.C. and will launch us on the path towards a broadened conservation strategy for the province.

Caroline Caza has been the Director of Programs with Wildlife Habitat Canada since October 1991. She received her M.Sc. in Botany and Environmental Studies from the University of Toronto, and her Ph.D. in Forest Ecology from the Faculty of Forestry at University of British Columbia. Caroline has taught courses in forest ecology, tropical biology, and resource management, and has worked as a research consultant on a variety of environmental management issues.

Community Sustainability: Are We Ready for Change?

Ms. Joy Leach, Chair, B.C. Round Table on Environment and Economy, Nanaimo, B.C.

The last time I was asked if we were ready for change, I said no, and met with strong opposition. But changing from an old to a new world view does not happen overnight and much hard work is required to move people towards sustainability. As little as a generation ago, people still thought of land as a commodity to be traded for goods and services. The challenge is to find ways of communicating with the general public without frightening them. Change, especially at the local level, creates a great deal of tension because our governmental structures are so disconnected that it is difficult--if not impossible--to find the levers to pull, even if the necessary political will exists.

This does not mean that local and regional boards do not have significant land use authority in specific areas, or that with considerable political will a great deal could be accomplished. However, I believe that municipal and especially regional boards are truly the hell's kitchen of sustainability, and without reform at the provincial and federal levels, sustainability will be a very elusive goal indeed.

The need for change is clear to everyone in this room, and certainly there is a growing

public understanding that the way we are currently doing things is not right; understanding what is wrong is a great deal more difficult. Change is already taking place in certain areas. In the General Vancouver Regional District and on Vancouver Island (within the entire Georgia Basin), people are realizing that what they have been warned might happen, is happening. As a result, growth management strategies are now seen as necessary tools, and forest land reserves have been well received.

But the individuals, families and communities in the northern end of Vancouver Island, for example, feel like victims. They are in the middle of the debate and are expected to make the ultimate sacrifice. But where do they go, and what do they do? If entire communities have to find new economies, and hundreds of people have to create new livelihoods--for the common good--who looks after their interests? Who helps them make the adjustment to a new life? Change is rarely accepted willingly and will be all the more difficult because people cannot feel safe in the absence of governmental structures to respond effectively to their needs.

I have heard people close to the C.O.R.E. (Commission on Resources and Environment) process express surprise that local governments, union members, and forest companies seem to be allies. Of course they are. Local government gets the taxes to support community infrastructure and services from that industry. Union members get the paycheques with which to support their families from that industry. That industry cultivates these relationships as bargaining chips at the table where change is being negotiated.

It is clear from consultations that the Round Table conducted with people from all walks of life across this province that sustainability is an essential goal and its principles need to be embraced. The hard part is deciding on the correct course of action to take. It's not too difficult to agree on broad general principles. However, accepting and committing to change--especially when it requires personal sacrifice by some and not others--is very difficult. If I was a logger and was told that I could no longer work, and had no other job prospects, I would find that unacceptable. People need to understand what is happening and to see how they fit into the picture.

Urban containment and forest land reserves are quite different issues. First of all, there appears to be a fairly extensive awareness of the need for change, because the effects of urban sprawl, and the potential for loss of highly productive forest lands, are quite clear to even the casual observer.

The alliance between local government is not as clear, since urban sprawl places enormous stress on local and regional taxpayers, and the loss of highly productive forest lands undermines local economies and removes green spaces normally used for recreation. On the Island, particularly, people can see what is happening, subdivision by subdivision, and there is strong opposition to it. That is not to say that private landowners can be expected to be enthusiastic, but the call from the Round Table is for further dialogue and discussion with the major stakeholders.

This change is not as frightening because models already exist in both instances. B.C.'s Agricultural Land Reserve is credited with containing the footprint of urban growth. Fifteen states in the U.S. already have growth management legislation, including Washington and Oregon. These are not radical concepts, and therefore not as frightening.

There is growing public awareness of the need to take specific steps towards a sustainable future for coming generations. However, there are significant sectors in our society which do not share, or even remotely understand, what we are talking about, or why it should matter to them. Some, on the other hand, have a clear understanding of their private interests, and are intent on stopping any interference with private land rights. As I well and truly discovered, their pockets are deep and their ability to remove politicians quite effective. Their attitude is that it is not their future, and so why should they care? They see it as just another ploy to get their money, and they vote no!

One of our biggest sustainability challenges is discovering how to talk to each other in this age of mass communication. Many people are turning off and tuning out, and trusting only the information they receive from trusted informers. Many of these people have joined the ranks of the disenchanted and defiant voters.

The Round Table's primary mandate is to ready people for change through public involvement, public education, and consensus-building. In other words, our role is to build an alliance for change.

However, there are specific change-agents that we are having difficulty reaching. These people are the local and regional decision-makers--local councils and regional district directors, and in many cases we can include MLA's and MP's. They are busy people, constantly being lobbied. At the same time, they are working with aged and decaying legislative structures and declining resources, with little ability to establish working relationships with senior levels of government.

With specific reference to issues related to land stewardship, I believe this is the most fertile ground for success, but cultivation of the ground must be strategic and the plan for success must be forward with an impressive demonstration of public support for action.

I would venture to say that most local politicians have no idea of their scope of power if, in fact, they had the political will to act.

How do we chart a course for action?

We need to:

- create an awareness of the need for change, cutting across all community sectors
- clearly identify who cares, and who ought to care, and join them together using personal pathways
- develop a strategy of personal discussion with key change-agents in the community. These people often do not respond to conference calls or attend general meetings. As a result we often find ourselves preaching to the converted without significantly advancing our cause
- set priorities locally, regionally, and provincially and advance them on the basis of highest need--rather than concurrently
- create a public discussion of issues through local newspapers, public television, talks to service clubs, in schools, in colleges, and on local radio stations. Write op-ed pieces, host special events for local officials, get on the agendas of regional bodies (i.e., Union of B.C. Municipalities regional associations)

Model solutions include:

- promoting successes--shine bright lights on the successful stewardship programs: the public hears the fighting, but rarely hears much after the victory party
- addressing the question of who pays and who ought to pay
- asking for land conservancy legislation
- asking local governments to adopt the principles of sustainability and assist in the development of local policy

In closing, I would say that we have cultivated an environment in which change could occur, but we must be more specific about the tools we require to carry forward this change. We most certainly have to demonstrate broad community support, and be prepared to work closely with local, regional and provincial agents and elected representatives so that they can, ultimately, do the right thing.

Joy Leach was appointed Chair of the B.C. Round Table on Environment and Economy in the summer of 1992. Joy was an elected school trustee in Nanaimo for 8 years, Mayor of Nanaimo from 1990 through 1993 and a Director of VanCity Savings Credit Union for 3 years. Joy is President of Leach and Associates, a consulting firm specializing in strategic planning and development in the educational and non-profit fields. She has previously served as Director of Development at Simon Fraser University.

Contributions of Private Lands to Sustaining Biological Diversity

Dr. Clark Binkley, Dean, Faculty of Forestry, University of British Columbia

Aldo Leopold was a forester who helped cull wolves for a living, and was part of a family business responsible for extremely damaging logging practices. However, he was also the founder of the Wilderness Society, and the originator of our current concept of a land ethic. As such, he embodied many of the conflicts which exist within the land ethic debate.

There are two main aspects of land conservation which need to be considered--land trusts and the indirect effects of private land ownership. The former provides a more secure path towards public ownership. The Appalachian Mountain Club is an example of private conservation that predated the national forest system in the United States. The Gilford Trust is another example of a successful land trust, with the trust owning 1 per cent of the land in Gilford. However, this form of conservation would not have been successful without private participation.

Private ownership can further the goals of conservation through efficient use of natural resources. It brings the additional benefit of efficient management which is characteristic of private enterprise. Intensively-managed private forests can reduce the pressure on old-growth forests and, if well managed, can double productivity (in terms of wood fibre). However, the best way to maintain diversity is through a combination of protected areas, multiple-use areas, and national forest managed for forestry and forest plantations. Alternatively, intensively-managed patches of forest interspersed with natural forest can be a viable option, as is the case in Sweden, Australia and Chile. The current policy is one of integrated resource planning--meaning all activities on all land. The result is an increase in the amount of exposed forest perimeters, and a decrease in forest interiors; an increase in the number of roads, and a reduction of future preservation options. The current Forest Practices Code breaks the link between individual action and outcomes. This means that foresters are not responsible for their actions as long as they follow the code.

Such a code works against conservation. We need to create a land ethic that no longer allows us to escape individual responsibility for land management.

Clark Binkley holds degrees in Applied Mathematics and Engineering from Harvard University and a Ph.D. in Forestry and Environmental Studies from Yale University. From 1978 through 1990, he served on the faculty at Yale University, both in the School of Forestry and Environmental Studies and in the School of Organization and Management. Dr. Binkley was appointed Dean of Forestry at the University of British Columbia in September 1990. His principal area of research is the application of economics to problems arising in public and private management of forests.

Land: A Mosaic of Perspectives

Friday, March 4, 1994, 8:55 - 10:10 am

The economic, historic and/or cultural relationship that a person has with a piece of land or with a particular region influences that person's sense of what stewardship of land means. In this session, speakers were asked to share their perspectives on land and to explain their personal connection to land and to nature.

Chair: Tim Pringle, Executive Director,
The Real Estate Foundation of British Columbia, Vancouver, B.C.

An Agricultural Perspective

Noel Roddick, Ladner, B.C.

Good morning. I appreciate the opportunity to speak here and give an agricultural perspective. My name is Noel Roddick. My wife and I own and operate a farm supply business in Ladner which is in the Fraser Delta about 15 miles south of where we are now. We also own a farm on Westham Island which is leased to our neighbour. I am the Secretary-Treasurer of the Delta Farmers' Institute which represents the 100 farm families that farm the 20,000 acres of good farmland, all alluvial soil, dyked and drained at the mouth of the Fraser River. The Institute was founded in 1898 and many of our members are sons and grandsons of original pioneers. Delta farms produce $50 million dollars worth of crops annually and this, we are told by the B.C. Federation of Agriculture, brings a total of $130 million annually to the local economy.

I want to give you a local perspective because I am very familiar with the local scene, which I believe to be quite different from the situation found in the vast farmlands of the Prairies.

We farm here on the urban fringe. We are in the Greater Vancouver Regional District (GVRD) or "Metropolitan Vancouver." Nineteen per cent of the GVRD is farmland in the Agricultural Land Reserve (ALR), 59 per cent is parks and forest, 5 per cent is streets and 17 per cent is urban. Of the inhabited and accessible area--leaving out forests and mountains, etc.--about 40 per cent is agricultural land, producing $300 million worth of crops annually which is farm gate value. These statistics show that our local farm industry is important and we feel confident that farming will continue in the GVRD for a long time to come.

How do we see the Stewardship issue? Without wishing to sound negative I think it's fair to say that local farmers are fed up with being taken for granted and being pressured by so many other groups. I do not mean that we are uninterested in stewardship of the land. We have been looking after our land: cultivating, draining, manuring, cropping, grazing and rotating our fields for years to maintain fertility and to be good stewards of our farms so that we can hand them on to our children to grow food for future generations of urban dwellers. We have neither neglected good stewardship nor sold our farms for condominiums, hotels, pulp mills or golf courses. And this is why we are fed up--we get no thanks for being good stewards of the land. We get no thanks for producing good fresh milk, potatoes and

vegetables, no thanks for keeping the "Green Space" (I dislike that term intensely because my land is a farm it's not just "green space"), and no thanks for keeping land for the wildlife, particularly waterfowl, that people come out to see on weekends.

Please, don't get me wrong; we are interested in stewardship and conservation. We like the birds, but we are tired of being taken for granted. The same people that support the Green Space concept probably buy their groceries in Bellingham! I read in the paper two weeks ago that the Yuppie wines of the year now come from Chile. I don't know the official definition of yuppie but I think it is Young Urban Professional something or other. I know they are supposed to like clear streams, clean air, green trees, etc. They buy their wines from Chile which is where we sent all of our banned pesticides! My point is that not much thought is given to stewardship from the farmer's point of view. Yet we just keep plugging away down on the farm, looking after the land which is the very definition of the word "steward."

I would like to show a couple of slides to give an example of the type of problems we run into.

- Here is a flock of snow geese. Quite a sight, but this is what they leave behind. However, better drainage and irrigation in the summer can replace all that is lost, but it takes funds.
- Just to show you that we left a hole at the roof peak when re-roofing our old barn two years ago so that the owls can get in and out.
- You see there are now as many ducks and geese as there ever were overwintering in the Lower Mainland. However with the urbanization of Kerrisdale, Richmond, Burnaby, etc. the ducks are more densely concentrated on the remaining farms out in Delta. We have about 1500 Trumpeter Swans now. A few years ago there were two or three. DDT almost wiped out the eagles--their eggshells were soft--but when it was banned 30 some years ago they eventually came back. Now we have 1500 eagles overwintering on our farms. All this is terrific. It gives us all hope. Thank you very much farmers for finding ways to grow crops without DDT!

Incidentally, we use fewer chemicals all the time, and use more integrated pest management and biological control. But don't forget--while we are on the controversial topic of pesticides--that the Canadian public ultimately benefits from the use of pesticides. People can buy the best and the cheapest food ever produced. Unfortunately, pesticides play a part in this.

So what are we doing about it all? We just recently formed the Delta Farmland and Wildlife Trust. I am a director. There are eight directors in total: three farmers and three naturalists and two directors-at-large (a land consultant and a company director). We have great plans to enhance Delta's farms for wildlife and farming, for both can be run together.

Farmland stewardship is so important. We must have our own food supply if we are to be a strong country. With a reliable food supply, people's minds can turn to other things. Why do you think Italy has so much beautiful art? Because it was always a rich agricultural country so people had the time. Southwest Scotland, on the other hand, where my family came from, is windswept and rocky. It took us most of the day to get enough to eat. There was no time for anything else. I guess that's why we all left!

Our farmlands are for food production and with everyone's support we can continue to keep them for farming and also, with your help, continue to look after the wildlife. To further stewardship on local farms, the urban public must first and foremost do one thing: buy what we produce. Farming may be a way of life to some, but you tell that to the bank manager. It is a business. Please don't forget that we live and work on the land and spend most of our time there. So listen to the farm voice when discussing farmland issues or when we ask for help to fight arrogant highway plans, ferry expansion, new port developments, and wildlife management areas that are being planned on our workplace. For example, the information on yesterday's Delta Farmland field trip said that "resource people" would focus on farmland stewardship programs. I hope that a farmer was included as a resource person. It would seem at times that the Delta area has become the "front lines" for every urban/farm conflict that you could ever dream up. But remember, if the local farmer goes out of business, the farmland will go and so will the open space for the birds. Thank you very much.

Noel Roddick has worked in farming since graduating from UBC Agriculture in 1962. In 1970 he and his wife, Valerie started their own farm supply (feed, seed, lime, fertilizers, etc.) store in Ladner. He is Secretary-Treasurer of the Delta Farmers' Institute and a director of the Delta Farmland and Wildlife Trust.

Developing Sustainability:
Loving the Earth As if Life Really Mattered!

Judith Plant, Catalyst Education Society, Gabriola Island, B.C.

There is a lot of talk these days about the disasterous effects that humankind's activities have had on the planet. Few hesitate to call themselves environmentalists, particularly in the so-called developed world--even presidents and prime ministers appear genuinely concerned about the fate of the earth. Corporations with gross incomes larger than some countries claim to have gone "green." And certainly when the powers of the world all showed up at the Earth Summit in Brazil in 1992, the promise was that business and government really did have the problem in hand.

Even though the Brundtland Commission--the precursor to the 1992 Earth Summit--may have had the best of intentions by coining the term "sustainable development"--the umbrella phrase for the Summit--it ended up creating a green screen for business-as-usual. With the benefit of hindsight, many are now referring to the Earth Summit as a "circus," maybe even a "magic show," for here was an opportunity for governments and big business to appear to take the crisis in hand when all the time the deep structural problems causing the crisis in the first place were not addressed at all. Issues that remained off the agenda, for example, were militarism, nuclear hazards, debt, structural adjustments and trade, all of which are degrading the environment and impoverishing the majority of the world's people. Solutions to global warming were effectively eliminated or watered down by the very nation that contributes more to global warming than any other on Earth. And yet we now have the curious situation whereby many have embraced this notion of "sustainable development" and still nothing much changes. Many grassroots groups almost instinctively questioned the Earth Summit from the beginning, with its top-down, old-boys network approach, and these same folks continue to argue that "sustainable development" has done more harm than good by creating a kind of complacency that the environmental crisis is in hand.

But, in spite of this green veneer, the environmental crisis has not gone away. Seen from the perspective that what we do to the Earth, we do to ourselves, the crisis is all-pervasive. The inequities between North and South, child poverty everywhere, and violence against women (to give just a few examples) are intimately linked to deforestation, ozone depletion, and fouling of water worldwide, and the state of the earth in general. The philosophy underlying this catastrophe is that money and accumulation rule over love for life, and some claim to be more deserving, even of existence, than others. The crisis which humankind faces is deep indeed, and it is not one that those who presently hold power and prestige are going to solve.

My presentation today looks briefly at this corporate and government strategy of "sustainable development" and shows the impossibility of its success with the help of the "ecological footprint" model. "Developing sustainability" is the direction where hope lies, where ordinary people can make real changes in their everyday lives, and this is the subject matter of the rest of my talk.

The phrase "sustainable development," coined by the Brundtland Commission in its report Our Common Future published in 1987, suggests we can have our cake and eat it too. While the report embraced the problems of the greenhouse effect, the destruction of the ozone layer, the poisoning of water, and desertification, it did not give us a way out of the values, lifestyles and supporting institutions that created the problems in the first place. Instead, the Brundtland Commission, and five years later, the Earth Summit, propose a kind of development that purports to have less harmful effects on the environment while at the same time continuing to enhance profits. Once accustomed to the taste of privilege, first world nations' designs for global well-being are inevitably based on maintaining their steady diet of wealth, though such privilege is now couched in the seemingly equitable terminology of "sustainable development."

Last winter, during a period of feeling tired and frustrated because of the time, money and energy that continues to go towards these business-as-usual "solutions" to an ever-increasing global crisis, I dragged myself to the local hall to listen to a fellow islander's talk on just this subject. Bill Rees, who teaches at the University of British Columbia, was presenting his and his co-workers' research on their idea of the ecological footprint. With great relief, I listened to a kindred spirit as he dispelled the Brundtland Commission's mythical goal which claims that everyone on the planet should be able to have access to the lifestyle of North Americans and/or Western Europeans within forty years--the carrot held out by "sustainable development." His team of researchers--all ecologists and planners--took the Brundtland vision seriously and applied the rigour of their disciplines to see if, indeed, such a future was possible. Could all of humankind really live at the same level as the average North American? Rees's research reveals that, in terms of natural resources, the lifestyle with which most of us here are familiar, is so highly consumptive that, when applied to the planet's total human population, it far exceeds Earth's carrying capacity. In fact, the research claims that should humankind attempt such a preposterous solution to our environmental crisis, we would somehow have to find two more planets to provide the necessary resources!

It may seem odd, but this lecture really picked up my spirits! Here, finally, was a graphic and simple way to look at our collective problem. Imagine a foot, imprinting itself on the landscape, and atop it, say, is the human population of the Lower Fraser Valley, more or less the bioregion where I come from. This represents this region's ecological footprint, or the amount of land needed to sustain the requirements of that human population.

Rees and his students have developed an ecological accounting tool that uses land area as its measurement unit. With this model, the total area of land required to provide the resources and assimilate the waste products of a certain population, say the inhabitants of the Lower Mainland, can be calculated. How much is it? Rees came up with about 4.8 hectares, or three city blocks per person for an average Canadian lifestyle. With a population of 1.7 million people, the residents of the Lower Fraser Valley need an area 20 times larger than what is actually available to meet their needs. Rees calls this the "appropriated carrying capacity"--the land from somewhere else required to support B.C. residents' lifestyles.

In addition to these troublesome facts is the expected growth in world population to approximately 10 billion people by the year 2030. By then, there will only be, according to the research, less than one hectare of productive land available per person, or one-fifth of what we, in this country, need to sustain our present levels of consumption.

Tracking the Footprint: Barefoot or Jackboot?

My partner, Kip, who also attended Rees's lecture, snorted just a little when he saw the illustration the research team uses to capture the idea of the "ecological footprint." It is a large, slightly hairy bare foot walking through a field of flowers. Sitting on top of the ankle are tall buildings, satellite dishes, and the inevitable smoke stacks. Like many well-done graphics, it says more than a thousand words. But, in Kip's mind, the foot is just a little too innocent-looking. He muttered under his breath that, given the exploitation of the Third World that it represents, he would rather call it an "ecological jackboot." This adjusted image would say a lot more about the nature of the relationship with the people and places from which we are appropriating our First World lifestyle.

The jackboot is perhaps a more realistic image given how land-based people in other so-called "underdeveloped" nations have been forced to leave their territory. Land that was once used to support what we, in this part of the world, somewhat paternalistically refer to as "subsistence lifestyles" has been lost to development schemes. While such "development" has been going on for over a hundred years, it has particularly accelerated in the last few decades. In the context of industrial development, "sustainable" means to enable development to continue relentlessly in the face of harsh environmental realities. With or without the jargon of the Brundtland Commission and the Earth Summit, the outcome is the same because the goal is the same--to continue doing business. The inevitable displacement of families, villages, and even whole peoples from the land puts an end to a way of life in the name of progress. Smooth-talking businessmen and their government allies bring the message of the Brundtland Commission as if it is the only lifestyle worth pursuing.

So What Can Be Done?

The stark truth of the ecological footprint remains. The people in the Lower Fraser Valley are living twenty times beyond their ecosystem's capacity to support them. And the world's population is increasing exponentially. In the face of corporate schemes like "sustainable development" which give the illusion that business and governments are really looking after the interests of all, what are we going to do? What is the grassroots action that will be as clear and compelling as Rees's analysis?

If our ecological footprint--or jackboot print--is so out of line with the carrying capacity of our ecosystem, we must surely look for a smaller shoe-size. We need to change our lifestyles. "Sustainable development" schemes do nothing to reduce our impact on other peoples and other places, and certainly have nothing to do with maintaining other cultures' self-sufficient lifestyles--their ability to live within the carrying capacity of their environments. How can we collectively assume responsibility for this critical situation facing humankind?

For over twenty years, people have been theorizing about and putting into practice the idea of bioregionalism. Sometimes thought of as the constructive program for coming to terms with the need for nonviolent and life-affirming human community, bioregionalism begins with a new/old understanding of how life works: old, in the sense that cultures before us have understood that our species is one among many and that we are interdependent, and new, in that we have never before consciously chosen this path over others. In traditional tribal cultures, life revolved entirely around their relation to place; there were few choices. Patterns of relating to the natural world simply were the way they were, and deviations from traditional ways of doing things often meant ostracization from the group. Today, decisions to live differently and to change habits and ways of seeing the world, must be taken deliberately, for what is being called for is a self-conscious lifestyle change. There is great power, I believe, in this self-conscious act, for there is little that will change the current tide more than the example of people taking control over themselves and the way they live.

To take up this perspective as a conscious act means that a person has been touched deeply by the reality of our situation. Few will change old habits unless "pushed" in some way, not only by practical reasons, but oftentimes by being touched at a deeper, more spiritual and/or ethical level. Bioregionalism is a way to express this sentiment in our daily lives. Simply put, we are seeking ways to live appropriately in our varied ecosystems--to ground human cultures within natural systems, to get to know one's place intimately in order to fit human communities to the Earth, to cease to distort the Earth to meet our demands. We are seeking a way to express what we have come to realize, and once commited there is no turning back.

Interestingly, by turning "sustainable development" on its head, a more bioregional basis for change is revealed. Instead of trying to patch up the old, top-down system with superficial attempts to "green" business, by starting with communities taking on the challenge of developing sustainability, we begin to put the well-being of the ecosystem first, and the responsibility for it into the hands of ordinary people. Instead of valuing money above all else--the bottom line for "sustainable development" schemes--a bioregionally-oriented society would encourage a love for all of life and hold this as its primary value. Decisions about how and what we take from the natural world must include such considerations as long- and short-term effects on other species, water and air quality, the well-being of all people within the region, and how one action in one bioregion affects neighbouring communities. What makes bioregionalism radically different from most other community development schemes is that such ecological considerations would not come after profit margins have been secured, but before.

Economics as the Cultural Praxis of a Sense of Place

Radically altered economic activity within a bioregionally-oriented context is perhaps one of the most powerful ways we can collectively organize ourselves. In the privileged societies of the North, we have become addicted to money and materialism in a desperate and ultimately destructive attempt to fill the emptiness created by alienation--from each other, from community, and from nature. A life that values quality relationships, where people share instead of hoard, where we gift more often than commodify, where we restore instead of exploit, seems much more welcoming and heart-warming than the coldness and isolation of most peoples' lives today.

Wendell Berry, writer and philosopher, has said that problems are not planetary--they are personal. He has also said that solutions cannot be planetary--they must be based in our homes and communities. He feels that our concern for the environment and our desire to do something about the situation has to be at the scale of our competence--in our households, neighbourhoods, and communities. Here we can create new examples of good home and community economics, for he feels that the economics of our communities are, at present, wrong and that the answers to problems of ecology are to be found in self-sufficient and self-sustaining communities.

When we look to our communities to sustain ourselves, instead of, for example, counting on massive and destructive transportation schemes to supply us with any diet we want at any time of the year, we do more than just put food on the table. An example of how this works in practice can be seen in an exciting and innovative strategy from Massachusetts. The people in Great Barrington dared to print their own money and through this process learned how much more is gained when some measure of control over our economies is brought back to the people. Local farmers issued "Berkshire Farm Preserve Notes" which carried the slogan "In Farms We Trust" instead of the federal reserve message "In God We Trust," and a cabbage head instead of the head of George Washington! These Berkshire Farm Preserve Notes helped farmers get through the long winter months when there is usually little or no income from their market gardens. Customers spend these notes during the summer months. But the local currency did much more than provide economic relief. Investors could see, touch and feel the effects of their money in their own community. Gradually the loans that people made began to work into the investors' own social and cultural life. The produce at the local farm became identified with the lenders, with their friends, and with their way of life. What began as a simple financial arrangement shifted to become an expression of shared belonging.

Another innovative story comes from B.C. Near where I live there is a creative gardening strategy that involves people who are living on the streets and farms that are abandoned. With a little organization and a lot of commitment, people have convinced the local welfare agency to allow a portion of their support money to go towards securing the farms. The result is that street people--who oftentimes know quite a bit about how to maintain a farm--are growing magnificent

gardens which produce much more than they can use. The local extension has been a food bank and sometimes, in the summer months when there is a surplus, they sell produce at the Saturday market. Many of the people have been involved with these farms for over ten years!

More and more urban people are becoming involved with Community Supported Agriculture arrangements where, for a modest amount of money up front, city folks are guaranteed a share of each crop. For about $350, one such group promises eight pounds of food a week for a 25 week season. With about 40 commitments, two full-time gardeners can be kept employed at work they love, and lots of people are guaranteed a high-quality, non-alienated food supply.

A culture and an economy based on on-going relationships within ecosystems cannot help but focus, at least partially, on restoration work. One such community that has inspired untold others comes from northern California. Freeman House works with the Mattole Restoration Council and he, among others, has written and spoken eloquently about how the people of the Mattole Valley worked to restore the once magnificent salmon runs of the Mattole River. While Freeman's writing serves as an almost step-by-step guide as to how to take up similar projects in one's own bioregion, what is equally important is his emphasis on the need for local people to be involved in such work. To do the work of rehabilitating the ecosystem in which one lives is to actually transform local social and economic systems.

Small-scale, bioregionally-oriented economic solutions do more than just create incomes. Unlike macroeconomic schemes which require that masses of people spend their entire adult lives scrambling for money to maintain a lifestyle that undermines their well-being (and no doubt also contributes to the destruction of other places if the eco-footprint research is right), locally-based, restorative economics builds community. Based on caring for each other and our shared ecosystem while meeting our own needs, a culture emerges that is both knowledgeable and humble enough to find its place in nature.

How to get started?

At a conference on community development several years ago in a town on the Skeena River, 150 miles east of the Pacific coast, I asked Marie Smallface what we, as non-native people in the north, could do about the mess we've made. Her straightforward answer: "Find a place and stay there. We can't work things out with you when you won't stay put." So, if you have been moved by the current environmental crisis and the state of human affairs in general to seek change, the next step quite logically seems to be to find a place that speaks to you and quietly commit yourself to it. I might also add that if, in your life, you are not ready to sink down roots, then consider yourself an itinerant bioregionalist and try to fall in love with the place where you find yourself for the moment.

Secondly, ask yourself the following questions which Margo Adair and Sharon Howell have presented in *Circles of Strength: Community Alternatives to Alienation*, edited by Helen Forsey.

- If you suddenly became seriously ill and could no longer take care of your own needs, whom could you count on?
- Whom would you rearrange your life for, if they got seriously ill?
- If the banks suddenly collapsed and supermarkets closed, what would you do? Who would you turn to? Who would turn to you?

If you are wondering who might make up your nascent bioregional community, start with the sense of community gained from answering these questions. Begin with those who share even just a portion of your view. Find out where you live. Get to know your neighbours, the issues in your community. Find a way to get involved with something that will make your neighbourhood or circle of friends happier and healthier. Develop relationships of trust because it is within relationships that we can count on that really new and exciting ideas for change will emerge.

Ask yourself where your food comes from. Buy locally as much as possible. Better yet, get involved with a garden, or with a community supported agriculture scheme. Nothing heals the spirit like eating food from soil you know and from your own labour. Share what you have with others. Healing self-interest must surely begin with practising generosity. Offer space in your community to weary activists who need a resting place.

An effective strategy for bringing bioregional types together is to do a community mapping project. What better way to get to know each other and the place you share than by mapping out the territory and sharing the knowledge of place that each person brings. Begin developing a collective vision of what your bioregion might look like if ecological principles were used as foundations for decision-making. Do an audit of what it takes to maintain the current lifestyle in your bioregion. Compare your bioregion's ecological footprint with a neighbouring community, or a twin city in another country. See who can reduce their shoe size the most in a year, or two years, or even five. Go about trying to make ecological principles a reality.

I predict that the work of building a culture of respect for all living things will be contagious because it will give us health and happiness as we work. I believe in our collective ability to empower ourselves and to organize to do things differently. "Take heart in the culture of love," a woman friend reminded me the other day. She'd just had an electronic shackle removed from her ankle ending her "punishment" for standing in front of logging trucks last summer at Clayoquot Sound and was celebrating with others who had also just been released. With a knowing grin on her face she assured me, "It's alive and well, and spreading..."

Judith Plant is a noted ecofeminist author, editor, and publisher. Her work focusses on community-building based on ecological principles. She is co-editor of The New Catalyst magazine and co-founder of New Society Publishers in Canada. She edited Healing the Wounds: The Promise of Ecofeminism; and co-edited Green Business: Hope or Hoax?; and Home! A Bioregional Reader. In addition to publishing, she balances her life with a large vegetable garden.

Including Nature in Development:
Bioengineering at Furry Creek!

Ben-Meyer Aaron, Tanac Land Development, Vancouver, B.C.

This paper presents a general overview of the Furry Creek project, explains our framing of the concept of "bioengineering," and gives several examples of this approach focussing in particular on creek enhancement.

Furry Creek is what we are calling a bioengineered mixed-use residential development. It has a golf course, residential units, and eventually will have a marina. It is located just north of Lions Bay, about 45 kilometres from downtown Vancouver. The area of the site is 1,036 acres. When it is finished, the community will house approximately 2300 people in 920 units--about 500 of the units are single family dwellings, the rest are multi-family units.

When we first started looking for a site for this project, we looked all over the world. We knew that we needed about 1000 acres of property to actually implement our ideas. Beyond that we felt strongly that the development had to be outside of a municipality so that we could work with the government regulators to introduce new ideas without having to fight regulations all the way. (You can not, for example, go into the middle of Surrey and bioengineer a project because there is too much influence from the development already there.) Furry Creek is an ideal site for us. It used to be a gravel pit. It is outside of a municipality and it has been logged several times. It offers us a chance to work with the authorities to develop a whole new community.

The Concept of Bioengineering

Bioengineering is not new, nor is it a fad. It integrates biology, engineering and architecture in the development of a community. Although the ideas are not new, the fact that we are integrating these ideas in a community is pioneering. One of the biggest challenges in incorporating any new idea into a product, in this case a development, is framing its terms of reference. There is no one specific meaning of "bioengineering" and no single reference by which to understand the term. As an area of study, bioengineering is still maturing. However, in order to implement the idea, it needs to be simplified into one or two statements that can be immediately understood and used to direct the development. Because the field is changing, it is impossible to give a concrete definition. Recognizing that our definition is evolving, we have framed bioengineering as follows: bioengineering is the science, and to some extent the art, of building a development with minimum negative impact on the natural ecosystem in which the project is constructed. This definition acknowledges that the development will have some impacts on the environment, but that we will: consider the impacts in our planning process; try to mitigate these impacts, and where possible, try to enhance the environment.

Planning for Bioengineering

One of the advantages of the Furry Creek project is the fact that instead of building within the limits of an existing city or town, we are in essence creating a new town. This gives us the opportunity to implement bioengineering concepts on a number of levels. Our considerations start with the individual who occupies a house and move out in a series of concentric circles to include the design of the house, the way the house fits into the community, how the community fits into the site and how the project as a whole interacts with the area around it. Rather than impose the community on the site, we want to build a community that fits in with the existing ecology.

In planning the project, the first thing we did was to conduct a complete biophysical inventory of the site. This included looking at the climate, drainage, water quality, vegetation, fish, wildlife, and energy. As we planned buildings or subdivisions, this inventory gave us a better idea of just what the impacts on the existing ecosystem would be. The impact variables considered included drainage patterns, soil quality, water table topography, plant cover, shading, air movement and energy (also known as biomass).

The next step was to develop a plan to address the impacts, and then review the feasibility of the plan with engineers and government agencies. The process was a highly iterative one. It involved: consulting with experts, educating engineers on the principles of bioengineering and working closely with the government agencies who regulate the project.

Lastly, we had to consider the financial implications and the market acceptance of a bioengineered development.

Examples of Bioengineering

Here are some examples of our approach to bioengineering:

- Since we will be marketing empty lots, we have introduced building guidelines to control the landscaping of each house site. These guidelines specifically incorporate the amount of vegetation that an owner of the lot has to maintain on site and steps that each has to take to replace any vegetation that is cut down during the construction period.
- In order to minimize congestion on the roadways and to reduce the pollution caused by transportation, we will install infrastructure that promotes a lifestyle that reduces commuting (e.g., providing local shopping amenities). We are also negotiating with B.C. Tel to instal fibre optics.
- To minimize the use of artificial fertilizers and pesticides, we will be using an organically-based fertilizer system (the BMW system) that is delivered through the irrigation of the golf course.
- We have incorporated a major planting programme intended to encourage and reintroduce native species of plants. (The site used to be a gravel pit, so part of the plan is to reclaim this area.) On the golf course, we are planting 1700 trees.
- Provision has been made for animal trails and animal access around the site (e.g., wildlife crossings at bridges and roads) in order to minimize the conflict between the new human occupants and the wildlife that already inhabit the site.
- We have also enhanced some of the creeks on site which I will talk about next.

The Enhancement of Middle Creek

I would like to give you one detailed example of bioengineering, and that is the enhancement of the Middle Creek. There are three creeks on the site. One is South Creek, the second is the major creek, Furry Creek itself, and the third is Middle Creek. One of our initial problems was that Middle Creek came right across the fairway of the 18th hole, and, as you can imagine, the 18th hole is critical to the design of any golf course. The problem for anyone hitting a golf ball off this particular tee was the strong likelihood that the ball would end up in the creek. Quite apart from the frustration that this might cause the golfer, the creek is home to trout and other types of salmon; so, the authorities objected for fear that this would interfere with the fish habitat. The problem offered us an opportunity to apply the principles of bioengineering. The solution was to move the creek out of the landing area and enhance the stream bed for salmon spawning at the same time.

Middle Creek has a problem with intermittent water flow. The creek bed is very uneven and at certain points, the water table is actually lower than the creek bed. This causes a lot of trouble for fish that are trying to migrate upstream. So, in addition to relocating the stream for the golf course, we took steps to stabilize the flows; in particular, we lowered the creek bed to keep it beneath the water table. We also put in a fish ladder to help with fish migration up the stream.

We also took steps to increase habitat diversification. At each stage in a salmon's life cycle, from egg to fry to juvenile to adult, it requires or prefers a different type of habitat. Furthermore, different species of fish eat different kinds of insects and the latter also require different kinds of habitat. To support this diversity of fish and insect species, it is important to provide a range of habitat. The fish habitat in Middle Creek was improved through riparian planting and gravel recruitment.

The food supply of young salmon is usually comprised of aquatic insects, and insects falling into the stream from vegetation on the stream bank. This vegetable material also supports the life cycle within the stream itself. For example, when a plant dies or a leaf falls into the stream, it sinks to the bottom, decomposes and is eaten by water insects which then provide food for salmon. Developing this food chain is a critical part of enhancing a salmon stream. The other thing that riparian vegetation does is provide protection as once a salmon gets to a certain stage of growth, it becomes attractive as food for other animals. Riparian planting helps provide hiding places for young fish. Plant cover also provides temperature control protection for small salmon fry during their rearing stages. Lastly, the stream bank vegetation also helps to control erosion.

The other thing we did to enhance the fish habitat in the Creek was to vary the velocity of the water flow by putting obstacles in the stream. This enhances fish habitat because it changes the size of gravel present at various points along the stream bed. The basic principle is as follows: the faster the water flows, the larger the size of rock found on the bottom of the stream (because the smaller material gets carried away). This process is referred to as "gravel recruitment." Gravel is crucial to salmon spawning; it provides a place for laying eggs and a habitat for fry.

To create different types of gravel and sand bars, structures are introduced that change the flow pattern and velocity of the water. For example, placing large rocks across the creek will form a kind of barrier. The effect is an accumulation of small gravel above the barrier and scouring below. (Scouring means that water velocities are higher so small gravel is carried away and bigger gravel is left behind.) Different kinds of structures will create a variety of scours and depositions (accumulations) and result in different kinds of habitat.

To summarize, if you introduce obstacles that change the velocity of water flowing in a stream, you end up changing the habitat because a different size of gravel is recruited. In Middle Creek we have employed a wide range of obstacles--either logs or rocks--to recruit different sizes of gravel. In the past year and a half we have finished the actual engineering of the creek. This summer we will be going back in with the riparian planting and some finishing touches on the whole bioengineering project. The stream has a relatively natural appearance and fish do come up the stream regularly during spawning season. I am told that it will take about two to three years for this kind of a system to stabilize.

Conclusions

To conclude, I want to give you some sense of how we view the bioengineering on site. In a very simplified way, the engineer's view is really to look at some sort of development and apply engineering principles to come up with a final design. The bioengineer's view is slightly more complicated than that; you have to take the environment into account and include biologists at the beginning of the planning process to come up with a viable design. From a developer's point of view, you have to go one step further because the project has to pay for itself. So you have to look for market acceptance.

I would like to finish off by giving you an update on what we have done and what our experience has been with the bioengineering. In reality, we have been able to incorporate most of our principles. The one part that we have not been able to control, however, is consumer preference. We have found that we are a bit ahead of the times. People don't really care whether they live in Surrey or whether they live in a bioengineered project. They come to this project not because it is bioengineered--which is what we would like them to do--but just because it is a beautiful place to live. We hope that over time this view will change and that these kind of issues will become foremost in a purchaser's mind.

The other difficulty we have faced is regulatory authorities. It has been difficult for us to get them to move on a lot of issues that would make this project much more ecologically sound. A classic example is when you put a road through your property. Somewhere, somebody in engineering school has decided that, in order to have convenience servicing in our communities, we need roads built to certain specifications. We would like to build narrower roads at Furry Creek for a number of reasons: to minimize disruption of the habitat, to slow down traffic, and to discourage people from using cars. This explanation has not been well received by the Ministry of Highways. We are finding that we have to apply considerable pressure on the political end to educate the authorities so we get the project that we want.

To conclude, I was told that in order to complete a successful bioengineering project, you need the skills of an engineer, the knowledge of a biologist and the artistry of a landscape architect. But after two years of working on this project, I would add one other thing--you need the pocketbook of a banker. This approach is not cheap. But since this project is really experimental, we are not looking for a big return from the project. But, we are certainly hoping that some of the techniques we develop here will allow us to do the same kind of project elsewhere in a much more efficient manner.

Ben-Meyer Aaron is Vice-President and Chief Operating Officer of Tanac Land Development Corporation. He is responsible for overseeing the Furry Creek golf course and residential development project. From 1984-1992 he was a partner of Freeman & Company, an international law firm. His specialty was banking and corporate commercial law.

From the Ground Up! Communities and Corporations Embracing Sustainable Land Stewardship

Friday, March 4, 1994, 10:30 - 12:00 am

Across Canada there are many examples of important and significant commitments by landowners to voluntary conservation stewardship. Speakers from different regions of the country talked about their projects and shared the challenges and successes of their work.

Chair: Moura Quayle, Chair, Urban Landscape Task Force, Vancouver, B.C.

A Community-based Program of Voluntary Private Land Stewardship in Muskoka, Ontario

Donald Gordon, Muskoka Heritage Foundation, Bracebridge, Ontario

Muskoka Heritage Foundation

Incorporated in 1987 as a registered charitable organization in order to preserve and conserve the history, culture, and environment of the District of Muskoka in central Ontario, the Foundation is governed by a volunteer Board of Directors elected annually by an open membership. The Foundation has active programs in both built and natural heritage. A general voting membership was introduced in 1993 by an amendment to the foundation's bylaws with the aim of broadening its base of support within the community.

Muskoka Stewardship Program

Since 1991 this program has enroled the owners of over 15,000 acres of significant natural lands in a voluntary program of land stewardship. While continuing to recruit Muskoka Stewards the program now focusses on nurturing a long-term commitment on the part of the landowners. This is being accomplished through a variety of means:

- frequent mailings: landowners receive two quarterly newsletters, one specifically for land stewards and the other, a general newsletter intended for wider distribution
- preparation of "Stewardship Strategies" by staff biologist
- Heritage Resource Centre: a "one-window" source of conservation and land use information collected from a variety of agencies and private organizations. Available to land stewards and the general public from a store front office
- frequent newspaper articles on Heritage themes printed in local media
- occasional walks, talks, and workshops
- active recruitment of stewards as volunteers to help shape and direct the program to better reflect their needs and aspirations

Reasons for Success

- a dedicated Board of Directors that represents the diversity of the community and that pools a variety of skills
- focus on local direct action to protect common heritage (The Foundation leaves the political realm to other community groups and, in doing so, allows for the participation of landowners of varying political backgrounds.)

- limited geographic area allows the program to accurately reflect the needs of the local ecosystem, and community standards

Above all else, our independence from government has been our major asset. This frees us of complicity with the regulators who are often despised by landowners. It allows our program to be developed from the ground up and not imposed by a central authority. Freed from bureaucracy, our program is both more cost-efficient and responsive to change.

Voluntary private land stewardship works because a great many landowners are ready and willing to "do the right thing" if given sufficient support and encouragement. Education is a far more powerful tool than legislation in the struggle to protect our heritage. Critical to the success of stewardship as a conservation strategy is the ability to sustain the program indefinitely. While agency programs can be very effective at recruiting stewards, only programs firmly anchored in the community will endure over the long term.

Challenges

If land stewardship is to be a facet of sustainable land use, then the organization hosting the program must itself be sustainable. The funds to maintain the program over the long run should be generated by the community it serves. Funds from government and from national organizations may be available to help start a program, but they will not be available to sustain it. The most serious oversight in the experience of the Muskoka Heritage Foundation was not to organize itself around fundraising and membership soon enough, and this may yet prove to be a fatal flaw in the program.

The greatest asset of any community organization is its volunteers. The better the use made of volunteers, the more successful the program. Staff resources are expensive and should be used sparingly, preferably to support the work of volunteers. Volunteer positions should be interesting and rewarding as this will encourage the level of community participation necessary to sustain your organization over the very long run.

Many non-government organizations are now being deluged with opportunities to consult with government. While this is initially flattering, you should be very selective about the processes in which you choose to participate as these will sap your group's energy and you will not be compensated by the agency in question. Financial constraints in government mean that agencies are eager to download their responsibilities onto community organizations without any accompanying compensation or control. Beware.

Finally, most land stewardship is going to take place in a rural setting and yet most decision-making will take place at the centre. Community groups must struggle to ensure that responsible rural development is not held hostage to the guilty urban conscience.

Acknowledgements

The Muskoka Stewardship Program enjoys the financial support of the governments of Canada, Ontario, and Muskoka, the Richard Ivey Foundation, Wildlife Habitat Canada, the McLean Foundation, the Muskoka Lakes Association, and hundreds of private donors. The Foundation is indebted to the efforts of Ron Reid and Janet Grand for establishing the program.

Prior to becoming the Administrator of the Muskoka Heritage Foundation in early 1993, Donald Gordon worked as a Master Carpenter on projects throughout the Muskoka District of Ontario. During a lengthy tenure at the University of Toronto he acquired a degree in History and was involved in various activities relating to political and environmental rights.

Corporate Forestry on Private Lands in Nova Scotia

John MacLellan, Scott Canadian Timberlands, New Glascow, Nova Scotia

I am an employee of Scott Maritimes Ltd. (S.M.L), a subsidiary of Scott Worldwide, Philadelphia, PA, with a 750-ton per day kraft pulpmill at Abercrombie Point, Nova Scotia. Our holdings are made up of 1,000,000 acres of Scott freehold lands, 200,000 acres of public lease lands and 22,000 acres of small private lease lands including two municipal watersheds. The total forest base of Nova Scotia is 10,000,000 acres.

For S.M.L., our forest stewardship can be described as including stakeholders in our growth and programs. We have a vision of our people, business, and environment as being part of a whole. The Scott vision was distilled into our mission statement: to promote a safe, secure, and growing environment for our people, trees, and industry.

This morning I will outline Scott Maritimes' experience in corporate forestry stewardship. Stewardship for our organization has been a journey with many turns and no apparent end. Each minute of each day, every individual in our organization will make choices, acquire knowledge, and experience change. Over the last three centuries, there have been many changes in the forests of Nova Scotia. Only today, the rate of change is greater than the one experienced by our predecessors.

The forest stewardship practices today by Scott Maritimes are very different from the practices of 5, 10, or 20 years ago. Our practices have changed through changing social attitudes, changing markets, and increasing non-timber demands on the forest lands of Nova Scotia. If there is one central theme in this presentation, it is change. Good forest stewardship practices will continue to change as our knowledge and expectations change.

Private Woodlot Management Program

We work under a set of stated values and beliefs. The first is that Scott is an active member of the Nova Scotia community. We believe that excellence in environmental performance is essential to the long-term success of our business. We are committed to continuous improvement in all aspects of our business including waste water quality, air emissions, waste reduction, forest land stewardship, and stakeholder involvement.

In 1974, Scott initiated a private woodlot management program. Since its inception, 119 woodlot owners have put their woodland under management with Scott as the managing partner. The program was intended to help foster responsible forest management by offering a variety of sound forest management options and services. Our personnel were committed to managing private woodlots to ensure the optimum timber resource and to meet or exceed all applicable environmental standards and guidelines.

St. Mary's River Project

In 1988, Scott entered into a joint venture with industry, public, and professional organizations. Its objective was to combine wildlife habitat management with forestry management and operations in the St. Mary's River watershed area. The St. Mary's is one of Nova Scotia's most popular salmon rivers. Joint studies and trials were conducted to answer specific questions and to develop practical and effective methods for managing wildlife and forestry together. One very important goal of the project was to provide an opportunity for people involved in forestry and wildlife to exchange information and learn about each other's work.

The project employed two full-time biologists and one technician who designed the research and produced reports, fact sheets, and training videos on operational methods and procedures. The staff also made presentations to community and professional groups on the project and its results. The four major topics of study were:

1. special management zones
2. .wildlife habitat relationships
3. snags and cavity trees
4. field demonstrations

Special management zones (S.M.Z.'s) along waterways

Forestry operations along waterways are permitted within the S.M.Z., but these operations must follow the provincial forest wildlife guidelines. Activities included:

- developing techniques and procedures for crossing streams through field tests working with contractors and machine operators to refine techniques
- fish habitat improvement trials with industry and the federal Department of Fisheries and Oceans to improve in-stream cover for fish
- research on wildlife travel zones/corridors (Wildlife and plant surveys were carried out by the project staff to identify habitat differences and wildlife use along streams with uncut strips of different widths. The surveys, had as their objective, to maintain or improve forestry wildlife guidelines on the width of corridors to be left between streams and harvest blocks.)

Wildlife and forest habitat relationships

Wildlife and forest managers practising habitat management together need to be able to predict how wildlife will respond to various forestry operations. The long-term studies were initiated to evaluate how the arrangement, spacing, varied habitat, or forest types affect wildlife species. The knowledge acquired from these studies can now be used by the forest industry when planning operations on forest lands.

Snags and cavity trees

These are important to about 25 per cent of the 250 wildlife species that breed in Nova Scotia. Snags and cavities have usually been cut for economic and safety reasons. The project staff were able to develop fact sheets to help industry personnel select the best trees to be left for use as snags and cavity trees. Workshops were held with logging contractors and their employees to seek their input as well as to educate them on the importance of such trees for wildlife.

Field demonstrations

The sites employed were used to show the results of proper operating techniques and will serve as valuable educational tools.

Wildlife Guidelines for Nova Scotia

At S.M.L., we believe that managing for forestry, wildlife, and water quality is a realistic goal. Wildlife guidelines and standards for Nova Scotia were introduced in 1988. These were developed after extensive literature review and consultation by the Department of Natural Resources, along with input from advisory councils and forest users. They were designed to be used on all forest lands in Nova Scotia. The guidelines address:

- forest diversity
- harvest blocks limited to 50 ha (125 ac)
- managing edge
- wildlife corridors
- special management zones near water courses
- cavity trees, snags
- deer wintering areas
- birds-of-prey and heron colonies

These regulations were applied to all Crown lands and to lands managed under the Private Lands Management Program funded under federal/provincial agreements. In 1989, Scott adopted the guidelines for all Scott fee lands, lands managed by Scott and all stumpage purchases.

Best Forest Management Practices (B.F.M.P.)

In 1994, Scott will be embracing a complete process for planning, implementing and auditing the application of the best forest practices. B.F.M.P. are the synthesized results of our past experiences in private land management, the St. Mary's River project and five years of applying the forest guidelines and standards for Nova Scotia on our operations. In addition, B.F.M.P. are the result of consultation and input from woodland staff, contractors and their employees. The four primary elements of our best forest management are:

1. Planning through the steps of:

    a) identifying the specific operating block from the forest products inventory
    b) deciding on the appropriate regeneration plan
    c) locating roads and stream crossings
    d) developing the harvest plan based upon the distribution of operable stands throughout the compartment to ensure compliance with the forest wildlife guidelines and standards for Nova Scotia
    e) auditing of the results of the operation by each harvesting contractor and his/her supervisor as operations are completed

2. Harvest method selection

The method of harvest influences the regeneration potential through: establishment of natural regeneration, protection of advanced regeneration, or establishment of plantations. There are a variety of methods to apply, namely:

a) Site enhancement harvest to improve harvest block appearance while facilitating post-harvest treatments. There are three categories of site enhancement:

- patch cuts - where clearcut areas of ten hectares (10 ha) or less in size are distributed across the stand to minimize the visual impact of the operation. Each block is separated by an untreated block of equal size.
- conversion cuts - this method is used to harvest one component species from a mixed forest type. These operations are aesthetically pleasing, provide wildlife benefits and improve the regeneration potential of shade tolerant species.
- clumps - leaving undisturbed clumps of trees over the entire harvest block will improve appearances, enhance wildlife and can act as a seed source for the next crop. For this treatment the minimum number of clumps based on the block size is specified up to the maximum cut size of fifty hectares.

b) Seed tree harvesting is used where the opportunity for regeneration is judged to be favourable. In this operation, 10 to 20 trees per acre of the dominant species are left to improve the opportunities for natural regeneration. The species most often left as seed trees are red spruce and yellow birch. Ironically, this practice--leaving the best trees on the site--is the complete opposite to the traditional philosophy in Nova Scotia since the best trees always provide the best economic return. This represents a significant change for us.

c) Shelterwood cuts are treatments which require the removal of merchantable material at several intervals gradually, over a period of years, opening the forest floor to greater sunlight and enhancing regeneration. This treatment's primary objective is to ensure natural regeneration. This treatment is expensive and is limited to forest stands with a tolerant species overstory.

d) Clear cuts are blocks where all merchantable material is removed in compliance to cut size limitations, stream and run off protection, snag and cavity trees.

In summary, the choice of method is influenced by stand and terrain conditions, level of public exposure, site quality index, and environmental sensitivities.

3. Environmental considerations

There are many factors to consider but the objectives of our practices are:

- to minimize site disturbance by managing the timing and intensity of operations (For example, this year our goal is to reduce the impact of the ruts made by logging equipment.)
- to enhance wildlife habitat and the health of the ecosystem by meeting and exceeding all regulations and guidelines
- to identify and protect wetlands and riparian zones as an important component of protecting wildlife and water quality (One example is the Eastern Habitat joint venture to protect wetlands and waterfowl.)

4. Site aesthetics

Good plans, well executed with care and dedication must stand on their merits long after operations have ceased. Sites devoid of foreign objects, and organic debris returned to the site and not piled on the roadside are all part of site aesthetics.

In conclusion, we are proud of our present forestry practices and we are confident in our direction. We believe there is a promising future if we continue to recognize that good forest stewardship includes the people, the business, and the forest.

John MacLellan graduated from the University of New Brunswick in 1984 with a B.Sc. in Forest Resource Management. He works for Scott Canadian Timberlands as a Planner in the company's Central Region. John has been involved in Scott's efforts to develop progressive environmental "best practices" for its forest operations and for the enhancement of wildlife habitat.

Operation Burrowing Owl: A Communication Plan

Curt Schroeder, Nature Saskatchewan, Regina, Saskatchewan

The burrowing owl was designated a threatened species by the Committee on the Status of Endangered Wildlife in Canada in 1978 due to declining population numbers. Breeding range contraction on the Canadian prairies has been well documented, with less than 2,000 burrowing owl pairs remaining in 1993. Saskatchewan and Alberta contain the largest populations, Manitoba and B.C. the smallest.

The primary factor contributing to the decline in the burrowing owl population is loss of nesting habitat, specifically unoccupied burrows and surrounding area. Much of the suitable nesting habitat has been altered and fragmented through cultivation of prairie lands and industrial and urban development. In addition, extensive rodent (e.g., black-tailed prairie dogs, badgers, ground squirrels) control measures have further reduced nesting habitat as the owl depends on these animals to dig a burrow for nesting. Secondary poisoning by pesticides, vehicle collisions, shooting, predation and limited food supply further reduce survival and reproduction of the burrowing owl.

In response to the decline in population, Operation Burrowing Owl was initiated in 1987 by the Saskatchewan government and World Wildlife Fund Canada. The use of the military-like title (e.g., Operation Desert Storm) is particularly appropriate given investment by many funding partners and the collective involvement of a large number of individuals in the program.

Operation Burrowing Owl is particularly suited to private stewardship involvement. Private individuals occupying the nesting habitat of the burrowing owl play a critical role in maintaining that habitat. One of the goals of Operation Burrowing Owl, therefore, is to protect nesting habitat through renewable voluntary landowner habitat protection agreements. A landowner simply agrees not to destroy a burrow for a minimum of five years from the date of signing and to report the number of nesting pairs annually to Nature Saskatchewan. In the six years since the program began, over 500 landowners in Saskatchewan alone are registered participants in the program protecting over 16,000 hectares of land.

Operation Burrowing Owl is largely a landowner contact program where potential landowner participants (or stewards) are identified, recruited and supported throughout the life of the program. Given that the breeding range of burrowing owls in Saskatchewan covers almost the entire southern third of the province, a large number of volunteer landowners must be recruited. Communicating with them is an integral part of our work. We must use various communication strategies to reach potential participants. In a nutshell, we are in the communications business.

In 1990, after three years of operation, we hired a consultant specializing in corporate public relations to conduct a communications audit of Operation Burrowing Owl. His task was to evaluate our current practices and to recommend possible improvements. The objective was to develop a communication plan for 1990 and 1991, and beyond. The audit involved interviewing landowners, media, funding partners and others to assess the effectiveness of our communication plan. Telephone interviews were completed with the following publics:

Partners: One hundred per cent of Operation Burrowing Owl's program partners including Wildlife Habitat Canada, World Wildlife Fund Canada, Saskatchewan Wildlife Federation, Saskatchewan Parks and Renewable Resources and Nature Saskatchewan were contacted. Students at the University of Calgary were interviewed at length as they had evaluated Operation Burrowing Owl programs throughout Saskatchewan and had established a similar program in Alberta.

Media: Eight journalists in the print and electronic media specializing in agriculture and wildlife issues were interviewed. Their media outlet was within the geographic area where the program is most active.

Landowners: A random selection of participating landowners, as listed on the newsletter mailing list, were surveyed. The random sampling was somewhat skewed to get representation from around the program area.

The results of the interviews were as follows:

1. *Partners*

The partners seemed to feel that they receive the information they require promptly. However, they would like to receive progress/annual reports that are professionally-designed, making them easier to read and more attractive to funding agencies, and more appropriate for dissemination to other interested parties. The partners also agreed that information sent out by Operation Burrowing Owl needs to be more cohesive and organized. Several partners identified a couple of information gaps: materials that are up-to-date and information about the reasons for and the ways of becoming involved in the program.

Each partner also requested more general information about the program on a more regular basis. They each stated that although they do not require this information, it would enable them to become more knowledgeable about the program and perhaps find other avenues for involvement. The partners would like to receive all information mail-outs.

Several partners identified the need for one or two culture/wildlife journalists whose media outlet is within the geographic areas where the program is active. Journalists who have already published a national or international wildlife story should be invited to write a story on burrowing owls.

2. *Media*

The media interviewees said that they were very interested in the burrowing owl program even though many did not know about the program or had not received any information about it. All journalists were familiar with the visit in 1988 by HRH Prince Phillip to promote the program. Journalists often stumbled upon the burrowing owl information and decided to use it. Obtaining correct information can be very time consuming and they felt that a more accommodating approach was needed to encourage media coverage. A media kit should be assembled containing background information, story ideas, fact sheets, updates and the name of a spokesperson.

3. *Landowners*

All the participating landowners surveyed said they initially discovered the program while talking with neighbours who were involved in one of the partner organizations, or through the media coverage of Prince Phillip's visit. They all commented they rarely hear anything about the program or hear people talking about it. The landowners were quick to point out they are proud of their participation, but have noticed a lack of concern, interest and support from neighbours and people in the area. This, they felt, was directly due to lack of knowledge and education about the program and the issues involved.

Even though new landowners are sent a brochure and updates about the program, few could remember receiving any. Long time landowners could not remember receiving the annual newsletters. However, all could remember receiving a farmgate sign. When the landowners were questioned about their opinion of each of the communication tools used by the program, the following comments were made:

- The brochure was adequate, but was not very well designed and probably would not invite people to pick it up.
- The newsletter content was adequate, but difficult to read because of format and uninteresting stories. It had the facts, but could be enhanced with more up-to-date material and information about how the landowner fits into the total picture, the progress of the program and how everyone fits into the bigger picture.
- They all wanted information more frequently.
- Farmgate signs were great. They liked having them where everyone could see them, as many people commented on them.

Over half the landowners surveyed said they would like more media coverage, more information in the schools and in their communities and generally more knowledge about the program to assist them in explaining the program and to help conserve the owls. Three quarters of the landowners surveyed said they wanted more opportunities to ask questions and bring the program people up-to-date on what is happening on their land.

Communication Goals

Completion of the communications audit provided sufficient information to set communication goals for the program. The following communication goals were set:

1. to recognize landowners' efforts in the Operation Burrowing Owl program - this encourages continued participation and support for the program and raises the profile of the program in their communities
2. to keep participating landowners up-to-date on the program and related issues - this encourages continued participation and the development of knowledgeable ambassadors for the program
3. to encourage more landowners to become part of the program - the protection of more habitat is a direct contribution to recovery and involves a larger number of willing volunteers
4. to educate the neighbours, young people and communities in geographic locations where burrowing owls are found about the plight of the owls (Education of the community is critical as it provides support for the landowners currently participating in the program and applies community pressure to those who have not yet joined. More information about other causes of mortality from hunting, pesticide use and predation can be disseminated. Raising awareness of the burrowing owl and wildlife and habitat conservation can contribute to an understanding of why conservation measures are needed and should be supported.)

Target Audiences

The next step was to identify target audiences along with ways of reaching them. In 1990, we identified the following as our primary and secondary target audiences:

1. Primary
   - Participating landowners: newsletters
   - Media (local and relevant provincial): updated media kit
   - Partners: grant applications, annual report
   - Local communities: news releases, paid advertising, stories from local participating landowners
2. Secondary
   - Media (provincial): updated media kit
   - General public: community shows on radio and television, letters-to-the-editor

In 1991, our target audiences were:

1. Primary
   - Participating landowners: newsletters, pesticide survey, toll-free telephone number
   - Potential landowners where owls exist: current landowners, media, toll-free number
   - Media (local, provincial, national, international): media kits, journalists
   - Youth groups: Nature Saskatchewan members as speakers, slide presentations
2. Secondary
   - Partners: annual report, grant applications
   - General public: electronic and print media
   - Publics in other provinces: national and international wildlife journals

Conclusion

The communications plan for Operation Burrowing Owl is essential to the program's existence. The plan will assist in maintaining support for the program and help us increase awareness which will contribute to the preservation of the burrowing owl. Our communications plan could be the prototype for many other communications activities in other provinces. Saskatchewan is the source of information and activity concerning the burrowing owl. Principles and approaches used in Operation Burrowing Owl have been exported to Alberta where a similar program has been set up.

In summary, a communications audit and development of a communications plan is an essential component of conservation programs. Environmental problems are people problems, and effective communication is an important dimension of effective stewardship. According to the recent Statistics Canada report, "The Importance of Wildlife to Canadians: Highlights of the 1991 survey," 83% of Canadians stated that it is very or fairly important to protect endangered or declining wildlife populations. One very effective way to mobilize that public attitude is to involve organizations such as naturalist groups. Like Nature Saskatchewan, these groups have strong grassroots connections because of their membership and are uniquely capable of working with local people and agencies to build social or community consensus for responsible land use decisions.

Recommendations

1. Develop a more professional image for Operation Burrowing Owl programs.
2. Consistent use of the symbol/logo is an inexpensive way to develop an identity and professional image. The logo can be used as the cover for the annual report, to respond to requests for specific information, for presentations (i.e., budget submissions) and a multitude of other purposes.
3. Continue to produce landowner signs using the new symbol. Follow-up with a phone call to ensure signs are

erected.

4. A personal visit by Nature Saskatchewan staff or member volunteers to sign up new members is effective in getting commitment from landowners. This can be expensive though, especially with the distances involved, but use of cellular phone technology has increased the productivity of field personnel. Many farmers now have cellular phones which makes telephone contact much easier.
5. Consider establishing a toll-free number to encourage participating landowners and the general public to report owl counts and sightings each spring.
6. Volunteer recognition is a must! Produce certificates so participating landowners and their families have a public way of showing their concern about burrowing owls and to thank them for participating.
7. Produce a newsletter twice annually using professional assistance in design, content analysis and writing.
8. Produce postcards to update landowners, and other targeted publics on a regular basis, to use as thank you cards and to send as quick reminders to return surveys, etc.
9. Produce caps, t-shirts, and pins for participating landowners, members of organizations which are partners, dignitaries, and other appropriate supporters. These will serve as thank yous, goodwill perks, and promotional pieces. These items were chosen because caps are appreciated and worn by many older men in rural communities and are visible to everyone they encounter thus encouraging logo recognition and discussion about the program. The t-shirts are required as the program is supported by women and families who should also be recognized for their efforts. These highly visible promotional pieces can be used as thank you gifts, prizes, etc. when caps may not be appropriate. Pins should be used only for participating landowners. These can be worn all year round and in many situations where caps and t-shirts are not appropriate.
10. Develop media contacts and encourage media coverage in geographic areas where landowners currently participate.
11. Develop a poster which introduces the new symbol/logo, outlines the program and provides contact numbers. Space could be left for announcements and local messages.
12. Supply fact sheets and other information to partners in organized, professionally-produced formats on a regular basis.
13. Encourage partners to assist in publicizing the program by passing on information, talking about the program at their meetings and including it in their literature, and by creating publicity opportunities.
14. Include recognition of the partners in publicity and literature whenever possible and appropriate.
15. Produce a brochure with the new symbol/logo, explaining the program and how to become involved. This should include a reply card. The brochure can be used by Nature Saskatchewan and its partners to explain and promote the program.
16. Annual reports should be designed and written professionally. They should also use the new symbol/logo.
17. Approach HRH Prince Phillip about endorsing the program in a public manner once again, especially when the five-year voluntary agreements are due for renewal. A letter from Buckingham Palace thanking participating landowners for their past support and encouraging them to continue is a particularly unique volunteer recognition approach.
18. Take advantage of unexpected publicity opportunities.

19. Prepare a slide show or video on burrowing owl conservation.
20. Establish a speakers' bureau so that Nature Saskatchewan members can present the program to various groups using the video or slide show.
21. Where appropriate, promote membership in Nature Saskatchewan. Advise the general public that they can participate in the program through donation to and membership in Nature Saskatchewan.
22. Rural landowners often have a high distrust of government and thus the involvement of non-government organizations is essential to program success.

Curt Schroeder is Executive Director of Nature Saskatchewan. He has a Master's degree in Environmental Design from the University of Calgary. His research interests include: endangered species conservation, zoo biology, and management of non-profit organizations.

Community Support Programs

Dr. Stewart Hilts, University of Guelph, Dunslinch, Ontario

I use the term "private stewardship programs" to refer to experimental approaches to building a commitment on the part of private landowners to good land stewardship. In this presentation, Ontario's Natural Heritage Stewardship Program is examined as an example, and some suggestions for community support programs are offered.

The Natural Heritage Stewardship Program has involved the negotiation of about 1500 voluntary or 'handshake' stewardship agreements with landowners over ten years. Sponsored by a coalition of government and non-government groups known as the Natural Heritage League, the program has been very well received by landowners, who are by and large supportive of conservation. The main shortcoming has been the inability of co-operating government agencies to provide follow-up programs for participating landowners. The goals of a landowner stewardship program should be:

- to build a relationship of trust with landowners
- to encourage practical land ethics
- to promote good land stewardship practices
- to build a long term commitment to stewardship

Experience suggests that landowners expect certain things during a landowner contact program. They expect to be treated with respect; they expect to see a lot of understanding. Landowners want support and assistance with management of their land, and they want agencies to provide integrated information. Finally, it is important to recognize the knowledge that landowners have of their own land. There are a lot of programs and activities that communities can offer to support landowners. These might include:

- a newsletter
- follow-up phone calls or personal visits
- workshops and hikes
- information on land management and options
- assistance with higher levels of commitment such as written management plans

In Ontario, there have been a number of initiatives to improve follow-up with landowners. These include a conservation land tax rebate program, the development of 'one-window' stewardship offices, a training program for government agencies that provide advice to landowners, and a Stewardship Information Bureau.

An Environmental Farm Planning Program is being developed by a coalition of farm organizations. It will encourage farmers to plan and undertake a wide range of conservation practices. Increasing attention is also being paid to the role of rural non-farm landowners in land management, with the development of a stewardship handbook directed at their particular interests. In a number of communities, Land Trusts are emerging as groups of citizens seek to play a more active role in conservation.

Government agencies have rich staff resources to contribute to landowner follow-up efforts, but they are limited by their sector-specific mandates. Non-government organizations such as Land Trusts are more innovative and flexible, but are limited by lack of staff. Partnerships of various types will be essential in developing community support programs for encouraging private stewardship.

Dr. Stewart Hilts is the Director of the Centre for Land and Water Stewardship at the University of Guelph. He also teaches in the Department of Land Resource Science and the School of Rural Planning and Development. Over the past decade, he has developed a stewardship program to encourage private landowners to voluntarily protect significant natural habitats on their own land.

Panel A: Revisiting the Land Ethic

Friday, March 4, 1994, 1:15 - 2:15 pm

Speakers were asked to describe and analyze the prevailing land ethic, in order to identify the challenges we face and to provide possible signposts for a path to the future.

Chair: Greg Roberts, Director of Integrated Land Policy
B.C. Lands, Ministry of Environment, Lands, & Parks

The Land Ethic - Historic World Views

Dionys de Leeuw, Ministry of Environment, Lands & Parks, Terrace, B.C.

As a contribution to the "Revisiting the Land Ethic" stream of STEWARDSHIP '94, I discuss my understanding of valuing nature or "environmental ethics." (See the background paper, "Changing Values Towards Nature, A Short History" in these proceedings.) I define "environmental ethics" as the moral judgements of society towards nature and I classify these judgements into three types: the exploitation, conservation, and preservation environmental ethics. The preservation view of the world is further subdivided into the "aesthetic," the "rights" and the "respect for nature" ethical points of view. Both the exploitation and conservation as well as the aesthetic preservation ethics are essentially people-at-the-centre, or anthropocentric. The "rights" and "respect for nature" ethical systems are biocentric, or life-at-the-centre, and view the human species as an equal and legitimate participant with all other life in the global organism. Since environmental agencies espouse primarily the conservation ethic, I suggest that allowances be made in management decisions for the emergence of a life-centered ethical system other than conservation.

Dionys de Leeuw received an M.Sc. in entomology from the University of Victoria in 1979. Since then, he has worked for the B.C. Ministry of Environment, Lands and Parks as a Fisheries Biologist and more recently as a Habitat Protection Biologist. In 1992 he took a one-year leave of absence to acquaint himself with the study of ethics and human values toward nature in particular. He is also an artist and classical guitar teacher.

Ecological Footprints: Can We Learn to Tread Lightly?

Dr. William E. Rees, School of Community and Regional Planning, UBC

All of our thinking, all of our ideas reflect our current mental model of reality. We can call it a paradigm, we can call it a worldview, we can call it a cosmology, but, whatever we call it, it is nothing more than our present way of perceiving things. However, just because we perceive things a certain way doesn't mean that they are that way. In fact, the environmental crisis and the political crisis of inaction, have much to do with the fact that our models of reality do not necessarily correlate well with the true nature of reality. When the facts start disagreeing with the paradigm, when things happen that can no longer be explained by the model, the model has to be discarded. We're at such a juncture right now. There are phenomena occurring "out there" that cannot be explained or remedied by the prevailing social paradigm--the ethic from which we operate on this planet.

Since the scientific revolution--although its roots go much further back than that--we conceive of the world as divided into two spheres: the realm of human activity (the world of mind) and the realm of matter (the environment). Accordingly, our dominant economic models implicitly treat the economy as a separate entity from the environment. The latter is treated merely as a source of resources and a sink for wastes for the former.

Stan Rowe, last evening's keynote speaker, wrote a brilliant little piece in the magazine *Forest Planning Canada* a couple of years ago, in which he points out that the "environment" is really a creation of mind. He argues that our intellectual heritage--our dualistic world view--encourages us to see humankind as separate from everything else. Environment, in Stan's words, "is its own pejorative. It meekly sets itself aside from something else more important, something else at the centre." So we live from a mental model that presupposes that humankind is at the centre of things and that the environment is simply a backdrop somewhere "out there."

There is no environment "out there" if we think in ecological terms. We are in reality intimately connected to this thing we call "environment." If we were to agree to meet again in this room in one year and everybody actually attended, only two to three per cent of us would show up! What do I mean by this? Our bodies are constantly wearing out and being replaced: we take in matter and energy from the environment and we excrete back into the environment. On an annual basis we exchange 90 to 100 per cent of our material selves with that thing out there called "the environment." Now do you feel as isolated from it as our mindset says that we are? The reality is that we are in constant exchange with this otherness and yet we still think of ourselves as an entity apart, in some way invulnerable to the fate of that otherness. That's the model from which we operate in our day-to-day activities. Significantly, this model suggests there are no constraints on the growth of the economy because it is not connected in any important way to the environment. Technology can substitute for resources and cope with any waste management problems.

A very different way of looking at things is the ecological way. Whether we like to think so or not, we are basically animals. We eat, we excrete, we have a metabolism that is fundamentally no different from that of robins or earthworms. This is simple reality. Plants produce food for animals and the excretions of animals (and bacteria and fungi) are nutrients for plants. This is what enables us to continue to take from the environment, reconstruct, self-produce, and excrete back into the environment on a continuous basis. Every other species does the same thing. But, we have, in addition, an industrial metabolism. All of our artifacts--our factories, our machines and so on--are extensions of ourselves and they also take from the environment, process the material and energy and excrete back into the environment. So in addition to our animal or biological metabolism, we have an industrial metabolism which has no evolutionary basis. In other words, nature has no evolutionary experience with the kinds of chemistry that we have contrived within our economy and that's one of the reasons why industrial contamination is often toxic to living things. Industrial excreta are not part of natural cycles.

Now, from this ecological perspective, the human economy does not produce anything. We *talk* about increasing economic production, but in reality all we do is increase consumption because economic activity always requires inputs from nature. We process energy and material, we convert them to goods and services which have market value, but the raw materials are produced elsewhere, outside the economic sub-system. Production is outside, consumption is inside. The economy does extract utility from the rest of nature, but in material terms this is a consumption process. To summarize, we are a species like the others except for our aberrant industrial metabolism. In addition, we have to think of the economy as internal to the ecosystem. This brings us closer to a nature-centred view of reality.

Now, when the economy was small, the notion that it was separate from the environment was an adequate first approximation because the impacts of thinking that way were trivial. For the first 200 years of the industrial revolution it didn't matter that our model was dead wrong.

An earlier parallelism is the notion of flat geocentric earth versus round heliocentric earth. For 99.9 per cent of human evolutionary history, people lived their lives as if the world were flat and at the centre of the universe and this too was an adequate first approximation of reality. It became inadequate when we began to trade and navigate around the world. That is what really convinced people that maybe Galileo, Kepler and the others had a point. The Catholic church only caught up two years ago when it apologized for its condemnation and excommunication of Galileo. Sometimes it takes a long time for the social models of reality to catch up to the facts! Well it is now time to shift from a flat earth economy to a round earth economy. And hope that it does not take the next 500 years to do it!

We are concerned at this conference about land and last night I asked you to consider how much land it takes to sustain your individual lifestyle. The products we consume can be traced back to the land in two ways: first is the land needed to produce resources; second is the land needed to absorb wastes. For example, in Canada the average high animal protein diet requires 0.5 to 0.9 hectares of land per capita. Every one of us is attached (although most of us are unconscious of it because we live in cities) to at least half a hectare of land for food alone. The carbon dioxide produced through the consumption of fossil fuels can go two places. It can accumulate in the atmosphere where it may ultimately cause climate change or it can be absorbed somewhere on the planet. To assimilate the carbon dioxide through photosynthesis (e.g., through the growth of forests) would require about two to three hectares of a typical Canadian forest per capita. If we look at consumption of newspapers, magazines, wood products of various kinds, there is another fifth of a hectare per capita. Imagine--a fifth of a hectare in continuous production just to generate the paper and wood products that each of us consumes!

When we add it all up, the average Canadian requires (and this assumes that the land is being managed on a sustainable basis which arguably it is not) at least five hectares per capita. This is your personal "ecological footprint" on the planet. Most of us are totally unaware of it because it comes to us through market exchanges of goods and services. We do not see the connection to the land base, yet it is very real.

If we multiply the population of an urban region by the average per capita land requirements, we come up with the ecological footprint of the entire region. It is vastly larger than the amount of land the city physically occupies. The ecosystems that sustain cities are now a global hinterland spread out all over the planet. For example, the area of the Lower Mainland from Hope to Vancouver--the valley bottom--is about 4000 sq. kilometers or roughly 400,000 hectares. There are 1.7 million people living in the region, each requiring five hectares. The total area required to sustain the whole population of Vancouver at current consumption levels is therefore over 8 million hectares. Compare this to what is actually available (400,000 ha) and you get an idea of the magnitude of our dependency on distant "elsewheres" and of the problem facing an industrializing world.

We like to think of the Lower Mainland as a rich and growing area that generates great economic surpluses. This may be true in financial terms, but, in ecological terms, the region is running a tremendous deficit. The difference between the land that is required per capita and the actual land occupied, is the ecological deficit of our particular region. That's the amount of ecological consumption that we enjoy in excess of the amount we produce locally on the land base that we call home. An ecological deficit is more serious in the long run than any financial deficit.

Let's apply this concept to a whole industrial country, say Holland because it is a country with roughly the same population densities as the Lower Mainland--425 people per square mile. If you look at the economic indicators, Holland is a wonderfully advanced industrial country with a positive current account. It is a net exporter (in dollar value terms) of agricultural products. However, Holland imports cheap fodder from the third world and converts it to value-added meat, cheese, and dairy products which it sells in the rich markets of the world. As a result, the amount of land needed to support the agricultural economy of the Dutch countryside alone is five to seven times larger than the entire agricultural land base of the country as a whole. These ecological flows are largely invisible and arguably unsustainable. From the sustainability perspective, it doesn't matter how good a "developed" region looks, how much you "parkify" or beautify it, because most of the important supporting ecosystems are external to the region that you are talking about.

Can every country run an ecological deficit? No! Somebody has to run an ecological surplus! For every deficit there has to be an equivalent surplus elsewhere on the planet, otherwise we end up drawing down the stores of ecological capital

stocks that have been built up over time. In fact we are already doing the latter. The collapse of the East coast cod stocks, the depletion of the ozone layer, soil erosion (26 billion tons eroded in excess of new soils formed), falling ground water tables, desertification due to human misuse of landscape, the deforestation occurring on almost every continent, declining biodiversity--these are all symptoms of the imbalance between the rate at which human beings are using the outputs of nature and the rate at which new product is being formed.

We are continually drawing down the very stocks of assets upon which we depend. We are able to do this because one hundred years ago we discovered vast storehouses of accumulated photosynthesis in the form of hydrocarbons. The oil that has powered the industrial revolution since the middle of the last century is the product of millions of years of ancient photosynthesis. And we should keep in mind that photosynthesis by green plants is the most important source of new production on the planet.

The United States, one of the great industrial powerhouses of the world, is a net importer of energy and of every strategically significant mineral. This great economy is totally dependent on flows of material and resources from outside of its own land base! A very significant amount of its industrial infrastructure and standard of living depends on the stability and continued availability of those resource flows. Again, can every country follow the path taken by the northern industrial countries and become net importers of ecological products? Can every country run an ecological deficit?

Let us look at this in terms of the theme of this conference. Given the current population of the planet and the total amount of ecologically productive land, each person is entitled to the output of 1.6 hectares. In other words, if we were to divide the productive assets of planet earth equitably among the whole of the human population, there would be 1.6 hectares for each person. (Notice how relentlessly anthropocentric even this view of the world is!)

The problem is as follows: people in industrialized countries use at least three times their fair share of ecological flows. This means, in effect, that there is a lot less productive land available for the rest of the world's peoples. In fact, the list of trends I gave earlier--the changing atmosphere, the collapsing fisheries, etc.--suggests that the present population of the world (particularly those of us who enjoy very high material standards of living) has already appropriated the entire carrying capacity of the planet particularly for those factors which show accelerating decline.

The picture I have painted so far is pretty bleak; however, I am going to leave you with some hope and optimism. I have argued, in effect, that the "sustainable development" path prescribed by the Brundtland Report, the one that calls for a five-to ten-fold increase in industrial activity in order to raise the material standards of the world's poor, may not be biophysically possible. If this thesis is correct and we continue to follow the mainstream development path, it will lead to a very unhappy and unstable world. On the other hand, if my thesis is correct and we change our behaviour and attitudes, then we have a chance of creating a world that is ecologically more stable and more geopolitically secure. Our cities will be more compact with superior urban amenities, better public transit, and a balanced relationship with the countryside. We will be able to walk in the streets at night without fear of being mugged. I am saying that if the ecological worldview is correct and we act as if it is, we will have a better world than the one we seem to be creating now. We are not improving our lives by accumulating material wealth if we have to lock ourselves in at night because wealth is inequitably distributed. We are not bettering our standard of living if we are creating a planet on which a quarter of the people are permanently impoverished because the wealthy quarter has appropriated almost the entire productive potential of the planet.

The problem is not just an international one. Tensions are increasing too within even the richest countries. The development model that asserts that life is improving because GDP is increasing no longer makes sense. For the past ten years, despite an increase in GDP in both the United States and Canada, half of our families are worse off in real terms than they were at the beginning of the decade. This decline is a result of the distributive inequities that are occurring partially as a result of the profound restructuring accompanying the globalization of the economy.

I ask you to consider the two models of reality we have been discussing. I am not saying that the ecological version is right, but it does offer a different way of looking at things. How does it jibe with your own experience and your own common sense? You might want to read the February 1994 issue of *The Atlantic Monthly*. The following is the header for an article on "The Coming Anarchy:"

> Nations break up under the tidal flow of refugees from environmental and social disasters. As borders crumble, another type of boundary is erected. A wall of disease. Wars are fought over scarce resources, especially water and war itself becomes continuous with crime as armed bands of stateless marauders clash with the private security forces of the elites. A preview of the first decade of the 21st century.

Again, this is a very bleak prognosis based on present trends. I believe, however, that "the coming anarchy" is avoidable if we recognize that we are in a state of denial over the seriousness of the problems we face. I am not sure my prescription will be correct, but I am asking you to accept that there is a serious problem and that we need to seek serious solutions immediately. This requires a shift in the dominant social paradigm, a change in our behaviour and values, the acquisition of a new land ethic that considers humankind as a part of the ecological reality. We must admit that we are a major force on the planet earth which can shift it in either direction. The choice is ours. We have the potential to create a secure and stable future for us all, but do we have the will to do it?

Dr. William (Bill) Rees is currently Director of the School of Community and Regional Planning at the University of British Columbia where he has been researching and teaching the ecological basis for economic development since 1970. Dr. Rees's planning and policy research focusses on the developmental implications of global change and the ecological conditions necessary for sustainability.

Wildlife and Private Land

Mike Halleran, Landowner, Lardeau Valley, B.C.

I have been speaking at conferences like this for 25 years. You have chosen a pretty well-worn theme. Likely any of my old talks would have sufficed today. I am as concerned for wildlife as ever, but I am disturbed about the new face of wildlife advocacy. It seems that wildlife advocates have begun to show proficiency at a system, as the system itself becomes less and less relevant. Getting better at playing the angles won't make the traditional system work better, but more on that later.

Some private land is good wildlife habitat and some of it is for sale, but no public body has any money to buy it. Buying land is not a priority for any government since it is not a priority with the public. And there has never been a time in the history of fish and wildlife management in B.C. when as much PUBLIC land was being allocated to fish and wildlife purposes as now. Now you want landowners to "Volunteer to Conserve Nature on Private Land." A large request.

I own some private wildlife land. It is good habitat for ducks and elk and deer. There are coyotes (and coy-dogs) and occasional cougars and black bears (most months) and grizzly bears in the spring when the cow parsnips come through. And anywhere between 250,000 and a million landlocked sockeye salmon go by the door every fall. When the salmon come back so also do the gulls and eagles and mergansers and more bears than other months. Even coyotes eat the salmon eggs.

I have too many beavers. They are a dam nuisance (that's spelled D-A-M). The fish and wildlife people blasted a creek channel through this place about ten years ago and you all know how beavers resist flowing water. So they dam it up and it floods the meadows. It's against the law to shoot these beavers. I can't get anyone to trap them. And I'm not allowed to blast any more. It used to be that just about everyone in this valley had half a case of powder in the woodshed and a box of caps up over the cellar door. Now, if you own anything that will explode, everybody thinks you're a terrorist. So, the fish and wildlife people come up and dismantle the dams by hand. By hand! And I thought they were short-staffed.

The meadows are timothy and redtop and clover and reed canary and also sedges and northern bedstraw and some other stuff. The canary grass gets so high the whitetail are completely hidden by it. One can see the grass moving as they walk through it, but otherwise they are invisible. The cow parsnip plants will reach a height of seven feet.

This piece of land is typical of most of the land in the flats of the Lardeau River Valley. My son, his mother, his sons, and back for about five generations have all hunted deer in this valley and those still alive and able, continue to do so. We're talking five generations of people, 25 or 30 generations of deer.

One tree stand overlooks a deer path that has produced well for 60 years that I know of. More deer survive than are shot of course, or there wouldn't be as many as there are. I guess you could say that this was a "sustainable" population. I know there are more hunters in the valley now than there were 40 years ago. I think there are more deer too. I can't explain that. One day last week, when I took a break from editing, I counted 19 deer from the dining room window. In a new clearcut across the valley, a neighbour recently counted ninety. Ninety!

When the clearcuts are new, the ground is littered with tops and limbs. This is excellent browse for wintering deer and they move right in. In severe winter conditions fallers see them move in on the top as soon as it hits the ground. How many people believe that?

I don't have enough horses to graze these meadows down. I am not fond of cows so I have none. All my neighbours have cows. They have a few mice on their meadows but I have millions of mice (though not by actual count). And because I have mice I also have hawks. And owls. And the butcher birds impale their prey on the hawthorns. Marsh hawks course the meadow every evening at almost exactly the same stage of twilight. And because I have no cows there is also an abundance of grass nesting birds: redwings, bobolink and Wilson's snipe. And because of those there are also sparrow hawks. Can any other blue in nature match the kestrel's wing?

I burn the meadows just about every year. The "Fires of Spring." For me at least, there is a kind of rejuvenation about that. Also, something close to compulsion. It's the damnedest thing. I look down at a tangle of dry grass and the next thing I know it is on fire. Just like that. The grazing animals (and the bears) are attracted by the new growth and other creatures seem unbothered by the fire. Except for the meadow mice of course. But, peromyscus maniculatus is not exactly an endangered species. Perhaps I'm playing God. I know some biologists like that.

The resident coyotes are conditioned to the burning ritual. They stay just ahead of the fire. When the mice run from the flames the coyotes grab them. Many mice are killed by the fire. The coyotes return the next day and eat them with relish (metaphorically speaking of course). Roast mouse is obviously delicious.

I don't think anyone could make a living on this farm. But when I see the tax bill I think maybe I should rent the land to a rancher or haycutter or something. But, if I did that, another of the last corners of meadowland abundance in this valley would be gone. This place thus becomes more important for the wildlife, for family members and for me.

Some of this property is timbered sidehill. It has never been logged. If I logged it I could make a lot of money but the timbered area is also good wildlife habitat and has an historic trail that predates white settlement. It would be nice to think that the public or public agencies appreciate this little stockpile of wildlife diversity. But I see no signs of that. I am pledged to try and keep it in the family but I am self-employed, have an uncertain income, have no pension to retire on and no real assets but the land. Some people think places like this should be set aside for wildlife. But those who are willing to farm are willing to pay for it and nobody else is. If having wildlife on private land is important to people then people have to pay for that. The theme of this conference suggests that you want us landowners to do it. Would you give up your pension or life savings for wildlife?

The present system of acquiring private land for wildlife is elitist and arbitrary. My son spent ten years trying to interest various bodies in buying a piece of private land in the Lardeau Valley without success. The owner held off selling or logging for years. Recently, it was sold to a logger who logged it. That's what he bought it for. In my son's continuous efforts to get this little patch for wildlife, he experienced great frustration. Now, the new owner would like to see it turned over to some wildlife habitat purpose but the issue is still in doubt. Not only do the institutions not want to pay for it, but they also don't even appear to want it for nothing. It is described as "low on the priority list." It is just under a hundred acres--apparently too small to be of interest. The effort to secure this property has been ongoing for ten years. Wildlife people have yawned their way through it all.

One problem with managing private land for wildlife is that for many landowners, the land they own is *all* they own. If you want private landowners to forego their private aspirations to benefit public wildlife you have to approach them quite carefully. And wildlife managers have to develop some communication skills. Most are terrible at communicating.

Government can expropriate private land for worthy public purpose. Some people are uneasy about this approach. I live in a part of the country and am part of a generation that saw government burn several communities, expropriate private land and displace hundreds of people all for the public good. Thirty years after the dams went in, the government agencies are allocating generous funds to compensate for fish and wildlife losses. That pleases me. But we still have a sustainability deficit and many social scars remain. Thirty years ago it was argued that these dams would benefit the majority and thus

were worth the cost. We hear similar justification for creating new parks and other worthy public projects. But, historically, the people who benefit are not the ones who get paid.

Moving "toward sustainability" must reach an equilibrium between the economy, the environment and social equity. Most people think mainly about the first two. But all three forces are on a collision course in B.C. There are grassroots moves to achieve sustainability but the institutions are not in the game. The institutional processes are too inflexible. For sustainability to progress, institutions have to change. It is traditional for institutions to resist change. And they are resisting it. Twenty years ago, a biologist friend complained that a forest ranger had more control over wildlife than a biologist. At that time the industrial sector did hold the power balance in B.C.'s land use debate. There was great lack of equity there. In the last few years there has been a major shift from emphasis on extractive industry to nonconsumptive choices. The social pendulum is now stuck on the other side.

Abuse of power is offensive no matter who wields it. I am disillusioned. I thought the objective was to make the system fair. I didn't know it was about power. A senior biologist recently said to me, "Its our turn now." I wonder what he meant by that? Will we see a political backlash developing against too much emphasis on wildlife and other environmental values? Are we seeing it now?

I can attest that the citizens of B.C. are starting to talk seriously about sustainability. The idea is not the property of any political party or government agency. The idea is global. It comes from the people. It is what we went to Rio for. And to the first World Environment Conference in Stockholm 22 years ago, where the term "sustainable development" had its beginnings. The B.C. Round Table has distributed 400,000 copies of its various documents. They are in use continent-wide. This is grassroots interest. The best kind. And it is growing. Institutions are nervous and as stated, they are resisting. This could be quite a positive thing. Nothing offers as much hope for a new idea as when the establishment tries to discredit it, or, better still, ride it down.

Historically, the resource conflict in B.C. was a land grab between special interests. In some ways it is more so now than ever. In B.C.--as we speak--the last land rush is on. The

conflict is now so polarized that it reaches into virtually every aspect of small town life in the province. It is causing tensions and conflict even within the schools. Entire communities are divided by it. It took several generations to end the class system and in some communities we have seen it virtually restored within a decade. Hasty solutions are creating a generation of social casualties. I know of a shut-down sawmill with over 100 employees. Retraining? Over half of them are illiterate. I am not appalled that several thousand people will lose their jobs because of the Vancouver Island C.O.R.E. recommendations. What appalls me is that some people can dismiss it so easily. We are far from consensus between economic and environmental forces. That's common knowledge. But sustainability requires social equity as well. Without it, there will be social chaos.

Sustainability is not a destination; it is a direction. It springs from a totally new value system. It crosses all the boundaries between social, economic and environmental special interest. Those with uncompromising commitments to any of the special interests should excuse themselves from the game. Too many people still believe that a consensus on land use will constitute sustainability. I am embarrassed for them. Peace in the woods is only a very small part of sustainability. So far, all the major land use proposals offend the social aspects of sustainability. Some people seem to think the solution is to have a Master Map somewhere. And, no doubt, a Map-Master to keep it. In the real sustainability discussion, maps become almost irrelevant. Maps are too flat. Too thin. Sustainability is a process, not a map. Sustainability is a Rubik's cube.

Sustainability will both require and create a new form of governance--one more local, more autonomous, more accountable. Bottom up--less top down. Local round tables and other such groups are springing up everywhere. It's happening. In my view, the move "toward sustainability" will come to represent the biggest change in human consciousness since the industrial revolution. Sustainability represents an entirely new phase in the human journey. If I am finally forced to sell the old home place--as I suspect will occur--that little corner of natural wildlife abundance will be gone and sustainability will have lost a little more. But I'm in my sixtieth year and I have done all I can.

Mike Halleran is a career journalist who has done land use and resources stories for nearly 30 years. Most of his work has been in the field of documentary television. He was a producer at CBC for ten years and for the last 11 years, he and other members of his family have produced the information series "WestLand" shown on the B.C. Knowledge Network. Mike was one of the original appointees to the B.C. Round Table on Environment and Economy.

Panel B: Private and First Nations' Land Stewardship in B.C.

Friday, March 4, 1994, 1:15 - 2:15 pm

Speakers from British Columbia were asked to describe their experiences with stewardship programs and concepts in the province. The session characterized the British Columbia context as a basis of comparison for subsequent presentations.

Chair: Ray Halladay, Director, Wildlife Branch,
Ministry of Environment, Lands & Parks

Municipal Experiences

Bob Bose, Mayor, Surrey, B.C.

Most of the people living in the world today live in urban centres. The trend is for ever increasing concentrations of people in large urban centres, so we have megacities or megalopolises which now have populations approaching that of Canada. There are some 21 cities with populations of ten million (or more) and the number continues to grow. We, in the Pacific Northwest, also live in a megalopolis of about ten million. We are living collectively in an area with a limited land supply, constrained by the water and the mountain ranges and we share a common environment. It is rather appropriate that we are beginning now to consider the megalopolis of ten million people--the fastest growing region in North America--with the potential to grow by another ten million people in the next 25 years.

Within the Greater Vancouver Regional District (GVRD) we have a population of 1.7 million and we are expected to add another one million over the next 25 years. This presents particular problems because this portion of the Pacific Northwest is even more constrained in terms of land use than the neighbouring states of Washington and Oregon. However, we have begun to consider the broad implications of land uses within the Fraser-Georgia Basin (sometimes referred to as "Cascadia")--the I-5 corridor stretching from Eugene, Oregon through to Vancouver, including southern Vancouver Island and Nanaimo. We are in the process of doing joint transportation, economic and land use planning on this larger scale. I draw this into the discussion because the decisions being made at this level (between province and state, of an international nature) don't necessarily give adequate weight to the stewardship of the lands of the First Nations. These discussions are going to set a framework that will affect all of us including First Nations peoples.

The energy and investment in time and planning on the Cascadia corridor is substantial. The third major conference on Cascadia will take place at the end of this month in Vancouver. The first one was held in Bellingham, Washington and the second in Portland, Oregon. These first two conferences made an attempt to involve the people of the First Nations in the land use and transportation discussions. But, in our region, there has been little dialogue with First Nations peoples on these kinds of issues. For example, we have only recently, at the GVRD level, asked that resource people be made available to talk about land use issues affecting native peoples.

The GVRD has been going through a process of strategic planning for the last four years. The original regional planning initiatives in the mid-1970's created what is known as the "Livable Region Plan." This plan is currently being updated and is now referred to as the Strategic Plan. It involves preservation of open space--the so-called "Green Zone." It involves transportation initiatives, urban centres initiatives, and the preservation of special wildlife habitat within that context.

There are several choices facing our region, choices that will have profound effects on the nature and use of land within this region. The current direction that the GVRD is pursuing is the development of a very compact metropolitan form with severe or strict containment of the urban boundaries--the so-called Green Zone boundaries. The implications of pursuing a compact regional model for our region as opposed to following trend lines (sprawling urban growth up the valley) are really quite profound: 25 per cent reduction in vehicle movements, 15 per cent reduction in people movements, 54 per cent less air pollution (76 per cent reduction from current levels), 47 per cent less land use. Even with this reduction we will still need twice as much land to accommodate the additional one million people. (So if we just let the market place determine where we go in this region then we will need four times as much land as we currently are using.)

We are attempting, within this region, to create some sense of permanency of open space, of green spaces. I would like to refer to something Moura Quayle, the landscape architect, said in some of our earlier sessions: It is fine to have big spaces--and these we can achieve when we do big planning--but we also need small spaces at the community level. She pointed out that the really quality open spaces are the edges between urban and non-urban uses. When you consider the large-scale planning that we are doing both within the Greater Vancouver region and the Cascadia region we must not forget the fine structures, the fine spaces, the little spaces that occur in our communities. At the city level, we have to find new ways to provide a fine texture of natural and community spaces that goes beyond what we are able to do at the regional level.

The problem from a local perspective is to find models which will allow us to reconcile the various interests of people who see land as a business opportunity and the interests of the local community. In my municipality, Surrey, we are developing what is referred to as "neighbourhood concept planning" which involves a process of sharing interests and sharing the land in ways that allow us to preserve the fine open spaces within the context of a very much more complex planning process. In my community, we have lots of small landowners and no mechanism to bring them together to share the costs and benefits of land development and, therefore, no means to ensure that one person's land can be protected as open space without that person being disinherited. That is the conundrum that we are trying to deal with.

I hope that in the course of the discussion of the panel that these larger problems may make some kind of sense in the context of dealing with the open spaces and the native peoples' interests.

Robert Bose has been the Mayor of Surrey since 1987. He is the Chair of the GVRD Strategic Planning Committee and a member of the Vancouver Regional Transit Commission. Prior to his election as Mayor, Bob served as a Senior Scientist at Syndel Laboratories in Vancouver. He has a Ph.D. in Chemistry from the University of Minnesota.

The First Nations of the South Okanagan-Similkameen Environmental Protection Society

Arnie Louie, Councillor, Osoyoos Indian Band, Oliver, B.C.

It is an honour and a privilege to have this opportunity to address you all today representing our First Nations of the Southern Okanagan-Similkameen Environmental Protection Society. I would like to share with you today a native perspective on how the Osoyoos Indian Band supports the society.

An Elder once shared with me the following: the essence of spirituality is to see the sameness in all things. In living this teaching one comes to appreciate that everything has a spirit. We can identify with everything in the universe through the spirit. The rock has a spirit, the air has a spirit, the water has a spirit, and the fire has a spirit. All of creation has a spirit and it is through the spirit that native people communicate. There were special ceremonies, dances, songs, and many other forms of expression that our people used to come into touch and to make a connection between themselves and all their surroundings. It is from this understanding that our people developed a close relationship to the earth, and all the living things that inhabit the earth.

However, the native perspective has changed dramatically. From the residential experience to contemporary struggles with today's governments, our people have lost a lot. One of the greatest impacts that European government has had on our people is the destruction of our culture. But a spark remains, and it is this spark that my generation is bringing back to life. We are concerned about the environment and all the teachings of our people and it is only a matter of time before we as a people will hold these teachings once again.

About three years ago I was very interested in an Environmental Youth Corps project. With the help of the Ministry of Environment in Penticton, I submitted a formal application. The proposal was turned down, but the idea was so influential within the Ministry itself that it wasn't long before I received a call from biologist Mike Sarell who, along with Wildlife Technician Orville Dyer proposed that our Band submit a modified application to the Ministry of Aboriginal Affairs. Through this team effort, the First Nations of the Okanagan-Similkameen Environmental Protection Society was born. The Society was given funding to hire a full-time biologist to supervise four Band member trainees, one from each of the participating Bands (Osoyoos, Penticton, Lower Similkameen and Upper Similkameen). These individuals would be trained in habitat identification, species inventories and other environmental activities that are crucial in preparing documentation about the Southern Okanagan and Similkameen areas.

With the publication of the Southern Okanagan Conservation Report, we, as a community, have become aware of the ecological significance of our area. Arguably, the Southern Okanagan/Similkameen is one of the three most threatened habitats in all of Canada. Our location is the only pocket desert in Canada. Two thirds of the most threatened habitat in British Columbia is found in the Southern Okanagan. Our Society, then, has become a prominent force working to promote environmental awareness and to provide a positive model for other Bands to use.

Through the years the Society has had many ups and downs. Being dependent on government funding makes planning difficult. Since our funding is limited to training dollars, the tangible results the Society would like to produce are limited. The real research and inventory required in order for this sensitive area to compete with development are just a dream at this point. Funds available to Bands through federal programs are very tight and economic activity on reserves is basically defined as billboard signs along highways. So, there is no real revenue at the community level that can be earmarked to support our society. Even though ours is one of the most threatened habitats in British Columbia (and recognized as such by the B.C. government), we still do not get any real support from the government.

The positive thing is that we are taking control of our own land management initiatives. We are making our communities more conscious of the habitat as well as training one of our own Band members as a biologist.

I remember one story that really touched me in terms of what environment means to our people today. A team of biologists came out to do a study on a rare bat species said to reside on our reserve. They asked everyone within the administration if they had ever seen the bat or if they knew of anyone who had. Nobody knew anything about the bat. After they were given permission to do the study on reserve they engaged in three weeks of hard work and then gave up. Just as they were leaving the reserve they decided to make one last ditch effort and asked a Band member that they met along the dirt road if he had ever seen this bat. The band member, who had had a few drinks, asked for a smoke before he would give any information. After he lit his smoke he asked to see the picture. The biologist showed him a picture of the rare bat

species. Instantly he pointed up to the dry lake area on the reserve. The biologist decided to spend one more night and sure enough the bat was there. This goes to show you that what the administration of the Band Office can't do, the membership may be able to do. Never underestimate the resources within the community.

The values and beliefs of a people are the basis of their culture. The culture evolves around the language. Once our language was taken away by the residential schools and every other means of assimilation, so were our teachings of the planet. Today, because many of our youth don't know the language, they also have little understanding about the environment and other traditional teachings. And it is from this perspective that I stand here before you. Our Society lives. And it is through the enthusiasm and spirit we have to make it work that we will persevere and protect our interests in the environment not only now, but also far into the future.

Arnie Louie is a Councillor of the Osoyoos Indian Band. He is currently working on a novel of short stories and poetry. When this is completed he plans to submit an application to the Canada Council to write a book on the "Run for Peace," an Okanagan peace run organized by the Osoyoos Band to support the Mohawk at Oka. Arnie Louie is a dedicated student of the cultural and traditional ways of his people.

Cowichan/Chemainus Stewardship Pilot Project

Janice Doane, Project Coordinator, Vancouver, B.C.

Background

This paper focusses on the development, current status and future plans of the Cowichan/Chemainus Stewardship Pilot Project (CCSP). The project was developed and is managed by the Pacific Estuary Conservation Program (PECP) under a Contribution Agreement between Environment Canada and Wildlife Habitat Canada. The PECP is a cooperative program of seven government and non-government organizations: Environment Canada's Canadian Wildlife Service, Federal Department of Fisheries and Oceans, B.C. Environment's Habitat Conservation Fund, B.C. Lands, Ducks Unlimited Canada, Wildlife Habitat Canada and The Nature Trust of British Columbia.

These groups came together in 1987 because they shared a common interest in the conservation and the wise management of British Columbia's best remaining coastal wetland habitat. Their goals are accomplished primarily through acquiring 1,270 hectares (ha) of land, and initiating the conservation designation of some 2,337 ha of adjacent intertidal Crown land. More recently, thought has been turned toward alternative forms of conservation such as stewardship with the development of the CCSP and future plans for a First Nations Stewardship Project. Stewardship as we apply it to conservation means simply taking good care of the land.

The pilot project began on July 7, 1993 with two goals in mind:

1. to determine the feasibility and landowner acceptance of the "conservation stewardship" concept
2. to sustain or enhance natural areas occurring on privately-owned land

In the development of the CCSP we adopted the principle that no one can better assure the protection of private natural lands than the owner of those lands.[1] We also made three underlying commitments to the landowner:

1. Information resulting from site visits by CCSP staff or consultants belongs to the landowner, and will not be published or otherwise made public by us without the owner's permission.
2. CCSP is "completely voluntary," deriving its effectiveness from the Stewardship Pledge made by private landowners. The Pledge has no legal force but relies solely on the owner's word.
3. By taking the Pledge, the landowner does not give the public any right of access to his or her property. The landowner maintains all rights to the land.

Methodology

The Cowichan/Chemainus lowlands were selected because they are contiguous to two major Vancouver Island estuaries of national significance for their abundance and diversity of wildlife species including fish and plant life. Following the steps laid down in the "Natural Heritage Landowner Contact Training Manual[2], we first collected site-specific environmental data through literature reviews and personal communications with local naturalists, government and non-government organizations. This information was then used to identify areas having significant environmental value, according to nine commonly-used criteria. The next step was to identify and contact the owners of these lands. To these landowners, we sent an introductory letter enclosing a brochure outlining the project. We followed up with a phone call and, depending on the response, a visit. Currently, we are at the site visit stage.

For landowners interested in taking the Stewardship Pledge, we prepare a Conservation Plan that meets the conservation objectives set by the owner. Typically, the Plan includes specific information on the natural values of the property as well as fact sheets on topics relevant to the owner's needs such as trail creation, wildlife plantings and Canada geese management. We also make available a resource person to provide information on: species identification, wildlife management techniques, options for integrated resource management, and programs, services and funding available to landowners for conservation. In recognition of the landowners commitment we provide a wall certificate or gate sign, if preferred, and hold a reception honouring the Conservation Stewards.

Results

To date, we have contacted 66 property owners and the response has been gratifyingly positive. Of the 30 landowners visited to date, 28 have agreed to become Conservation Stewards. Because of this support, we have formed a local committee to continue the project so it can become a self-sustaining, permanent presence in the Cowichan/Chemainus area.

Conclusions

Our experiences have led us to several conclusions. We recognize that, to succeed, private land conservation stewardship programs must be:

- voluntary
- respectful of the landowner's privacy, concerns and desires

- non-government orientated
- locally-based
- tailored for the community by the community
- well-publicized
- long-term in perspective

In addition, private land conservation stewardship programs must:

- approach conservation holistically and practise integrated resource management
- have knowledgeable and motivated staff

What is Needed?

In the future other similar programs will benefit from:

1. seed money for community groups to get started but with the intent that they become self-sufficient in the long term
2. an economic incentive, such as a grant or rebate, for landowners to set natural habitat aside for conservation
3. a province-wide Conservation Stewardship Advisory Committee which would:
   a) work with government to develop conservation policies
   b) provide technical advice
   c) give grants for conservation on private land
   d) provide a network for exchanging information
4. Informing landowners of options currently available to them for the long-term conservation of natural habitat such as:
   a) restrictive covenants
   b) land sale for conservation with options for
      -lease back by owner
      -life tenancy
   c) financial donation*
   d) land donation*
   e) donating an insurance policy*
   f) making a bequest in a will
   g) endowment fund
   h) charitable lifetime term deposit*
   i) proposing areas suitable for conservation
      -acquisition
      -Crown reservation
      -habitat enhancement
      -conservation stewardship

*Federal Income Tax Credits may apply

References

[1]Heritage Foundation. 1993. *The Muskoka Steward*. Bracebridge, Ontario.

[2]Hilts, S., T. Moull, J. Rzadke and M. VanPotter. 1991. *Natural Heritage Contact Training Manual*. Guelph, Ontario: University of Guelph.

Janice Doane is the project coordinator of the Cowichan Chemainus Stewardship Pilot Project. She graduated from Trent University in 1975 with a degree in Biology. After graduating, Janice worked with the Metropolitan Toronto and Region Conservation Authority for 14 years as a biologist and environmental planner. She then worked for four years as a real estate broker with Royal Lepage. Janice joined the Pacific Estuary Conservation Program two years ago.

Stewardship on Galiano Island

Loren Wilkinson, Galiano Island, B.C.

I live on Galiano Island which is a forested island about 16 miles long and two miles wide in the Gulf Islands which lie between Vancouver Island and the mainland. The island has a permanent population of about 900. Galiano Island is still quite rural; it contains a remarkable amount of undeveloped land--much of it is second and third growth forest land in various stages of regeneration. (It is a part of the increasingly scarce Coastal Douglas Fir ecosystem that occurs on the inner coast of Vancouver Island, and some of the islands).

Galiano is unique among the Gulf Islands in that in recent years (since 1951) more than half of it (about 56 per cent) is owned by MacMillan Bloedel. The land was classed and taxed as "Managed Forest." Logging on the island proceeded at a reasonable pace for most of that period, with general support from the community, who considered MacBlo a good neighbour. For more than 20 years, however, there have been indications that forestry was not really MacBlo's long range plan for the island. In 1972 the company floated a proposal to subdivide about 900 acres into as many as 1500 lots. The plan met with considerable opposition, and led to the formation of the Galiano Island Community Plan (the first in the region). The company has withdrawn its development proposal--for the time being. The Galiano Island Community Plan is now in the final stages of a revision process. For more than 20 years it has been a good planning tool, and was the first of a series of community efforts to have some say in the stewardship of Island land. Not all of the more recent efforts have been as successful.

In 1986 MacBlo stepped up considerably the pace of logging on the island, with large clearcuts on the east side. By 1987 the clearcuts were approaching the sensitive Coon Bay area on the north end of the island which lead a large group of islanders to ask for a meeting with the company to discuss logging policies. This request led eventually to the formation of a government/community/company roundtable called the "Forest and Land Use Council" which allowed the community to identify sensitive areas, and have some input into cutting plans and methods. The process led to a highly praised "selection logging" show on the island, and was advertised in MacBlo's own publicity as a "win-win" situation. It was also featured--proudly--in the 1991 Silvicultural Society's meeting. MacBlo foresters were proud of the beginning here of a new kind of forestry.

But, at the same time as its foresters were--with justifiable pride--showing off its new logging methods, the company's "Property Development" division was planning a major development for the island. (We had an inkling of this very early in the process when MacBlo wanted the name changed from "Forest Use Council" to "Forest and Land Use Council.") MacBlo contracted with IntraWest (the same group that had developed BlackComb ski resort). The rough outlines of their plan (from a 1989 MacBlo document which was not made public) makes for very interesting reading:

> We would develop at least 36 holes of golf plus a golf academy. At least one course would be of professional tournament quality. The golf course development would be supported by a 350-room hotel and single- and multi-family residential development of between 700 and 3000 units...Initial projections indicate that the project was marginally profitable at 2000 units and would probably require something in the order of 3000 units to be worthwhile from a risk reward perspective.

Then come a couple of sentences which convey very clearly the attitude of the company towards local stewardship concerns:

> A project of this magnitude implies a potential population of in excess of 6000 people. We cannot disguise the fact that 6000 new residents to Galiano would radically change Galiano as perceived by existing residents (MB doc. 162).

The sentence "as perceived by the existing residents" is particularly revealing because it contrasts the islanders' vision of their home with another, supposedly more enlightened vision, imposed by those who do not live here. To be fair, this proposal never got very far--the response to even rumours of it was too horrified. So, the company began with a more modest residential development of 300-350 building lots, but making no long-range guarantees about the eventual use of most of the rest of the land.

In response to these development proposals--even the most modest would have severely changed the rural character of the island community--the Islands Trust, with overwhelming community support, passed zoning by-laws prohibiting residential development on forest-zoned land. (Support was far from unanimous: it was roughly 2-1 in favour of the by-laws. The ratio remained fairly steady throughout several years of community meetings and elections.) MacMillan Bloedel immediately brought a lawsuit against the Islands Trust and the Galiano Conservancy Association for conspiring to reduce the value of their property on the island. The suit was widely regarded as the first B.C. "SLAPP" suit (Strategic Lawsuit Against Public Process). (Greg McDade of the Sierra Legal Defence Fund, was our excellent legal defence. See Revisiting the Land Ethic stream, "Barriers to a Sustainable Land Ethic.") Eventually the suit against the Conservancy was dropped, as was some $18 million in damages against specifically named trustees). But the company continued in its suit against the Trust, and eventually succeeded in overturning the by-laws.

While the lawsuit was in court, much of the land was sold to a wide mix of owners; much of the remaining good timber was cut, diminishing the hopes for sustainable forestry on the island. The system is now filled with applications for development of land. The court decision against the Trust is being appealed, for it has profound implications for communities seeking to exercise stewardship over their land through the zoning process. There is a great deal of privately owned forest land adjacent to growing population centres. (Fellow Galiano Conservancy director Ken Millard will be speaking about that later this afternoon. See Communities and Landowners Stream, "Community Land Trusts.")

The unfinished Galiano story is some indication of the lengths to which large forest landowners will go in order to develop land according to their own wishes, rather than to those of the community. Up to this point, our experience on Galiano (which has been exhausting and divisive to the community) does not give much encouragement to people who are seeking to use zoning to limit and shape development in their communities. (There are other stories which could be told of preserving important bits of the island, but the battle to exercise community voice over the use of the land through zoning has not gone well.)

Frustration over the experience is perhaps one reason why an unusually high percentage of island residents have been arrested in the blockade at Clayoquot Sound. It is important to bring the two issues together: the company's use of the legal system to ensure access to the remaining old growth forests on public land, and the company's use of the legal system to take their own privately held forest land out of production (recall what Clark Binkley said last night about the value of forestry on private land as a way of taking pressure off of old growth reserves on public land).

I speak as one who believes that stewardship is not only a responsibility to the vast abstraction of an evolving ecosphere and to future generations, but a personal responsibility to a personal Creator. However we understand stewardship, our experience on Galiano has shown how hard that stewardship is to exercise. The Galiano story, however, is far from over. We have a great deal of hope that our long battle on Galiano Island will be of benefit not only to the island, but also to other communities in British Columbia who want to have a voice in how their land--especially private forest land--is used.

Dr. Loren Wilkinson is a resident of Galiano Island where he has been a director of the Galiano Conservancy Association since its formation in 1989. He is professor of Philosophy and Interdisciplinary studies at Regent College, a Christian graduate school affiliated with the University of British Columbia. He has written and taught widely on the relationship between Christianity and land stewardship.

1. Revisiting the Land Ethic Stream

In Western industrialized economies, land is viewed as a commodity. The many other important non-market functions it fulfils such as planetary life support and spiritual healing are ignored or undervalued. A different land ethic would seem more appropriate to the conditions faced in the world today. In this stream we look at legal and political barriers to adopting a new land ethic, ways of changing attitudes towards land, and mechanisms for developing a sustainable land ethic in the Fraser River Basin.

Barriers to a Sustainable Land Ethic

Friday, March 4, 1994, 2:45 - 3:45 pm

Chair: Jim Hillson, United Church of Canada

Strategic Lawsuits Against Public Participation (SLAPPS)

Greg McDade, Sierra Legal Defence Fund, Vancouver, B.C.

Introduction

SLAPPs (Strategic Lawsuits Against Public Participation), a recent acronym now common in the U.S., are actually symbolic of a much older problem: the use of courts for purposes of economic intimidation. SLAPPs might also properly be seen as a subset of a larger problem: the legal system's preference for private property over public interests that can be less clearly defined. The Galiano case should be seen as an example of how legal and municipal planning systems can totally fail the people they are designed to serve.

The Galiano Island Case

Fifty-six per cent of Galiano Island was forest land owned by MacMillan Bloedel, a hold over from the E & N Railway grant. Concerns over forest practices arose in the mid-80's.

(1) How the Consensus Approach Failed:

The community established the Forest and Land Use Council, with three-way involvement of industry, government and community. Different perceptions (industry's desire for megadevelopment versus the Island's rural life style) led to a stalemate despite an excellent process. The community evolved the idea of "community purchase" as a possible win-win solution. The company failed to bargain in good faith, and proceeded to a private sale (thus removing itself from the process). Local government passed a by-law freezing forestry use (down-zoning consistent with official community plan). The community and government were then greeted with a lawsuit for "conspiracy."

(2) How the Legal System Failed:

The initial action against the by-law was changed to a civil claim for "conspiracy to manipulate the planning process" (with potential damages of $15 million). The court bent over backwards to protect the rights of the plaintiff by refusing to grant a Motion for Particulars of "illegality" until after Discovery, thereby continuing the case for another year (22 days of discovery, $80,000 in legal fees). The case was eventually dropped. Consequences of the lawsuit were: breakdown of communication between government trustees and community, hostility, suspicion, expense, fear, loss of focus, and frustration.

(3) How the Municipal Planning Process Failed:

The action against the by-law succeeded on "discriminatory" and "bad faith" grounds (by-law is against one company and motivated by the desire to protect forestry values). The planning process was frozen by appeal. Meanwhile, applications for subdivision and building permits assured complete destruction of forestry lands showing an implicit assumption of the supremacy of private property interests over community interests. We have also seen threats to clearcut unless further subdivision is allowed, and more threats of litigation.

SLAPP Suits

Strategic Lawsuits Against Public Participation can be recognized by the following criteria:

- brought for improper purpose: motivated by intimidation or revenge, rather than monetary damages
- most commonly brought by land developers
- economic imbalance between plaintiff and publicly-minded defendants
- brought against essentially political activities (complaints to government, petitioning, letters to editor, etc.)
- use of vague claims (conspiracy, interference with contract, slander, etc.)
- low rate of success (often dropped prior to trial)

Proposed SLAPP Suit Legislation

The problem can be solved with simple legislation or reform of court rules. Essential elements of reform include: provision of an early and simple Motion to Dismiss, placing the onus of proof on the plaintiff, some provision of legal aid (paid for by strong cost awards), and an effective SLAPP back remedy. Model legislation is available from the Committee for Public Participation.

The Larger Problem of Courts

In municipal development matters, courts have adopted principles showing significant sympathy in favour of "private property rights." This results in a bias against down-zoning and acceptance of up-zoning. There is an inadequate recognition of public rights and environmental issues.

Greg McDade is Executive Director and General Counsel of the Sierra Legal Defence Fund, a public interest environmental law firm specializing in litigation. He graduated from UBC Law School in 1978, and practised criminal law in Kelowna, B.C. for 12 years with his own firm, McDade, Hattori & Co., prior to opening the Sierra Legal Defence Fund as its first Executive Director in 1990.

The Land Ethic

Dr. Thom Heyd, Philosophy Department, University of Victoria

Aldo Leopold's call for a land ethic was his reaction to the unconscionable acceptance among his contemporaries of often irreversible degradation of "land and the animals and plants which grow upon it."[1] Philosophers continue to debate whether recognition of the value of non-human entities requires a new kind of holistic, ethical theory or simply an extension of extant, individualistic theories of ethics. Although Leopold is generally placed among those who argue the need for a new holistic theory of ethics, a case can be made for the view that his concern was less for a new justification of respect for the natural environment than for a new willingness to act on principles of conduct (extant or not) that express respect for land and its life. One might say that Leopold's call for a land ethic is primarily a call for the adoption of a new, individual and social ethos, that is, a new form of life, commensurate with the value we already recognize as present in land. In this paper I briefly describe what Leopold considered central to the land ethic, outline some of the obstacles to the development of a land ethic, and sketch the beginning of how these barriers may be overcome.

The Land Ethic

Leopold understood the relationship of human beings to their broader environment in terms of their participation in a "biotic community" comprised of soils, waters, animals and plants. He supposed that, although some "alteration, management, and use of these 'resources'" is inevitable, respect for the value of other, non-human members of the biotic community would result in the affirmation of "their right to continued existence, and, at least in some spots, [to] their continued existence in a natural state (74)."

Curiously perhaps, he despaired of the supposition that "more conservation education" would bring about the desired ecologically sound practices. As he saw it, the "conservation education" urged on his contemporaries amounted to little more than this: "obey the law, vote right, join some organizations, and practise what conservation is profitable on your land; the government will do the rest (75)." To Leopold such conservation education failed to stem the tide of environmental destruction and bring about a land ethic because of its failure to point out that more than "enlightened self-interest" is required.

Leopold illustrates the limitations of "enlightened self-interest" by noting that when, on its basis, concerted political action is taken, the results tend to be less than satisfactory from an ecological point of view. Leopold noted that, in order to stem erosion of farmland in Wisconsin in the 1930's, both conservation education and self-regulation were tried. The farmers, however, only "selected those remedial practices which were profitable anyhow, and ignored those which were profitable to the community, but not clearly profitable to themselves." Leopold concludes that "[t]he net result is that we have more education but less soil, fewer healthy woods, and as many floods as [before] (76)." In contrast, effective conservation education would cultivate ecological conscience, that is, a will to act that reflects "a conviction of individual responsibility for the health of the land (80-81)."

Although today everyone pays lip service to the preservation of a healthy natural environment and to the need for "sustainable development," the predominant view still seems to be that individuals (as singular owners or as stockholders in land holding corporations) only have a responsibility to themselves. Fortunately, environmentally responsible management often agrees with the self-interest of the proprietors of land; when it does not, however, few perceive a moral obligation to give the well-being of the natural environment a high priority. For example, despite the fact that old growth forests on private land can provide a last niche to various species of plants and animals, development is often given priority over preservation. Evidently the type of moral responsibility for land and its inhabitants described by Leopold's land ethic has not yet taken root very widely. What are the barriers to the development of a land ethic from Leopold's point of view? In the next section I discuss three of the obstacles that Leopold lists explicitly, and one that is implicit in his view.

The Obstacles

It was "inconceivable" to Leopold "that an ethical relation to land [could] exist without love, respect, and admiration for land, and a high regard for its value (82)." In his eyes an ethical relation to land was undermined by three factors: our increasing isolation from natural processes, our perception of an adversarial relation to land, and the "fallacy" of economic determinism. Leopold noted that "our educational and economic system is headed away from, rather than toward, an intense consciousness of land (82)." He points out that our artifact-oriented societies block the immediate awareness of the natural environments on which we rely for our sustenance. This is epitomized by our preference for a multiplicity of "[s]ynthetic substitutes (82)." Our tastes, moreover, are changing in such a way that, for many people, land holds no interest unless packaged as "a golf links or a 'scenic' area (82)."

Since Leopold's time the substitution of the human-made for the natural has accelerated. This process has advanced even into areas formerly of interest only to nature enthusiasts. Increasingly skiing and rock-climbing, for example, are turning into synthetic, fully engineered activities; artificial snow and concrete climbing walls are stealing the show from their natural counterparts. Moreover, after decades of pseudo-reality beamed into our very homes on television sets, we are soon to face the mass dissemination of machines that will generate the ultimate in synthetic experiences, that is, virtual realities. This growing alienation from the land and its life processes makes the development of a land ethic unlikely. The alternative intimated, of course, is a re-naturation of our educational and economic systems. This would require a conscious and concerted effort at re-establishing our roots in the natural environment.

The perception of land as an adversary that has to be squeezed for a livelihood contributes to our alienation from it. If land is seen as "a taskmaster that keeps [us] in slavery," then the replacement of natural forests with tree farms, and the use of pesticides and herbicides on fields and woods becomes acceptable. In response to this difficulty Leopold urges the spread of genuine ecological understanding of land and of our place in the environment. He proposes that recognition of our membership in the ecological community should lead us to adopt his oft-cited imperative: "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 (82)."

Furthermore, Leopold notes that the belief that "economics determines all land use (82)" constitutes another important obstacle to the development of a land ethic. While he freely admits that economic factors may provide an important limitation to our concern for land, he points out that it is false simply to assume that economic factors are, or need be, the only values considered when land use decisions are made; as it stands, "[a]n innumerable host of actions and attitudes, comprising perhaps the bulk of all land relations, is determined by the land user's tastes and predilections, rather than by his purse (82)." One may add that, even if perhaps generally undeveloped, aesthetic appreciation of the natural environment certainly is part and parcel of our culture, and hence a source of valuation independent of the marketplace.

Finally, I would like to mention one further barrier to the development of a land ethic which is implicit in Leopold's writings, namely the lack of appropriate political structures that could give institutional support to a land ethic. Our representatives in government are seldom guided by an ecological conscience. And even if they are so guided, given the political reality of well-financed self-interested lobby groups and the relative impotence of either individual citizens or self-appointed environmental advocates, it is likely that the well-being of land and its inhabitants will continue as the mere subject of "letterhead pieties and convention oratory (75)." As a result, no action is taken on serious environmental issues until matters take on crisis proportions.

Models of political structures that support a land ethic are not easy to come by, but one may begin by considering land and its wild inhabitants in the same manner as other threatened, voiceless minorities that receive special protection in a country's constitution. This may lead to a number of practical measures, such as the establishment of a land ombudsperson and the creation of an environmental bill of rights (as has been instituted in Ontario) that would allow ordinary citizens to go to court against those who break environmental laws.

At the international level, political structures are not any more supportive of a land ethic than at the national and local levels. Typically, international agreements are reached by a process of consensus. Although this may seem to be ideal for the task of integrating all relevant perspectives, it often is a way to settle on the least common denominator dictated by collective self-interest. The Earth Summit's "Agenda 21" provides a revealing example. It seemingly addressed the concerns of the land, its soils, waters, plants and animals in sections titled "Protecting the Atmosphere," "Combating Deforestation," and so on. Its focus, however, was on harnessing all remaining natural environments (land, sea, and even the gene pool) for the goals of what has been called "sustainable development." Given that this expression mostly stands for "economic growth...that is both sustained and sustainable (Preamble, Chapter 2, *Agenda 21*), this means that the agreed-

upon aim of Agenda 21 is really the limitless exploitation of the natural environment for human economic purposes. Accordingly, certain forests may be saved from clearcutting, for example, if there is a suspicion that ingredients for future pharmaceuticals may be lost otherwise. As computer modelling for genetic engineering purposes progresses, however, this rationale for protecting forests from industrial logging will diminish in importance, facilitating their release to logging interests.

The tendency of consensus-based decision-making to bend to the least common denominator may seem to be an insurmountable obstacle to the task of formulating policies respectful of the inherent value of the natural environment. One approach might be to appoint tough-minded, politically independent, environmental spokespersons to represent one's nation, and in this way ensure that the land has some voice.

Conclusion

Leopold argues that the lack of a land ethic contributes to the continued despoliation of land and its biota. Leopold compares our careless interventions in the land to the unfathomable notion of remodelling Alhambra, the apogee of Moorish architecture in Southern Spain: "We are remodelling the Alhambra with a steam-shovel, and we are proud of our yardage (82)." Leopold believed that, even while we express awe and love for the land and its wildlife, we continue to destroy its intricate fabric. Nonetheless, despite the obstacles he identifies, Leopold argues that it is possible for us to adopt a form of life that is respectful of the natural environment. What is required is a new ethos, a new form of human life that manifests a very practical commitment to act on the respect we profess to have for the land.

References

[1]Leopold, Aldo. *The Land Ethic*. In *People, Penguins and Plastic Trees*
D. VanDeVeer and C. Pierce (eds). 73-82. Pleas note that page references are included in the text in parentheses. (*The Land Ethic* is from: Aldo Leopold. 1949. *A Sand County Almanac with Other Essays on Conservation from Round River*. New York: Oxford University Press. 217-241.)

Dr. Thomas Heyd is a visiting assistant professor in the Department of Philosophy at the University of Victoria. Recently he has written on sustainable development, technological rationality and the Earth Summit's Agenda 21. Aside from environmental philosophy he works on the history of philosophy and the philosophy of art.

Paths to the Future

Friday, March 4, 1994, 4:00 - 5:00 pm

Chair: Dr. V.C. (Bert) Brink, Federation of B.C. Naturalists

Stewardship as Caring

Rick Kool, Ministry of Environment, Lands and Parks, Victoria, B.C.

> "The real substance of conservation lies not in the physical projects of government, but in the mental process of citizens."
>
> *--Aldo Leopold*

The word "stewardship" seems to be everywhere these days. From product stewardship to forest stewardship to land stewardship and soil stewardship, the word is being widely used, but rarely in a way that makes clear what is being talked about. I would argue that stewardship programs should be based on a philosophy of knowledgeable caring.

Caring in our culture is often related to ownership: we usually care deeply for what we own, take some care for what others own, and often have little concern for what nobody owns. We have to teach the 3C's: caring, concern, and connection. At the core of stewardship is the idea that the steward cares for, but does not own, the object in question. Both the biblical foundations for stewardship, as well as the etymological roots of the word, support this contention.

It is the attitude of thoughtful and non-possessive caring that moves us towards the attitude of a steward. The steward practises usufruct--"the right of temporary possession, use, or enjoyment of the advantages of property belonging to another, so far as may be had without causing damage or prejudice to this."

The idea of caring is based on a relationship between what we could call the cared-for and the one-caring. In this case, we would see the steward in the one-caring role, a role in which the cared-for is not his or hers, and is not even a single thing, but a web of ecological relationships. And, yet, the relationship here while appearing one-way is really two-way. The steward cares for his or her charge, and the charge in turn cares for the steward. We have to remember that the things that we care for care for us all as well.

Stewardship also has a temporal component--it recognizes the interest of the future in the actions of the present. In our position as one-caring, we have a concern for the sustainability of our actions. As we examine our role of steward, we take our responsibilities from our parents and hand them off to our children. And often, if our stewardship has not been as good as it should have been, it is the future that must pay the price and carry out the redress.

Richard Kool is the Environmental Education coordinator of the B.C. Ministry of Environment, Lands and Parks. Prior to this, he was Chief of Public Programs at the Royal British Columbia Museum. He has taught at Ucluelet Secondary School, Douglas College and the University of Victoria.

Planning Education Programs to Accompany Stewardship Projects

Glenn Brown, Vancouver, B.C.

The previous paper considered some of the broader educational concerns associated with environmental stewardship. This one addresses some specific issues facing managers of private lands who are considering starting educational programs at their site.

Education is a complex and challenging subject by itself and managers need to be sure that any education programs they undertake really suit their own objectives. Initiating education programs for incompletely thought out reasons, even if well intentioned (like raising environmental awareness or creating a stewardship ethic), could lead to failure and disappointment.

As a first step, managers must identify the needs of the audiences that they think they will reach separately from their own needs, and must not mix the two. For example, offering an "educational program," which is really an attempt to attract free labour but which does not meet the audience's educational needs, is usually a disappointment to all. Careful thought and clarity in objectives is needed before starting educational programs. Given the difficulties of land management by itself, the extra challenges of educational programs may not be appropriate in many cases.

Despite the initial caveat, environmental stewardship projects offer some very rich educational opportunities. The work is real, relevant and important, and it takes place at a human scale more understandable than the abstract classroom work of many school and training exercises. Five different kinds of educational programs are identified that are well suited to the kinds of environmental projects in which private land owners are often involved. They are listed in order of increasing difficulty of design and delivery:

- information or public relations about your project for the public or schools
- natural and/or cultural history for the public or schools
- life skills for school students, "at risk" youth, and chronically unemployed
- job training for youth and adults or job retraining for adults
- projects for schools which meet multiple curriculum aims such as content knowledge, thinking skills, and developing student independence and personal responsibility

Some of the attributes and challenges of each type were discussed. Cooperation between landowners and organizations which have a continuing interest in the educational goals is suggested during both design and delivery phases.

Glenn Brown is an ecologist and environmental manager who first worked as an environmental consultant with industry and government. He has completed ecological survey, impact assessment, project siting, and land reclamation projects across western and northern Canada. For the last six years he has been involved in science and environmental education. He is currently working on integrating educational objectives with environmental preservation and restoration programs.

Case Study: Fraser River and Delta

Saturday, March 5, 1994, 9:00 - 10:00 am

Chair: Dr. William E. Rees, School of Community and Regional Planning, UBC

(Please note that the report for this workshop was prepared by Mathis Wackernagel one of the presenters.)

Workshop Objectives

The workshop focussed on how some of the ideas and concepts from the conference could be implemented in the Fraser Basin. The purpose of the workshop was to give the participants an opportunity to discuss concerns and to generate recommendations and directions for further work. The workshop began with three presentations that provided some context for the discussion. These are summarized in the next section. The last part of this report documents the key issues that were raised by participants during and after the workshop discussion. The comments and suggestions were anonymously submitted to the workshop recorder on slips of paper. (They are reproduced below using the exact words of the authors.)

In the first presentation, Bill Rees introduced the opposing perspectives in the sustainability debate. Then, Mathis Wackernagel discussed a framework for planning toward sustainability. Finally, Tim McDaniels reflected on decision-making for sustainability.

The Sustainability Dilemma: What Are the Choices?

Presenter: Dr. William E. Rees, UBC School of Community and Regional Planning

Dr. William Rees noted that there are two recurring themes in the sustainability debate: population growth and increased consumption. These issues have to be dealt with locally, but obviously, they are also global problems. In academic and political circles, there are two differing approaches to the population-consumption debate. Few dispute that we have to reduce our impact on the ecosphere, but there are two completely opposite perspectives on how we should go about doing this. In the mainstream, the emphasis is primarily on "decoupling the economy from the ecosphere" which refers to developing a human economy that is minimally dependent on--or "decoupled" from-- material resources. The opposite view holds that industrialized countries must significantly reduce their resource consumption. The question then becomes: which one of these paths should we choose? Once we have chosen a path, we must figure out how to go about pursuing it? We have some very serious decisions to make.

The idea that the economy can be decoupled from the ecosphere is based on the conviction that we do not have to stop or control growth as long as the amount of energy and resources needed to produce the goods and services decreases faster than consumption of these goods and services goes up. For example, if we can produce a television set or a car with half the energy, materials and pollution, then we can obviously have double as many without increasing the impact on the ecosphere. Clearly, one could argue that such efficiency gains have been a key feature of the technological developments of the last 40 years.

But, this approach presents some significant problems: efficiency gains are often employed to increase production rather than to conserve resources. Also, in some areas efficiency gains may well be approaching diminishing returns and it might be difficult to push these gains much further. In fact, in agriculture we may already have pushed productivity as far as it can go. Such ecological limits cannot be seen in the market place because prices do not reflect biophysical productivity. Nevertheless, the reality is that global per capita food production has been declining for the last ten years and many of the advances introduced by the "Green Revolution" have now begun to unravel. More land is going out of agricultural production due to salination, water logging, erosion, etc. than is being brought back into production. We are simply running out of land on the planet.

Now, the dilemma is whether we can just maintain the *status quo*, that is, assuming that the current growth of consumption can continue and that we can bring the Third World up to western standards through economic growth and technological advances or, whether we have to reduce our consumption and our material standard of living both to reduce the ecological impact of our economy in general and to free some ecological space for the impoverished billions to satisfy at least their minimal basic needs.

Most in the mainstream, including our government, have rejected the second option. They are oriented towards maintaining the *status quo*. The growth ethic has become part of their sustainability rhetoric. Such economic expansionism represents total faith in the capacity of technology and market forces to improve the material and energy efficiency of economic activities indefinitely.

While you may believe in continued economic growth, the fact remains that global waste sinks are already overflowing, and that nature's sources are being drawn down; therefore, it seems unlikely that technological advances will be introduced fast enough to reverse our negative impact on nature while simultaneously satisfying the needs of a growing world population. This means that we have to look seriously at the other option. And the other option requires a reduction in consumption. How should we go about it?

We need to develop a new social contract and agree to a course of action that will take us in the desired direction. Clearly, if people feel left out of these decisions they will not support any transition. We have to think much more creatively about sharing the available resources and income and creating a whole new concept of the social safety net if we have any hope of seeing a materially different world.

Dr. William (Bill) Rees is currently Director of the School of Community and Regional Planing at the University of British Columbia where he has been researching and teaching the ecological basis for economic development since 1970. Dr Rees's planning and policy research focusses on the developmental implications of global change and the ecological conditions necessary for sustainability.

Planning toward Sustainability: Reducing Our Ecological Footprint while Improving Our Quality of Life

Mathis Wackernagel, Vancouver, B.C.

This presentation is based on the work of the UBC Task Force on Healthy and Sustainable Communities and staff from the City of Richmond. Our work is aimed at developing tools for planning toward sustainability. To explain our concept of planning toward sustainability and to link it to the land ethic, I will first present a simple classification of perspectives on the land ethic, then introduce corresponding concepts for understanding society's relationship to nature (or land), and finally, translate these concepts into tools that might be useful for planning for a healthier and more sustainable relationship to land.

Essentially, land ethics can be separated into two camps. One camp claims that *land belongs to people*, while the other camp maintains that *people belong to the land*. Typically, in hunting and gathering societies as well as in agricultural societies, people live directly from their land. For example, in Switzerland, my home country, families have lived for hundreds of years in the same valley and feel that they belong to this valley which has provided for most of their resource needs. In contrast, in industrialized societies, we buy more land or resources if we need more, and move some place else if we want to or need to.

Both of these camps represent a different understanding of society's relationship to nature. Those who think that *they belong to the land* are the people who live within the land's carrying capacity, because their land is their home and their resource provider. They are naturally concerned about how many organisms can be sustained on their land. A farmer would think about how many cows can be fed or sustained by a given pasture. Many aboriginal societies understood that their population was dependent on the carrying capacity of the region in which they lived. However, those who think that *land belongs to people* generally no longer live directly on the land that sustains them.

Carrying capacity is seldom any longer a concern because if one needs more one can buy more. The constraint on consumption is not regional carrying capacity it is purchasing power. Carrying capacity has to be conceptualized differently in a global economy. The relevant question becomes how much carrying capacity is necessary (or needs to be appropriated) to sustain a given lifestyle. Much of this carrying capacity is actually not within the region. Economies today do not draw solely on the resources from the region in which they are based but from the entire stock of global resources and waste sinks.

To illustrate this changed relationship to nature, we have developed the concept of the "Ecological Footprint" or, more academically, "Appropriated Carrying Capacity." In essence, the Ecological Footprint concept tries to quantify this relationship to nature. Its purpose is to illustrate an economy's dependence on nature and to measure that economy's progress toward sustainability.

In a global economy, thinking in terms of our Ecological Footprint rather than of the regional carrying capacity is more useful for planning toward sustainability. After all, we in industrialized societies no longer live in regions, but draw on ecosystems from all over the globe. The economic success stories of places such as Hong Kong, Japan or Switzerland cannot be understood from the traditional carrying capacity perspective. In fact, in the global economy, those economies that are the most resource rapacious (and use these resources for efficient economic production) generally do "the best," which explains why today, economic success and ecological integrity are fundamentally at odds. As a first step, therefore, toward sustainability, we need to understand how much land is necessary to support Hong Kong, Japan, Switzerland, or our own economy.

The average Canadian uses about 4.8 hectares of ecologically productive land to provide for his or her current lifestyle. However, there are only 1.6 hectares of ecologically productive land available per capita on the planet. This means that we would need three planets if every person was to live like an average Canadian. In the case of the Fraser Valley, the footprint of the people living here is about 20 times larger than the valley itself. However, some people feel that running out of agricultural land is not a concern as advanced agricultural technology, such as greenhouses, can generate much higher yields than traditional agriculture. Unfortunately, quite the opposite is the case. Yoshihiko Wada, in his Masters thesis, demonstrated that one kilogram of B.C. greenhouse tomatoes has an Ecological Footprint 10 to 20 times larger than one kilogram grown in the open field. How can we deal with such ecological-economic conflicts and what does this mean for development?

Many people understand that municipal decisions have the greatest potential of moving society towards more sustainable living patterns. If municipalities cannot deal with these challenges it is even less likely that other institutions will be effective in developing sustainability. Given this perspective, we on the UBC Task Force together with staff from the administration of the City of Richmond have started to think about how to report about the sustainability impacts of municipal decisions.

To do this, we have developed a simple framework for understanding sustainability challenges. In our opinion, sustainability is a struggle between human survival, on the one hand, and good life here and now, on the other. Human survival can be quantified by the Ecological Footprint concept which measures our dependence on nature. The "good life" is, of course, more subjective. We have to ask fundamental questions about what makes our lives pleasant and what is important to us. Soon, we will realize that there is more to the good life than just a high Gross Domestic Product (GDP). To help people think about what matters to them and explore how good their community's quality of life is, we are developing a second tool which we call "Social Caring Capacity" (as opposed to "Appropriated Carrying Capacity").

Two conditions need to be met if we are to move toward sustainability: we need to a) reduce our Ecological Footprint, and b) improve our quality of life. Sometimes these conditions are in conflict, sometimes they are compatible. For example, if the "good life" means having three cars, then the two conditions are obviously in conflict. If the "good life" means drinking tea with friends then they may be compatible.

These two simple conditions provide a framework for assessing progress toward sustainability. To know whether we move in the right direction, we need to determine whether a particular decision leads to a reduction of our Ecological Footprint and to an improvement in our quality of life (which means that people are happy about and supportive of the change). All decisions that do not meet these two conditions would be conscious choices against sustainability.

After his training as a mechanical engineer in Switzerland, Mathis Wackernagel developed and marketed solar equipment for Third World applications in the south of France. He is currently a Ph.D. candidate at the UBC School of Community and Regional Planning and a research associate with the UBC Task Force on Healthy and Sustainable Communities. He is completing his dissertation on "Ecological Footprint or Appropriated Carrying Capacity: A Tool for Planning Toward Sustainability."

Decision Analysis: A Tool for Better Decisions about Complex Sustainability Challenges

Tim McDaniels, UBC School of Community and Regional Planning

In his talk, Tim McDaniels pointed out that explaining how to make good decisions about ecological problems is impossible in ten minutes. However, he did try to show how we can think about these issues in a more structured way and what we can hope to gain from doing this. The following is a summary of the ideas Tim explored:

My personal interest in better decision-making leads me to ponder about the whole spectrum of economic and environmental challenges that we are facing. The reason we face the environmental circumstances that we do today is because of decisions that we have made over the past few hundred years. Likewise, the decisions that we make now will determine what life and environmental quality we experience in the future.

This is why I believe that thinking hard about decision-making is our best hope for making environmental improvements. We have to recognize that environmental decision-making is confronted by the toughest political problems. And there are some clear cut reasons why this is the case. Environmental issues are characterized by:

- opposing objectives or trade offs between various objectives
- enormous uncertainties as we do not know the ecological, economic and social consequences
- institutional complexities - mainly overlapping levels of jurisdiction between different levels of governments, different forms of land tenure and organizational efficiency
- interrelated decisions where decisions of today influence all kinds of subsequent decisions

All these factors mean that our decisions about land use and environmental quality are enormously complicated. We cannot simply rely on experts to tell us what to do because there is no one who is an expert in all the different aspects of the problem. We cannot rely on the media to tell us what to do because, at best, they simplify and make cartoons out of really complicated problems. Academics might not be the right choice either. We have to work harder to develop more organized and structured assessments of the problems.

There are some basic steps for improving our decision-making. Employing them would significantly improve our current decision-making. The following are examples of ways to improve decision-making:

- clarify the value trade-offs, or ask "is it worth it?"

For example, is it worth it to increase density at the cost of possibly decreasing the quality of life in order to have more people living in the core of the city and to cut down on commuting? Is it worth it to change land-use patterns in Richmond in order to reduce its Ecological Footprint, given that some groups will pay high costs? The whole value side is usually disregarded in decision-making. Often it is hidden by having a set of criteria or by using a standard approach. Rather, we should explicitly ask: What is being gained? What is being lost? And, by whom?

- assess the consequences, or ask "what could happen?"

The other aspect of the problem is the technical side, or the facts. We need to characterize the consequences of the various options of a given decision in a fairly systematic way. We have been doing things like environmental impact assessment for a long time. Clearly, this is part of the analysis, but many aspects of these problems could be dealt with more explicitly and systematically by representing uncertainty and introducing probabilities to reflect the range of possible outcomes, thereby bringing more understanding in characterizing impacts. Of course, the level and detail of analysis needs to be justified by the nature of the problem. Many people feel that government works too slowly. My own experiences with government suggest that the officials are overworked, and that they never have time to do what the nature of their job requires as is evident in how the consequences of land use alternatives are assessed.

In essence, clarifying the "why?" and "what for?" and "for whom?" (value side of the problem) and the "what will happen?" (technical side of the problem) are two areas in which we have to do a better job. This raises questions about whose values are relevant and about who gets to make the decisions.

How could we achieve this? Referendums? Public involvement where we get all the conflicting view points? Or, leave all the analysis to the political decision-makers and have them think about it overnight? Use benefit-cost analyses? These are all different ways of trying to inform decisions--all of them different in the ways values get represented. On the technical side of the problem, we have to become clearer about whom we believe, who the experts are, and how we deal with the differences among these experts.

Clearly, we need better ways of structuring problems. The only way that we have of making progress towards more informed decision-making in the environmental context is to recognize that:

- there are inevitably trade-offs
- science can never give us a technical answer
- good decision-making means being clear about the objectives and the value side of the problem
- we must create good alternatives which are more attractive than the ones we might automatically come up with, and then:
  - -analyze their impacts in a systematic way
  - -understand how these alternatives stack up in terms of the objectives
  - -be upfront about the trade-offs that the alternatives entail

Tim McDaniels is Assistant Professor at the UBC School of Community and Regional Planning (SCARP). His research and teaching focus on environmental policy and decision-making. His training and professional experience lie in decision analysis, management of environmental risk, the role of evaluation in environmental choices, environmental economics and strategic planning. Before joining SCARP, he worked at the University of Washington and Carnegie Mellon University.

Suggestions for Action from Workshop Participants

A lively workshop discussion followed the three presentations. Towards the end of the workshop, Bill Rees suggested that all participants write down one key suggestion concerning the question "WHAT I WOULD LIKE TO SEE HAPPEN IN THE FRASER RIVER BASIN?" At the end of the workshop, the written comments and suggestions were anonymously submitted to the workshop recorder. The following are the suggestions submitted, in unedited form:

1. "Needed: to wrest control over economic decisions from the large corporations that have it now. Legislation of *moratoria* on changes in forest, waterways and agricultural land use until it has clearly been shown that taking out parts of these environments for consumption-goods production is necessary for bare (human) survival."
2. "Apply limits to our activities by limiting the ability of decision-makers to trade economic gain for essential natural capital and ecological functions."
3. "(A)I would like to see mass communication with individuals to convey the seriousness of our personal responsibility for sustainability, i.e., 'less talk, more action'. For example, we should be asking ourselves: What actions can I take to reduce the size of my footprint (take the bus, buy local produce, wear my clothing longer, etc.).
   (B)Relieve the average person of the responsibility of understanding the complexities of the issues. Some people are intimidated by the concepts, and give up as a result. Perhaps we could teach a condensed version--steps to follow--instead of an advanced degree in ecological understanding."
4. "In the Lower Mainland, I would like to see...regional governance with a mandate to identify and implement biodiversity retention/enhancement/restoration, with urban development as a lower priority than agriculture and essential water/soil/air/electromagnetic levels...with the boundaries defined in relation to the footprint concept (including Whistler, Pender Harbour, etc.), and with the decision-making chain to provide a voice for our elders (especially those of the First Nations) and for our children."
5. "The decisions should be made on a holistic/cumulative basis rather than the present isolated/sectoral basis."
6. "Preservation/survival of salmon fishery in Fraser Basin."
7. "My vision for the Fraser Valley: Development of neighbourhood units/communities - recuperation of land - (i.e., ploughing under subdivisions/malls etc. - or transforming them somehow). Land around concentrated housing devoted to agriculture, recreation, wilderness (Lee Durell's idea). "Reverse development" - an experiment in California (read about it in Mark Roseland's book). What I would like to see: Developing this from the ground up with strong communities. These communities must be prepared to follow their agendas despite edicts from NAFTA and national interests. The greater good will be served only through dedication to realizing ecological and social principles - resorting to civil disobedience if necessary."
8. "I would like to see a closer relationship between man and nature in the Lower Mainland."
9. "I would like the 'land ethic', [that is], the inherent worth or value of all organisms and thus the ecosystem, to be communicated to ALL individuals from kindergarten up. People just don't know the issues that face us, we don't think about [them]. I don't feel that people can't understand, it's that they don't want to because it's frightening. If we are brought up knowing what we have around us and how our economic decisions affect it, then we will (I think) make informed, eco-friendly decisions. Not everyone [will], but I believe the majority will feel this way and that is enough to make a change in the way we live."
10. "Make Lower Mainlanders pay the full costs of disposing of their wastes. Price all utilities, water, etc. at their real cost in the Lower Mainland."
11. "Shifting our ideas of 'progress/success' as traditionally accepted by economic growth/material wealth to cooperative and sharing actions, i.e. value and recognition added to the 'informal' economy; political process that allows you collective action."
12. "Growth control is important, but that alone will not solve our problems - we are still placing too much pressure on the Fraser Basin. We need to provide practical ways in which people can understand the footprint concept. (I believe that education alone will not work). Short of cutting off food imports and turning off the tap, we need to find ways of getting more people involved in local stewardship and sustainability activities (from restoration to local food

production). These activities/projects should transcend cultural and class barriers. We need a critical mass of a cross-section of society involved in order to provide the inertia for change. This certainly is not the key, but a part of the solution, I believe. Political will and economic restructuring may [then] follow."

13. "Stop the Alcan Kemano II to save our salmon and fresh water fish resources and water supply for down river [of] Vanderhoof, for water for sewage treatment, and irrigation already lessened by Kemano I."
14. "Move housing off the floodplain in Richmond. Protect salmon fishery (stop Kemano Completion Project). Protect our drinking water (stop logging in the watershed). Use ozonation, not chlorine or chloramine--these are poisons). Control population growth."
15. "Value Level: People parts, components and subsidiary units of Fraser Basin ecosystem less important than maintaining integrity of that regional system. Social Level: Population control, energy/material use control, try to bring people's footprint as close to carrying capacity as possible. Plenitude - quality of life rather than quantity (Mumford)."
16. "Make the Lower Fraser Basin car-free."
17. "People living in true community spirit, where people share resources for the benefit of the community thereby requiring sacrifices on the part of some for the benefit of others."

2. Communities and Landowners Stream

This stream provides examples of communities in action, as well as identifying landowners' concerns and their success stories. Partnerships between communities, governments and landowners are highlighted, and new information and resources discussed.

Mobilizing Communities

Friday, March 4, 1994, 2:45 - 3:45 pm
Chair: Ron Erickson, The Nature Trust of British Columbia

The Brant Festival

Neil K. Dawe, Canadian Wildlife Service, Qualicum Beach, B.C.

Brant habitat in various regions of the Pacific Flyway is under threat from residential and recreational developments. Displacement from their habitat is also a problem for the Brant. Concerned about the loss of habitat, and wanting to make the local communities and visitors aware of the beauty and needs of this talkative little sea goose, a group of people in Parksville and Qualicum Beach got together to establish a festival that would:

1) work toward protecting the Brant habitat,
2) demonstrate that wildlife can have an economic benefit to the community, and
3) encourage the two communities to celebrate, and share with others, their wildlife heritage. The first festival was held in 1991.

In 1993, a major goal of the Brant Festival was accomplished. The Honourable John Cashore, then Minister of Environment, Lands and Parks, declared a 17 km stretch of our intertidal wildlife habitat a Wildlife Management Area. The Parksville-Qualicum Beach Wildlife Management area secures most of the important Brant habitat in the area. In the same year, the festival brought more than $424,000 to the community during the three-day event, which, to festival organizers, suggests the second goal has also been achieved.

The final goal of "communities celebrating their wildlife heritage" has not yet caught on the way festival organizers hoped it would. In order for this goal to be achieved, a shift in the attitudes and outlooks of individuals within the community is required. A number of factors play a role here: from the way individuals relate to themselves and the natural world, to the ability of individuals to move out of their comfort zones and look at their communities from a different perspective.

Neil K. Dawe is Habitat Manager for the Canadian Wildlife Service on Vancouver Island. He is a Registered Professional Biologist with research interests ranging from garter-snake ecology to the enhancement and rehabilitation of estuarine wetlands. As co-founder of the Brant Festival and of Self-Esteem Week, he works to effect a "paradigm shift" in the way that communities view themselves, their relationship with the natural world, and their wildlife heritage.

The LandOwner Resource Centre

Jamie Fortune, Ontario Ministry of Natural Resources, Manotick, Ontario

Over the years many organizations including provincial ministries, conservation authorities, non-government groups and associations have developed programs and provided services to landowners. In the last two years, funding pressures have caused a withdrawal of programs and services. However, the need for good land management practice, that is, stewardship, remains.

A group of agricultural and conservation agencies concerned with Ontario's natural resources are testing ways of improving their support for landowners. This group has agreed to support a small number of community-based pilot projects to test the practical feasibility of a "one-stop shopping" approach for landowners. The title for this exercise is the "Ontario Private Land Stewardship Initiative" and it is based on the following principles:

- A long-term, cooperative approach must be developed involving all public and private agencies with an interest in natural resources.
- The initiative must foster development and realization of the vision that local people have for the landscape around them, and work through their connections to it.
- The focus should be on addressing all the needs of landowners, irrespective of how many agencies ultimately become involved in supplying assistance.
- It should complement and not replace existing initiatives of agencies and the private sector.

The pilot projects within the initiative will be examined over a three-year period. Developing a "one-window" storefront, which is community-based and supported, is a challenge! Three pilot projects have been under way for a little over a year, and are at varying stages of development.

The LandOwner Resource Centre is based in eastern Ontario. It serves an area which includes the National Capital Region and consists of a diverse land base including significant components of farmland, wetland, forests, lakes and rivers, mainly in private ownership. There is a tradition of strong support for landowner programs and services in the area. Over the three-year pilot phase the LandOwner Resource Centre is to: provide an information and referral service for landowners and agencies, encourage coordination, cooperation and cost-effectiveness among agencies, and, it appears, be available to provide advice on program policy to agencies.

The project is managed by an independent steering committee composed of landowners, stakeholder representatives and agencies. The project's resources (staff and dollars) are controlled by this group. To date, staff support has been provided by the Ontario Ministry of Natural Resources (OMNR), and the Rideau Valley Conservation Authority with financial support from OMNR, Wildlife Habitat Canada, the Rideau Valley Conservation Authority, and the Eastern Habitat Joint Venture of the North American Waterfowl Management Plan.

The project has been well received by landowners. Agencies are as supportive as can be expected in a climate of organizational uncertainty and overlapping jurisdictions. There are many challenges ahead, but the project will remain focussed on the interests of landowners, and provide ample fuel for evaluation and consideration as private land stewardship develops in Ontario.

Jamie Fortune graduated as a forestry technician from Algonquin College in 1982 and has spent the last eight years working with landowners, five as County Coordinator of the Gypsy Moth Aerial Spray Program, and the last three as an Extension Agent with the Ontario Ministry of Natural Resources. His most recent assignment has been to assist with the development of the LandOwner Resource Centre.

Community Land Trusts

Friday, March 4, 1994, 4:00 - 5:00 pm
Chair: Mark Roseland, Simon Fraser University, Vancouver, B.C.

Delta Farmland and Wildlife Trust

Brian Rogers, Delta, B.C.

The Delta Farmland and Wildlife Trust (DF&WT) is a community-based, non-profit, charitable society committed to the preservation of farmland and the conservation of wildlife habitat. It has directors who are farmers, landowners and conservationists who work together to develop farm stewardship practices.

Yes...wildlife does depend on farmland and farmlands are much more than just food production systems for human consumption. The present focus of DF&WT is the Fraser River delta ecosystem. The Fraser River delta is an internationally significant habitat for migratory birds and supports Canada's highest density of wintering waterfowl, shorebirds and raptors, and also is, one of Canada's most productive agricultural areas. The Fraser River delta's diverse ecosystem consists of a variety of habitats including: farmlands (25,000 acres), bays, bogs, river estuaries and islands.

Seventy percent of the original Fraser River delta wetland habitat has been altered by regional dikes and drainage. Farmland has become essential habitat for the maintenance of many of the delta's wildlife populations. Inside the dikes, farming practices include many types of cultivated row crops such as grain, potatoes, corn, peas, and cabbage to name just a few. It also includes relatively large areas of permanent pastures for cows, sheep, cattle and livestock, hay and forage production. Arable and livestock farming practices can provide important habitat for many types of resident wildlife.

The Fraser River delta is located on the Pacific Flyway; therefore, its importance to migratory birds as a staging area, or winter habitat, cannot be overemphasized. It is important for many shorebirds and waterfowl. At times, many migratory waterfowl, such as widgeon, geese and swans, roost and glean farmers' fields for food or feed upon winter cover crops leaving little green manure or crop residue to benefit the soil--much to the frustration of resident farmers. Farmlands are indeed important to wildlife, which is a benefit to us all. In order to conserve farmlands, we must not only support, but also work with farmers to sustain a viable agriculture industry. This includes:

- protection of agricultural land from urban encroachment and industrial development
- promotion of soil and water conservation
- securement of land tenure for farmers
- encouragement of public support

The car is one of the primary threats to farmland and wildlife conservation. It results in highways that dissect farmlands, thus inhibiting farmers from safe and easy access to fields. It allows many people to have quick and easy access to rural communities, resulting in urban encroachments onto valuable farmlands and the development of farmlands for recreational purposes (i.e., golf courses). The car stimulates industrial development and encroachment onto farmlands, which results in other support services such as rail transportation corridors and hydro right-of-ways. All of these seriously threaten the integrity of farmlands. As a result the livelihood of our farmers is compromised and the potential for farmlands to produce valuable food and provide wildlife habitat is undermined. One should remember that without farmers, there is no farmland.

As a society we must protect farmlands from urban and industrial development, and support and recognize the important service that our farming communities provide. Farmlands are much more than just food production. Farmers are caught in the middle of a maze of interjurisdictional disputes and bureaucratic wrangling, much to the confusion and detriment of farming communities. To many, farmlands are simply lands waiting for urban and industrial development. Many farming families simply do not have the time or energy to deal with all these issues; after all, they are small in numbers and have a business to run.

So what can we do? DF&WT employs a number of strategies. These include:

- bringing together various organizations and individuals concerned with the preservation of farmlands and the

conservation of wildlife habitat

- offering sound practical advice and incentives to farmers and landowners for farm stewardship and habitat enhancement
- undertaking programs and research that help farmers cope with problem wildlife
- promoting public awareness and appreciation of agriculture and wildlife

Many programs that deal with farmland and wildlife conservation have already been developed and tested in Europe. The DF&WT's goals include:

- the preservation of farmland as a source of food and valued wildlife habitat
- coordinated research into programs of benefit to agriculture and wildlife habitat conservation
- recognition of the farm as the basic unit of conservation by working with farmers "in partnership" to develop farm stewardship programs and incentives

The DF&WT would like to develop and deliver field programs including: cover crops, grassland set-asides and ley crops, integrated pest management, and soil drainage. Incentives for programs that benefit the soil and provide valuable habitat to wildlife, such as winter cover crops, will be an important goal of the DF&WT.

Grass set-asides are programs we wish to develop. There are many types of grassland set-asides that can include whole or part of fields. Grasslands are important for small mammals, such as voles, and are of benefit to soil organic matter and structure. Voles are a primary food source for many birds of prey such as hawks, eagles and owls.

Many chemicals used on farmers fields can have unfortunate effects on wildlife when the chemicals are not used in a safe and appropriate manner. The DF&WT will encourage the use of integrated pest management monitoring techniques to reduce the use of pesticides and to encourage the introduction biological controls.

The DF&WT recognizes that many of Delta's soils experience crop problems associated with high levels of salts and deep compaction, caused from working the soil when it is too wet. Compaction results in crops that are more subject to drought and/or water-logging, which reduces yields and threatens the farmer's ability to compete in the market place. To alleviate serious soil salt and compaction problems the DF&WT recognizes sub-surface drainage as prerequisite to sustainable arable farming on the delta.

Farmlands in Delta are subject to heavy waterfowl use. Many fields have well established cover crop heading into the winter, later to be grazed several times by widgeon, leaving the soil puddled and subject to extensive flooding and drowning of crops. Many pastures are extensively grazed, leaving little in the spring for livestock. Land contouring, to reduce flooding, may be of some help to farmers who continually experience heavy crop losses due to excessive waterfowl grazing.

The DF&WT wishes to develop incentives for farmers to establish and maintain field margins, which may include: hedgerows, grass-field margins and ditches. Field margins provide valuable habitat to wildlife and shade and shelter to livestock. Grass-field margins reduce weed infestations and may provide refuge for many beneficial insects.

Some fields in Delta already have well-established hedges consisting of hawthorn, crabapple, hardhack, wild rose and brambles. Field hedges are important to many songbirds and birds of prey for food, shelter and/or nesting. Ditches provide nesting and feeding habitat for many types of wildlife. Grasslands along ditches that are cut late in the season provide much cover for nesting birds and small mammals, while regularly mown grasses offer little wildlife use. The great blue herons can be seen in many of these ditches and many birds nest in these grasslands along ditches and hedges. Field margins are very important to wildlife and we must make every effort to preserve them and to provide incentives to farmers to plant and maintain them.

The DF&WT also wishes to develop off-field programs to conserve and enhance wildlife on the farm. These include: yards and buildings; watercourses, ponds and wetland; and trees, woodlands and shrubs. Watercourses and woodlots are valuable habitats for wildlife. Many areas of a farm not planted to crops could be planted to trees and various types of vegetation, providing habitat for breeding birds, mammals (i.e., voles), reptiles and amphibians, insects, fish, aquatic plants, and wildflowers and grasses.

The placement of bird boxes and building of ponds not only provides valuable habitat for wildlife, but provides recreational use and pleasure on the farm. Many barnyard buildings provide habitat to wildlife. Barn Owl nest boxes can be placed in the lofts of barns, thus providing a home for one of Canada's endangered species of birds.

Yes...farmlands are important for wildlife and much of what we can do is common sense. But sound advice and incentives must be given to farmers to encourage them to be stewards of the land, and society should recognize this service as a benefit to us all.

Brian Rogers is President of the Delta Farmland and Wildlife Trust. He is a businessman in Vancouver with a long association with agriculture through the B.C. Food Processors' Association, Ladner Beet Seed Plant and various enterprises in southern Alberta. Brian Rogers has a long-time interest in the association of wildlife with horticulture.

Can a Community Choose its Future?

Ken Millard, Galiano Island, B.C.

The title of this talk dates back to a series of Galiano public meetings in 1989 called "Choosing Our Future." To understand events on Galiano over the past several years, one must also understand the context.

In B.C. there are about 926,000 hectares of private land classified as "Managed Forest Land" by the B.C. Assessment Authority. This is about one per cent of the total land area of B.C., but about 16 per cent of all private land. Owners of this land receive an incentive tax assessment and an incentive tax rate to "encourage permanent forestry" (Sloan, 1956 Royal Commission). According to Peter Pearse (1976 Royal Commission), "Owners may enjoy tax advantages on this land by virtue of its commitment to continuous forestry...but when its value in other uses rises they may withdraw land from this commitment without penalty, which prejudices the public's interest in the arrangement."

Until recently, about 56 per cent of Galiano Island was owned by MacMillan Bloedel and assessed as Managed Forest Land. In 1985 the annual cut on this land jumped from about 5,000 to about 40,000 cubic meters per year. Alarmed by the scale of progressive clearcutting, a round table forum--the Galiano Forest and Land Use Council--was initiated by the community. The membership on this council consisted of equal representation from government, MacBlo and the community. The objectives of the council included discussion of forestry practices, development issues and the sale of this forest land to the community.

At this time, people within the community felt a need for an organization which could research and provide information on land use and resource issues, including ways to protect important resource lands and natural areas. The Galiano Conservancy Association was formed in 1989 as a land trust and has charitable status with Revenue Canada. One of the purposes of the Conservancy is to preserve, protect and enhance the quality of the human and natural environment. The purposes of the Conservancy are carried out mainly through:

- education by sponsoring an ongoing lecture series and maintaining a library and Resource Centre
- research by inventorying our natural environment and gathering information on human impact
- acquiring land for resource and ecosystem protection

In 1990, the Galiano Conservancy Association put forward a process, the Community Acquisition Plan, that could lead to the community purchase of the Galiano Forest Lands. This process would have involved community decision-making at each stage. The primary land uses would be forestry, conservation and limited development. If successful, the Community Acquisition Plan would establish a major land trust in British Columbia, enabling a community to choose its own future. The Community Acquisition Plan promised fair value to the owner and required not only a willing seller, but a cooperative seller. The last ingredient was not present.

In 1991 MacBlo started marketing their Galiano Forest Land as an "Investment in Paradise." The Galiano community undertook a massive fund-raising drive to purchase Mt. Galiano. Coon Bay was acquired by the Province to be a park. Efforts are currently under way to protect the Bodega area. What started out as an attempt by a community to secure its resource lands and protect its natural areas through fair process has come down to diverse attempts to protect key natural areas.

Ken Millard joined the Galiano community fifteen years ago. He helped found the Galiano Conservancy Association, one of the first community-based land trusts in Canada. As a maker of violins and bows, Ken is a passionate advocate of sustainable forestry practices and of the highest value-added use of B.C.'s rich forest resources.

Resources in Action

Saturday, March 5, 1994, 9:00 - 10:00 am
Chair: Otto Langer, Department of Fisheries and Oceans

Public Involvement the Salmonid Enhancement Program Way

Don Lawseth, Salmonid Enhancement Program, Department of Fisheries and Oceans, Vancouver, B.C.

The focus of my talk is fish. This topic relates very well with one of the central themes of this conference--revisiting the land ethic. Fish are a barometer for what is happening in the environment. The barometer analogy was stated very well by Rich Goulden, CEO of the Manitoba Habitat Heritage Corporation, at an excellent workshop put on by Wildlife Habitat Canada last fall. To paraphrase him: "fish live in a medium (water), which is the end-product of all that happens on the lands within that watershed, covered by towns, farms, industries and individuals!" What I would like to do this morning is show you the Salmonid Enhancement Program Public Involvement model: what it is, where it came from, where we are going next and why.

The Salmonid Enhancement Program (SEP) was established in 1976 with the aim of doubling the salmon stocks of the West Coast. However, fish production was not the only goal. The program also set out to:

- increase national income
- increase regional development
- benefit aboriginal people
- create employment
- increase environmental awareness

From the beginning, SEP managers decided to encourage a high level of public involvement in the program. Before launching the program SEP held two rounds of public inquiries throughout the province to ask people what they wanted from a salmonid enhancement program. For the time (18 years ago), the approach was a very novel one. At these inquiries SEP heard that the public wanted active involvement in the program. This meant actually going into the streams and working with the fish. The public's desire to become actively involved created problems for the Department of Fisheries and Oceans (DFO). Such a request was unheard of--how could we possibly let untrained, unruly citizens handle this delicate resource? Such work had always been reserved for the experts.

To address these concerns a new entity was created--the Community Advisor (CA). The CA was an experienced fisheries staff person who would work with volunteers on projects. The CA would do much more though, really: s/he would act as an ombudsperson for the different groups. The CA would:

- cut through government red tape to get approvals
- act as a proponent for the groups within government
- take general public concerns and reflect them on the agencies for resolution at public meetings
- take the groups' dreams and, through consultation with the experts, turn them into meaningful projects that benefit the resource
- help the groups with fundraising ideas
- link various projects and project activities in a given area
- deliver the SEP education program: classroom incubators, "Salmonid in the Classroom," Storm Drain Marking Program.

The key here is for the projects to remain under the control of the individual groups. The CAs use what we call the "velvet glove" approach to ensure that the projects are biologically viable and that they address real fisheries issues.

The program started with four CAs; now there are 15--covering all of B.C. and the Yukon. Today, there are about 250 projects with 8000 volunteers. The projects range from streamside incubators to full-scale complex fish hatcheries and ecology centres. There are more than 800 classroom incubators with salmon eggs. Over one million students have been exposed to 'Salmonids in the Classroom'.

What brings a fish enhancement guy to a symposium on 'Revisiting the Land Ethic'?

The 8000 volunteers have not been content just to produce fish. In some cases, all it took was for a few soapy looking bubbles to float by the incubator and a few fish to die mysteriously for people to start looking upstream and around them. Our clients started to tell us that they wanted to be more involved in habitat issues, watershed issues, water use issues, land use decisions, and community planning. When we looked around for something that was broader than our PIP program, we saw a lot of interest in "Adopt-a-Stream" type programs so I invited the Adopt-a-Stream Foundation from Washington State up to show us what they do. I also invited individuals from various government agencies, volunteers, SEP's public advisory group, and the Salmonid Enhancement Task Group (SETG) to participate.

The interest level was very high. The SETG then wrote 150 Mayors and municipal governments to see if they would like an adopt-a-stream type project in their area. We received over 100 positive replies.

Then I called together individuals from federal and provincial resource agencies (including Water Management) and SEP volunteers to form a steering group. Their task was to recommend principles that would be the base for establishing such a program for B.C. The next step was to present the concept to the SEP volunteer community. Last spring we held a Volunteer Conference in Port Moody. We received a strong endorsement and many excellent suggestions from the participants. We are currently developing the program and will call it *STREAMKEEPERS*.

What is Streamkeepers?

The idea is to provide volunteers with a handbook, training and (later) certification to become Streamkeepers. At this time we visualize three levels of activity:

I. Simple stream work:
- stream cleaning
- stream mapping
- SDMP
- streamside re-vegetation
- water quality/quantity monitoring
- stream BUG monitoring
- observing, recording, reporting
- increasing community awareness

II. More intrusive habitat restoration
- stream complexing
- fishway design and construction
- water storage
- instream weirs, structures, etc.

III. Community Activism
- more involvement in community planning and local decision-making processes

We now have a draft document which includes a handbook on the program and its philosophy, eight training modules as well as information on who to contact and what approvals are necessary.

The work was accomplished through a cooperative effort: SEP (Gary Taccogna is the group leader), Ministry of Environment, Lands and Parks (MELP), a teacher, CAs, the Environmental Officer for North Vancouver, and Project Watershed people from Comox. The draft is out for review by 45 people representing a broad range of interests: government, volunteers, teachers, etc. The program will be field tested by CAs in the summer and fall of 1994. We will incorporate feedback we receive and then publish the final document.

For the sake of the Community Advisors and Gary Taccogna, who has the job of implementing Streamkeepers, I must caution that although many people are doing Streamkeeper activities with the CAs and the CAs are already overwhelmed with requests from people wanting to become Streamkeepers, the program is not ready for full implementation. Please don't start phoning yet--we don't want to create expectations we can't deliver on.

Next Steps

Now that we have something physical in hand, we must start developing partnerships and building a program at higher levels of government. It is particularly important to build partnerships between DFO and the MELP at the senior level. We must also look at delivery mechanisms in areas where there are no CAs. Streamkeepers must be articulated with other similar initiatives such as the Water Stewardship Project MELP currently has under way. We need cooperation on streamlining approval systems--for example, a "one-stop shop" for those volunteers that just want to get out and do good things.

Certification at the College-level would give the Streamkeepers credibility and identity. We are currently working with a group that is interested in taking an enforcement bent--Streamwatch. Another issue that must be addressed is who will take ownership of the program? Should it be a private NGO? Some CAs want to keep the program. But it will be bigger than the SEP or DFO mandate soon. We are also looking at obvious linkages with other community-based initiatives such as:

- Fraser River Action Plan (FRAP) Demo Watersheds
- HAP Partnerships

and linkages with other products such as:

- Land Development Guidelines
- Developers & Planners Guidelines to Aquatic Stewardship

I had no idea when we started this process how much it would drag me into and through the complex world of Habitat Management--the morass of jurisdictions, interests and emotions. I would like to quote Rich Goulden who I think said it very well:

> Ours is a noble, albeit, difficult goal: To identify ways and means of enhancing the stewardship of a resource (fish) which is owned by the federal government, but which lives in a medium (water) which may be owned by Canada, a province, a municipal authority or privately, but which is the end-product of all that happens on the lands within that watershed covered by towns, farms, industries and individuals.

I would like to conclude with one final observation. Governments can no longer govern on a species-specific basis alone. Nor can they govern in isolation of those that are most affected by the decisions. People insist upon being a part of the decision-making process and on influencing decisions. People, while participating in these many processes, will need to be encouraged and offered tools to increase their knowledge and awareness of the resource. Streamkeepers, I believe, will fill this requirement. It will be the true grassroots level rung on the ladder of integrated, community-based decision-making.

Don Lawseth has worked with the Department of Fisheries and Oceans in many capacities since 1968. He was one of the original four Community Advisors who initiated the Public Involvement Program for the Salmonid Enhancement Program (SEP). He then went on to manage the Robertson Creek Hatchery at Port Alberni for SEP

from 1981 to 1991. Now, as the Chief of Community Involvement for SEP, Don oversees the Public Involvement Program, the Community Economic Development Program and SEP's education and information programs.

Information for Conservation: Protecting Private Land

Bill Andrews, West Coast Environmental Law Association, Vancouver, B.C.

Conventionally, people look to government to protect environmentally important areas by creating a park or ecological reserve. Although parks and reserves are still vitally important, most of them are located in the 95 per cent of British Columbia that is owned by the Crown (publicly-owned). Unfortunately, much of the most ecologically valuable land in British Columbia is in estuaries and valley bottoms that are mostly privately-owned.

Government is increasingly unable to afford to buy this land, and government control does not necessarily ensure conservation of the land in the long term. In addition, certain conservation objectives can be achieved most cheaply and practically by limiting use of the land without eliminating all use of the land. As a result, private landowners and conservation groups are turning to voluntary stewardship and to an array of legal tools tailored to safeguard specific land forever.

Information for Conservation is an electronic collection of legal and environmental materials relating to the voluntary protection of private land in British Columbia. The collection includes:

- an interactive guide to choosing legal tools
- the full text of *Here Today, Here Tomorrow: Legal Tools for the Voluntary Protection of Private Land in British Columbia*
- the full text of dozens of related statutes and documents
- catalogue references to other sources of helpful information

Information for Conservation is part of ELIB, the Environmental Legal Information Base. For modem access to ELIB, call **604-684-2483** (N-8-1, up to 19,200 baud). Please see our brochures "What's ELIB?" and "Connecting to ELIB" for more details. Or, feel free to come in and use the public ELIB terminal in the West Coast Environmental Law Research Foundation library (1001 - 207 West Hastings Street, Vancouver, B.C.) between 8:30 am and 5:00 pm, Monday to Friday). Or, call us at 604-684-7378.

Information for Conservation is intended to be used by landowners, conservation groups, lawyers and real estate professionals, civil servants, and students and academics.

Once you are in ELIB, simply choose "Information for Conservation" from the Main Menu. You will then get the Information for Conservation Home Menu, and you can explore by following instructions from there.

We gratefully acknowledge project funding for *Information for Conservation* from The Real Estate Foundation of British Columbia, and core funding from The Law Foundation of British Columbia.

Bill Andrews is a lawyer for the West Coast Environmental Law Research Foundation. He is currently working on the Electronic Crossroads Project aimed at improving public access to environmental legal information.

3. Managing for Nature Stream

Presentations in this stream focus on conservation management issues, from how to identify environmentally-sensitive areas to current zoning and by-law case studies.

Identification of Habitat on Private Land

Friday, March 4, 1994, 2:45 - 3:45 pm
Chair: Val Schaeffer, President, Vancouver Natural History Society

Working with Naturalists

Bob Purdy, Former Manager, Land for Nature Project, Vancouver, B.C.

The Federation of British Columbia Naturalists (FBCN) is a provincial non-profit organization formed in 1969 to represent the interests of British Columbia's naturalists. British Columbia's naturalist clubs, now numbering 48 through out the province, have a long history of initiating community-based natural history education and conservation initiatives. Club members are typically well-informed about special areas in or near where they live--areas where one can observe biological diversity or simply seek solace from hectic lifestyles. Over the years naturalists have developed good working relationships with government agencies at all levels. Naturalists are knowledge-based advocates for nature; in addition to the emotional bond they have for the areas they are interested in, they regularly contribute their knowledge to support decision-making.

An advertisement entitled *Profit with the Developers* was recently featured in the Globe and Mail. It urged readers to quickly purchase an interest in a limited land supply in order to "profit from [the] land squeeze" in the Lower Mainland. Advertisements such as these illustrate the need for programs like the FBCN's **Land for Nature** initiative. First proposed in October 1990, the initiative endeavours to stem the tide of urban habitat loss in rapidly growing areas of British Columbia by constructively overcoming the barriers that often hinder conservation action in these areas.

The Land for Nature initiative supports naturalists' efforts to proactively identify habitat, disseminate knowledge about tools for protection, and develop working partnerships for conservation at local and regional levels. To date, efforts have focussed on low elevation areas of the province undergoing rapid development, namely, Eastern Vancouver Island, the Lower Mainland, the Thompson, Okanagan and Similkameen valleys, and the East Kootenays. It is these areas where habitat critical to the survival of a wide variety of provincially-, nationally- and globally-significant plant and animal species is being lost or degraded as a direct result of rapid human population growth and settlement patterns. It is conservatively estimated that such lower elevation areas provide habitat for 85 per cent of British Columbia's plant and animal species. In other words, some of the most biologically-rich habitat of the province is also the most threatened, and not enough is being done to protect it.

Specific inventory-related activities supported by the Land for Nature initiative include ecologically-important site identification, mapping, land ownership determination and development threat assessment. However, habitat inventories are useless if they sit on shelves gathering dust. It is for this reason that the Land for Nature initiative marries inventories with community-based action by coordinating forums and workshops to raise public and administrative awareness of important habitat, the tools available to protect them, and the opportunities for people and institutions to work together to protect specific sites. Representatives of government agencies, non-government organizations, developers, First Nations, community groups, the academic community, legal experts, landowners, and others are brought together to share their perspectives and information, build common ground, and create teams to work toward shared conservation goals. By raising awareness of local natural heritage and tools for protection, inadvertent habitat losses due to ignorance can be avoided.

A few words are in order on what we have learned from Land for Nature activities to date, and the challenges that lie ahead. We have certainly learned a lot through our zeal to identify sites. During one naturalist-led mapping project, a rancher became very concerned when naturalists identified an important wetland on his property. At a subsequent

workshop sponsored by the Land for Nature initiative, ranchers and naturalists shared their perspectives and concerns, identified common goals and agreed to work together to explore ways and means to identify and protect important habitat areas on rangeland. This positive result underlines the importance of dialogue among potential stakeholders as early and as often as possible in projects of this kind.

We have learned that data on low elevation habitat at appropriate map scales is still inadequate in many areas, and significant land use decisions continue to be made in the absence of such data. While a substantial amount of data has been collected at small scales for single species and their habitats (for example, deer winter range), data on a range of plant and animal species, at map scales that are useful for municipalities, is insufficient. Much more needs to be done to ensure that the right kind of information is assembled and used to support decision-making.

I suspect that government agencies and their contractors now realize that volunteer groups such as naturalist clubs simply do not have the resources to be solely responsible for conducting comprehensive inventories. As it stands, many naturalist clubs are besieged by requests to serve on countless committees and task forces, too often with no clear assurances that their efforts will pay off in terms of habitat conservation. This is, over the long term, a "no-win" situation. Volunteers need support in the form of training and professional assistance, and need to be engaged in a way that recognizes both their limitations and aspirations.

A promising example of how government agencies can work well in concert with volunteers is the Eastern Vancouver Island Sensitive Ecosystems Inventory. This cooperative project involving provincial, federal and local government agencies, the FBCN Land for Nature initiative, and others, started with the hiring of professional biologists to interpret aerial photos and conduct field checking. The Land for Nature initiative is providing funding and in-kind support to enable local naturalist clubs to share their local knowledge and generate community awareness of important areas.

While the Land for Nature initiative has accomplished much with scarce resources, much more work remains to be done. We must continue to encourage the cooperative efforts needed to focus conservation efforts on the ground, where they really count. While some local governments are quite progressive, many need to make a stronger commitment to habitat conservation. Often municipalities will identify ecologically-significant sites in their Official Community Plans but will not take measures to actually protect them under existing provisions of the Municipal Act. Last, but not least, senior government agencies need to ensure that global, national and provincial conservation objectives are harmonized with efforts at the local level.

Another key challenge facing habitat protection initiatives in the low elevation areas is the fact that many important areas lie on private land. As a means of addressing this challenge, a Land for Nature-sponsored workshop in Summerland last year recommended the establishment of a voluntary private land stewardship program for the Okanagan Valley. Progress toward this end cannot be delayed; critical habitat continues to be lost in this unique valley. Indeed, voluntary private land stewardship programs have a major role to play in virtually all of the populated valley bottoms of British Columbia.

Mandate and jurisdictional restrictions are too often given as excuses for insufficient progress on habitat protection. However, ensuring viable ecosystems is everyone's problem. We must continue to create opportunities for people to meet with people at the local level to encourage them to work together to overcome jurisdictional constraints. After all, viable ecosystems are not governed by our arbitrary boundaries and predefined mandates.

Perhaps one of the biggest challenges facing those working to protect urban habitat is not the rapid pace of development per se; rather, it is what I call "the perception gulf." Whereas a naturalist views a patch of forest as a shrine, a developer may just see dollar signs once that forest is replaced by a densely-packed collection of condominiums. We must work diligently to raise awareness of the ecological, aesthetic, *and* economic benefits of protecting natural areas in or near our communities.

And, lest we forget, the majority of British Columbians may never actually visit the Spatsizi, or the Tatshenshini. The nature in or near their backyards may be the only nature they regularly see. If we fail to protect the experience of nature where people live, a critical connection will be lost. If this happens, where will we find the broad-based support for protection of the large wilderness areas?

Bob Purdy graduated in 1978 with a B.Sc. (Honours) from the University of British Columbia. For the past two years, he has acted as consultant to non-government conservation organizations and until recently was Project

Manager for the Federation of British Columbia Naturalists' Land for Nature initiative. He is currently Business Development Manager for ESSA Technologies Limited, a Vancouver-based provider of environmental consulting services and software.

Case Study: South Okanagan Conservation Strategy

Susan Austen, The Nature Trust of British Columbia, Penticton, B.C.

The South Okanagan and Lower Similkameen Valleys with their hot, dry, shrub-grasslands host some of the most diverse, rare and, in some cases, unique assemblages of plant and animal species in B.C. and Canada. In fact, 31 per cent of the province's threatened or endangered species live here. The region is identified as one of the top three endangered habitats in Canada (G. Scudder). Over 40 per cent of the bunchgrass land has been lost to urban development or to intensive agriculture. Of the remaining grasslands, only 12 per cent is Crown Land and less than two per cent is protected for conservation or park purposes. Furthermore, 85 per cent of the valley bottom riparian habitats have been destroyed.

Concern for this threatened habitat brought about two programs: The Nature Trust of B.C.'s South Okanagan Critical Areas Program (SOCAP) and B.C. Environment's South Okanagan Endangered Spaces Program, the latter funded by the Habitat Conservation Fund. As a result of these two programs, the South Okanagan Conservation Strategy (SOCS) was born--the main goal of which is to coordinate all conservation activities in the region, as well as prioritize conservation management activities of the area's unique habitat and associated species for a five-year period commencing in April, 1990. Three of its objectives are:

- to identify and protect threatened habitat and representative habitat for species of concern
- to encourage inter-agency support
- to promote public awareness

The initial Steering Committee consisted of the Canadian Wildlife Service, The Nature Trust of B.C., the Royal British Columbia Museum, University of British Columbia, and B.C. Environment's Wildlife Program, Penticton, and Policy and Planning Branch, Victoria. The Committee has since been expanded to include other interested groups such as provincial resources agencies, First Nations, Ducks Unlimited and local government. Also, a Technical Committee comprised of key agencies and private landowners meets to discuss habitat management plans for specific areas.

Some of the main projects are: the formal protection of Crown land, private land acquisition and stewardship, biophysical habitat mapping and the gathering of species information, habitat management plans for three main areas, and a liaison project with the First Nations to train Band members to carry out field research and develop habitat management plans for Band lands. Biophysical mapping involves the analysis of terrain, soil and vegetation followed by the mapping of the landscape according to its ability to support rare, threatened and endangered species. Also, habitat suitability and capability are being rated for a number of priority species.

Although many aspects of the Conservation Strategy are progressing well, some of the original objectives were overly ambitious in terms of the allocated time frame and scope. For example, unexpected delays in the mapping program have caused slowdowns in the completion of habitat management plans and the lack of information for a number of land use decisions. Increased urban development coupled with escalating land values have decreased the opportunities for land acquisition. Also, the lack of a full-time coordinator has meant a slower and less continuous process. Despite these setbacks our spirits are not dampened, thanks to a dedicated group of individuals.

So, in taking stock, we need to focus on:

- continued and enhanced funding
- a private land stewardship program
- a full-time SOCS coordinator
- a public awareness program
- user-friendly products such as an atlas of important habitats and habitat/species information
- information on rare plants and invertebrates
- continuation of the First Nations liaison program
- continued and renewed commitment to the implementation of SOCS

After all, it is the implementation measures and a hands-on presence that make us, and the process, credible and worthwhile.

Sue Austen has an undergraduate degree in Geography and Planning and a Masters degree in Environmental Studies with extensive experience in integrated resource management and rural planning. Before coming to B.C. in 1973, Sue practised planning in Ontario, Nova Scotia and Jamaica, West Indies. In B.C., Sue worked for the Agricultural Land Commission, then for regional government in the Okanagan and later as a consultant on various resource issues. Since 1990 Sue has been employed by The Nature Trust of B.C.

Managing for Nature - Identification of Habitat on Private Land

Debbi A. Hlady, Protected Areas Strategy Policy Analyst, Victoria, B.C.

Before I respond to the topic of identifying significant habitats, I would first like to briefly describe the background and current status of B.C.'s Protected Areas Strategy (PAS). There are approximately 150 people in regions and headquarters working on PAS.

Background

As follow-up to "Parks and Wilderness for the 90's" recommendations, and the May 1992 release of the map-brochure "Towards a Protected Areas Strategy," the document "A Protected Areas Strategy for British Columbia" was formally released in June 1993 as a central component of government's commitment to balance a sustainable environment with a sustainable economy. "A Protected Areas Strategy for British Columbia" outlines the policy and process for achieving the government's goal of protecting 12 per cent of the province by the Year 2000.

"Protected areas" are defined as land and freshwater or marine areas that are set aside to protect the province's diverse natural, cultural heritage and recreational values. Protected areas are inalienable: the land and resources may not be sold; no industrial extraction or development such as mining, logging, hydro dams, or oil and gas development, is permitted. Briefly, PAS has two goals: 1) to set aside ecologically viable, representative portions of the land base which display natural, recreational and cultural heritage values and 2) to protect smaller sites which possess special features which I will discuss later.

Under PAS, interim management guidelines (IMGs) are applied to Cabinet-approved study areas (as indicated in Appendix 1 of "A Protected Areas Strategy for B.C.") to maintain natural, cultural heritage and recreational values while these are being assessed. Road building, timber harvesting and mineral exploration activities are restricted under IMGs. Protected areas will be designated only after considering recommendations from land use planning processes which involve local communities, aboriginal people, industry and environmental organizations, and upon evaluation of environmental, economic and social values of the recommended areas. PAS will respect the treaty and Aboriginal rights and interests that exist for land and resource use in the province.

Current Status

Public input to PAS is occurring at the three planning levels. These include: Vancouver Island, Kootenay and Cariboo/Chilcotin Commission on Resources and Environment (C.O.R.E.) regional tables; sub-regional Land and Resource Management Plans (LRMPs) in various parts of the province; and special study areas such as Pinecone Lake/Burke Mountain in the Lower Mainland Region.

Both the existing list of Cabinet-approved study areas and areas of interest submitted by the public are being technically evaluated by seven Regional Protected Areas Teams (RPATs) throughout the province. This ecologically-based technical assessment called "gap analysis" is to ensure that the best representative areas are being considered for protection. The technical analysis uses two classification systems which divide the province into eco-provinces, eco-regions, eco-sections and biogeoclimatic subzone variants. As indicated in the map fold-out in the back of the PAS document, a total of 100 terrestrial and ten marine eco-sections have been identified in the province.

Out of 197 Cabinet-approved study areas (which includes twelve areas recommended for protection by the Old Growth Strategy), government has protected the Khutzeymateen, Tatshenshini, areas within Clayoquot Sound and Chilko Lake, in addition to several other smaller study areas. Approximately 7.8 per cent of the province is now under some form of protected area status.

Habitat Identification on Private Land

The current policy of PAS is to exclude private lands when recommending candidate areas for further study or protection. However, biophysical inventories and assessments can inadvertently include "natural" areas before identification of land ownership takes place. Study and protected area recommendations being developed by each RPAT, therefore, have in some cases identified parcels of private land which are adjacent to, or surrounded by, Crown land parcels. For example, in the Kootenay RPAT "Alternatives Report," the Gilpin area recommendations present two options. One option shows the total area and does not differentiate land ownership so as to protect the ecological integrity and viability of this unit, while the other option excludes the private lands.

Based on the two goals of PAS, it is important to consider that the identification of habitats on private lands may range from large diverse tracts of forested land such as those found on Vancouver Island, to urbanized valley bottom areas such as the Gilpin, and to smaller site specific features such as Spotted Lake in the South Okanagan.

As RPATs complete their gap analysis for large study areas to achieve Goal 1, and move into assessing special features and sites to meet Goal 2, this stage of the PAS process will likely have the most significance to STEWARDSHIP '94 objectives. During this stage, RPATs are likely to receive information on special habitats and features found both on Crown and private lands. Criteria used to assess Goal 2 features include: rarity, scarcity and uniqueness; diversity; vulnerability; opportunity for scientific research; public use and appreciation; cultural heritage significance; and ability to address public perceptions and demands. The identification of special features with natural, cultural and recreational value is a part of this process. Special features are listed on pages 12 and 13 of "A Protected Areas Strategy for B.C."

In both rural and urban areas, it will also be increasingly important for local governments such as the Islands Trust, non-government organizations such as The Nature Trust of B.C. and the Federation of B.C. Naturalists, and knowledgeable individuals to come forward with site specific information on natural, cultural heritage and recreation values so these values may be assessed in a regional context by each RPAT--and even ranked for their significance on a national and global scale. In turn, because of the local authority regional and municipal governments have through the zoning of private land (such as the GVRD "Green Zone" Plan), they will become an important partner in not only identifying but also protecting special habitats and features found in urbanized areas.

Debbi A. Hlady currently works as a policy analyst for the British Columbia Protected Areas Strategy. She has worked as a Resource Planner with B.C. Environment for several years both in Victoria and in regional offices, and has been involved in several land and resource planning, management and research projects. These include the: National Biodiversity Strategy, B.C. Land and Resource Management Planning Process, and the South Okanagan Conservation Strategy.

Stewardship How To's

Friday, March 4, 1994, 4:00 - 5:00 pm
Chair: Greg Filyk, Wildlife Habitat Canada, Ottawa, Ontario

The Landowner in a Stewardship Program

Tom Slater, Ducks Unlimited Canada, Kamloops, B.C.

Ducks Unlimited (DU) has been involved in "stewardship" from its inception over 55 years ago (although it wasn't called stewardship back then). Since that time, the organization has been involved with over 9,000 wetlands covering nearly seven million hectares of productive Canadian waterfowl habitat.

Ducks Unlimited was created in the late 1930's following a study that identified the loss of wetlands on the Canadian prairies as the major cause of the decline of North America's waterfowl populations. This study recommended the restoration of this lost habitat and the prevention of further losses. It is interesting to note that the three major reasons identified for this decline--weather, population growth and mechanization--are still having an effect on wildlife habitats today.

It was quickly realized that governments were not going to step forward and accept responsibility for preserving and restoring habitat. Thus, Ducks Unlimited was born: Ducks Unlimited Incorporated--to raise the dollars in the United States, and Ducks Unlimited Canada--to take on the task of restoring and protecting the Canadian prairie wetlands. Because restoration work was going to be very costly, DU decided that it would not be possible to pay landowners. So the organization adopted an approach whereby landowners were asked to give a "free easement." This legal document then allowed Ducks Unlimited to proceed in partnership for the sum of one dollar. Fortunately, most landowners did not demand payment.

Ducks Unlimited in British Columbia has worked successfully in cooperation with private landowners for over twenty-five years. The following has been observed about working with landowners as a result of our close contact with them:

1. Most landowners appreciate the wildlife values on their property and have great respect for the land.
2. Landowners prefer not to destroy wildlife habitat and only do so because they feel they have no other choice or they don't understand the full consequences of their actions.
3. Landowners are willing to cooperate with any group or organization that wants to protect the wetlands on their property as long as the project does not have an adverse effect on their farming operations.
4. If the landowner receives a benefit from the conservation activity, s/he is more likely to support it and be more committed to protecting the habitat.
5. Landowners like to have their cooperation and contributions acknowledged and recognized.

I will now discuss these five points in more detail relating them to our work in British Columbia. In our 25 years in this province we have secured over 750 wetlands involving nearly 80,000 hectares of important habitat. These are spread throughout the province from Creston to the Queen Charlottes and involve many private landowners. I base the following comments on the experiences of working with them.

Most landowners know their wetland habitat is valuable and important. Our field staff have encountered many who have a very good understanding of the role that wetlands play in sustaining a healthy environment for both humans and wildlife. This is not unexpected if you realize the landowners grew up living with and experiencing the natural environment on a daily basis. As children, it was their playground. They noted the natural changes from day to day, and season to season. Also they observed the immediate and long-term effects of human activities on the habitat and the wildlife that depend on it. Our staff have noted many instances where landowners have modified their land use practices in order to maintain the wildlife habitat.

Where landowners have had negative impacts on habitat, it is usually because they either felt they had no choice or they did not fully understand the consequences of their actions. We have noticed that, when given alternatives, or when the effect is explained, they are willing to consider change. An example of this willingness to change is in the management of fringe areas. Many landowners understand the importance of the wetted area of the wetland, but few appreciate the critical role played by the wide fringe of habitat which surrounds most healthy productive wetlands. Many ducks and songbirds depend on its thick long grass, shrubs and trees for good nesting cover. Following a field trip with our biologists, we have observed modifications in how landowners manage this fringe area.

Most landowners are receptive to working with us to enhance and protect the wetland habitat on their land. There are also joint projects between concerned landowners and the B.C. Wildlife Federation clubs or the Federation of B.C. Naturalists. The landowner may realize that something should or could be done to either protect or benefit the habitat on his/her land but lacks either the knowledge, the monetary or human resources, or the time to do it. Conservation organizations can and are filling the void.

When a landowner receives either direct or indirect benefits from activities to protect or enhance wetland habitat, s/he is likely to be more committed thus making the piece of habitat more secure. I am not suggesting that we pay the landowner. The same applies today as 55 years ago; this would be too expensive. Besides it doesn't work that well. The Canadian Wildlife Service found this out on the prairies in the 60's and 70's. They paid landowners not to drain wetlands. Many took the money even when they had no intention of draining their wetland, while others participated until such time as they had other uses for their land. When the program was stopped, I believe there was no immediate noticeable land use changes resulting in loss of habitat. Ducks Unlimited has found easy and inexpensive ways to provide other (non-monetary) benefits to landowners, without compromising the wildlife habitat. The following are some examples that illustrate this.

Many of our projects store water, especially in the southern half of the Interior where water is a scarce and a valued commodity. The creation of any permanent licence storage is a major benefit to the landowner. Some of our projects are designed to provide controlled stockwatering. Others provide water for irrigation either directly by backflooding a hay meadow upstream of our works, or by diverting the stored water through pumping or gravity flow or by releasing the water through the structure to meet irrigation needs downstream. In all cases the timing is designed to provide optimum habitat for breeding waterfowl. We have one project in the Interior where we drilled a well. The groundwater from this well creates a permanent wetland where one never existed. In addition, this water is used to backflood a large hay meadow. The meadow is then drained for grazing but only after the eggs have hatched and the young ducklings are able to move into the adjacent new wetland.

Other examples that do not directly involve water include providing assistance in clearing an area for a new pasture in return for excluding or limiting grazing in the critical fringe around a wetland. Usually an access road and stream crossings are required when we build a project. The location of these is decided in conjunction with the landowner, so that they can help his operation. The important point is that the landowner feels s/he receives something for giving up some of his/her land to benefit everybody's wildlife.

It is human nature to want to be recognized and stroked when we feel we are doing something good. Ducks Unlimited has always made an effort to recognize the important contribution of landowners. Right from the first landowner, we have proudly pointed out that although the dollars to build the projects come from the United States, the Canadian landowners' free easement contribution, if converted to dollars, is equal to or greater than the money coming north. When

DU started its magazine one of the targets was the landowner. All landowners received a complimentary subscription and the focus of many of the stories was landowners. Our field staff try to personally visit each landowner every year. We want the latter to feel part of our team and its goals and successes.

Before closing I leave you with some general thoughts based on our experience working with the private landowner. These may apply to any stewardship program.

1. Landowners do care and are concerned about the health of their land and the habitat it supports. They regard themselves as good stewards and caretakers of their properties. Some have either chosen or inherited the spot where they live. They have developed a great love of, and respect for, the land, the climate, and the wildlife. They may not be able to identify every bird or name every wildflower but they know more intimate things about their land than anyone else.
2. It is important to take the time to get to know the landowners. Find out how they view their property. Find out what plans they have for it now and in the long term. How do they view the wildlife that uses it? What is important to them? Focus in on what you are trying to promote but only after you have determined how they feel about what you are trying to accomplish. You may be pleasantly surprised. They may have always wanted to see on their land the kind of project that you are proposing.
3. Always show that you respect that it is their property. If you try to dictate to them, or become frustrated or argumentative, you are likely to find yourself looking at their gate from the outside.
4. In suggesting your program or management regime, try to find benefits for them. If you see they have a problem that you can help solve, or know how to resolve, point this out. If you are aware of programs or organizations that can help, let the landowner know about them, or better yet, offer to follow up on their behalf.
5. In discussions with the landowner: be prepared, keep your approach simple and always be open and honest. Landowners, especially those who make their living from the land, are very busy. If they believe you are wasting their time, either because you are unclear of what you are trying to accomplish or because you are making it complicated and difficult, you will be tuned out. This applies to any material you want them to read or to any documents you want them to sign. In computer terms, keep it "user-friendly." If the landowner thinks you are trying to "put one over" on him, or that you have not "played it straight," again you could be on the outside of the gate looking in.
6. Keep the landowner informed, even after s/he becomes part of your program. Remember that you are entering into a partnership. Good communication is critical. You don't want the landowner to feel used or forgotten or you will have lost all that you worked so hard to accomplish.

In the final analysis, it is important to remember that the private landowner is the key to any successful stewardship program. Without his or her support there is no program.

Tom Slater has been the Provincial Manager of Ducks Unlimited Canada for B.C. & Yukon for the past 15 years. Tom graduated from the University of Alberta in Civil Engineering. He spent 10 years working for Alberta Environment in Water Resource Management before joining Ducks Unlimited.

Landowner Contact Programs

Dr. Stewart Hilts, University of Guelph, Dunslinch, Ontario

In developing landowner contact programs, the place to start with is the view of the landowner. Landowners have their own interests, but are usually interested in being informed about programs that may impact them. They are usually very knowledgeable, but also have an almost limitless thirst for further knowledge.

Six principles for landowner contact may help:

1. Have complete respect for the landowners.
2. Be willing to listen.
3. Have patience.
4. Provide ecological information.
5. Build community support.
6. Build a long-term relationship of trust with landowners.

The following 'recipe' of steps may help provide a framework for developing and carrying out landowner contact programs.

1. Develop an agreement among partners as to their short- and long-term responsibilities.
2. Develop the message you wish to provide to landowners based on the form of your stewardship program.
3. Decide up front what long-term commitments can be made to landowners.
4. Acquire the information you will need, whether it be on landowners, ecology, or agriculture.
5. Decide on the type of stewardship agreement that is appropriate, verbal or written, and the detailed format it will follow.
6. Get organized! Pull together your information, and ensure that all partners are briefed on your plans to this point.
7. With the support of partners, develop your plans for involving the community, whether through the media or otherwise.
8. Send out an introductory letter to landowners explaining your program and asking for a chance to visit.
9. Follow the letter with a phone call to arrange an appointment for a visit.
10. Carry out the personal visit. Be prepared to listen and be understanding of the landowner's view.
11. The heart of the landowner contact program is the stewardship negotiations that occur during the visit, or over a longer period. Be patient and listen, but be direct and honest about your message for the landowner, and ensure that you both have a clear understanding of any agreement or any required follow-up before leaving.
12. Fill out records of the visit, its results and any promised follow-up immediately--before visiting any other landowners and getting confused.

13. Over the first week, carry out any promised short-term follow-up such as filling information requests, and send a thank you letter. Make sure that the landowner knows who to contact with questions.
14. Maintain longer term follow-up as planned over succeeding years, whether through a newsletter, repeat visits, phone calls, or other events.

Experience in Ontario suggests a number of limitations and some successes that can be expected in landowner contact programs, both on the part of agencies and landowners. On the limiting side, agencies have lacked funding and have tended to avoid taking ownership of programs, leading to a lack of follow-up with landowners. On the positive side, agencies that gain non-government support for programs are pushed toward more integrated field efforts, and end up with the support of friendly landowners.

Landowners change their own commitments over time, and lack financial incentives for long-term stewardship commitments. There is a lack of integrated, practical information on stewardship practices for landowners, and some owners may not agree with the message you bring. On the other hand, most landowners are interested and knowledgeable, and, through the information you provide them, can further their own personal "land ethics."

Dr. Stewart Hilts is the Director of the Centre for Land and Water Stewardship at the University of Guelph. He also teaches in the Department of Land Resource Science and the School of Rural Planning and Development. Over the past decade, he has developed a stewardship program to encourage private landowners to voluntarily protect significant natural habitats on their own land. He has written several books on landowner contact, private stewardship and land trusts for the conservation of natural areas.

Municipal Planning Experiences

Saturday, March 5, 1994, 9:00 - 10:00 am
Chair: Tom Slater, Ducks Unlimited Canada, Kamloops, B.C.

Creating a Green Zone for Greater Vancouver

Nancy Knight, Greater Vancouver Regional District, Burnaby, B.C.

My talk this morning will review the Greater Vancouver Regional District (GVRD) Board's efforts to create a Green Zone for Greater Vancouver. I will begin by outlining the planning process of which the Green Zone is a part, and then take a fairly detailed look at the Green Zone itself--what it is intended to be, the process the GVRD Board followed and the results to date. I will close with a discussion of where the Board is headed with this initiative.

"Creating Our Future" is the GVRD Board's action program for improving the livability of Greater Vancouver. The "Green Zone" is an important part of translating the Creating Our Future vision into a reality for Greater Vancouver. The Green Zone is the starting place for the Livable Region Strategy, which brings together the numerous Creating Our Future actions relating to land use, growth management and transportation. There are a number of challenges to achieving the Creating Our Future vision:

- limited land base in the Lower Mainland
- significant ecological and agricultural resources
- significant population growth over the next 30 years
- aging population with high disposable income and preferences for ground-oriented housing and a private automobile
- limits to willingness-to-pay on the part of taxpayers

The "business-as-usual" approach to managing urban growth will not get us to the Creating Our Future vision. Business-as-usual involves substantial sprawl up the Fraser Valley primarily in bedroom suburbs with continuing reliance on the metropolitan core for jobs, shopping, education, services, and a growing dependence on the private automobile. Clearly, we need to do things differently in managing our urban growth if we are to move towards the Creating Our Future vision. The alternative proposed in the Livable Region Strategy begins with Creating a Green Zone for Greater Vancouver.

In the "Choosing Our Future" process, the public asked the GVRD Board to protect the region's natural assets. Survey results reinforced this as a widely held priority among the region's residents. The GVRD Board responded with the idea of creating a Green Zone that would define the limits of urban expansion in the region and draw attention to the need to protect the region's key assets. The Board also said that identifying the Green Zone should be the first step in developing a new regional strategic plan; the next steps would identify how best to accommodate future growth on the remaining lands. Giving the Green Zone this priority marked a fresh approach to metropolitan planning; the more typical approach is to define the amount of land required to accommodate urban growth, with open space being what is left over.

The process of identifying a Green Zone began with developing a regional framework. This was prepared in consultation with staff from member municipalities and the provincial government. The framework:

- clarified the types of lands that could be included - the general assets were watersheds, major parks, wetlands, critical wildlife habitat, and agricultural lands
- suggested principles to consider in identifying lands (size, shape, linkages)
- set out general steps in the process for establishing the Green Zone, and its relationship to other aspects of the Livable Regional Strategy.

The framework was discussed with the public at two conferences in November 1991. The agriculture conference focussed on ways municipalities can support farming--the Board received the important message that if farmlands are to remain as part of the Green Zone, farming has to be a viable business opportunity. At the broader Green Zone conference, members of the public nominated areas to be included in the Green Zone and provided submissions, including a very significant effort by the Federation of B.C. Naturalists' Land for Nature project. The GVRD Board invited municipalities to identify suitable lands in their communities in March 1992, and then consolidated those municipal submissions into a regional picture.

The result is that municipalities have included about 2/3 of the GVRD land base in the Green Zone (175,000 hectares). When the mountainous areas in the northern part of the GVRD are removed from the calculation, about half of "developable" land is in the Green Zone. Most of the region's important assets have been included: farmlands, watersheds, major parks, wildlife habitats, and wetlands. The widespread recognition of the importance of wetlands is surprising and encouraging.

The challenge now is to ensure that these lands are protected from the pressures of urbanization. Analysis is under way to identify threatened areas. We will also be looking at existing tools for protecting areas and new tools such as stewardship and land trusts. The GVRD will be pursuing partnerships to improve protection for threatened areas, to manage the edges and make connections, and to add new areas to the Green Zone. Examples include: GVRD's partnership in the Fraser River Estuary Management Program which will be protecting habitat lands and adding outdoor recreation opportunities; and the Park and Outdoor Recreation System proposal that builds on the outdoor recreation assets included in the Green Zone and identifies new major parks that result in a remarkable network of outdoor recreation opportunities across the region.

We will also need to manage our urban growth carefully. Protecting the Green Zone in the GVRD and in the Lower Fraser Valley means we have to do things differently--we need to build more complete communities in a more compact metropolitan area that allows an increase in transportation choices and affordable ground-oriented accommodation closer to where people work, go to school and shop.

Where are we now? The Green Zone, as part of the *Livable Region Strategy: Proposals*, is being circulated for review by municipalities, other governments and the public. The GVRD Board has requested comments by the end of March. The Board will then review the comments and decide whether adjustments are required. In due time, it is anticipated that the GVRD Board will adopt a Livable Region Strategy which will be implemented through partnerships.

In summary, Creating a Green Zone for Greater Vancouver resulted from a strong public voice that spoke about the need to protect the region's natural assets from urban sprawl. That support has continued through the process of identifying appropriate lands, and we hope it will continue through the work ahead to ensure that those lands are protected and handed down to future generations. Part of the challenge is achieving this; and the other part is building the partnerships needed to change how we live and travel in this region.

Nancy Knight is with the Strategic Planning Department of the Greater Vancouver Regional District. Her educational background includes degrees in Natural Resource and Environmental Planning and Community and Regional Planning. Nancy has worked in both the private and public sector, and has taught university courses in regional planning and public policy.

City of Richmond: Experiences with Environmentally-Sensitive Areas (ESAs) By-laws

David Brownlee, Planner, City of Richmond

Richmond adopted a by-law in December 1991 that amended the Official Community Plan (OCP), putting into place a by-law designed to designate and protect environmentally-sensitive areas (ESAs) within the municipality. The approach taken by the municipality was to employ specific provisions of sections 9-45 and 9-76 of the Municipal Act.

Section 9-45 deals with the general content of official community plans. It also allows for "restrictions on the use of land that is subject to hazardous conditions or that is environmentally sensitive to development." It also permits the municipality to designate areas for the protection of the natural environment. Section 9-76 states that, where an OCP designates areas under section 9-45, land or building or structure located on land that is within an area designated shall not be altered.

Armed with these, the municipality did some experimentation on a couple of specific projects. We went to the public in a series of consultation efforts and subsequently adopted by-law 57-46 which designates specific areas as environmentally sensitive and requires developers to apply for a development permit prior to construction in, or subdivision of, designated ESAs. The by-law also includes a series of seven guidelines covering specific ESA situations along the municipality's foreshore and upland areas. Among other things, these guidelines require leave strips and impose setbacks for development. And often we end up negotiating rights of way or restrictive covenants to ensure that these are actually maintained. In total, the ESAs by-law affects more than 1600 properties within the municipality. This is quite an extensive area, particularly in the foreshore regions. It covers virtually the entire perimeter of the island.

In applying the by-law we have borrowed some ideas from the Department of Fisheries and Oceans (DFO). First, we work to avoid any damage to the ESAs and second, to mitigate the impacts and lastly to seek compensation where losses appear inevitable. Just like DFO, we sometimes find that things do not quite work out as planned. To help developers and designers plan their projects we have created a design manual as a guide. This is to help them when they are working in or near Richmond's natural areas. Recently, we have been providing information directly to real estate agents to ensure that they are aware of the implications of the by-law, both for the sellers and the purchasers of land. In the coming year we are hoping to launch a new set of brochures for the public and to explain what Richmond's ESAs are all about and what people can do to help maintain them.

Our by-law is now more than two years old. We are still working to refine both it and the administrative procedures for handling ESA situations. We have found that sometimes the by-law is reactive, placing us in the difficult position of having to make educated guesses at what suitable compensation should be after a piece of habitat has been lost--realizing that in most cases you can never fully replace what nature has actually put there. We have also found that sometimes there is resistance not only from developers, but also from within our own organization as interdepartmental mandates collide. We are finding that it is essential and really fundamental to keep communicating what we are trying to do, both to the public and to others within our own organization.

Our experiences have shown that you cannot rely on a single approach to do the job simply because the issues are too diverse and complex. You find yourself dealing not only with protecting habitat but also with economic issues, ethical sensitivities, cultural values, and issues of personal safety to mention but a few. So what you have to do is look at the full range of tools available and then be prepared to adapt to those inevitable situations for which you are simply not prepared. In Richmond, we have made a good start, but we still have some distance to go.

David Brownlee is the Special Projects Planner for the City of Richmond. Much of his current work focusses on Richmond's environmental issues. David has a Masters degree from the School of Community and Regional

Planning at University of British Columbia. He has worked for the Policy section of the Richmond Planning Department in a variety of positions since 1989.

Delta Planning Experiences

Jim LeMaistre, Planning Department, Delta, B.C.

Municipalities and cities are creatures of the provincial government. Any major changes in land ethics, therefore, have to fit within the existing legislation and related court decisions. The *Municipal Act*, the *Land Title Act*, the *Condominium Act* and the *Agricultural Land Commission Act* are the main legislative acts under which the Planning Department works. We regularly deal with small landowners who want to know what they can do with their property, and with the general public who have varying perceptions of how land can be used.

The Municipality of Delta is located at the south end of the Greater Vancouver Regional District, close to the U.S. border. It is comprised of three urbanized areas--north Delta, adjacent to Surrey; Tsawassen, near the U.S. border; and Ladner, which is the original historic centre of the municipality. In between these three is the Green Zone. Under current policies, the municipality has no intention of building in these areas.

Over the past few years, the Planning Department has become more involved with environmental issues in the municipality through the Environmental Services Division in the Engineering Department. This Division regulates how people treat their land and what they do with it. It covers pollution control, and monitors storm, surface and sanitary water quality on a quarterly basis.

As new developments or business licenses come into existence, they are monitored by the Environmental Services Division for any potential contamination or hazardous chemicals. Developmental features such as lighting glare, vibration and noise are also monitored. The Division is also equipped to cope with chemical or toxic spills. In addition, it undertakes a small amount of pest control (mosquitoes and thistles) and furnishes a waste management coordinator to work with our local recycling society on solid waste management programs. The Division is likely to assume a new responsibility relating to the recent changes in the provincial *Waste Management Act*, whereby it will evaluate the soil quality of properties used or zoned for industrial or commercial purposes.

In recent years, heated debates in Delta regarding land use, the natural environment and agriculture have reflected the change in public awareness and land ethics. Partly, I believe, as a result of that shift in perception, a new council was elected three years ago, leading to the appointment of an Environmental Advisory Committee (EAC) which has been quite active. Established in 1991, the committee has brought about a new understanding of some of the issues and problems facing the municipality. Its 12 members are appointed by the council each year, and include two representatives from the farming community and two from the fishing community--both significant industries in the municipality. The committee members have been participating in a wide variety of conferences and studies in the Lower Mainland, bringing important information back into Delta.

The EAC also participates in reviewing municipal and regional plans from environmental perspectives, looking at, and commenting on, some of the individual development projects. In addition, it is studying a series of smaller local issues such as regional drinking water quality, the impact of an incinerator for contaminated soils, and a local cement manufacturer interested in using waste products as alternative sources of fuel or raw materials.

In association with the EAC, we have been commissioning environmental overviews--one for North Delta, one for a small area to the west of Ladner, and one currently under way for the whole of Ladner--to identify habitat quality. Based on these assessments, we then build policies and environmentally-sensitive areas into the area plans. Together with the EAC and the Advisory Planning Commission, we have also been participating in several studies of Boundary Bay over the last four years. The municipal side of the studies dealt with rural land use and involved a multi-agency committee comprised of the Canadian Wildlife Service, several provincial agencies, municipal advisory groups, the Delta Farmers Institute, the Boundary Bay Conservation Committee, and the Burns Bog Conservation Society. The studies have been carried out in an atmosphere of cooperation and have involved the public and others with an active interest in these areas. We are now finalizing a document based on our findings.

With respect to the adoption of a new land ethic, change is taking place among residents and the council members. We need to look at new municipal planning procedures, and new approaches to environmental plans and environmentally-sensitive areas. Recently, we began discussions with the EAC on the need to re-examine park design, maintenance and engineering with a view to incorporating natural features into the process.

Continued cooperation with residents and key agencies is necessary. However, because of the number of groups involved, we need to find some mechanism which fosters continued cooperation between the various jurisdictions managing the area. The approach must be one of ecosystem management so that the upland areas are related to the waterfront areas, and so that we work in a concerted manner with landowners--farmers and owners of the bog--to recognize their interests in the process. The council is certainly keen to continue support of stewardship efforts such as the Greenfields Project and the Delta Farmland and Wildlife Trust.

With respect to population growth within the municipality, the council is looking at new kinds of housing that will be acceptable to the community. We are currently trying some techniques in North Delta which, so far, the residents committee seems to think will work. We plan to continue discussions with each of the neighbourhoods to see if incremental changes in density would be acceptable to them as a means of relieving the pressure on rural areas.

Since mid-1989, Jim LeMaistre has been Deputy Director of Planning in Delta. Before that, he was a senior planner in Surrey (12.5 years) and Director of the Urban Design Centre in Vancouver (5 years). In preparation, he finished Civil Engineering (University of Manitoba), taught in Nigeria, helped build a dam in northern Manitoba, and graduated from the School of Community and Regional Planning at UBC.

4. Corporate Stewardship Stream

The concerns of landowners who make their living from the land are identified in this stream, and several examples of cooperative conservation programs are highlighted. Presentations are drawn from the forest sector, the agriculture community and the development industry.

Conservation Options for Development

Friday, March 4, 1994, 2:45 - 3:45 pm

Chair: Gary Williams

Greenways for Nature

David Reid, Lanarc Consultants, Nanaimo, B.C.

Concern about loss of green space to urban sprawl is coming to a crescendo in parts of British Columbia. Efforts to conserve environmentally-sensitive areas (ESAs) in and near our urbanizing communities appear to lack focus. Greenway programs have become common across North America. These programs combine efforts to protect urban green space for conservation, recreation and alternative transportation functions. Greenways include both public holdings and private land stewardship programs. Lanarc believes that a Greenway Program for B.C. could provide the necessary focus to be effective in community land stewardship.

"Greenway" is an umbrella term to identify linear green spaces which are maintained in their green and ecologically significant state. Linear parks are a publicly owned form of Greenway, but a Greenway system is also likely to include private lands which are managed with conservation objectives in mind. A Greenway's backbone would be shorelines of all types--foreshore, rivers, streams, lakes, wetlands. These ESAs would ideally be connected with upland linkages along ridgelines, rights of way, traditional parks, schoolgrounds, or other open space opportunities to create a Greenway system. Such a Greenway system is a logical part of environmental programs related to wildlife, fisheries and water quality conservation. Greenways provide recreation opportunities. Some can include trail or bikeway networks to meet objectives for alternative transportation. Greenways can also play a key role in a Regional Growth Management Strategy by providing a mechanism for conserving ESAs. Greenways also provide buffers between neighbourhoods, and enhance community aesthetics and neighbourhood identity.

A critical need in embarking on a Greenway program is to have an effective implementation strategy. Parks acquisition and planning is a vital component of Greenways, but not all environmentally-sensitive lands can be brought into a public parks system. Methods to encourage stewardship of private lands must also be used.

Lanarc Consultants has been very active over the past year in Greenway initiatives. We have prepared a proposal called "Greenway Implementation for British Columbia" that is currently being considered by funding agencies. The Greenway Implementation proposal would look at all tools available under British Columbia law to implement a Greenway system. Special emphasis would be placed on powers under the *Municipal Act*, including Development Permits, the new Comprehensive Development Zone, Zoning By-laws, Landscape and Screening By-laws, and Parks Dedication requirements. The proposal would determine how to use these tools specifically to encourage protection of green space.

The product of this study would include draft wording, with corresponding legal review, of development permit guidelines, tree management by-laws and zoning by-laws used to protect ESAs. Local governments would be able to adapt this draft wording to their individual circumstance. Planning and design issues which surround linear open space often include issues of tree windthrow, privacy and security of adjacent properties, and access to views. This proposal would provide a design primer proposing solutions to these problems.

Provincial and federal agencies have powers under the *Wildlife Act* and the *Fisheries Act* to encourage conservation measures. This Greenway initiative will review how the mandates of senior governments could be coordinated with local governments, to both increase efficiency, and build new partnerships to conserve ESAs. Innovative land tenure

arrangements such as conservation easements will also be documented, including draft wording. The roles which non-government organizations could play will also be reviewed. The results of this work will be of interest to all local governments in B.C., as well as to the province, the federal Department of Fisheries and Oceans, and to public groups and landowners. The Steering Committee, and the funding agencies for the project, would include local, provincial, and federal governments, and non-government organizations. The bulk of the funding would be from higher levels of government.

In a related area, Lanarc is currently producing a *Developer's and Planner's Guide to Stream Stewardship* to integrate fish habitat concerns with the land development process. The Guide is being produced for the Department of Fisheries and Oceans, with the participation of the B.C. Ministry of Environment, Lands and Parks. The local government planning process is used as a structure to make the Guide relevant to local government and the development community. The objective of the Guide is to introduce techniques for better stream stewardship in land development by:

- describing the fishery resource and illustrating habitat requirements which are essential to the maintenance of viable fisheries
- providing an outline of the land development process identifying key stages and approvals required
- highlighting existing planning tools and encouraging their use for the protection of fish habitat, and other ESAs
- suggesting economic incentives which may be used to encourage appropriate development proposals
- introducing the "Land Development Guidelines" which describe techniques for the protection of natural conditions during land development
- describing the environmental approval process which oversees the protection of fish habitat during the development process

David Reid is a landscape architect and partner in Lanarc Consultants Ltd. He has practised in Ottawa, Vancouver, and, for the last 12 years, on Vancouver Island.

Striving For Environmental Stewardship

Bob Paddon, B.C. Hydro, Vancouver, B.C.

B.C. Hydro's Mission

B.C. Hydro's corporate mission is to support the development of British Columbia through the efficient supply of electricity. The way we endeavour to achieve this mission is through the production of electricity from our integrated system which serves 1.3 million customers in the province. Between 43,000 and 50,000 gigawatt-hours of electricity are produced annually. These are delivered to customers through more than 69,000 kilometres of transmission and distribution lines. About 96 per cent of this electricity is generated at hydroelectric facilities of which more than 70 per cent originates from facilities on the Columbia and Peace River systems.

As many people in the Lower Mainland are aware, the system also includes thermal generation. Our Burrard facility in the Lower Mainland is our largest thermal plant. Burrard uses natural gas as fuel. There are some smaller diesel generation facilities located in the more remote areas of the province. Five objectives have been established to support BC Hydro's mission:

- to be a leader in the economic and social development of B.C.
- to be a leader in stewardship of the natural environment
- to be the most efficient utility in North America
- to be a superior customer service company
- to be the most progressive employer in B.C.

These objectives are challenging and none are easily obtainable.

Environmental Stewardship Initiative

In recent years, B.C. Hydro has attempted to meet new power needs through demand side management which most customers know as "Power Smart." This initiative is in keeping with the spirit of sustainability: conserving our resources and striving for greater efficiency with the energy we use. Hydro is also considering a program of meeting new supply requirements through changes and enhancements to our existing infrastructure of dams and hydroelectric facilities, which we call "Resource Smart." The goal is to make better use of our facilities thereby minimizing the environmental impacts which come with constructing new dams. Putting resources into protecting the environment is an obligation to future generations. This alone is reason enough to do it. However, we also see stewardship as a source of jobs and economic activity.

Stewardship means going the extra distance and making the extra effort to ensure our activities help create a sustainable environment for future generations. As our operations touch almost every corner of the province, we have a responsibility to care for the natural and social resources. A commitment to stewardship is a long-term process that involves looking ahead in order to plan how we can be leaders today, and for many years to come, in balancing society's environmental desires with a reliable supply of electricity at reasonable prices.

Land use planning has become a key aspect of our environmental initiative. We wish to participate in the planning processes which will identify those areas which British Columbians perceive as needing protection or sensitive management. We believe we should be at the table in discussions of land use planning. Our motive is to ensure that decisions retain some flexibility for energy needs. We hope these processes will provide sufficient options for our long-term power planning.

Meeting Contemporary Standards

When much of our hydroelectric system was developed in the first half of this century, society did not hold the same values which today are believed to be important, such as conservation and environmental protection. Many facilities were constructed with little if any regard for the natural resources which would be impacted. In many cases, people just did not know or understand the complex relationships which exist in ecosystems. But we know much more today, and Hydro has, over the last decade, worked to correct some of the environmental problems created by our facilities.

B.C. Hydro's Environment Plan

The first Corporate Environmental Plan which specifically addresses 15 key environmental issues from PCB's to electromagnetic fields, will soon be complete. The plan will outline activities to protect the environment in our daily operations and the plan will also serve as a blueprint for future direction. The Environmental Plan will set out our performance targets and strategies to achieve them. Examples of BCH's Environmental Initiatives include the following:

Major Compensation Programs

B.C. Hydro has partnered with the provincial Ministry of Environment, Lands and Parks to address the long-term natural resource needs of areas affected by hydroelectric developments through the establishment of major compensation programs. Two of the programs, Peace and Columbia (formerly Mica), are used to support both research and enhancement initiatives. The programs are administered by joint management and technical committees of the Ministry of Environment, Lands and Parks, and Hydro with input from local communities.

Puntledge River Fish Screen Project

The Puntledge River on Vancouver Island was historically an important river for coho and chinook salmon and steelhead. However, these populations went into serious decline when the hydroelectric facility was expanded in the 1950's. Approximately 60 per cent of out migrating juveniles were being destroyed by the hydroelectric facilities.

Through the 1980's local community groups and government agencies and B.C. Hydro started to look carefully at the problem. Studies undertaken in 1989 and 1990 concluded that permanent fish screens at the entrance to the turbine penstock would be the best method of protecting the juvenile fish. In 1993, a new technology, the Eicher screen, was introduced to Canada. Initial results indicate that juveniles are avoiding the turbines (98 per cent survival rate). The benefits of this initiative may increase the annual value of the commercial fishery by more than $1 million.

Dust From Reservoir Drawdown

When most people think of air quality problems they rarely picture a reservoir. However, that was precisely the issue which led B.C. Hydro to begin a program six years ago to control dust in the drawdown zone of the Arrow Reservoir near Revelstoke. The program was developed to reduce dust storms which develop when there are high winds and the reservoir has low water levels. One solution is the annual seeding of fall rye in the drawdown zone which creates an environment conducive to the establishment of wetland and riparian ecosystems. This vegetative approach has eliminated the dust problem. This innovative program was recently recognized with an Environmental Achievement Grand Award by the International Erosion Control Association.

Full-cost Accounting

How B.C. Hydro decides to allocate its resources can produce a range of implications. Operational and technical issues are becoming increasingly intertwined with economic, social and environmental issues. In order to have a clear understanding of the consequences of our decisions, guidelines have been developed for "multiple account evaluation." The

guidelines serve as the framework for Hydro's comprehensive evaluation of power and non-power values that are affected by its electric system operations. Multiple Account Evaluation systematically presents information related to:

- environmental issues and concerns
- community and social issues
- economic development
- electricity generation
- financial impacts

Each area of concern is represented as an "account."

Conclusion

Identifying environmental targets is accomplished, in part, by participation in planning processes and through consultation with the public on future initiatives. B.C. Hydro cannot, and should not, plan its activities in isolation. Working relationships have been established with municipal and regional planners in order to work together to determine the most appropriate locations for facilities and efficiently plan for system expansion in growth areas. B.C. Hydro is also developing its public involvement capabilities and striving to create partnerships with other groups and organizations in order to realize common goals.

I hope these efforts I have described help to demonstrate B.C. Hydro's commitment to environmental stewardship which is now at the heart of the corporate mission and will serve to guide the company through this decade and beyond.

Bob Paddon is Senior Environmental Communications Coordinator with B.C. Hydro. He works with the Environmental Affairs Group which is responsible for all of Hydro's environmental initiatives.

Private Forest Lands

Friday, March 4, 1994, 4:00 - 5:00 pm
Chair: Dr. Caroline Caza, Wildlife Habitat Canada, Ottawa, Ontario

Corporate Lands: Applying Stewardship Principles

Carmen C. Purdy, Crestbrook Forest Industries, Cranbrook, B.C.

The task set out for this panel is to examine stewardship principles of resources on private land. Private land should display exemplary stewardship of all resources. Stewardship on public lands should have the same goal. What is a steward? A steward is a manager. A manager, as we know from the management of our forest corporations, does not own the assets but is in charge of and responsible for them.

The corporate manager not only guards against losses but is expected to make assets grow, and multiply them. Those who multiply the assets and generate a high return on investment get more because they demonstrate capability and responsibility. Suppose you own a forest company and hire a professional forest manager. To the manager who greatly increases your net worth you happily give more responsibility and handsome pay. Suppose you hire an inept manager who accumulates losses. Will you not take away from him even that which he has? And so it should be, not only on private land, but on Crown land as well.

Forest lands available to the forest industry have been shrinking steadily over the past 10 years. Environmental and other guidelines which have been applied rather suddenly and without prior calculation of potential impact, have significantly reduced the public forest land available for harvesting. This, along with expected forest fall down, has increased pressure on private timber holdings. This shrinkage of the timber land base is not finished by any means. New cliches, new excuses, new myths, new slogans, and misdirected prophesy will reduce timber harvesting even further. This leads to increased pressure on private forest lands. Private landowners must also be prepared for some application of harvesting and management guidelines to forest lands owned in fee simple terms. This is under study at the moment. One of the difficulties in a forest planning exercise on private land is the lack of consistent historical data for non-timber values. For that matter this same statement is equally appropriate to Crown timber lands. It is especially a factor in parks and defacto wilderness areas.

Fulfilment of tomorrow's desires depends on decisions made today. There are no future decisions. Decisions are made now, but there will be future results that occur as a consequence of how we order, plan and manage today. In today's rapidly changing times we seem to manage from crisis to crisis, being pulled and pushed by the ill winds of others.

Stewardship planning and stewardship management is not new. It has been around for centuries. Many wildlife species have been saved from extirpation because of good stewards. Special attention to fins, fur, feathers, and fibre is a traditional foresters' tale.

In all cases, habitat is the key to maintaining all species--protecting the bedroom, the living room and the dining room so to speak.

Stewardship means managing our forests in a way that will attempt intelligent integrated uses. This is much easier to talk about than to carry out. We are now making some progress on private lands in our company. There are generally no incentives for forest companies who practise good stewardship. Good stewardship is practised by most companies because it is the right thing to do.

At first blush it doesn't make financial sense for a company which profits from timber harvesting to give much weight to non-timber values. Public opinion today, however, is convincing forest managers that good stewardship will pay and that good works publicly acknowledged will eventually win the day.

Carmen Purdy is a Director of The Nature Trust of British Columbia, a past President of the B.C. Wildlife Federation, Vice-President of the East Kootenay Trappers Association and Founding President of the Kootenay Wildlife Heritage Fund. From 1988-1991, Mr. Purdy served on the B.C. Forest Resources Commission. He is presently employed as Manager, Community Relations with Crestbrook Forest Industries Ltd.

Small-Scale Private Land Forestry and Conservation

Doug Hopwood, Lasqueti Island, B.C.

The Nanaimo Lowlands (NAL) and Strait of Georgia (SOG) Eco-sections contain many species and ecosystems at risk, and there are insufficient protected areas to meet basic conservation objectives. This lack can be partly offset by good stewardship of the many small-scale private forest lands in this area. Preservation, low intensity forestry, and integrated management all have a place in a healthy landscape. Managed forest use is often preferable to residential or agricultural use because the conservation effectiveness of protected areas will be much greater if they are set in a matrix of sensitively managed forests than if they become isolated "islands" of natural habitat in a sea of development. Good forest stewardship can also contribute to the socio-economic sustainability of the region.

For owners motivated by a sustainable land use ethic, current policies pose some significant barriers. With regards to property tax, Managed Forest Land classification might make it feasible to practise good stewardship while paying a rate of property tax that does not force the owner to sub-divide or scalp the land. However, many would-be stewards of the forest have been denied this option. The principle of "highest and best use" means that the Assessment Authority has more power to determine land use than either local government or the actual landowner. This power is exercised with no reference to any land use goal other than maximizing of profit.

For landowners not motivated to practise stewardship, there are very few constraints to ensure protection of environmental values.

Suggested policy reforms to enhance private land stewardship include: 1) application of the Forest Practices Code to all forest lands, 2) creation of a Forest Land Reserve, analogous to the Agricultural Land Reserve, and 3) the revision of rules concerning taxation of Managed Forest Land.

Taxation rules should be revised in a number of ways. The power to choose between forest or residential land use should be shared among private and public interests, including a Forest Land Commission guided by sustainability and stewardship goals. Forest conservation should qualify for the same tax benefits as timber production, and there should be policies to ensure that Managed Forest Land classification is not used as a tax shelter while holding land for real estate speculation. Tax benefits should be equalized between agricultural and forestry use. Standing trees on residential land should not be taxed. Of course, these policies should be accompanied by a program of education and assistance for owners of private land to help them towards better stewardship. The FRDA II Small-scale Forestry Program has been valuable in this regard and should be continued.

Doug Hopwood is a forestry consultant specializing in forest ecology, and small-scale forest management and conservation. He lives in the Gulf Islands, where has a small wood-lot.

Stewardship on Private Forest Lands in Nova Scotia: Abstract

Reg Melanson, Department of Natural Resources, Kentville, Nova Scotia and John MacLellan, Scott Canadian Timberlands, New Glascow, Nova Scotia

One of the main challenges facing wetlands conservation and management in Nova Scotia is the fact that approximately 75 per cent of the land base is privately owned. One initiative developed to aid in the conservation of the province's wetlands is the Corporate Stewardship Project under the Eastern Habitat Joint Venture Program. Agreements, in the form of a "memorandum of intent," have been signed with the three largest forest companies in the province. These agreements affect approximately 3.3 million acres of forested lands (9,000 wetlands). Through these agreements, the corporation is provided with management plans that contain an inventory of all wetlands on their property, sites where rare flora and fauna are known to exist, beaver management guidelines, and general guidelines for working in and around wetlands as well as detailed recommendations for specific sites. The main advantage to the corporations is an enhanced public image which can result in increased sales and profits. Both parties benefit by the compilation of a complete inventory of the wetland resource

under corporate control. Advantages to the province include an increased awareness by industry of the value and function of wetlands which together with sound operating guidelines should result in wetlands conservation. Corporations provide a good role model for small private owners. An avenue to establish a good relationship between industry, government and conservation groups is created.

Reg Melanson is a Wildlife Biologist employed by the Nova Scotia Department of Natural Resources, Wildlife Division. He is the Program Manager for the Eastern Habitat Joint Venture Program.

John MacLellan graduated from the University of New Brunswick in 1984 with a Bachelor of Science in Forest Resource Management. He works for Scott Canadian Timberlands as a Planner in the company's Central Region. John has been involved in Scott's efforts to develop progressive environmental "best practices" for their forest operations and for the enhancement of wildlife habitat.

An Agricultural Perspective: Stewardship From the Ground Up!

Saturday, March 5, 1994, 9:00 - 10:00 am
Chair: Kirk Miller, Chair, Agricultural Land Commission

A Landowner's Perspective

Laurie Guichon, Rancher, Quilchena, B.C.

I have been asked by the conference organizers to give my views as a landowner. My objective today is to provoke some new understanding and to leave you with constructive solutions to mutual land problems. Gerard Guichon Ranch Limited is a privately-owned B.C. company. It encompasses some 6,000 deeded hectares of land and some 10,000 hectares of Crown land situated in the Nicola Valley, just four hours east of here. Our family has lived in the Valley since the 1860's when my great grandfather and his brothers wintered their pack animals while hauling freight to the Barkerville Gold Rush. My great grandmother's family arrived in the Valley about 1875. I am the fourth Guichon to purchase this land since my great grandfather purchased the original Guichon Home Ranch from Mrs. Hamilton in 1882.

Before I start my talk I would like to take a small straw vote of the people attending this session:

1. How many of you here are members or employees of the 8 groups that are listed as the sponsors of STEWARDSHIP '94?
2. How many of you make some income from a piece of land other than marketing it as real estate?
3. How many of you are land owners of land other than that on which your home or living quarters is situated?
4. How many of you have an ongoing relationship with someone who is earning his living from the land?

I would like to express thoughts that are from my perspective and from my area of this beautiful province. This conference setting is some distance from the land for which you all have a concern. You are mostly people who live in urban areas and enjoy all of the great amenities of city living. You are mostly people whose only connection to owning land is via the land on which your home is situated. Depending on your employment, most of you do not get out on the land that you are concerned about.

With these comments as background, I would like to state my concern, as a landowner, that you have been talking about a land ethic in these surroundings. At these kinds of conferences, with all due respect, much talk takes place and urban guilt is put to rest for another year or until another land problem arises. Discussion will take place as has been happening at this symposium and an idea for a new rule or regulation will be suggested. As there are usually a few well-meaning bureaucrats or legislators in attendance, a new well-meaning rule or regulation will be enacted and this symposium will be deemed a success. Urban people will be able to go back to their homes in suburbia, knowing that land has a new ethic and their minds will be at peace. Meanwhile, they will still create a mountain of garbage which will be hauled and disposed of in our backyard, in Cache Creek. The new rule that has been created as a result of this meeting will have to be policed by some arm of government. The rule will be resented by the present government employees as they are already overwhelmed with paper work. Most of them are not now able to get out into the field to do the job that they were trained and hired to do--how many government employed wildlife biologists today are working out-of-doors doing the job that is their first love? The result is that more government employees will be hired as policemen and the bureaucracy will grow. I, as a landowner, will be subject to a new piece of paper or form that will help chain me to my desk and take me away from the job of being a good steward of the land. This gets my dander up. I resent the intrusion on my time required to address this type of paper work.

As I mentioned earlier, my great grandfather purchased the Home Ranch in 1882. My grandfather purchased his shares from the original company when he bought out his brothers and sisters in 1950. My father and mother bought his father's shares and paid off his brothers and sisters in 1957. In 1978, I bought out my parents' shares. In order to do this at each

generation change we have had to have very good bankers. My debt will be paid off in the year 2013. Any person who doesn't have the cash available and wants to get into the ranching business has to finance the purchase of the land, usually over a 30-year period. During that 30 years, finances are at the mercy of the cattle market and the interest rates. I have seen cattle prices as low as $0.1945 per lb. in 1964 and interest rates as high as 22 per cent in the 1980's. Granted, these haven't come at the same time, but some years were tight. My point with this dissertation is the fact that, usually, when a person takes on this kind of debt and responsibility to become a landowner, he has a very vibrant love for the land. In the case of the rancher his love is also for the cattle that he raises.

The rancher's role is to convert sunlight, one of the world's only sources of renewable energy, to human food by converting grass to beef. When he is out on his land, the rancher looks at grass use with these thoughts in mind. We look at wildlife, birds, insects, and other forms of life, including plants through rancher's eyes. Our planning is done with consumable grass for cattle in mind. We ranchers might be accused of having tunnel vision. But we too love the land. It causes us pain to see bare soil, open to erosion by wind, water, or motor bikes. We will not stay viable if we do not look after our most valuable asset--our land's soil surface.

So what can be done? First of all, we have to keep the lawyers out of the discussion. Confrontation is not the answer. We only need look to our southern neighbours to see that land use conflicts settled through the courts are not only costly, but create win-lose situations. All parties spend big dollars with lawyers getting the most, the court system is tied up, and the land goes without.

Second, each of you should adopt a landowner. In this way, you can come to understand his problems and express your own values in return. By visiting with the landowner, you will have the opportunity to make him aware of your concerns about land. Landowners need to understand your perspectives in order to implement them in land plans. With such direct contact, your ideas are less likely to be misinterpreted by us and can be taken into consideration in our planning processes.

Third, each of you should become part of a round table. Local round tables are being established around the province to work on local issues. We are discovering that once all the people in an area sit down and establish a three-part goal for that area, most of our personal prejudices are put aside. We are all concerned about the future. We are finding out that city folks like yourselves, breathe the same air and drink the same water. We all want to see survival of our children and grandchildren. That three-part goal must include the quality of life part (social), production part (economic) and the landscape description part (environment) in order to create our future vision for the particular piece of land or watershed.

And a last solution would be for the province to sell more land to private owners. Not only would a larger tax base be created to pay down some of our debts, but individuals would be able to react to land problems immediately. In my experience, government response to land issues takes forever, usually because of intergovernmental wrangling between departments about jurisdiction. This solution would also take some of the pressure off of land with the highest value for habitat uses, environmental uses, and food production. Because less than four per cent of British Columbia is deeded, and most of that land is in the agricultural land reserve, the value of the remaining land has to go up for housing. We cannot continue to have our population increase and not have land available for home construction. In this situation, again the lawyers are the only people to gain, from a win-lose situation, as loopholes are found to get the remaining deeded land out of the agricultural land reserve.

These are some of my thoughts on land ethics and caring for the land. I hope that I have given you some new ideas in order that we can strive for "win-win" solutions.

Laurie Guichon is a fourth generation rancher who operates a grazing operation in the interior of B.C. In 1987, Laurie was introduced to "Holistic Management." Since that time he has been involved in intensive grassland and forest management. He was instrumental in the initiation of the Nicola Watershed Round Table process. His philosophy is to leave the land over which he has control better than when he took over management.

Incentives for Agriculture and Wildlife Partnerships: Greenfields Project, Delta, B.C.

Theresa Duynstee, Coordinator, Greenfields Project, Ladner, B.C.

The Greenfields Project was initiated in 1990 by farmers, soil scientists and wildlife agencies to investigate waterfowl grazing of overwintering crops in the Fraser River delta. Migrating birds, such as the American Widgeon and Trumpeter Swan use farmland for both food and shelter, sometimes with a detrimental impact. Today, Greenfields administers farm programs which share the cost of management practices to help maintain soil productivity, reduce financial losses due to crop depredation and provide habitat for wildlife. There is also a strong communications component highlighting the importance of farmland to wildlife.

There are several incentives that can help build agriculture and wildlife partnerships. The challenge is to know how much, and where to focus resources. Motivating commercial farmers to participate in stewardship initiatives requires consideration of the economic climate, as well as public recognition and incentives to maintain the rural lifestyle. The human element and socio-economic conditions must be considered along with the technical aspects of bird behaviour or soil degradation.

Economic incentives are necessary for two reasons: 1) to offset financial losses incurred by local farmers providing habitat, as is the case in Delta and 2) to acknowledge the public good provided by farmland habitat. Currently, there is no compensation for wildlife crop damage in British Columbia. This is a provincial policy issue that makes farmers less tolerant of wildlife. There are real costs when damage occurs and there are costs to protect crops from wildlife depredation. Farmers do not feel this is equitable because wildlife benefits society at large.

Public recognition of agriculture's role in maintaining habitat is important even though the effectiveness and impact of agriculture is difficult to measure. This incentive is not often considered because people rarely ask for a pat on the back. More credit should be given to farmers who implement stewardship practices. Agriculture, particularly farms in the urban shadow, face enormous challenges with the new global economy. Unless we support our local producers, there is less chance of maintaining our Agricultural Land Reserve.

The other incentive to consider is the desire to maintain a rural lifestyle. Farmers are farmers because they enjoy the independent, "close to the land" type lifestyle that is central to agriculture. The urban population benefits because this translates into an aesthetic, open landscape that provides habitat for wildlife. Given a choice, farmers would rather deal with the problems associated with wildlife than with the impact of an expanding urban population.

There is more to successful partnerships than incentives. With the Greenfields Project the key has been participation from both agricultural and wildlife interests and the program's flexibility with respect to incorporating new ideas from the community. The value of exchanging information should never be underestimated and the effort to seek input must be continual.

One aspect of Greenfields that could be improved upon is the decision-making structure so that landowners become equal players. Even though farmers' concerns and suggestions were acted upon whenever possible, the *perception* remains that the local community has no control over program activities or agendas. The formalization of farmers' involvement as an integral part of the planning process is in itself an incentive to participate in agriculture and wildlife partnerships.

Theresa Duynstee is a professional agrologist and coordinator for the Greenfields Project. She is employed by Ducks Unlimited Canada and has been with the project since its inception in 1990. Theresa has over five years work experience in the horticultural industry and a B.Sc. in Soil Science.

An Example of Farmland Stewardship in the Comox Valley, B.C.

Bill Wareham, Ducks Unlimited Canada, Vancouver, B.C.

The Comox Valley Waterfowl Management Project (C.V.W.M.P) was established in 1991 to assess the impacts of overwintering Trumpeter Swans on agricultural operations and to determine options for managing swans in ways that ensured adequate habitat and that limited impacts on agricultural operations. The project required negotiating with farmers to establish ways of sustaining the capacity of their land to support wildlife while maintaining options for them to run an economically-viable farm.

At the onset of the project, little was known about managing Trumpeter Swans. In the past, wildlife managers had directed their efforts towards maintaining and increasing swan populations. Through these conservation efforts, the Trumpeter Swan population on the west coast rebounded significantly. The total coastal population now stands at approximately 14,000 birds.

Historically, Trumpeter Swans have not had an impact on agricultural operations. Recently, however, the birds have adapted to take advantage of food sources available to them on agricultural land. Large numbers of swans caused extensive damage to grass fields which farmers required as feed for dairy cattle. With the Trumpeter Swan population continuing to grow, there was a need to establish a swan management strategy that would ensure their long-term survival and address the needs of agricultural producers. The task required cooperation of many organizations and individuals. Accepting the challenge, the Canadian Wildlife Service and Ducks Unlimited Canada set up the C.V.W.M.P. with the goal of establishing a long-term management strategy for Trumpeter Swans.

The primary elements of the project include: the promotion of cover crops to maintain soil and provide feed for overwintering swans, a hazing program to keep swans off sensitive grass fields, and a monitoring program to document trends or changes in Trumpeter Swan behaviour. Local producers had the following concerns about damage incurred on crops as a result of overwintering Trumpeter Swans:

- Some crops sustain permanent damage due to swan use, resulting in an increase of time, effort, and money to establish a viable crop.
- Swan use of some fields can impede drainage of the field.
- Swan use of grass crops sets back the crops enough to result in a substantial loss of yield, resulting in an economic loss.
- Swan use of flooded vegetable fields results in the formation of large craters which damage farm machinery and also may cause injury to the operator.
- The depletion of planted crops by swans increases the ability of weeds to establish within crops.
- The palatability of high quality forage crops to swans prevents farmers from producing these crops, resulting in production of less than premium crops.
- Swans remaining in the Comox Valley late in the Spring (mid-April onward) impose a risk to newly seeded corn crops.

From October to December, swans primarily feed on corn cobs remaining in fields after harvest. From January through March, swans continue to use corn fields, but graze weeds and native grasses that grow with the onset of spring weather. From January through to March, when the swans migrate north to their nesting grounds, they prefer to feed on grass fields and winter cover crops. The C.V.W.M.P. actively planted cover crops to feed swans and to attempt to keep them off farmers' grass fields. These cover crops were utilized extensively by Trumpeter Swans.

Several techniques were tested to confirm their effectiveness at scaring swans off fields where they were not welcome. Dogs proved to be an effective short-term method of scaring swans. The Phoenix Whailer, an electronic audio device, proved to be effective at protecting five to seven acres of grass field from Trumpeter Swan use. Cracker shells, which are shot from a starting pistol, were used and were also an effective short-term scare tactic. Strings of flash tape and pennant flags were used on a number of farms throughout the Comox Valley with varying degrees of success. Flags were placed on a number of farms throughout the study area with varying levels of effectiveness. Barrels placed throughout a field at a density of one per acre proved to be the most effective method of preventing swans from feeding on specific fields.

Communications activities were given high priority throughout the project. It was essential to communicate frequently and articulately with both the public and the farmers cooperating in the project. A Trumpeter Swan Society Conference, a project newsletter and press releases all contributed to increasing the public's awareness of the Trumpeter Swan/agriculture issue. Signs on cooperating farmer's fences provided recognition to the farmers and served to highlight the important role that local farmers play in supporting wildlife.

The C.V.W.M.P. was successful in meeting its objectives. The incidence of severe impacts by swans on agricultural fields in the Comox Valley decreased significantly compared to impacts experienced by farmers prior to the C.V.W.M.P. The potential still exists, however, for damage to occur and many farmers remain concerned about the swans, particularly in light of the increasing Trumpeter Swan population. Because of the positive response to the program by local farmers, and support by both agricultural and wildlife interests, the C.V.W.M.P. will be extended for at least three more years to continue managing the swans and to track any long-term changes in feeding preferences and response to various scare tactics.

In summary, I feel that the most important aspects to implementing a successful stewardship program like the C.V.W.M.P. are as follows:

- Communicate with everyone more than you think you have to.
- Use local media to promote your project.
- Listen closely to what farmers have to say--local knowledge can be your best resource.
- Give the project enough time to build trust with cooperating farmers.
- Build a local support base to provide financial and moral support for the project.

- Keep people informed on project progress.

In the long term, a successful Trumpeter Swan management program will require all of the activities noted above. As well, cooperation and financial support from wildlife agencies, the local public and farmers is essential to sustain a harmonious existence between people and Trumpeter Swans using agricultural land.

Bill Wareham works as a Campaign Assistant for the B.C. Spaces for Nature organization where he is involved in promoting the completion of the provincial park system in B.C. Prior to this, he worked for three years for Ducks Unlimited Canada developing and administering cooperative programs between wildlife agencies and agricultural producers. Bill holds a B.Sc. in Zoology from the University of Manitoba and an MBA from the University of British Columbia.

5. Legal Issues Stream

An overview of legal mechanisms to protect habitat on private land is referenced to the new West Coast Environmental Law Research Foundation's publication, *Here Today, Here Tomorrow.* The second workshop gave participants an opportunity to discuss their concerns and to learn more about particular legal issues of interest to them. In the Saturday session, taxation incentives and other taxation issues were discussed.

Introduction to Legal Tools for Conservation

Friday, March 4, 1994, 2:45 - 3:45 pm
Chair: Janice Doane, Pacific Estuary Conservation Program

HERE TODAY, HERE TOMORROW: Legal Tools for the Voluntary Protection of Private Land in British Columbia

Barbara Findlay and Ann Hillyer, Vancouver, B.C.

Here Today, Here Tomorrow written by Barbara Findlay and Ann Hillyer is designed to encourage efforts to protect land which is privately-owned by providing a reference-quality catalogue of legal mechanisms which can be used to protect private land. It was inspired by the growing interest among conservation organizations and landowners in British Columbia in a variety of initiatives to protect private land in the province.

The purpose of *Here Today, Here Tomorrow* is to help with one small part of our collective efforts to conserve the earth. It is written for conservation organizations, individual landowners, real estate professionals and other interested parties who want information about the legal tools available to conserve private land. *Here Today, Here Tomorrow* explores how current laws can be used to allow us to make careful decisions about how to conserve land now owned privately. Specifically, it examines the concept of land stewardship, developing a strategy for protecting private land, the role of conservation organizations, basic land law concepts and legal tools currently available that can be used to protect private land.

Support for the research of *Here Today, Here Tomorrow* was provided by the Real Estate Foundation of B.C. That support has allowed West Coast Environmental Law Research Foundation (WCELRF) to distribute copies of the report to all community libraries and municipal governments in the province, as well as over 100 conservation groups. This report is now available from WCELRF.

Conservation Covenants

West Coast Environmental Law Association advocates law reform to promote the expanded use of conservation covenants for the voluntary protection of environmentally-significant privately-owned land in British Columbia. Concern about the protection of land for ecological purposes has increased dramatically in recent years. We have always expected governments to provide this protection. Today, due to limited resources, local and provincial governments cannot ensure permanent protection of all environmentally-significant land. Individuals and organizations that want to protect land permanently by purchasing it often find the cost prohibitive.

At present, it is possible for a landowner to grant a covenant under the Land Title Act to a government body for the purpose of preserving land in its natural state. The covenant--which is an agreement to protect the land according to the terms of the covenant--is registered on title to the land and binds both present and subsequent owners of the land. However, it is not possible for the covenant to be held by a non-governmental conservation group. This seriously restricts the usefulness of this tool.

West Coast Environmental Law Association is urging the provincial government to amend the Land Title Act to enable private landowners to grant conservation covenants in favour of qualified conservation groups. This would create a land protection tool similar to one that is widely used in the U.S. for the voluntary protection of privately- owned land.

The benefits include:

- long-term protection of environmentally-significant land
- continued ownership of land by the landowner
- increased opportunities to protect land in B.C.
- cost-effective alternative to outright purchase
- increased involvement of conservation groups in land protection initiatives
- negligible cost to government

The law reform proposal is outlined in detail in *Using Conservation Covenants to Preserve Private Land in British Columbia* written by David Loukidelis and edited by Ann Hillyer. This report was written with the generous financial support of the Real Estate Foundation of B.C. Copies are available from West Coast Environmental Law Research Foundation.

Ann Hillyer is a staff lawyer with West Coast Environmental Law Association, a non-profit public interest organization which provides legal advice and legal counsel to individuals and organizations with environmental problems. Ann has practised law in B.C. since 1986 and has worked with West Coast since 1989.

barbara findlay was called to the bar in 1977. Her legal career has been involved with issues of social justice including poverty law, women's rights, environmental law, and lesbian and gay rights. She is currently practising law in Vancouver with the firm of Smith & Hughes.

Taxation and Financial Incentives

Saturday, March 5, 1994, 9:00 - 10:00 am
Chair: Lindsay Jones, Pacific Estuary Conservation Program

Tax Options for Conservation

Marc Denhez, Lawyer, Ottawa, Ontario

How does the tax system affect the setting aside of ecologically-significant lands for conservation purposes? The federal income tax system is not neutral, but negative: a gift of environmentally-significant land (to charity or to a government) is seldom accompanied by a usable tax receipt commensurate with the value of the gift. Sometimes the usable receipt is obliterated altogether. This is because the *Income Tax Act* introduces a legal fiction, saying that the donor has received *proceeds* on the gifts--when the donor has received nothing. The *Act* thereupon attributes *deemed capital gains* (and potential capital gains tax) to erode the tax benefits of the receipt. Furthermore, artificial numerical *limits* are imposed upon the usability of the receipt. Because of these legal fictions, gifts of Canada's natural heritage have a substantially worse treatment than gifts of Canada's cultural heritage; in certain key respects, philanthropic expenditure receives worse treatment than business expenditure.

Giving artificially poor treatment to donations of environmentally-sensitive lands is no way to foster the public-private sector "partnership" foreseen in the *Green Plan*. Furthermore, since budgetary allocations for purchase of environmentally-sensitive lands are scarce, failing to encourage donations of such lands runs against the Green Plan's objective of securing conservation of 12 per cent of the Canadian landmass. If this laudable 12 per cent target is to be geographically representative (i.e., of conservation of our bio-diversity) much of it will have to be achieved on what is now private land. That is impossible under the fiscal status quo. NGOs recommend the elimination of the legal fictions which currently roll back the usability of receipts for donations of real estate.

Problems also beset the income tax treatment of conservation covenants and easements. Although Revenue Canada has finally acknowledged that charitable donations of conservation covenants and easements can give rise to charitable receipts, the possibility of deemed capital gains tax has not been eliminated either. NGOs recommend the formal elimination of this legal fiction, namely deemed capital gains on the donations or sale of conservation covenants and easements.

In the meantime, five solutions are conceivable:

1. One can (legally) adjust the value of the gift downward (this reduces the risk of capital gain, but also the value of the receipt).
2. The donor can choose to donate his or her property to the Crown (or an agent of the Crown) to benefit from the higher ceiling, but some donors find this hard to swallow.
3. The donor can go through a special procedure to "*certify*" the gift as "*cultural property*" (this eliminates capital gain, and enjoys the same ceiling on receipts as gifts to the Crown), but, although this has worked for gifts of land and buildings, it does not work for gifts of pure land.
4. The donor can deal with one of the real "trusts," for example, the Heritage Canada Foundation or the Nature Conservancy of Canada which, under certain circumstances, can accept gifts "in trust for the Crown." (These are registered charities which, for these trust gifts, have the same ceiling as the Crown.)
5. The philanthropist may decide instead to put a *covenant* on his property: this is a contract (registered on title) which can waive development. The lost development potential (professionally appraised) is treated as the value of the donation. In B.C., these can be signed with a municipality or (preferably) the B.C. Heritage Trust, and Revenue Canada will (if the agreement is properly drafted) recognize the lost development potential as a receiptable charitable donation. The municipality or B.C. Heritage Trust can then transfer the covenant to a charity.

This convoluted approach, however, is an inadequate substitute for a rational tax system. The recommendations to improve the tax system were outlined in publications like *Here Today, Here Tomorrow* (West Coast Environmental Law Research Foundation, Vancouver, 1994) and my text *You Can't Give It Away* (National Round Table on the Environment

and the Economy, Ottawa 1992). The recommendations (particularly the first one) met with outright derision from the previous federal government, which is largely the response similar proposals have encountered from Finance Canada over the past fifteen years. Although there are new elected officials in Ottawa now, the conservation community should hold no illusions about the resistance which is likely concerning any proposals for a fairer tax treatment of environmental philanthropy. It is submitted, however, that unless these punitive fictions are abolished (particularly in light of the recent elimination of the capital gains exemption), the largest *legal fiction* in Canada will be the rhetoric about a public-private sector partnership in pursuit of conservation.

Marc Denhez is a lawyer, consultant and author specializing in Canada's national heritage buildings, artifacts and natural environment. His career has included advising Heritage Canada, Parks Canada, UNESCO, the Federation of Canadian Municipalities, the heritage agencies of all ten provinces and both territories, and several national environmental organizations. He is an honourary director of the Canadian Institute for Environmental Law and Policy, and has lectured at universities across Canada and abroad.

Financial Instruments for Conserving Private Land--Some Observations from the U.S. Experience

Phil Meyer, Metchosin, B.C.

Application of financial incentives to the conservation of private lands in the United States has a history that goes back many decades, and belief in the merits of private sector approaches to conservation were greatly expanded, at least at rhetoric levels, during the Reagan-Bush presidential years. Some of the programs have been successful, but many have been less so--often due to a failure by initiators to consider or understand the full range of factors that condition what are, essentially, economic strategies for conservation. As a result, regulation, not market-based incentives/disincentives remains the primary avenue for conserving wildlife habitat today.

At the broadest level, effective use of incentives must deal with three key issues:

- Who will pay for the incentive program?
- Who receives program benefits?
- What is the nature of external benefits or costs associated with the incentive program?

Spending for Conservation

Funding places two important limitations on incentive programs. The first is fairly obvious. Dollars available for such problems clearly limit the scope of the programs--particularly during difficult financial times. It should be noted that incentives via both direct payments and tax reduction measures are governed by this observation--as both limit the level of government funding available to provide alternative goods and services. Thus, both direct payments and tax incentives represent "spending for wildlife conservation."

A less obvious limitation has sometimes escaped the attention of wildlife conservationists. While programs by government and by private conservation groups have had some notable successes in "spending their way to conservation," these programs, to remain effective, must necessarily be opportunistic. On a more comprehensive basis, when economic entities who are disinterested in wildlife habitat conservation seriously pursue some amount of land or water, they can usually muster the market leverage to purchase it.

Recent experience by the California Department of Fish and Game (CF&G) provides a case in point. Several years ago, CF&G entered into an aggressive program of purchasing water for fish and wildlife at auction. This initiative was consistent with both federal and state political philosophy of the time, offered hope of a new path to wildlife conservation in a state increasingly devoid of it, and, in fact, has saved fish and wildlife at several important locations and times. "Water marketing" to achieve greater efficiency of water use suddenly became the new fad for conservation in California and elsewhere, and further initiatives were undertaken by other public and private entities.

Over time, experience has revealed at least three significant limitations on this strategy. Firstly, experience has shown that purchase of water for wildlife is most feasible (and least costly) when the purchase is not strongly contested by other potential buyers, that is, when the water is viewed as "surplus" to other non-wildlife conservation needs. With respect to firm water entitlements (water supplies that will be available under most annual hydrologic conditions), such surplus water conditions are progressively reduced as demand for water (including the demand for wildlife conservation purchases) increases over time. This trend acts to substantially increase the cost of water purchases for wildlife over future years. Budgets available to both CF&G and private wildlife entities have simply not allowed them to keep pace.

Secondly, calls by wildlife conservationists in California for increased efficiency in water use provided a brief benefit window for wildlife, but have acted subsequently to dry up water sources upon which wildlife could depend. This result stems from institutional changes in the way that California counts and contracts for water, driven by the efficient use debate. A decade ago, an ultra-conservative definition of firm water (see above) was used in developing California water plans. All other water was considered "surplus," and was distributed in wet (hydrologic) years via ad hoc arrangements--with significant portions of surplus water going to fish and wildlife. As a result of pressure to use water more efficiently in the state, the old distinction between firm and surplus water has been largely abandoned by California water planners, and state water use contracts are now written based on probability of hydrologic occurrence. These new "probable delivery" contracts have "dried up" surplus water designations, are subject to the full range of market forces discussed in the previous paragraph, and have consequently acted to diminish the leverage of wildlife conservationists in securing water for wildlife.

Finally, it has been observed that as a practical matter, water for wildlife is most available for purchase in wet years. But this is precisely when Mother Nature takes care of wildlife, and where such purchases are least needed.

Who Benefits from Spending for Wildlife Conservation?

A broad array of tax incentives in the United States perceived by conservationists as benefitting wildlife were in fact, enacted for other purposes. Principal among these were measures to preserve farmland, forests and soils, for example, the *Williamson Act* has served to provide tax incentives to California farmers over several decades. It is consequently more correct to say that these measures benefitted the owners of such lands, whose interests were assumed by wildlife advocates to be complementary to those of wildlife conservation. Over time, this assumed complementarity between the interests of the standing forest, the farm and wildlife has often been questioned. Incentives to create and/or maintain forests hold no particular guarantee for biodiversity. Tax incentives for farming do not dictate wildlife-friendly farming techniques. Most importantly, as other (often urban driven) interests threaten farm and forests, dependence on such incentives leaves wildlife conservationists as spectators to a dialogue to which they have no direct access.

Given these evolving circumstances, it is not surprising that there has been a movement in recent years by wildlife conservers away from dependence on economic incentives exclusively directed at other interests, and toward economic incentives which specify payouts for wildlife conservation.

Who Else is Affected by Incentive Programs?

Perhaps the most significant barrier to effective incentives programming for wildlife has been failure to properly consider the full range of interests that may be positively or adversely affected by such market-based payments or subsidies. Fish and wildlife agencies are most likely to make such errors, for they retain little or no professional capability to understand economic forces and circumstances.

Few current U.S. subsidy programs to preserve lands for wildlife predict in advance the effect on local government tax revenue. On the one hand, these programs are not in a position to predict where revenues will fall, and thus risk adverse action from county and other local governments. On the other hand, the U.S. Fish and Wildlife Service (and other federal agencies) usually makes payments in lieu of taxes to local governments for federally held lands. Comparisons of these payments with taxes usually received by local governments from farmers and ranchers suggests that, in many instances, the "in lieu" payments are far higher than farm-based local tax revenue, and represent a revenue windfall for local government. Failure to properly consider impacts on local tax revenue can, therefore, result in under-subsidization and defeat the program, or it can result in over-subsidization, and reduce the total amount of wildlife lands secured.

Another consideration often neglected by designers of economic incentives for wildlife conservation is the maintenance of the land once a title or easement for conservation is secured. Who will take responsibility for ongoing land management and maintenance? Who will be responsible in the event of catastrophe (for example, a flood)? Who will be responsible for any required restoration activity on the land? This latter point has become a particularly difficult issue in Nevada, where land is being purchased in order to obtain water rights and then dewatered to wheel water to wildlife habitat at other locations.

Finally, where conservation easements are obtained, insufficient attention is often paid to the economic viability of the other "partner on the land." Sometimes, curtailment of farm activity in favour of wildlife preservation on a property can result in increased assessment of taxes, forcing the "partner" to take actions adverse to the original wildlife conservation intent. Assumption of ongoing maintenance responsibilities (see previous paragraph) which overstep the partner's remaining economic capability can similarly break down the conservation accord. Development of an incentives program that will be sustainable over time needs to consider these issues. Too many programs have not given them sufficient consideration.

Economic Incentives and Wildlife Conservation in the Future

This brief and rather dismal recital of "problems" associated with incentives for wildlife conservation in the U.S. is not intended to detract from increased use of such techniques. There is considerable evidence that the lesson about the need to address economic incentives for wildlife conservation directly, rather than by piggy-backing on incentive programs addressing other objectives, has been learned. The Nature Conservancy, Ducks Unlimited, Trust for Public Lands and a range of other entities can point to market-based success stories across North America. Of particular note is the 1994-95 allocation of $300 million by the U.S. government for the Wetlands Reserve Program. This program provides payments to farmers for restoring wetlands on their property in return for permanent easements ensuring wildlife-compatible land use. In Nevada, as part of a water acquisition for wildlife EIS, long-term water sharing arrangements to ensure water flows for wildlife and cash flows for farmers during drought years is being considered. This may represent a promising new initiative in a world faced with increasing scarcities of water and land. Finally, in both Canada and the United States, there is an increasing awareness that not all values on the land need be addressed in dollar terms. This is particularly evident when Aboriginal interests are involved, and may lead to expanded systems providing wildlife-compatible incentives expressed in both dollar and non-dollar terms.

The wildlife populations of Canada and the United States are not consigned exclusively to market entrepreneurs, but, rather, are conserved for all citizens to enjoy at little or no accessing cost. However, because our economic market system does not incorporate the greatest part of the values we associate with wildlife, exclusive reliance on market economic measures to conserve wildlife will see their decline and eventual extinction.

Nonetheless, economic initiatives used opportunistically and effectively can make a significant contribution to conservation of wildlife habitat. Economic systems are complex, and use of economic tools, therefore, requires the same attention to factual detail that is commonly employed in dealing with biophysical issues concerning wildlife and their habitat. Agencies need to improve their capability of dealing with economic issues, and to learn more effectively from past experience if economic intervention on behalf of wildlife habitat is to achieve substantial success.

In the 1970's Phil Meyer was Principal Social Science Advisor on Habitat Protection for the Department of Fisheries and Oceans in British Columbia and the Yukon. From 1979 to 1981 he served as Economic Policy Advisor to the U.S. Fish and Wildlife Service's California Water Policy Centre. Since then he has headed his own consulting firm, completing more than 100 projects involving wildlife, fish and the environment in B.C., the western U.S. and the western Pacific.

Our Own Backyards - Enjoying and Protecting Nature

Friday, March 4, 1994, 7:30 - 10:00 pm

On Friday evening, a free public lecture was held. Four speakers shared their insights on and enthusiasm for stewardship and conservation efforts.

Chair: Dick Cannings, Vancouver Natural History Society, Vancouver, B.C.

Beginning in Our Own Backyard

Bill Merilees, B.C. Parks, Nanaimo, B.C.

Attracting Backyard Wildlife which was published in 1988 had its origin fifteen years earlier. In 1973, when I was a grad student at Colorado State University, the American National Wildlife Federation published its centrefold "Invite Wildlife to your Backyard." Dr. Ron Ryder, teaching one of North America's first non-game wildlife classes, brought this publication to my attention. In 1980, when the Habitat Conservation Fund, through the encouragement of Chris Dodd and Rod Silver, provided a grant to the Federation of B.C. Naturalists, I became involved. During the course of this project, many naturalists and naturalist groups provided information and encouragement. Though not a runaway best seller we have sold over 13,000 copies to date and, for some unexplained reason, it has sold best in Arkansas!

I joined the naturalist community in 1953. Earlier this afternoon I took the opportunity to visit my old haunts in Kerrisdale. The frog pond I frequented is a condominium site, my salamander pools have been filled in and the flats where we tried to snare snowshoe rabbits are a golf course. Even the back alleys have been paved! I was left with a very void feeling. Now I live in Nanaimo on the east side of Vancouver Island. You are aware of what is happening here. The planning process is 'development driven'. In such circumstances, the meaningful preservation of adequate green space cannot occur. To ensure that this room is not totally devoid of nature, I have this evening brought a single cattail to 'decorate' our head table. This cattail has special significance and I will explain this more fully later in my presentation.

"Beginning in Our Own Backyard" to me means putting something back for wildlife. Both gardening and bird/wildlife-watching enjoy some of the highest participation rates in North America. By bringing these pursuits together, each of us has an opportunity to create an oasis of greenery. Whether this be a window box or hanging basket for an apartment dweller or a large garden, each of us can start 'at home'.

In downtown Vancouver, on the corner of Hastings and Seymour, is the Price Waterhouse Building. In its design are a number of planters in which a number of Ivy, Rhododendron and other exotic plants are propagated. If one can believe the figures, 15 per cent of the winter House Finches recorded on the Vancouver Christmas Bird Count roost here. This building is even designated as green space on at least one city road map!

What is a wildlife garden? I like to think of a good wildlife garden as having an orderly presence verging on chaos! Perhaps Barbara Frum's description of a "Canadian garden" fits. During a radio interview she described this as an oasis towards the centre 'tapering' to native 'bush' at its exterior. Within this garden food, water, shelter and breeding space for all manner of wildlife are provided in a more concentrated manner.

Some years ago, I was asked to participate in the construction of a community park that the residents wanted to be developed for butterflies and birds. My role was to suggest suitable plantings. For reasons not fully understood the landscape architect could or would not follow my suggestions. The problem appeared to be one whereby nurseries only stocked a limited selection of plants--few if any that had value to birds or butterflies! This situation is changing as there are now a number of nurseries that specialize in native plants, and one or two, such as Thimble Farms on Saltspring Island, that specialize in wildlife plants!

Tonight I have brought along a few pictures to demonstrate some ideas that might bring you reasonable results. British Columbia's provincial flower, the Pacific Dogwood, is a good wildlife tree. The beautiful flowers produce a crop of bright red berries in August that are fed on by Pileated Woodpeckers, flickers and Band-tailed Pigeons. Arbutus, honeysuckle and many other berry-producing plants are favoured foods of other species in late summer and even through the winter.

Two weeks ago, Anna's Hummingbirds began nest-building by picking fluff from my cattails. My garden is a three-cattail garden, which means it takes three cattails to supply all the nesting materials required by my backyard birds. Now you know why I brought this cattail to this presentation. Try it--it works!

In addition to nesting materials hummingbirds also are attracted to feeders and nectar producing plants. Of the latter there are many species including simple fuschias, honeysuckles, twinberries and red flowering currants.

Dead trees and snags also have a special place in the requirements of many wildlife species. Woodpeckers are among the obvious species, but flying squirrels, salamanders and beetles are regular users of this resource.

Raccoons may be delightful visitors to your garden or a nuisance. They are especially attracted to backyard pools. Persons contemplating dedicating their garden to wildlife need to ensure their homes are secure. Should animals like raccoons, squirrels, bats, or, worse still, rats and mice, get access to your house or garbage, correcting this habit can be difficult and costly.

One of the most beneficial additions to any garden is a water source. Pools, bird baths, even a dripping tap, during hot dry weather will serve this need for a wide variety of species. Dragon flies, damsel flies, caddisflies, salamander larvae, tree frogs and even butterflies will be attracted to these water sources.

Like hummingbirds, butterflies are a popular addition to any garden. Bright sunny areas with lots of small bright tubular flowers are great for butterflies. In addition, knowing the host plants for their caterpillars will also bring in butterflies. The Anise Swallowtail for instance lays its eggs on fennel, dill, and parsley.

With the coming of winter many British Columbians think about bird feeders. Seeds from garden weeds are attractive to Juncos and other seed eaters. As the severity of winter increases, well-stocked bird feeders become important food sources to help these birds through our coldest months.

In Nanaimo, over the past five years, a number of experiments were conducted to determine feeding preferences. In all more than 30,000 observations were recorded, using 13 different seed types for 18 species of birds. Black sunflower seeds and peanut bits and pieces were about the best.

As I close this presentation I want you to remember two things: have fun in whatever you do and do not be afraid to experiment. After all, it will only be by trial and error and in sharing our results that we can improve. This is especially true for wildlife gardening, when we begin in our own backyards!

Bill Merilees holds a B.Sc. in Zoology and Botany from the University of British Columbia, and an M.Sc. in Outdoor Recreation/Education from Colorado State University. He is employed as a Visitor Services Officer for B.C. Parks, and is a Past President of the Vancouver Natural History Society.

The Youth Perspective

Jeremy Dick, Environmental Youth Alliance, Vancouver, B.C.

Youth are often neglected, and with this the ideas and perspectives of the next generation are lost. We as youth need a place and way to develop responsibility for the land and all that this involves. Stewardship is the connection between ourselves and the land. The land counts on us and we count on the land.

Being an urban youth, I, like my peers, did not grow up interacting in a true way with my environment. With the city as our home we have lost that connection with the natural world. So it is easy to forget how dependent we are on it. Just a few weeks ago I was telling a friend of mine how I had just planted a fig tree and was enthused about seeing it grow. He couldn't understand my enthusiasm. What shocked me more was the fact that he could only picture a fig in terms of the "Fig Newton" cookies he'd bought from grocery stores. Youth need opportunities and exposure to learn first hand what it means to be involved with their environment. Before we can save the world we must first understand what we are saving and why.

One of the problems I've come across as a youth is the interaction between youth and adults. We are forever being told what to do and how to do it, all the time being made to feel that our ideas are somehow not as important. Youth must be given the opportunity to assume leadership roles. Far too often youth are only thought of after the planning is done and the physical labour has to be finished. Myself, I have found that I learn the most when collaborating with others and when given a chance to explore the parts of a project that interest me the most.

Youth must be involved in stewardship because for a project to have longevity it must also have youth. I feel very lucky to have access to knowledgeable people with good communication skills and to have access to land where my ideas have use. Youth need to be reintroduced to the land, and I'm sure after that introduction a true friendship will follow.

Jeremy Dick is a member of the Environmental Youth Alliance and a grade 12 high school student. He is the coordinator of the orchard at the Youth garden (Cottonwood Gardens). This year he will coordinate the wild area reclamation in downtown Vancouver. He has also participated in the Youth Stewardship camps.

Washington Department of Fish and Wildlife Backyard Wildlife Sanctuary Program and Urban Wildlife Project

Russell Link, Washington Department of Fish and Wildlife, Millcreek, WA

Backyard Wildlife Sanctuary Program

The Washington Department of Fish and Wildlife's popular Backyard Wildlife Sanctuary Program began in 1985. The reason for starting the program was primarily to provide information to help people understand and appreciate the many species of wildlife in the vicinity of their home.

Upon written request, a free packet of information is sent to the home or landowner, business, school, etc. This packet includes information on landscape design for wildlife, nest box construction, supplemental feeding, plant and animal species lists for eastern and western Washington, and in-depth information on attracting butterflies and hummingbirds. Also included is an application form to enrol a yard or property as an official backyard sanctuary with the state. After enroling, the participant receives an outdoor sign, a signed certificate, and a newsletter with updated information on related topics and letters from participants.

Money for the program comes from the Washington Department of Fish and Wildlife's non-game program which is largely funded by the sale of personalized licence plates in the state. There are no legal benefits to being involved with this Backyard Wildlife Sanctuary Program.

The number of people currently certified with the state is rapidly nearing 5000. The backyard program has been successful in reaching diverse segments of Washington's population. It is overwhelmingly perceived as being useful to the participants, and it has motivated nearly all involved to undertake additional activities related to home habitat management.

Urban Wildlife Project

Washington's public perceives development as one of the major threats to wildlife and declared the "need to control the continuing degradation of habitat by development and industry" as a priority for the Washington Department of Fish and Wildlife (Wildlife Action Agenda). In 1987 the Washington Department of Fish and Wildlife responded to this need by providing for urban wildlife enhancement, preservation, and public education with the Urban Wildlife Project. One of the components of this program is the Habitat Demonstration Projects. These projects are aimed at enhancing local wildlife habitat and public education, thereby linking the urban/suburban public with wildlife habitat conservation. Projects are designed to assist land developers, landscape professionals, and agencies in providing for wildlife habitat on sites with which they are involved.

Habitat Demonstration Projects have ranged from 1/4 to 40 acres and include wildlife enhancement features such as snags, brush and rock piles, downed logs, wildlife ponds, nest boxes, and feeding stations. The Washington Department of Fish and Wildlife has provided funding for plant materials, interpretive signage, as well as on-site technical consultation during the project planning and construction phases. In order to qualify for funding the area must: be visible and open to the general public, provide public education, and be developed primarily for habitat protection and enhancement. Installation of Habitat Demonstration Projects generally involve volunteers who may later work as part of the volunteer maintenance staff. Each project is provided with a site specific maintenance guide that includes information on flora and fauna and wildlife-friendly maintenance approaches.

The Urban Wildlife Habitat Demonstration Projects have been a learning opportunity for parks administrative and field staff, school districts, developers, volunteers, and members of the Department of Fish and Wildlife's design team. Both the Demonstration Projects and the Backyard Wildlife Sanctuaries can be managed for resident, seasonal and migrating wildlife, provide opportunities for personal involvement with nature, function as outdoor classrooms, complement larger habitats in the area, and add to local wildlife resources.

*Russell Link is currently the Urban Wildlife Projects Coordinator for the Washington State Department of Fish and Wildlife. This program includes the very popular Backyard Wildlife Sanctuary Program and Urban Wildlife Habitat Demonstration Projects. Russell is a biodesigner with a background in wildlife biology and landscape architecture. He is currently working on a book titled "*Landscaping for Wildlife in the Pacific Northwest: a Guide for Urban and Rural Property Owners".

Land for Nature - Tools for Preserving Green Space

David Loukidelis, Lawyer, Vancouver, B.C.

People now recognize that local governments have an important role to play in green space conservation. It should be emphasized that while innovation can stretch those powers that exist, municipalities do not have extensive powers in this area. (Of course, legal advice must be sought in each case before proceeding. This paper does not offer legal advice and should not be relied upon as legal advice.)

Land Use Planning Powers and Green Space Conservation

Development Management Powers Under the Municipal Act

The *Municipal Act* gives municipalities control over development of land within their boundaries. Part 29 of the *Municipal Act* allows local governments to "adopt one or more community plans for one or more areas" of the municipality.

An official community plan also designates the approximate location, amount and type of residential, commercial, industrial, agricultural, recreational and public utility land uses. The plan also designates the approximate location and phasing of major road, sewer and water systems, as well as present and proposed public facilities such as schools, parks and waste treatment and disposal sites. In this way, an official community plan can deal with a host of planning issues at a very general level, giving broad guidance to development of the community. It is important to emphasize that an official community plan does not have any direct regulatory role in land use. Although the *Municipal Act* requires all zoning by-laws to be consistent with the official community plan, the plan itself does not impose any land use restrictions directly on land owners.

Use of Zoning Powers

The power to regulate or prohibit land uses by by-law is given to local governments by Part 29 of the *Municipal Act*. Zoning by-laws adopted by a municipality--and rural land use by-laws adopted by regional districts--may create different zones and, within those zones, regulate land uses and the density of development on each parcel of land. These by-laws may also regulate the siting, size and dimensions of buildings and structures and uses permitted on the land, as well as the location of uses on land and within buildings and structures. Such by-laws may also regulate the shape, dimension and area of parcels of land.

The zoning power has, over the years, often resulted in provision of community amenities in connection with the rezoning of a particular parcel of land for more intense development. Developers have often offered gifts of land, or cash, to provide amenities to the public and to mitigate the impact flowing from development of a particular parcel of land.

Section 963.1 of the *Municipal Act* now permits zoning by-laws to "establish different density regulations for a zone, one generally applicable for the zone and the other or others to apply" if conditions established in the zoning by-law that "entitle an owner to higher density" have been met. The zoning by-law may establish conditions "relating to the provision of amenities" and relating to "the provision of affordable and special needs housing." The term "amenities" is not defined in s. 963.1 of the *Municipal Act*; therefore, until a court rules otherwise, local governments can assume that a very broad meaning will be given to that term and that it will include, for example, dedication of park land as an amenity.

Official Community Plans and Development Permits

Amendments in 1987 to Part 29 of the *Municipal Act* increased the authority of local governments to protect environmentally-sensitive areas. The *Municipal Act* now allows a local government to designate areas in the community for "protection of the natural environment." An environmental protection designation means that development cannot proceed in a protected area unless a development permit is obtained under section 976 of the *Municipal Act*.

These powers have their limits. The environmental protection conditions which may be imposed through a development permit are aimed at:

- preservation of water and watercourses
- prevention of flooding, erosion and other kinds of land degradation
- protection of fisheries and prevention of erosion of watercourse banks

In addition to those purposes, a development permit may specify areas of land which must remain free of any development except in accordance with conditions contained in the permit. Any conditions imposed under a permit must be connected to protection of the natural environment.

Dedication of Park Land on Subdivision

In certain cases the *Municipal Act* requires those subdividing property to "provide, without compensation, park land of an amount and in the location acceptable to the local government." This requirement does not apply to certain subdivisions creating a small number of parcels or large parcels. Nor does it apply where the landowner merely is consolidating existing parcels of land.

The obligation to dedicate is capped at five per cent of the land to be subdivided, or the market value of that amount of land, at the option of the owner. The local government may nonetheless stipulate whether the park land dedication is to be in kind or in cash if there is "an official community plan or a rural land use by-law [sic] [which] contains policies and designations respecting the location and type of future parks." Any money paid instead of dedication must be deposited in "a reserve fund established for park land acquisition purposes."

Tree Protection Powers

Amendments to the *Municipal Act* in 1992 have given local governments considerable powers to regulate the cutting and destruction of trees on privately-owned land. Division (4.1) of Part 28 of the *Municipal Act* gives local governments great latitude in creating a comprehensive regulatory scheme to control the cutting of trees on private land and to require their preservation or replacement. Detailed discussion of these very broad and flexible powers is beyond the scope of this paper. It is sufficient to note that they are potentially very powerful--and controversial--because of the extensive power they give to local governments to protect trees on privately-owned land.

Gifts of Land

Section 531 of the *Municipal Act* enables a municipality to accept a gift (or other transfer) of land subject to the trusts on which it is transferred. Local governments should consider encouraging donations of land by citizens as part of their environmental strategy.

Conservation Tools Available to Local Governments Under the *Land Title Act*

Covenants Under Section 215

Covenants granted under section 215 of the *Land Title Act* are used by local and other governments to achieve a wide variety of land use control objectives. The provincial government has, for example, for a number of years used section 215 covenants to protect fish habitat. Recent amendments to section 215 of the *Land Title Act* make such covenants even more useful as conservation tools for local governments. Covenants of this kind can form a valuable part of local government conservation initiatives by complementing statutory development controls and land acquisition.

Section 215 of the *Land Title Act* now provides that a landowner may grant to a municipality or regional district a covenant containing provisions, that land or a specified amenity in relation to it be protected, preserved, conserved or kept in its natural state in accordance with the covenant and to the extent provided by the covenant.

This language is broad and offers considerable flexibility. Covenants can restrict all development or only some types of development. The restrictions which are imposed are left to the agreement of the local government and the landowner, and to the skill and imagination of the drafter of the covenant.

Such covenants have other uses. For example, if a local government has created a natural area park, it may choose to obtain section 215 covenants over adjacent land in order to ensure that some buffer exists between the park and surrounding developed land. The land over which the covenants are taken may not be suitable for a park, but it may be valuable as a buffer zone. The local government may be quite happy to allow some or all of the current land uses to continue in the buffer, so long as further development is restricted by the covenant.

Statutory Rights Of Way Under Section 214

If a local government wishes to acquire land that is suitable, for example, for use as a nature trail, it may wish to acquire a statutory right of way over the land under section 214 of the *Land Title Act* instead of trying to acquire title to the land. A statutory right of way may be granted to a local government "for any purpose necessary for the operation and maintenance of the grantee's undertaking, including a right to flood."

Some municipalities have already used statutory rights of way to create trails. A local government may also acquire a statutory right of way to restrict use of land to conservation purposes, for example, by creating wildlife corridors. Such a right of way would best be acquired in conjunction with the section 215 covenant to ensure that incompatible land uses are not undertaken on the corridor.

Green Land Conservation Tools Available to Local Governments and Others Under the Common Law

So far this paper has concentrated on *statutory* tools which might be of use to local governments in land conservation. There are also several *common law* tools which may be of use in some cases. Some of these tools are as yet relatively untried in land conservation, so caution is in order before proceeding in any specific situation.

Long-term Leases

A local government may wish to conserve land it cannot afford to buy. The landowner may be willing to part with possession of the land, but may not be keen to give up title to it. A conservation covenant under section 215 may not be appropriate. As an alternative, a long-term lease would give the local government possession of and control over the land subject to restrictions on use and conservation set out in the lease.

Options to Purchase and Rights of First Refusal

These tools are frequently used in real estate transactions. Their utility in the land conservation context is as a holding device. There will be cases where a local government wishes to secure the opportunity to purchase a parcel of land in the future, either at fair market value or for a nominal sum.

An option to purchase and a right of first refusal may be registered against title to the land. This gives other potential purchasers, such as real estate developers, notice of the interest. This ensures that the local government's rights under the agreement are protected. This tool is useful for holding onto land identified as being of interest, pending identification of the resources to purchase it or of other means to preserve it.

Profits a Prendre

Property is seen by our law as a bundle of separate rights, any one of which may be separated from the rest. When the fee simple estate in land is transferred, all of that bundle of rights passes with the transfer. One of the ways in which that bundle of rights can be split up is through creation of what is called a profit a prendre. This term describes the right granted by a landowner to another person to enter land and take something off the land.

For example, trees growing on land are considered by our law to be part of the land. But once a tree is cut down, it becomes personal property, just like a car is personal property and not real estate. Cut trees become the personal property of the landowner, but a landowner can change that by selling or giving someone else the profit a prendre to enter land and cut down trees. Once those trees are cut down, they become the property of the holder of the profit a prendre. A profit a prendre can be granted to exploit many aspects of land, including trees and other vegetation and soil (but not, with certain exceptions, minerals), animals of all kinds, and the right to hunt or fish.

The Need for a Comprehensive Land Inventory

Whatever type of conservation instrument is being used, a comprehensive inventory of the property is desirable. A thorough analysis and inventory should be made of the ecology and physical geography of the land affected by the instrument. This should include an inventory of flora and fauna, the state of development of the land, its natural features, and features of historical or anthropological significance.

Emerging Tools for Green Land Conservation

Modern zoning and development laws set parameters within which a landowner may use his or her land. On the fringe of urban development, there is always pressure to develop agricultural land. If that development is prohibited--for example, because the land is in the agricultural land reserve under the *Agricultural Land Commission Act*--a landowner will be prevented from realizing the financial benefit of the demand for use of the land. To some people this is inequitable and constitutes an unfair public burden on a few private landowners. One way of dealing with this may be to allow the landowner whose land cannot be developed to transfer the development rights that would otherwise exist for the land (but for the development restriction) to the owner of land located elsewhere that is slated for development. Again, the law conceives of property as a bundle of rights. Borrowing from this concept, a law could be passed to allow landowners to carve off the so-called property right to develop their land and to sell it to others. Units of development potential could be assigned to land and these units could be sold by the restricted landowner and used elsewhere by their purchaser.

Conclusion

In addition to exercising their statutory powers, local governments can be advocates for preservation. They can encourage action by private landowners and can coordinate private conservation with governmental initiatives.

The provincial and federal governments traditionally have taken the lead in land preservation. But there are at least two limits to what the senior levels of government can do. For one thing, the tools used by them to preserve natural areas are best suited to large scale projects outside urban areas. Second, budgetary restraint means that even large scale initiatives covering Crown land are becoming more difficult to carry through. Nevertheless, local government can advocate action by senior governments--especially the province--to preserve land in and around municipalities.

David Loukidelis has practised law in Vancouver since 1988. His practice with Lidstone Young Anderson specializes in legal issues affecting and relating to local governments, and includes land use regulation and environmental law matters. He studied law at Osgoode Hall Law School in Ontario and received a graduate law degree from Oxford University.

Final Plenary: Into the Future - Strategies and Recommendations

Saturday, March 5, 1994, 10:35 am - 12:10 pm

Calvin Sandborn with the Commission on Resources and Environment commented on the importance of private land conservation in B.C. His talk is presented here. Three rapporteurs talked about what they had learned at the conference highlighting both practical, on-the-ground issues and policy issues. Their comments are contained in the Summary Report at the beginning of the Proceedings.

Chair: Calvin Sandborn, Commission on Resources and Environment

Rapporteurs: Bill Wareham, Ducks Unlimited Canada
Pamela Cowtan, Islands Trust Fund
Bill Rees, School of Community and Regional Planning, UBC

Introductory Comments

Calvin Sandborn, Commission on Resources and Environment (C.O.R.E.)

C.O.R.E. is trying to establish a land use strategy for the province. There has been a lot of focus in the media on the Vancouver Island Land Use Plan which looks at Crown lands. The work that you are talking about doing at this conference is critical because government and Crown land managers cannot do the job of building a sustainable land base alone. There has to be private land conservation as well. For some of the most critical environments in B.C., private land is the issue. For example, less than one per cent of the coastal Douglas Fir ecosystem on southeastern Vancouver Island is protected (well short of the 12 per cent Brundtland goal). And that is almost exclusively private land. If we are going to do an adequate job of conservation, it will have to be done on private land. The other critical ecosystem in B.C., the South Okanagan, is also primarily private land. It is one of our most endangered ecosystems. Crown land managers will not be able to save this ecosystem. It has to be saved through initiatives on private land.

What we talk about in the C.O.R.E. Land Use Charter is "shared responsibility." If we are going to have a sustainable society for our grandchildren, we will have to do it ourselves. Victoria will not be the one to do it. Private initiative, philanthropy, hard work, dedicated people and a change in legal structures to allow the energies to be unleashed to accomplish that vision of sustainable conservation-based values, are all vital.

The issue is very clearly drawn when you look at Vancouver Island where 20 per cent of the island is private land. The Crown cannot set aside 12 per cent of that southeastern corner of Vancouver Island. We are going to have to look at issues like conservation covenants, taxation incentives, urban growth boundary incentives, forest land reserve issues. All these kinds of private land base reform are crucial if the area is not to become an unlivable megalopolis.

I would like to bring to your attention the proposed Land Use Charter and Land Use Goals developed through the C.O.R.E. process. The Charter has the principles of sustainability--the precautionary principle, full-cost accounting, etc. The goals include goals for regulation, for taxation, for all government action basically. These include things like retaining the character and beauty of natural shorelines, not developing environmentally-sensitive areas, not developing valuable forest lands and agricultural lands for residential use, creating an energy-efficient transportation system and urban form.

Three rapporteurs, Pamela Cowtan, Bill Wareham and Dr. Bill Rees were asked to sit in on the Symposium's sessions, and to report their findings back to the final plenary session.

Rapporteur Report Bill Wareham

This information comes from you. Under the light of the stars, we waded through the rafts of notes that were taken in yesterday's workshops and during the last fifty minutes, and we will now try to summarize some important concerns.

We have broken our summary down into: the opportunities we see, the challenges we face, and some recommendations that came from you. In short, I will say that the opportunities are certainly ripe, the challenges are many, and, to offer up one recommendation, I would suggest that when we go home we should all pray that the great spirit of stewardship opens up the heavens and pours money into the pockets of those who have the noble ambition to care for the land. That's my Reader's Digest condensed version, but I will race through the details I've assembled based on our notes.

As far as opportunities are concerned right now, a very high level of public support exists for conservation of wildlife. How to translate that into action is often difficult because taking action differs from having an attitude. Most landowners want to "do the right thing". They want to care for the land. It is often a case, however, of informing these landowners of the options and opportunities which are available to them. This is an education process.

Many experts are available to US. We have experts in resource management, we have naturalists, and we have volunteers who have years of experience. We have to tap into the experience of these experts, befriend them, and involve them in stewardship activities. Many conservation groups and conservation agencies are currently promoting stewardship - Wildlife Habitat Canada is one example. We have come into a phase in conservation activities in which our options are becoming limited. We view stewardship as an essential component of such activities and organizations do exist that promote stewardship and opportunities do exist to be taken advantage of.

Municipal governments are starting to recognize the need to incorporate conservation planning into their official community plans. However, not all the municipalities are at this stage. As well, there are examples - good examples - of stewardship programs that have been implemented on a trial basis, or that are currently ongoing, and we can use these as models from which to learn.

Our challenges are many. We have to develop allies, and that means getting the community involved. We need community support. We need to familiarize ourselves with conservation agencies and learns what their boundaries are and what they can do. We must look at government agencies to see what they can provide. We must really_work to build a group of allies in order to move ahead with stewardship.

One of the crucial challenges in stewardship programs is securing commitment from participants, whether from the local community, the government, or from the non-government organizations that are involved. Formal commitments are necessary to move ahead because stewardship must survive in the long term. It is all too easy to change priorities and move in different directions unless we have secured some formal commitments.

We have to develop trust with the landowners. Much distrust exists between conservation groups and wildlife agencies, and landowners. And landowners must keep themselves informed of the activities in the conservation groups; it is a two way street. We all must strive to be informed of options and opportunities.

We also need to foster a friendly and diplomatic approach to our introduction to landowners and to our continued relationships with landowners. As people in the conservation community and biologists in the field, we do not always have what it takes to be a good diplomat. In developing programs, a real challenge is to find the right people to be "on the ground," working face to face with the landowners.

Another challenge is urban development. Urban development is moving at a rapid rate, and some of the key areas that we are trying to protect are those areas attracting the most intense development: the Okanagan, the Fraser Valley, and the south part of Vancouver Island. These areas are critical habitats, and urban development is a difficult thing to stop - time is of the essence.

Many landowners are forced to sell their land, as Mike Halleran has explained. As he said, landowners get to a position where they want to be good stewards, but the financial reality is that they have to move on.

We need to raise local awareness for financial support because, in the long term, programs have to be self-sufficient. Local people must have a sense of responsibility and be willing to support these programs. We cannot depend on the government to continue to provide money. The government is providing money now to start some of these programs, but, in the long term, we need to get everyone involved financially. The dollars for stewardship programs are scarce right now, and we all have to work at lobbying to reallocate budgets to support this kind of initiative. Municipal governments, as I said, have not all embraced the concept.

We have to simplify the bureaucratic system, which, of course, is a big challenge. People involved in stewardship programs often encounter many different governments and jurisdictional authorities. Finally, we must learn how to turn the initial excitement of a stewardship program into a long term commitment, which involves both those people promoting the program and the landowners. We need constant contact, and we need long term commitment.

We have to recognize that farmers and landowners in general have an economic operation in the works. They operate a business, and we have to recognize the constraints this imposes on them. In corporate stewardship, as was mentioned in one workshop, we have to really recognize that businesses like Scott Paper have to maintain a competitive place in the market; we must work within this boundary.

I would like to conclude with some recommendations:

When we deliver stewardship programs, we have to present materials that are user friendly. We cannot force large documents on people and expect them to wade through all the information. We must be adept at summarizing and presenting very clear and readable information.

It is important for resource agencies and conservation groups to allocate permanent staff to these tasks to keep stewardship programs working effectively.

We need to put people "on the ground", face to face with landowners. Much money is spent on planning and initiatives, but the priority needs to be money spent on the "on the ground" work

We must compile accurate inventories of the kinds of work that we want to accomplish in conservation. We need to invest money in identifying resources and into building good cases for the work that is needed.

We also must give landowners recognition for their efforts. This can be in the way of signs, media interviews, getting local press to interview landowners who participate in programs, and providing recognition in the way of plaques, or special public events to honour participants. Recognition is very important.

We also have to be persistent: there may not be a next time for many of areas that we want stewardship programs to protect. We need to identify local and regional resources that we can bring into our program. This includes working with all ministries. We must be aware that there may be resistance and, as a result, we have to be active at gaining support from places that we have not traditionally targeted.

Janice Doane from the Pacific Estuary Conservation Program makes this important point: we have to emphasize that these programs are voluntary. When we talk to landowners, we do not want to give the impression that we are driving something down their throats. Whether or not landowner becomes involved is their option; our job is to convince them their support is necessary.

We need to train volunteers as, ultimately, we will never have enough staff people to1 cover all the geographic areas. We need to be in touch with people who have the time and ability to get involved. What arose from one workshop was the idea of "adopting a landowner". Find someone in your community who has a piece of private land, and get to know them. If you have conservation values and ethics that you are trying to promote, get to know somebody. And, as Carmen Purdy mentioned, we need to put in some sweat equity. We need to work with the people on the land. Carmen threw up four hundred bales of hay with a fellow one day - he said he hurt for a week and thought of that guy every day, but it helped to build their relationship. We have to get out there.

One final recommendation I would like to make involves things like festivals to sustain awareness of important issues. We should continue to organize festivals like the Brant Festival, and, a proposed Trumpeter Swan Festival in Comox/Courtenay.

That's it for now and I'll look forward to other recommendations you have later on. Thanks.

Bill Wareham works as a Campaign Assistant for the B.C Spaces for Nature. Prior to this, he worked for three years for Ducks Unlimited Canada in the Lower Mainland.

Chair: Calvin Sandhorn

Thanks Bill. I think a lot of credit has to go to people like Bill who have spent years in the trenches working on these issues; it is this day to day slogging that is going to get the job done.

You know, the idea of "adopting a landowner" reminds me of the fact that in Victoria a big movement exists at present to restore Gary Oak Meadows. People are actually asking others to turn their yards into Gary Oak Meadows, and so, I no longer mow my lawn!

The next topic of discussion is the whole question of ethics. Speaking on the land ethic and in the tradition of Aldo Leopold, we welcome Bill Rees, our own successor to Aldo Leopold.

Rapporteur Report:: Bill Rees

I have either the advantage or disadvantage of being told that I was to do this just five minutes before I sat down at the table. I do not have the benefit of the collective wisdom of all the notes and so on that have come forward, so, unfortunately, you are going to get a rather personal view of what I saw unfolding in the course of the land ethic stream, and perhaps my views will be somewhat different from what actually appears in the proceedings when the notes are all collected.

Let me give you a quick summary of what I think the session was about. We heard in the opening session that when we even began planning a conference, the question of ethics was queried by some as being irrelevant. But the point has been made over and over again, certainly in this stream, that whether it is conscious or not, we have a land ethic. And, this ethic resides in the overall world view of our cultural mainstream, which is one that sees humankind as dominant over nature and in control of the situation.

It is the anthropocentric or, as Stan Rowe would point out, the "andropocentric", the very male-oriented dominance view of reality that puts humankind at the centre, and-land and the resources of the land in the service of human beings. That is in fact the land ethic from which our society at large operates. Most of the issues that we discussed in the course of this meeting, however, are from a different ethic.

The reality of the prevailing ethic, however, is that one set of values has come to dominate: the values represented by, in effect, the neoclassic economic paradigm. At the present time, we have allowed the language of economics to become the language of politics insofar as the language of economics truly dominates the whole of our political debate. As far as the economics of land is concerned, the driving force is the notion of "highest and best use" defined in terms of economic efficiency. Like it or not, this is the primary ethic behind the kinds of land use conflicts that engage us all the time.

Clearly, if we are moving toward a different ethic, if we are moving toward a relationship in which humankind is not at the centre, but is a partner in - a component of- the ecosphere, we have to allow other values equal place at the table. Some of this can be translated, partially at least, into economic language as well. But a whole array of other_values exists including the spiritual, the aesthetic and so on, which are not easily quantified.

The notion of biodiversity and being a part of nature, rather than merely a controller of or a dynamic outside of nature, is foreign to our prevailing ethic. Yet, it is in the direction of biodiversity we have to be able to move if, indeed, we are going to become sustainable and to maintain a relationship that is harmonious with the rest of nature. A new ethic then: humankind as a humble component of a natural system working in harmony with the other species with which we share the planet and over which we have no a priori right to dominate or to determine their future.

If we are going to move in that direction, another of our sessions recognized that there are formidable barriers to doing so. We heard an excellent case study on how the corporate sector and the values represented by the corporate sector work against community kinds of values and common property values. At the present time, those things that we need as a community to maintain our ability to live on this planet are simply in conflict with how much of our economic activity is expressed through the corporate sector. And the case study about the conflicts over the forest lands on Galiano Island (conflicts which are being repeated elsewhere around the province) was a very good example of how the political structure, the corporate structure, and the relative distribution of power and interests in society is currently, because of the ethic from which it all operates, counter to most of the kinds of values we have been talking about in the course of these last few days.

If we are going to make a shift, another of our sessions emphasized how important it was to influence the education process. The youth are the ones who are perhaps going to have to deal in much more

profound ways with the very crises with which we are concerned. Many of us past our fifties will probably see our lives out in relatively stable political and ecological environments, but many scientists believe that the promise of this cannot be made, even to our children. So, influencing the youth in some ways to understand the nature of human impacts on the planet from our present paradigm becomes critical and essential.

As well, we heard some excellent examples of efforts to bring into the education system at the lowest level such notions as the "ecological footprint", and the relative role of humankind - now the major geological force on the planet. The rate of extinctions induced by human activities are equal to those from geological hazards in geological histories of the planet. We face great barriers, but we do have mechanisms for change and these begin with our youth.

In the final workshop, we saw how some groups are working directly with communities and planners at the community level to introduce these ideas. We must face the fact that this is a societal problem that has to have the participation of public servants and communities. Both must be engaged in the debate over the value shifts that are going to be taking place.

One of the most important points made in the course of this morning's sessions is that we have to clearly specify those objectives we hold in common and recognize that, inevitably, tradeoffs have to be made. It used to be the case that there was sufficient ecological space on the planet that we never faced the reality of tradeoffs. If it didn't work here, you could move somewhere else. But, there is no place else to go. The fact that we are engaged in so many land use conflicts is direct evidence that we are running out of ecological space. The conflicts are inevitable in these present contexts. If a shift to a different set of values is going to be made, there are interests who will be affected and these interests will fight not to be negatively affected. However, tradeoffs have to be made, compensation has to be delivered, and some kind of new social contract to live in harmony with the planet must be drawn up.

Most important, in convincing the public, whether through the education system or meetings such as this, we have to recognize that we cannot sell the notion of a new land ethic, or a new ethic period, if it is sold as something that is going to be painful, or something that is going to demand sacrifice. Surely, we all believe in the need for this ethic because it will make a better world, not one which is more painful. In fact, if one believes in the efficacy of the basic ecological theory that we are all here in support of, it can be argued that the biggest sacrifices will be made if we stay in the mainstream. If we do, we will close off our options for ecological sustainability. And, we will close off our options for geopolitical stability, as the Kaplan article in last month's Atlantic Monthly magazine pointed out.

We have, if we believe in it, the strongest argument of all for moving to a new land ethic: it will make for a better world, one which is more secure for ourselves and more secure for our children, and one that is characterized by not only ecological stability but by a greater opportunity for social and economic equity with this new ethic will come the kind of geopolitical stability that the end of the Cold War promised us. This same stability will not be delivered if we get into a scramble for the last few resources on the planet. So, this is not a hard sell, if we put our minds around the idea that the future will be far better if we follow a new ethic than it will be if we stick with the old. Thank you very much.

Dr. William E. (Bill) Rees is Director of the School of Community and Regional Planning at the University of British Columbia.

Chair: Calvin Sandborn

I think Bill makes a very good point, and one that A1 Gore raises in his book *Earth and the Balance*. Gore argues that our current ethic, the consumerist approach to life, is actually a self-destructive cycle.

Gore explains that human beings are becoming alienated from nature and, as a result of that alienation, a great emptiness exists within human beings. Humans attempt to fill that emptiness with VCRs, TVs, and Barbie dolls; in other words, humans attempt to fill that emptiness by consuming. As you know, second to television, shopping is the second biggest leisure time activity. We consume, and in order to consume we are literally consuming the earth, not a great way to approach life.

The question then becomes: How do we get there from here? Pamela Cowtan is going to discuss some of the problems that arise in moving toward actually changing the structures - legal structures, policy structures, tax structures, and other structures in a way that we can arrive at a land ethic that gets us out of the malls and into the wetlands.

Rapporteur Report: Pamela Cowtan

What I have attempted to do is summarize the conference generally and provide some order to the vast amount of information that has been transferred to you over the last couple of days.
In my effort, I organized information into four headings:

1. stewardship, vision, change in land ethics;
2. identification: finding out what we need to be stewarding;
3. communication, education and input; and
4. tools to do the job and required action.

1) Stewardship, vision and change in land ethics:

We heard from Bill Rees that we need a change in land ethic. We also heard throughout the conference that we need a good definition of stewardship. We heard from Stan Rowe that we need a leading vision for what land is and what it means to us. We heard about "appropriated carrying capacity" and the "ecological footprints," the need for a changing ethic and the requirement to address questions of regional and social sustainability. We heard about reducing consumption, and using less of our resources. Joy Leach said that the change does not happen overnight, but we can find reasons to be encouraged. For example, eighty-three per cent of Canadians agreed that protecting our endangered species is important.

2) Identification: what it is that we should be stewarding:

We need to establish criteria for what should be protected. We heard from the Protected Areas Strategy about providing criteria for provincial significance. Regional planning exercises and local conservation strategies, such as the South Okanagan Conservation Strategy, can help in determining the criteria for stewardship. In addition, we need more funding and more support for assessing inventories. We really do not know what is out there - this is becoming increasingly more evident through the C.O.RE. process.

3) Communication, education and input:

We have heard from people on education. We heard that we must get our message to the public; we need to give a voice to the land. Rick Cool said that there are "three C's." We need to move from the "three R's" to the "three C's": caring, concern and connection. We heard that there are different models to serve different needs, but we must start with mutual benefits and mutual interests. The Burrowing Owl project found that their landowner contact program was really a communications program. Joy Leach said that we need to take our message to the public without frightening them. That is very important. We need to educate at all levels, but especially at the political level. The Federation of BC Naturalists'

Land for Nature project is doing a good job of educating people, and the Electronic Crossroads project provides individuals with access to information that will empower them to achieve conservation goals. It was also suggested that we could use a government extension service for private forestry to educate people on forest practices.

4) Tools to do the job and required action:

This is an exciting area. We heard about many different tools over the course of the conference; however, we also learned that not enough tools exist. Joy Leach said we need more tools to allow communities to manage resources into the future. We heard about Section 215 covenants for conservation, which can already be held by government, but a real need exists for non-government organizations to also be allowed to hold those kind of covenants. This can be achieved by legislation pending under Bill 70. One challenge to covenants is that they are not tested in court, and past experience suggests that the court favours public interests over private and consequently may not rule in favour of conservation. Time will tell whether or not these conservation covenants will stand up. The impact covenants have on local planning is another area for concern: how a covenant affects your community, your neighbours, the characteristics of your neighbourhood and property assessment. We also need to ask the question: What should we be putting covenants on? We also face challenges in writing legal documents to protect the values inherent in covenants into the future.

The communication link between lawyer and landowner is another area of concern. We must work to ensure the lawyer understands what the landowner really wants to achieve, because the language of the law can help achieve conservation. Another issue regarding covenants is non-compliance. If a landowner decides to cut down all his trees, we need to determine what action will be taken, who will take that action, and the costs of taking that action.

Also suggested was the need for new forest tenure, a forest land reserve, and more productivity on less land. Improved forest management and better integration of resource management at all levels are important tools. We should also encourage certain lifestyles that are less harmful to the environment. We should work with developers and encourage corporate stewardship; we need to understand their problems and needs, not just our own.

We also discussed "untaxing" nature, a very exciting concept. We need to "untax" nature through improving tax rules, so that for example, donating a piece of land is at least as advantageous as donating a painting of that same piece of land. We need to provide property tax incentives and disincentives, such as clawbacks, to support conservation efforts. That we perhaps need to equalize tax benefits between farming and forestry was another suggestion. As well, we need tough environmental spokespeople at political levels. We need to mobilize communities to take up partnerships, and to become involved in celebrations of the land, like the Brant Festival in Parksville. We also addressed issues of land trusts' private land stewardship programs. Dr. Binkley observed that U.S. land trusts allow for individual action to result in direct conservation benefits. That is important.

Community organizations which are apolitical are the most effective means by which to interface with the private landowner. And, we need to respect private landowners' needs and rights. As well, a very vital need exists for a cooperative network of government and non_government organizations under a shared umbrella to provide direction and guidance for all stewardship programs. Volunteers need support and training, possibly under that same umbrella. We need long term follow-up of landowner contact programs, and we need to be able to cover the cost of that follow-up.

A recommendation that has been repeated many times is the need for a one-window approach to stewardship. We need to encourage agriculture and forestry industries to develop more practices to

benefit conservation. We need better integration of planning among government levels: opportunities exist at regional and municipal levels to achieve this. We need to encourage government legislation to support stewardship. The forest practices code is an example of public input affecting government action. We need to support new endangered species legislation.

And, it has been suggested that we require new forms of land tenure and changes in the way government manages land. We need careful consideration of the issues related to management and monitoring, topics not covered in this conference. When we hold land covenants and agreements, we also need to determining how to cope with challenges such as risk, vandalism, non-compliance and the larger challenge of ongoing cost. Perhaps we need another conference to deal with this. I urge you to take away the information you learned here and to put it to work in your communities and in your own backyard. Break down the barriers of communication and become educated.

I want to end by quoting Toy Leach who said quite humourously: "Roll up your sleeves and keep your eyes open for philanthropists who will give you money to buy land." Thank you.

Pamela Cowtan is Executive Director of the Islands Trust Fund.

Chair: Calvin Sandborn

Where do we go from here? Is this conference just another meeting or, in five years time, will we be able to reflect on this conference as a kind of turning point? Will we be able to point to all sorts of
structures, processes, laws and success stories that are due to the work of this conference?

Closing Luncheon

Saturday, March 5, 1994, 12:30 - 2:00 pm

To help Wildlife Habitat Canada celebrate its tenth anniversary, Stewardship '94 invited several guests of honour, including wildlife artist Robert Bateman, Art Martell (Canadian Wildlife Service), and the Honourable John Cashore, Minister of Aboriginal Affairs.

Master of Ceremonies: Peter Larkin, University of British Columbia

A Message from the Federal Government

Dr. Art Martell, Regional Director, Canadian Wildlife Service

On behalf of Environment Canada I would like to say what a pleasure it is to be one of the partners in a symposium that is setting the stage for the consolidation of private land conservation efforts and programs in B.C. It is especially fitting that Wildlife Habitat Canada (WHC) is a partner in this event given its many years of fighting for land and wildlife conservation. Wildlife Habitat Canada is well known for its role in promoting the benefits of voluntary land stewardship on a national basis. Their programs and projects serve as models, and their success in promoting partnerships is one of the reasons we are all here today. Today, we are honoured to help WHC celebrate its tenth anniversary.

Environment Canada and Wildlife Habitat Canada are currently partners in two projects in B.C. STEWARDSHIP '94 is one example of the work WHC has supported. Another example is a pilot landowner contact project in the Cowichan/Chemainus estuary. The project is managed by the Pacific Estuary Conservation Program under a Contribution Agreement between Environment Canada and WHC.

Although this is a luncheon to celebrate Wildlife Habitat Canada's partnerships and the organization's ten years of work in conservation, I would be remiss in not thanking Nora Layard, who has been the catalyst for bringing all the players involved in voluntary private land stewardship in B.C. together for this symposium. As the initiator, organizer and fundraiser, she has successfully given shape to what has been a patchwork of individuals, governments and conservancy interests working within the bounds of their own projects and organizations.

Environment Canada is looking forward to playing a part in strengthening the role of voluntary private land stewardship in protecting lands for wildlife and wildlife habitat in B.C. We believe this can best be achieved through partnerships between governments, conservancy groups and private citizens. We all came here knowing that we have an obligation to care for the earth, our common home. STEWARDSHIP '94 has given us the philosophy, the ideas, and the tools to help us fulfil this responsibility.

A Message from the B.C. Government

The Honourable John Cashore, Minister of Aboriginal Affairs

Introduction

Good afternoon. It is a pleasure for me to be here today on behalf of Environment, Lands and Parks Minister Moe Sihota to join you in talking about land stewardship. I am also very pleased to see so many enthusiastic people involved in land stewardship. I would like to begin by saying a few words as Minister of Aboriginal Affairs.

The government has pledged to forge a new, more honourable relationship with aboriginal peoples--a government-to-government relationship that will enable aboriginal peoples to achieve a greater self-determination and self-reliance. In building that relationship, we must recognize the parallel between biological diversity and aboriginal diversity and the importance of protecting both. For aboriginal people, the concept of protecting their cultural diversity is integral to their community. Unfortunately, for many First Nations, their knowledge of their language is limited and spiritual and cultural values have been taken away. By working together to educate and improve relations with First Nations, we are strengthening their diversity as aboriginal people. This mirrors the ongoing efforts to enhance biological diversity in British Columbia.

B.C. Treaty Commission

There's no question that for most First Nations in B.C., the most important issue is the unresolved aboriginal land question. We have taken a number of crucial steps to set the stage for treaty negotiations in B.C. One of the most significant steps is the establishment of the B.C. Treaty Commission:

- The Commission will help to ensure that negotiations take place on a level playing field in a fair and equitable environment.
- The Commission has accepted Statements of Intent from 38 First Nations from around the province which indicates its intent to participate in treaty negotiations.
- Initial meetings to exchange information and address various procedural matters are well under way.

It is also important to note that all parties in the negotiations have agreed that private land is **not** on the table.

First Nations Relationship to Land

As you know, aboriginal peoples have a very strong relationship with the land. Land has a high emotional and spiritual value for many First Nations. It links them to their ancestors, and, through their ancestors, to the Creator. This is a belief that has been held by First Nations for thousands of years. Their respect for the land is a model we should all try to follow as we manage land and resources. I believe land is our most important shared resource, and that we are all responsible for working cooperatively to make sure the land is well cared for.

Government's Role

Government has a key role to play in land stewardship on both private land and public land. More than 90 per cent of B.C. is made up of Crown land, and government is responsible for managing this land for the benefit of all British Columbians. We've recently introduced major new initiatives to protect important natural values, to resolve B.C.'s land use debate and to improve environmental protection on resource lands.

Government Initiatives

At the Earth Summit in Rio, government made a commitment to protect important species and ecosystems. We're living up to that commitment. Just two days ago, Minister Sihota was in Oliver to announce the upcoming designation of the South Okanagan Wildlife Management Area. This unique area is home to a third of B.C.'s most threatened species, including the endangered Burrowing Owl. It also represents one of the most endangered ecosystems in Canada. This is only one of many important areas which will be secured for its outstanding natural values.

Through the Protected Areas Strategy, government aims to protect 12 per cent of B.C.- areas which represent the full range of British Columbia's natural diversity. But how do we decide which areas are most worthy of protection? Government created the Commission on Resources and Environment to recommend which areas should be designated for protection, which should be open to resource use, and which should be managed for both resource values and other values such as recreation and tourism. Regional C.O.R.E. tables, made up of representatives from all key interests, rely on fair and open negotiations to reach land use recommendations.

Government is also changing the way that B.C.'s forest and range lands are managed. This spring, government will introduce new legislation on the Forest Practices Code, putting the focus on prevention rather than damage control. Tougher management standards will protect B.C.'s biodiversity, including wildlife, water, fisheries and recreation. Stiff penalties of up to $1 million will be introduced to enforce the new standards. These initiatives will help protect important values on public land, but we all know that it is not enough. There will always be privately held land with important natural values. In fact, much of B.C.'s private land is concentrated along the southern coast and along river valleys--the areas that also have greatest diversity of fish and wildlife values. Key natural areas are important to all of us regardless of who actually owns the land.

It is the responsibility of both individual landowners and industry to take on a stewardship role. I understand that this conference has heard of examples of industry taking on stewardship responsibilities. I would like to encourage industry to move the concept forward and to embrace stewardship and sustainability.

Covenants

The use of covenants is one way in which governments have been able to secure prime natural habitats on private lands. This spring, government will reintroduce a bill which would also allow conservation groups to hold covenants over private land. With this proposed change to the *Land Title Act*, private landowners will have more choices in deciding who is the best watchdog to make sure that their important lands are permanently protected.

Land Development Guidelines

Another way to protect natural values is to encourage sensible land development. Last year, for example, the Ministry of Environment, Lands and Parks and the Department of Fisheries and Oceans introduced development guidelines to protect land and aquatic habitat in urban areas. There has been a lot of positive feedback from municipalities and other groups about these guidelines. The guidelines will be revised and updated within a few years to reflect comments from the public.

Land Trust Concept

As many of you are aware, I am personally committed to, and interested in, the concept of land trusts in British Columbia. Government is examining this kind of partnership between the private sector, government and non-government organizations. I want to advance this cause and will work to pursue this interest to its fullest.

Stewardship Pledge

Partnerships are the most important means to encourage conservation of nature on private land. By working in cooperation with landowners, community groups and others, we can protect important land values - for now, and for future generations.

Today, I'm pleased to announce that Wildlife Habitat Canada, Environment Canada, the Habitat Conservation Fund and the Ministry of Environment, Lands and Parks have agreed in principle to initiate a three-year Stewardship Pledge project. It's what Stewart Hilts called a "mixed" partnership in his talk yesterday. In about a month, we should have an agreement in place to assist in promoting local stewardship projects, and in creating a framework for voluntary conservation of nature on private land throughout the province. Both corporate and backyard lands will be included in this new project which will be lead by Wildlife Habitat Canada. The discussions and recommendations at this conference are providing valuable input to help achieve these goals.

I'd like to recognize the catalyst role of Wildlife Habitat Canada in creating this new partnership, and the efforts of Environment Canada, Ducks Unlimited Canada, and the Pacific Estuary Conservation Program to help lead the way in voluntary stewardship activities in B.C.

Private Land Use Stewardship Program in the South Okanagan

Another important partnership program will help protect the unique habitat of the South Okanagan. I've told you about the upcoming designation of the South Okanagan Wildlife Management Area, but this is not enough to protect the unique values of this area especially since so much land is privately-owned, and land development continues to increase. In April, the Ministry of Environment, Lands and Parks, the Habitat Conservation Fund and The Nature Trust of British Columbia will begin a Private Land Use Stewardship Program in the South Okanagan. The Nature Trust will be the lead agency on this pilot project.

Okanagan First Nations Project

I would also like to highlight B.C. Environment's ongoing cooperation with four First Nations in the South Okanagan. The program identifies and maps endangered wild species and spaces on native land in the region. A training program for First Nations land managers has been an integral part of this program, which is now entering its fourth year. The main objective has been to assist First Nations in acquiring the appropriate tools to make ecologically-based land management decisions. I would like to see more of these kinds of partnerships develop around the province.

It has been a pleasure for me to announce these new initiatives:

- the Stewardship Pledge to create a framework for stewardship throughout B.C.
- proposed legislative change to land covenants
- a new pilot project in the South Okanagan

These projects, along with the major new initiatives on public land, will help to protect biological diversity values on all of British Columbia's lands. But there is much more to be done, and it is through conferences such as this that we can find new approaches to work together to protect natural values on private land.

John Cashore was appointed Minister of Aboriginal Affairs in September 1993. Prior to that he served as Minister of Environment, Lands and Parks. John has been a Member of the B.C. Legislature since 1986. He is a United Church minister and a graduate of the University of British Columbia.

Welcome from Wildlife Habitat Canada

Nestor Romaniuk, Chair, Wildlife Habitat Canada, Edmonton, Alberta

I am very pleased to be representing Wildlife Habitat Canada at B.C.'s first conference on land ethics and stewardship. Our foundation is proud to have been a partner in sponsoring this conference, and I, too, wish to extend my congratulations to the organizers on the success of their efforts. On behalf of the Board of Directors of Wildlife Habitat Canada, I'd like to welcome you to this luncheon in celebration of our foundation's tenth anniversary.

Wildlife Habitat Canada (WHC) was established a decade ago because of the concerns of many conservationists about the status of wildlife habitat in Canada. The card before you highlights some of the ways WHC has worked to fulfil its mandate for the conservation, restoration and enhancement of habitat throughout the country. As we celebrate our 10th anniversary, we're proud of our national commitment to a landscape approach to conservation that includes the establishment of protected areas, conservation-friendly policies for Crown lands, and private land stewardship programs. Among other activities, we are committed to working in partnerships with government agencies, conservation groups, businesses, and private landowners. WHC is a strong advocate of voluntary stewardship programs, recognizing the need and value of such programs for achieving conservation objectives across 100 per cent of the landscape.

Ten years ago, many people worked to develop the foundation and to define its role as a catalyst to further the conservation of wildlife habitat throughout Canada. We are very pleased to have two of those people here with us today. Peter Larkin you have already met. The other is the internationally acclaimed wildlife artist, Robert Bateman. Bob not only helped lay the foundation for a strong wildlife program for WHC, his painting "Mallards in Spring" became Canada's first habitat conservation stamp in 1985. This conservation stamp program is now in its tenth year, and has featured the work of some of Canada's foremost wildlife artists. Two of those other artists are here this afternoon. I would like to acknowledge both Ken Ferris of Prince George and Fenwick Landsdowne of Victoria B.C. for their contribution to the Foundation's success in raising funds for conservation.

Ladies and Gentlemen, it is now my very great pleasure to introduce Robert Bateman.

Nestor Romaniuk is a retired Edmonton police officer. An avid outdoorsman and nature-lover, Nestor is the Vice-President of the Canadian Wildlife Federation and the Chairman of the Board of Wildlife Habitat Canada.

Small is Beautiful

Robert Bateman, Wildlife Artist, Salt Spring Island, B.C.

A few years ago, I went to Texas on a birding trip led by Canadian naturalist Gus Yackey. At one point on our tour, we came across a fence running across the wide open countryside. On one side of this fence was beautiful, lush grass and wildflowers and, on the other, desert-like, barren, stony land with a few poisonous weeds. "Which side of the fence do you think is owned by the U.S. government?" Gus asked. "Well, since the government protects things," I replied, in my innocence, "it must be the lush side." I was wrong.

This incident made me realize that the private sector and the philosophy and hearts of those who own and live on the land have a crucial role to play in re-establishing a healthy ecological balance for the coming century. We cannot expect the government to do it for us. Voluntary work on private lands is going to be crucial in this process, and this conference is therefore very timely.

Through my various interactions with politicians over the years, I have come to realize that the real problems facing our planet are philosophical. We need to change our approach from "bigger is better," to "small is beautiful." To paraphrase E.F. Schumacher, author of *Small is Beautiful*, the real problems facing the planet are not economic, or technical; they are philosophical. The philosophy of unbridled materialism is now being challenged by events, says Schumacher, and these events speak to us in a language of breakdown, unemployment, exhaustion, violence and despair.

We have all been led to believe that you can't stop progress. But, continuous, indefinite growth is the philosophy of the cancer cell, and we all know where that ends. Politicians claim that our problems will be solved by generating more growth. But, that, of course, will only spin our wheels deeper and deeper into the rut. So what is progress? Progress as we know it in this millennium does not represent true progress; rather, it is a denial of wisdom. Wisdom is a new orientation of progress towards the elegant and the beautiful and the organic. North America, the great inventor and proponent of this concept of 20th century progress, founded it on a kind of 'Coca Cola' philosophy whereby there are no limits to what an individual can do. Respect does not seem to be part of our philosophy, or part of the way we view our environment.

In fact, disrespect seems to permeate our entire philosophy. Our so-called heroes--Paul Revere, cowboys, Rambo--are the most disrespectful of all--and models for many of us. Our society is still adolescent and, with the turn of the century, I think we need to start growing up and handling things in a more mature manner.

Certain parts of the world already have a more respectful attitude. The Japanese, for example, take great pride in their country, although they are less respectful of others. We cannot blame Japan for treating a country badly if the rules of that country allow such treatment. We must make our own rules in such a way that other countries see that we respect ourselves, and are obliged to respect us also.

When people are personally responsible for their land, they tend to treat it with a great deal more respect. This is the case in parts of rural Germany where the agricultural community has great respect for the landscape and traditional small-scale farming practices. Parts of Austria, too, show this same reverence for the land. In the valley of Midersill, there are steep, forested slopes which have been logged for centuries--not going back to the old ways of the ancestors, but small-scale nonetheless. They use helicopters, big spar trees and donkey engines to log narrow strips. The logs are taken out by air, without damaging the ferns and mosses. And then the parent trees seed in, so that no replanting is required. There's a small sawmill and a furniture factory in the town, so the jobs all stay within the community. At the top of the valley is a small-scale hydro-electric power plant which has little impact on the environment; there's also an unobtrusive small-scale downhill ski development.

But, the most interesting aspect of these two areas is the hunting--admittedly an aristocratic sport, and very counter to North American thinking. The hunting in these two valleys is excellent and the area is leased out for seven years to the highest bidder. The last one was a German prince; the current one is a multi-national corporation which pays $300,000 a year in fees which go into the economy for the privilege of hunting red deer, roe deer and chamois. The locals can't hunt them and so it brings in a lot of money.

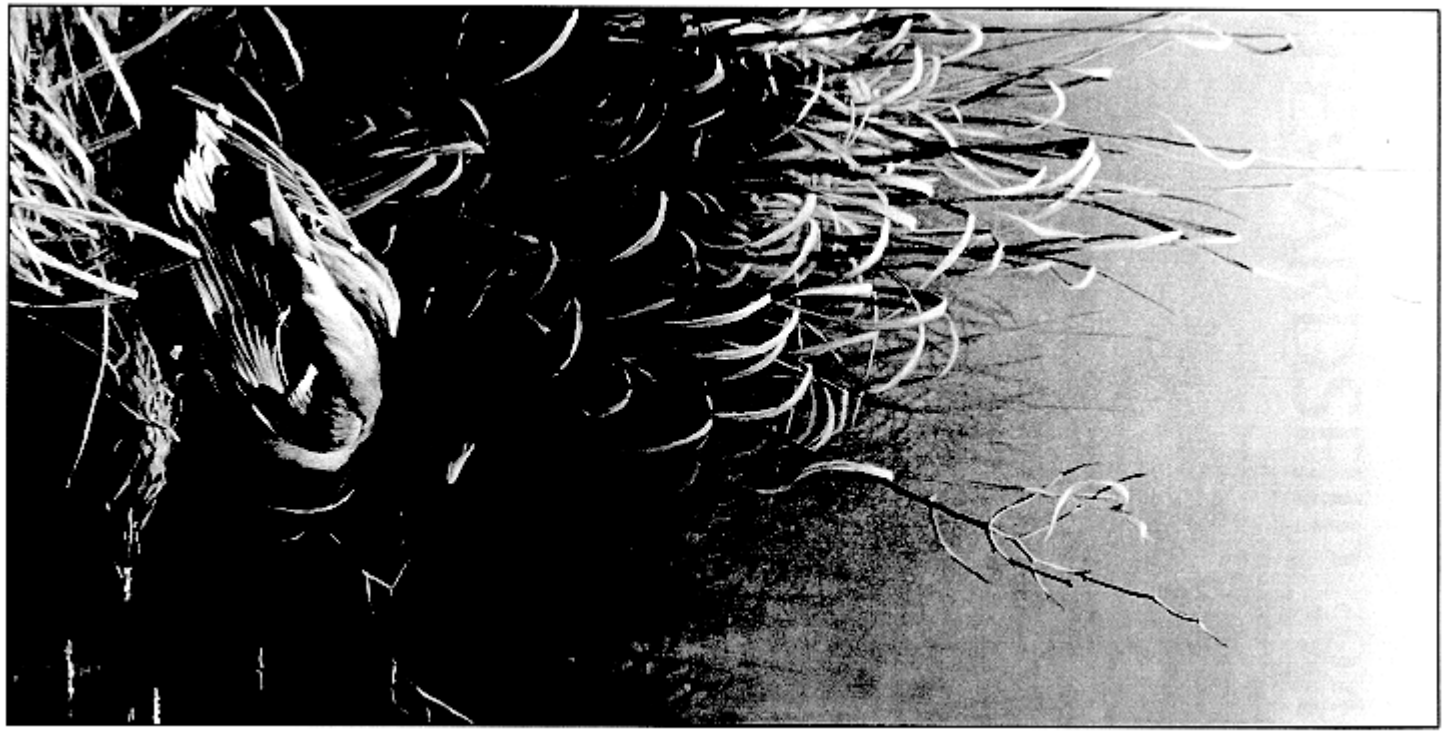
It works like this: the multi-national executive has a North American executive he wants to persuade to sign a contract, so he decides to use a little encouragement. He takes him on a hunting trip. The pressure is getting to him when finally he spots a magnificent red deer. The vice-president raises his gun to take a shot, but Fritz, the gamekeeper, stops him. "Nein," he says, "you cannot shoot this animal in 1994--1998 at the earliest--because I know that animal's mother, I know its father, grandmother, grandfather. My father was the gamekeeper before and my children will be gamekeepers after me. We need the genes for another four years at least for breeding. He's got excellent genes. His antlers will be even bigger in four years and he'll be advertised in the hunting magazines internationally and we may get more--we may get $500,000--next time we're on the open market. So, for the good of the valley and the good of the future, sorry, you cannot shoot this animal."

The important point here is the underlying philosophy. Fritz the forester is the boss because he lives there. It's his valley, he cares about it, he pays attention to it. It's private ownership, but it has stewardship which counts because of who lives there. I'm convinced that in 50 years' time, it will still be the same because they like it this way. They will get fax machines and computers, but first come the values, then the technology.

I would like to conclude by saying a few words about Clayoquot Sound. I am hopeful that, because native people live there, they will be able to make a difference. That was the essence of my earlier story about Bavaria, where people care about their environment. So to hand our forests over to huge corporations that don't even live there seems insane. These giant corporations move their capital around like mercury--it slides all over the place. For example, they could plunder Vancouver, then go south and plunder Venezuela, before moving on to the Philippines. When they're finished with the Philippines, they'll go on to whiskey or cosmetics because to them it doesn't matter. I believe we should put our logging in the hands of small market loggers who live there--small family logging operations. Big businesses are not going to like it because it means a lot of rewriting of rules and regulations. In my networking with small market loggers, I have noticed that we have a lot more stumpage fees coming into Ontario's coffers. Whereas, with the large corporations, we can't even find out the stumpage fees. They are based on agreements dating back to the 1950's and are kept secret. We could have a lot more stumpage fees, and we could have up to three times as many jobs per log.

You probably already know that Americans have twice as many jobs per log as we do, and that New Zealanders have six times as many. It is a job issue, and what I'm advocating will generate a lot more jobs. Don't blame the lack of jobs on environmentalists or spotted owls. It is the official policy of former governments and big business which created this situation. We could preserve our ecosystems if they were selectively logged and this fits into the stewardship issue. I believe we can trust the stewardship of people who live on the land and engage in small business. Small is beautiful, as I said earlier; big is not.

Robert Bateman is one of the world's foremost painters of nature. Before becoming a full-time wildlife artist in 1975, he taught high school art and geography for 20 years. Bateman's work is refreshing and his concepts unpredictable. With imagination influenced by any one of the multitude of art periods and styles, plus a deep understanding of the natural world, his artistic statements are strong and stunning.



"In His Prime" Mallard by Robert Bateman
Gift to Wildlife Habitat Canada. (courtesy of Mill Pond Press)

STEWARDSHIP '94

REVISITING THE LAND ETHIC
CARING FOR THE LAND

The Voluntary Conservation of Nature on Private Land

PROGRAM

March 3-5
At the
Coast Plaza at Stanley Park Hotel
Vancouver, BC

SYMPOSIUM AT A GLANCE

Thursday, march 3rd

Field Trips: BY BUS departing from the Coast Plaza Hotel.

10:00 am - 4:00 pm **Fraser River Delta and Farmland Field Trip**
Features: Greenfields Project (agricultural stewardship program), Reifel Bird Sanctuary, Alaksen National Wildlife Area, Finn Slough (community/landowner/conservation project). Lunch inclUded. Maximum: 45 people. Cost: $18.00

12:0O - 4:00 pm **Fraser River/Urban Stewardship Projects Field Trips**
Features: habitat mitigation projects (Fraser River) Burns Creek (community stewardship project). Maximum: 45 people. Cost: $10.00

5:00 - 9:00 pm **Registration & Displays**

7:00 - 7:30 pm **Opening Remarks - Symposium Themes**
"Revisiting the Land Ethic" - Dr. William (Bill) Rees, School of Community & Regional Planning, UBC
"Voluntary Stewardship on Private Land" - Dr. Caroline Caza, Wildlife Habitat Canada

7:30 - 8:10 pm **Keynote Address: "At Home in the World" - Dr. Stan Rowe**

8:10 - 8:30 pm **Community Sustainability: Are We Ready for Change?"** - Ms. Joy Leach, Chair, British Columbia Round Table on Environment & Economy

8:30 - 8:50 pm **"Contributions of Private Lands to Sustaining Biological Diversity"** - Dr. Clark Binkley, Dean, Faculty Of Forestry, UBC

9.00 - 10.00 pm **Reception** hosted by Environment Canada

Friday, March 4th

8:00 am - 10:00 pm **Registration & Displays**

8:45 - 8:55 am **Announcements**

8:55 - 10:10 am **Panel: "Land: A Mosaic of Perspectives"**
- First Nations' - Steven Point, Stolo Nation Canada
- An Agricultural Perspective - Noel Roddick, Ladner B.C.
- Lifestyles and Ethics - Judith Plant, Catalyst Education Society
- Can Nature be Included in Development? - Meyer Aaron, Tanac Land Development Corp.

10:10 - 10:30 am **Break**

10:30 - 12:00 am **Panel: "From the Ground Up! - Communities and Corporations Embracing Sustainable Land Stewardship"**
Chair: Moura Quayle, Chair, Urban Landscape Task Force, Vancouver
- A Community Project in Muskoka, Ontario - Donald Gordon
- Corporate Forestry Stewardship in Nova Scotia -John MacLellan, Scott Maritimes Ltd.
- Prince Edward island Watershed Program - Art Smith, Watershed improvement Program, PEI
- Operation Burrowing Owl - Curt Schroeder, Nature Saskatchewan
- Supporting Community Programs - Dr. Stewart Hilts, University of Guelph

12:00 - 1:15 pm **Lunch Break** - Buffet in the Display Area

1:15 - 2:15 pm **Concurrent Panel Sessions: (A & B)**
A. Revisiting The Land Ethic:
-"Changing Values Towards Nature, A Short History" - Dionys de Leeuw, Ministry of Environment, Lands & Parks
-"Ecological Footprints - Can We Learn to Tread Lightly" - Dr. William E. Rees, School of Community & Regional Planning, UBC
-"Wildlife and Private Land" - Mike Halleran, BC Round Table on Environment & Economy
B. Private and First Nations Land Stewardship in B.C.
Municipal government - (Speaker to be confirmed)
South Okanagan Conservation Strategy Wildlife & Habitat Project for Native Lands - Arnie Louie, Osoyoos Indian Band Communities in Action - Lorne Wilkinson, Galiano Conservancy Association
Cowichan/Chemainus Stewardship Pilot Project -Janice Doane, Pacific Estuary Conservation Program

2:15 - 2:40 pm **Break**

Friday, March 4th (continued)

2:45 - 5:0o pm **Concurrent Seminars & Workshops** (the five streams continue on Saturday Morning)

2:45-3:45 **Revisiting the Land Ethic**	2:45-3:45 **Communities & Landowners**	2:45-3:45 **Managing for Nature**	2:45-3:45 **Corporate Stewardship**	2:45-3:45 **Legal Issues**
Barriers to a Sustainable Land Ethic	***Mobilizing Communities***	***Identification of Habitat on Private Land***	***Conservation Options for Development***	***Introduction to Legal Tools***
- Political Barriers -Strategic Lawsuits Against Public Participation	-Brant Festival, Parksville - Landowners' One Stop Shop, Ontario	-Working with Naturalists -S. Okanagan Conservation Strategy - Protected Areas Strategy	-Greenways for Nature -Urban/Rural Development -Corridor Management	-Introductory Seminar -West Coast Environmental Law Association
4:00- 5:00 ***Paths to the Future*** -Stewardship Education - Learning New Ways	4:00-5:00 ***Community Land Trusts*** -Delta Farmland Trust -Galiano Conservancy Association	4:00-5:00 ***Stewardship How To's*** -Landowner Contact Programs -Securing Land for the Long Term	4:00-5:00 ***Private Forest Lands*** -Corporate Lands: Applying Stewardship Principles -Nova Scotia Stewardship program -Private Woodlots	4:00-5:00 ***BC Legal Aspects of Conserving Nature: What is Needed?*** -Law Reform Working Group

5:00 - 7:30 pm **No-Host Dinner Break** (Local restaurants)

7:30 - 10:00 pm **Free Public Lecture - "Our Own Backyards - Enjoy and Protect Nature"**

- "Beginning in Our Own Backyards" - Bill Merilees, author: "Attracting Backyard Wildlife"
- "Landscape Design For Wildlife" - Russell Link Washington State Backyard Sanctuary Program
- "Ways to Protect Land For Conservation" - David Loukidelis, Lidstone, Young, Anderson

Saturday, March 5th

9:00 - 10:00 am **Concurrent Seminars and workshops** - continued

Revisiting the Land Ethic	**Communities & Landowners**	**Managing for Nature**	**Corporate Stewardship**	**Legal Issues**
Case Study	***Resources in Action***	***Municiple Planning Experiences***	***Agricultural Perspective***	***Taxation Incentives***
- Workshop: Applying a Sustainable Land Ethic to the Fraser Basin	-Stream Stewardship Programs -Electronic Crossroads Project	-Zoning, Development Permits and Legislation -The GVRD Green Zone	-A landowner's Perspective -Comox Valley Waterfowl Management Project -Greenfields Project, Delta	-Tax Options for Conservation -Experiences south of the border

10:15 - 10:35 **Break**

10:35 - 12:10 pm **Plenary: into the Future - Strategies and Recommendations**

Presentations and discussion about voluntary stewardship and the Land Ethic

12:30 - 2.00 pm **Luncheon 10th Anniversary Celebration of Wildlife Habitat Canada**

With comments by: The Honourable John Cashore, Minister of Aboriginal Affairs, and a special presentation by Robert Bateman

Field trips: Departing From The Coast Plaza Hotel

2:30 - 5:00 pm **1. Stewardship at the Shoreline - Rocky Shoreline Restoration**

	Tour of Vancouver Aquarium - Dr. Jeff Marliave, Senior Scientist (Hosted by Vancouver Aquarium). Cost: Taxi to/from Aquarium.
2:30 - 4:30 pm	**2. Nature Tour of Stanley Park** - Stretch Your Legs! Hosted by Stanley Park Nature Centre. Cost: No charge.

Background Paper
Revisiting the Land Ethic

Stewardship '94

March 3-5, 1994
Vancouver BC

The Real Estate Foundation believes that conservation of natural and settlement heritage stands out among the many potential uses of land assets. Often these assets occur on privately owned lands. Educational events such as STEWARDSHIP '94 are very important to encourage landowners to preserve such values. The technical and resource references available from the Symposium will be of great value to owners actively pursuing conservation objectives.

Tim Pringle
Executive Director

The STEWARDSHIP'94 partners (listed on the back page) greatly appreciate the Real Estate Foundation of British Columbia's contribution towards the production and distribution of the Symposium's two loackground papers, "Revisiting The Land Ethic", and "Voluntary Conservation of Nature on Private Land". These papers have been provided to stimulate discussion and recommendations for a sustainable land ethic and future stewardship activities in British Columbia.

For further information, or to order additional copies (at $10.00 each), please contact the Symposium sponsors or:

SYMPOSIUM SECRETARIAT
c/o 4506 West 8th Ave.
Vancouver, BC V6R 2A5
Tel. 878-0488
(To March 30, 1 994)

STEWARDSHIP '94

Revisiting the Land Ethic, Caring for the Land

The Voluntary Conservation of Nature on Private Land

March 3-5
Vancouver BC

Over the three days of STEWARDSHIP '94 - in workshops, field trips and during informal breaks - Participants will have an important opportunity to discuss the ideas and suggestions contained in the background papers:

Revisiting the Land Ethic, and
Voluntary Conservation of Nature on Private Land

Dr. William E. (Bill) Rees provides a perspective about the need for a sustainable land ethic based on the realities of our current unsustainable land use patterns and global environmental crises. This Symposium is a forum to look at the difficult and critical questions that he has posed to us.

Dionys de Leeuw has kindly consented to circulating an edited version of a paper he presented to the Ministry of Environment, Lands & Parks' Annual Fisheries Meeting in January 1992, In it, he explores definitions and descriptions of environmental ethics related to nature and land. He also poses important questions, and his paper can help us to more clearly define and understand our individual value system

STEWARDSHIP '94 is a forum to begin a serious discussion about creating bridges and linkages between people with different environmental ethics and viewpoints. Where are the common threads? What does a sustainable land ethic look like? Can we subscribe to common principles and ideas? What do these look like "on the ground"?

These articles are presented as catalysts for discussion.

Please read them and come prepared to "revisit the land ethic"!

ENVIRONMENTAL: ETHICS IN B.C.

Prepared by:A.D. de Leeuw
Ministry of Environment, Lands & Parks
Terrace BC

This paper has been edited slightly for this Stewardship '94 background paper. The original was presented to the Ministry of Environment, Lands & Parks' Annual Fisheries Meeting, Yellow Point, Nanaimo, In January 1992.

DEFINITIONS, GENERAL SCOPE

Ethics come in two very related forms; one is a branch of philosophy called ethics which ideals with the academic study of what is and is not moral[1], the other is what constitutes moral or ethical behaviour[2]. It is the latter definition of the term ethics that I will use here.

We seldom think about what is and is not moral or ethical, at least I never did until recently. Not that I was unethical, at least I hope not, I just never thought about it. I took for granted the rightness and : wrongness of my actions and decisions as somehow intrinsic to the culture to which we all belong. It is with this understanding therefore, of ethics being a general guiding moral principle or golden rule that governs our actions, that I approach this topic.

For the sake of this discussion, I divide ethics or moral judgements into primarily two types; first there are the ethics or guiding moral principles which apply to all inter-social conduct. These include medical ethics, legal ethics, political ethics and so on. In their most basic form these ethics form the moral principles that guide the interactions between people. An action is considered good morally if it is sanctioned by society and bad morally if it is condemned. The second type of ethics, I call environmental ethics and in its most basic form defines the moral principles that guide all our interactions with things other than people. Moral principles in environmental ethics, therefore, supposedly guide us as to how we ought to treat nature. The underlying thrust of this type of thinking is based on the fact that we must kill things (parts of nature) in order to survive. The question is how can we do it morally?

A conspicuous contradiction in environmental ethics however, is that nature, Unlike society, cannot directly let us know whether we are treating it morally. It is the human society and its values that sanction or condemn our treatment of nature. In a very real sense then, environmental ethics consists of the kinds of values society places on nature by sanctioning or condemning our actions towards nature. The moral judgements applied to our actions and attitudes towards nature, or environmental ethics, I classify into three groups (again for the sake of this discussion). These groups are exploitation, conservation and preservation. Although there is considerable historical and ethical overlap between all three, they are, as well shall see, quite different[3].

[1] For an introduction to moral philosophy, note Duncan (1965)
[2] The introduction chapter of White (1991) discusses utilitarianism and Kant's theory. Note also Thompson (1990)
[3] For a good survey of ethical problems, note White (1991) and Singer (1979) and for environmental ethics generally note Shrader-Frechette (1981) Hanson (1986) and Duguid (1989)

THE EXPLOITATION ETHIC

Exploitation occurs when we use nature for our immediate survival with very little regard for either the plants or animals used. In this context, nature is viewed primarily as a store where all the groceries are free. This ethical view of nature limited our exploitation only by the need we had for nature and our technological capabilities to harvest. We may have had a ritualistic or spiritual relationship with nature, but this relationship recognized primarily the survival value to humans of things harvested. The positive side of the exploitive environmental ethic was that it justified the immediate gratification of societal needs such as development of civilization, the renaissance and the industrial revolution. As long as the resources were there for the taking we could convert them into things that had real meaning. The inevitable downside, of course, was that as our technological capability increased, resources ran out. Subsequently over 200 genera of large mammals are thought to have been hunted to extinction by our early ancestors[4], all the major forests of Europe, Lebanon and the Middle East no longer exist[5], so on and so forth.

THE CONSERVATION ETHIC

With the conservation environmental ethic a significant change took place. We still viewed nature entirely as a resource for people[6], but we now perceived it over the long rather than the short term. The guiding principle was still only our personal and societal gratification[7] but we now used science, a vastly more sophisticated tool, to plan nature. Nature in the conservation ethic is essentially something we manipulate for our own ends and we do so with the help of research and technology. The conservation ethic is firmly rooted on the principle that science can increase our understanding of nature to allow for continued exploitation or harvest of its various parts. This way of looking at nature has some very positive implications. Nature was now thought to be manageable[8]. Its various parts could, to some degree at least, be planned and long term goals developed. Our understanding of the natural world increased as did our concern for those components of nature which we valued. The problems associated with this view of nature, however, are becoming more and more apparent.

First of all, the things we value and plan for in nature keep changing. They keep changing as a consequence of both our culture and how we manage. The effect of changing and differing cultural values in the conservation ethic has and will continue to have some very subtle and sobering consequences. No matter what our cultural viewpoint, though, nature is essentially a currency to be understood and managed by people; it is the secondary uses to which nature can be put rather than nature itself that has value. When two or more conflicting interest groups compete for the same piece of nature, each interest group uses the identical conservation argument to justify the exploitation and management of their resource. These conflicts are then resolved, not on the basis of nature having value of its own, but, on the relative importance of all the secondary values. Virtually all impact assessment studies are essentially evaluations and trade offs of these competing secondary values. As nature becomes more and more managed and resources more efficiently harvested through science, our dependence on and demand for the secondary values increases, thereby accelerating the extirpation of nature. The vast majority, if not all, of the environmental problems and conflicts the world faces today are as a direct function of competition among these secondary values.

Secondly, the foundation of scientific management research results on which conservation ethic is so firmly based is by many considered false. I came across an interesting paragraph on this issue in a recent paper by Baird Callicot in the journal Fisheries. He wrote:

[4] For an excellent analysis of this topic generally, note Martin and Klein (1984) and for sea otters, note Simenstad, Estes and Kenyon (1978)
[5] A good review by Perlin (1989).
[6] The cultural basis for this idea in the west is discussed in an edition by Spring and Spring (1974). Note also a good overview in Ideas (1990).
[7] An excellent overview of the various conservation arguments is offered by Livingston (1981).
[8] All Environmental management publications espouse to this view.

"*The Resource Conservation Ethic's close alliance with science proved to be its undoing. Applied science cannot be thoroughly segregated from pure science. Knowledge of ecology is essential to efficient forest, wildlife, and fish management, but ecology began to give shape to a radically different scientific paradigm than that which lay at the foundations of Pinchot's philosophy. (Pinchot's philosophy is the conservation ethic.) From an ecological perspective, nature is more than a collection of externally-related useful, useless, and noxious species arrayed upon an elemental landscape of soils and waters. Rather, it is a vast, intricately organized and tightly integrated system of complex processes. It is less like a vast mechanism and more like a vast organism; specimens are its cells and species its organs.*"

This view[9] parallels that expressed by numerous other authors. It is ironic, therefore, that science, which so diligently has been providing the framework on which the entire conservation ethic was based, is in large part responsible for proving it false.

THE PRESERVATION ETHIC

The third and last (for now at least) environmental ethic I want to discuss is that of Preservation. Again, for the sake of this discussion I shall divide the ethics or values of environmental preservation into roughly three components; the aesthetic, the rights of nature and the respect for nature components. As you will see, there are some very fundamental differences between each of these three ways of looking at the natural world.

THE AESTHETIC PRESERVATION ETHIC

The aesthetic preservation environmental ethic views parts or all of nature as beautiful, and since people need to be surrounded by beautiful things in order that their spirit may be uplifted, some ecosystems, especially those that are beautiful, must be preserved. We also need to eat, so preserving nature completely would ultimately cause our extinction. Aesthetic preservation views the noble appreciation of nature as morally more justified than any other use. In many ways this idea is like the conservation ethic, only now we use things by appreciating their beauty rather than by harvesting them. Virtually all non-consumptive uses of nature, the vast majority of parks and many of the influential environmental groups subscribe to this viewpoint. The very positive result of this idea lies in the fact that parks and beautiful places have been preserved. The negative side is that this preservation ethic is still entirely a function of our socio-cultural value system and therefore is subjected to the same inherent problems as the conservation ethic. It also tends to be somewhat speciest or species racist in its outlook.

PEOPLE OR LIFE AT THE CENTRE?

Both the exploitation and conservation as well as the aesthetic preservation ethics discussed previously are in philosophical parlance called "anthropocentric" or people-at-the-centre ideologies.

The next two components of the preservation environmental ethic, the "rights" of nature and the "respect" for nature ethics are called "biocentric" or life-at-the-centre ideologies. These two moral approaches to the world do not view nature as ultimately serving people, but rather, humanity is viewed as being equal participant with all living creatures on the globe. To some adherents of the biocentric world view, equal participation with nature is thought to mean that nature should have rights equal to ourselves, while with others it is thought that all creatures including people should be treated with respect. The differences between the "rights" of nature and "respect" for nature are perhaps the most critical to our understanding of the new environmental ethic

[9] For an excellent overview of conservation ethics and Fisheries management read Callicot (1991) from which this quote was taken.

THE RIGHTS OF NATURE PRESERVATION ETHIC

The logic of the rights for nature argument, as I understand it, is founded on the principle that fundamentally we are all animals and that the attribution of moral or ethical superiority to ourselves is a function of our arrogance and nothing else. There is according to the "rights" view no substantial or justifiable reason to treat ourselves differently from other creatures. In order to substantiate their claim, the animal rights (or rights for nature) movement uses an ever increasing body of evidence to demonstrate a rapidly narrowing gap between humans and beasts. The rights of animals are seen as a logical expansion of the Magna Carta, the Declaration of Independence, the Freedom of Slaves, Emancipation of Woman and the various endangered species acts. The very positive aspect of this movement is that it has led to a significant awareness of the abuse of animals in research, food processing and so forth.

A problem, however, lies in the concept of "rights". Depending on what definition is used, rights are generally thought of as conditions bestowed on entities that can both recognize and defend them. Those that cannot often go without. Critics of the "rights" argument contend that since animals do not have the mental attributes to recognize "rights" they don't have them. For instance, within the human species, individuals or "persons" can recognize their rights by a comparison of themselves to other individuals in society. These conditions or rights can then be defended and fought for if their continuation is threatened. The difficulty here is for us to determine those conditions or rights for animals other than ourselves. Can we recognize the rights of animals exercised between animals concept of rights or the recognition and defence of an organism's rights, is very difficult to attribute to entities other than persons. The presently unresolved animal rights controversy continues to be hotly debated in the study of environmental ethics[2]

Nontheless, whether or not living entities other than persons can recognize or defend and therefore have rights should not necessarily allow our treating such entities with moral disrespect. For instance, many mentally and physically disabled people, all infants and the Unborn have no notion of rights, yet we are all perfectly justified in treating them with respect. To not do so would be to severely damage the very fabric of our society; which leads me to the last environmental ethic, respect for nature.

THE RESPECT FOR NATURE PRESERVATION ETHIC

The foundation of the respect for nature argument lies in the recognition that all living things have a legitimate but not necessarily equal place in the natural world. It recognizes that there are differences both between species and between individual members within species; and maintains that since we as persons have respect for each other, we should respect the other creatures in our biotic community.

The difference between the respect for nature and the rights of .nature ethics is as follows. In the respect for nature outlook, the numerous similarities between individuals or species communities are acknowledged, not defined. In the rights of nature argument, it is the definition of those similarities for the establishment of "rights" that is at the heart of the matter.

[10] For a very readable account of this debate read Kershaw (1989).
[11] An apparently good overview of this issue (l only read the summary) can be found in Nash (1989).
[12] Perhaps the two strongest and most influential thinkers on this issue are Singer (1979) and Regan (1983), Note also Frey (1980)

The notion of respect requires some clarification here. In the context of environmental ethics, respect for nature is based on intrinsic worth rather than on merit. Respect for merit is the type of respect we have for olympic athletes, Nobel prize winners and honest politicians. It is a respect for achievement largely independent of the individual and is the type of respect we most often attribute to managed fish and wildlife. The respect for intrinsic worth is the type of respect we have for persons generally, regardless of their achievements. It is this latter type of respect which the respect for nature advocates apply to individual organisms, their communities and the entire natural world[13].

CONCLUSIONS, ETHICAL IMPLICATIONS

There is a general consensus within environmental ethics that our actions towards nature are in large part a reflection of our attitudes towards nature. Therefore, the challenge our society faces in dealing with the present global ecological crisis is one which in a very profound sense involves a change in our values.

For the sake of this discussion I grouped all environmental ethics into three main areas of moral conduct or value systems which govern our attitudes. These are the exploitation, the conservation and the preservation ethical views of nature. The preservation ethic was further subdivided into the aesthetic, the "rights" and the "respect" for nature components.

The exploitation and conservation as well as the aesthetic preservation value system are people at the centre or anthropocentric ethical viewpoints. From a management perspective, nature exists to provide a product. It is there to serve humanity and, as we have seen, the long term outlook of this ethical system does not appear hopeful at best.

The biocentric preservation environmental ethic places people as co-participants with all other creatures and consists of two approaches; the "rights" of nature preservation approach, whereby nature has the same rights as we do; and the "respect" for nature preservation approach, where both humanity and the rest of the living world are recognized as legitimate participants in nature. Nature in this ethical system is viewed as having value on its own, or intrinsic worth, rather than as a means to produce an end product. The object of management in a biocentric world view is not the product of nature but nature itself. Although this approach is perhaps more sympathetic to the natural world, the very real dilemma in accepting it as an ethical view for the future lies in the understanding of "rights" and "respect" for nature and the form that such an understanding might take.

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REVISITING THE LAND ETHIC: TOWARDS SUSTAINABLE LAND USE

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1.0 CONTEXT

A recent flourish of studies and commissions in British Columbia and elsewhere has been unable to ease growing tensions over land use. Allocation of land' between agriculture and transportation/ utility corridors, between logging and wilderness, and among different rural and urban uses provokes intense conflicts. This occurs amid concern over the economic viability of resource-dependent communities and increasing uncertainty regarding Canada's place in the global economy. Meanwhile, expanding human populations, excessive consumption, and rising material expectations increase pressure on the productive landscapes of every continent. Indeed, for the first time in history human economic activity threatens the stability of global life support systems. Such accelerating trends as ozone depletion and atmospheric (climatic) change may well alter prevailing perceptions of the value and appropriate uses for local lands everywhere. In these circumstances, conflicts between people with different views of land can only increase.

1.1 THE CONCEPT OF A "LAND ETHIC"

How a given society perceives, allocates, and uses land is the practical expression of its de facto "land ethic." We can define a land ethic simply as the overarching set of stated beliefs and principles, as well as the unspoken values and assumptions, that guides human relationships to the land. Nevertheless, because land management is not generally approached from this perspective, many people do not consider our present treatment of land as an ethical issue.

In British Columbia, as in industrial societies generally, economic rationality provides the principal mechanisms for decision-making respecting land allocation and use. An immediate problem arises in the context of sustainability because the present economic system values only those attributes of land able to yield monetary profit. In effect, the economic mainstream perceives land as commodity, as inanimate substrate, largely ignoring (or discounting) the non-market life-support functions of associated ecosystems as well as many other difficult-to-quantify and truly intangible values that play important roles in meeting human needs. From this perspective, land is seen as having little value unless "developed", that is, modified by human activity to increase its utility - usually in the form of direct economic returns - to its owner. This individualistic, utilitarian perspective describes the dominant land ethic prevailing in British Columbia today.

[1] We define land to include the physical as well as ecosystems and all forms of associated "natural capital" - forests and other flora, fauna, microbial communities, soils, ground-water and fresh surface waters etc.

As noted, the economic criteria driving much present-day decision-making ignores aspects of land that cannot be accounted for in monetary terms. The fact is, however, that land is more than a lifeless backdrop, a factor of production, or a commodity. Not only do land and associated ecosystems provide the ecological necessities for life, but for many people land and a sense of place serve to meet basic human needs for security, identity, spirituality, and creative fulfillment. The internal logic of our present decision-making models is therefore in direct conflict with important non-market human values associated with land. Since these attributes of land are essential both to human survival and spiritual well-being, we must find ways to change our decision-making processes to reflect the full spectrum of social value.[2]

2.0 THE DOMINANT LAND ETHIC: SUSTAINABILITY THROUGH SUBSTITUTION

The prevailing land ethic is indissolubly linked with the neoclassical doctrine of perfect or near perfect substitutability of human-made capital for natural capital. This concept is at centre stage in the on-going debate over the meaning and implications of sustainable development.

Recall that the Brundtland Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their needs" (WCED 1987:43). in simple material terms, this has been interpreted to mean that each generation has a moral right of access to an equivalent (adequate) stock of productive wealth-producing assets. Indeed, "constant capital stocks" has become widely accepted as a necessary condition for sustainability.

According to prevailing economic rationality (with its explicit confidence in the near-perfect substitutability of manufactured capital for natural resources), Brundtland's definition and the constant capital stocks criterion for sustainability can be satisfied if each generation leaves to the next a stock of manufactured and natural capital, which in the aggregate is equivalent to that which it inherited from the previous generation.[3] in other words, the loss of productive land is of no concern if we are able to replace it with human-made assets of equivalent value.

From this perspective, the irreversible depletion of natural capital is not a fundamental problem. Provided that we "get the prices right," the mechanics of the marketplace are assumed to be sufficient to induce conservation where necessary on the one hand and to stimulate human ingenuity in the search for substitutes on the other. In this framework, land and associated natural capital (e.g. forests, wildlife, arable soils) should, in general, be treated no differently than other market commodities. Thus, economic criteria and monetary analyses would continue to provide most elements of the decision-making framework.

3.0 AN ALTERNATIVE PERSPECTIVE: SUSTAINABILITY THROUGH SYSTEMS INTEGRITY

In recent years accelerating global change has increased concern that certain biophysical resources and processes may not be perfectly substitutable and that development based on the depletion of natural capital may not be sustainable. Indeed, there is growing recognition that the richness and diversity of the global economy, long considered to be the product of the product of human and manufactured capital, is actually secondary production dependent almost entirely on primary production (photosynthesis) elsewhere in the ecosphere.

[2] Note that even this extended set of criteria includes only human values. Some would insist that we must go beyond such anthropocentrism to recognize the intrinsic value of nature and to extend moral standing to other sentient life forms.
[3] This discussion assumes that the original intergenerational transfer was adequate, that there is no population-growth, and that there is no increase in material consumption. If these conditions are violated, capital stocks would have to be increased to satisfy increasing demand.

Some economist's have gone even further and now accept the ecologists' argument that the integrity : of the ecosphere itself is a precondition for sustainability. Ecospheric processes not only provide resources (low entropy) inputs to the economy, l~ut also maintain the general conditions necessary for life.[4] Both these functions are in jeopardy from excessive rates of resource extraction and waste : discharge, the inevitable consequences of expanding material throughput in the global economy.

From this emerging perspective, sustainability requires the preservation of certain critical biophysical entities, processes, and relationships. Although not previously explicitly recognized by the economy, such keystone resources and processes (e.g., rainforests, the ozone layer, photosynthesis) are now seen to have immeasurable positive economic value. They maintain the life support functions of the ecosphere, the risks associated with their depletion are unacceptable, and there may be no possibility for technological substitution. Many forms of essential natural capital are intricately associated with land and terrestrial ecosystems.

This new reality requires a rather more restricted interpretation of the constant capital stock condition for sustainability as follows:

Each generation should inherit a stock of self-producing natural assets alone no less than the stock of such assets inherited by the previous generations[5]

This interpretation reflects basic ecological principles, particularly the multifunctionality of biological resources. It corresponds to Daly's (1989) definition of "strong sustainability" which recognizes that manufactured and natural capital "are really not substitutes but complements in most production functions" (Daly 1989:22).[6] Given the unique role of natural capital and the ominous evidence of accelerating global change, even some fairly conservative economists have noted that "conserving what there is could be a sound risk-averse strategy" (Pearce et al., 1990:7 [emphasis added]).

Perhaps the most important implication of the restricted constant capital stocks criterion is that, for the foreseeable future, humankind must learn to live on the annual production (the "interest") generated by remaining stocks of natural capital (Rees 1990). in this sense, it is related to Hicksian (or "sustainable") income, the level of consumption that can be maintained from one period to the next without reducing real wealth (productive potential). it seems that the possibility for continued civilized existence depends on our becoming better stewards of both private and public land.

3.1 LAND ETHICS, ECOLOGICAL FOOTPRINTS, AND EQUITY

Many authors have acknowledged that "sustainable development" implies a moral or ethical obligation to future generations. Indeed, the "constant capital stocks" criterion explicitly addresses the issue of intergenerational distributive equity. It asks people today to forego income (consumption) in favour of income for people tomorrow.

4 The ecosystem is an highly improbable, far-from-equilibrium, self-producing, dynamic, steady-state system suspended above thermodynamic death mainly by a single biological process, photosynthesis. Thermodynamic laws are ignored by conventional economic logic.
5 Natural capital includes both renewable/replenishable and non-renewable natural resources. Emphasis, however, is on renewable, biophysical assets. The economic depletion of non-renewables can often be compensated by investment in renewable capital stocks (the reverse is not possible)
6 Daly actually doesn't go far enough. Complementarity implies equal importance. However, while natural capital can function and may be economically valuable on its own, manufactured capital (e.g. a sawmill) is useless without natual capital "complement" (the forest).

But what of intragenerational equity and land/natural capital? There are less than 9 billion ha of ecologically productive land on Earth or about 1.6 ha per capita for a human population of 5.6 billion. Yet conservative estimates suggest that the inhabitants of industrial countries require about 5 ha of land per capita in continuous production to support their present levels of consumption and waste production.[7] The actual "ecological footprints" of industrial regions are therefore typically orders of magnitude larger than their geographic or political boundaries.

These data suggest, first, that much of the land/natural capital used by developed countries is, in effect, being "imported" from elsewhere and is therefore unavailable to local inhabitants; and, second, that there isn't enough land on Earth for everyone to enjoy First World levels of consumption.[8] Indeed, to support the present world population at Canadians' ecological standard of living would require 27 billion ha of productive land, or the equivalent of the present plus two additional planet Earths. The moral question, then, is whether citizens of wealthy industrial countries (who have effectively appropriated most of the Earth's carrying capacity) are willing to sacrifice some of their present exalted living standards so that others may live at all?

3.2 APPROPRIATING CARRYING CAPACITY: LAND PLANNING IMPLICATIONS

Appropriating distant carrying capacity is equivalent to importing sustainability. However, this raises serious questions concerning the security of the land and natural capital upon which the importing population is dependent. Many of the following questions bear directly on prevailing land use decision criteria. The symposium's focus on "Revisiting the Land Ethic" provides an opportunity to explore answers to these questions:

- What are the necessary ecological conditions for urban/regional sustainability? Are these conditions under active management and control or simply assumed to be available in perpetuity from elsewhere? How would the answers to these questions affect land use planning and allocation?

- Given the apparent deterioration of the global environment, can we reasonably talk about sustainable urban development anywhere without considering the implications of urban regions everywhere simultaneously becoming reliant on the ecological productivity of land "elsewhere"?

- How should the wealthy citizens of the industrial world respond to the ethical moral implications that they have appropriated essentially all of the earth's productive and waste absorption capacity, leaving little ecological space for the remaining world's population?

- How can we correct for excessive abstraction, problems with discounting, and market failure, in the economic valuation of land and ecosystems? How can the market system incorporate insurance against global change? What are the practical implications of increasing ecological insecurity for local land use decision making?

- How should considerations of carrying capacity and natural capital effect urban form and spatial scale? (e g., in the treatment of arable land, transportation modes densification paterns, city size, etc.)

[7] These data assume that the relevant land is being managed sustainable, which it is not.
[8] Global ecological trends (atmospheric change, ozone depletion, soils :erosion, deforestation, fisheries collapse, etc.,) suggest that aggregate consumption already exceeds sustainable rates of production .

- Should dependent urban regions formalize their relationships with export regions to ensure adequate maintenance of essential natural capital stocks thereby enhancing their ecological security, or…

- Should urban regions (provinces? nations?) develop policies explicitly to support and sustain local/ regional agriculture, forestry, fisheries, etc., in order a) to reduce potentially unstable inter-regional dependencies and; b) create a hedge against global ecological change and declining productivity elsewhere?

- What is the appropriate level of government to deal with these matters? Should we move toward regional systems of governance incorporating more life-support landscapes (natural capital)? Does the bioregional model offer useful guidance?

- What policies should we adopt to reduce our ecological footprints?

It should also be noted that for many people interested in revisiting the land ethic, even the foregoing analysis remains relentlessly utilitarian and anthropocentric. To these people, the most important ethical question is the extent to which moral standing should be extended to other living entities. Obviously, any recognition that other species have inherent values and rights that should be recognized in law would have potentially dramatic implications for traditional patterns of land and resource use than the enlightened self-interest advocated in this paper.

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Background Paper
The Voluntary Conservation of Nature
on Private Land

Stewardship '94

March 3-5, 1994
Vancouver, BC

The Real Estate Foundation believes that conservation of natural and settlement heritage stands out among the many potential uses of land assets. Often these assets occur on privately owned lands. Educational events such as STEWARDSHIP '94 are very important to encourage landowners to preserve such values. The technical and resource references available from the Symposium will be of great value to owners actively pursuing conservation objectives.

Tim Pringle
Executive Director

The STEWARDSHIP '94 partners (listed on the back page) greatly appreciate the Real Estate Foundation of British Columbia's contribution towards the production and distribution of the Symposium's two loackground papers, "Revisiting The Land Ethic", and "Voluntary Conservation of Nature on Private Land". These papers have been provided to stimulate discussion and recommendations for a sustainable land ethic and future stewardship activities in British Columbia.

For further information, or to order additional copies (at $10.00 each), please contact the Symposium sponsors or:

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STEWARDSHIP '94
Revisiting the Land Ethic, Caring for the Land

The Voluntary Conservation of Nature on Private Land

March 3-5
Vancouver BC

Over the three days of STEWARDSHIP '94 - in workshops, field trips and during informal breaks - Participants will have an important opportunity to discuss the ideas and suggestions contained in the background papers:

Revisiting the Land Ethic**,** and
Voluntary Conservation of Nature on Private Land

This background paper, Voluntary Conservation of Nature on Private Land, was commissioned to provide a catalyst for discussion about land stewardship in BC, including possible future programs

The importance of private land to the wildlife species that live in this part of the world is paramount. As valley bottoms are settled and developed, large mammals are losing important wintering and feeding grounds. Indigenous plant species are being overtaken by imported species. Songbirds are losing much of their traditional territory. Reptiles are losing their homes too. Habitat - the key to the very survival of our ecosystems - is at risk in many regions in BC.

STEWARDSHIP '94 provides a forum to look at what landowners need in order to embrace a stewardship ethic, and at what conservation managers and planners need in order to encourage and guide landowners towards voluntary action.

This paper identifies many excellent programs and projects in British Columbia. Partnerships have been key to the success of current stewardship programs. Community groups, Wildlife Habitat Canada, Ducks Unlimited Canada, and the Ministry of Environment, Lands and Parks have individually, and in cooperative programs such as the Pacific Estuary Conservation Program and the Pacific Coast Joint Venture, led the way in securing habitat and getting people on the ground, working with landowners.

As well as recognizing the good work of BC's conservation organizations, an important goal of STEWARDSHIP '94 is to bring questions about voluntary stewardship activities and programs to our attention, and in doing so, provide ideas, suggestions, recommendations and energy for meeting the challenges ahead.

As you read this paper, please think about what you need in order to enhance your voluntary nature conservation and stewardship activities!

THE STEWARDSHIP IMPERATIVE: A WELL PLACED PRIORITY

Over the past two decades, Canadians have become increasingly concerned about the environment and their impact upon it. That concern has been expressed in many ways, not the least of which is an increasing appreciation for land and nature. Conserving this biological heritage and the biodiversity it represents has become a high priority supported by changing social values and fueled by several international agreements and emerging government policies.

The International Conservation Union (IUCN) on Biodiversity

At the Ivth Congress on National Parks and Protected Areas, the IUCN stated that "Stewardship of public and private lands shall not be compromised . . . Policies should be examined to provide positive incentives." The IUCN also emphasized that "the concept of stewardship provide positive incentives." The IUCN also emphasized that "the concept of stewardship should be integrated into government planning at all levels and governments should encourage the strengthening of non-governmental organizations to carry out stewardship programs."

The Global Biodiversity Strategy:

Recommendations:

- increase incentives for local stewardship of public lands and waters;
- provide incentives for establishing private protected areas; and
- enhance the ecological and social value of protected areas by purchasing adjacent lands and by providing financial incentives to conserve values on neighbouring private lands.

Protected areas on public land are not enough.

British Columbia possesses a world class biological heritage. More recently, that heritage has come under increasing pressure as land users compete for diminishing opportunities on the land base. Protecting habitat is key to maintaining biological diversity . Traditionally, in British Columbia, Crown Land, in the form of National, Provincial and Regional parks, Ecological Reserves, Recreation Areas and Wildlife Management Areas, have provided this protection. However, it has become increasingly clear that the strategies for preserving biodiversity must extend beyond public lands if they are to succeed.

- Over the long term, it is unlikely that more than 15% of British Colurnbia will achieve protected area status. The remaining 85%, which also has important biodiversity values, is vulnerable to impacts resulting from settlement, development and resource extraction. The 6% of BC land which is privately owned is located primarily in highly productive, valley-bottom habitat.
- Protected areas will only be effective if the surrounding land uses support their conservation goals. For instance, resource extraction policies for surrounding lands must include management strategies to protect fish, wildlife and plant values. Such strategies can reduce the impacts of intensive land use on neighbouring reserves, and provide additional habitat and travel corridors for animals, particularly those needing large areas.
- Government budget constraints and the pressures of growth limit the amount of private land that can be acquired for parks. Similarly, budgets for managing Crown lands are also being stretched to the limit.
- Although many land parcels will never be designated as protected areas because they have been highly modified, are being used for other purposes, or are too small, they nevertheless may provide critical habitat
- Some areas would be more appropriately managed by private or non-governmental interests
- Individuals and communities are enriched by taking a larger role in caring for land and nature. Land use planning processes currently underway in BC do not address conservation needs outside

of public lands While the Protected Areas Strategy (PAS), for instance, identifies habitats needing protection, it does not identify conservation strategies for private lands . The Commission on Resources and Environment (CORE) acknowledges that the policies both for conserving sensitive areas and for regulating forest practices on private lands are outside its mandate.

CORE Recommendations on Biodiversity

In *Finding Common Ground: a Shared Vision for Land Use in B.C.* (Jan. 1994), CORE proposes a Land Use Charter which describes basic principles for sustainable land use and a set of Land Use Goals. The Charter would commit the Province to:

- protect the environment for human uses and enjoyment and respect the intrinsic values of nature;
- conserve biological diversity in genes, species and ecosystems; and
- respect the integrity of natural systems . . .

CORE also defines the following Land Use Goal

- To ensure that environmentally sensitive areas are identified in all land use plans, and are managed in a manner which respects their sensitivity and maintains their inherent values.

Stewardship of privately-owned land complements international, national, provincial and regional conservation initiatives

Stewardship is part of a tool kit of complementary land use options, which include:

- protected areas;
- guidelines, codes, rules, etc. on multiple use areas;
- acquisition and management of key areas by conservation agencies; and
- voluntary private land stewardship.

Conserving habitat on private lands for biodiversity will therefore depend on the landowner's direct, voluntary involvement in maintaining and caring for habitat, that is, upon a sense of stewardship. The land may meet human needs, but must first consider non-human needs and the relationship between human needs and the land's carrying capacity. Stewardship programs, whether they be offered by government or non-governmental organizations, provide the landowner with the tools and support to protect the ecosystem. While such programs offer many incentives, the success of voluntary stewardship upon private lands rests on the landowner's respect for the health of the land and concern for nature, rather than on financial or legal considerations.

FOSTERING STEWARDSHIP: INCENTIVES FOR COMMUNITIES AND LANDOWNERS

"*More elements of natural diversity are destroyed through ignorance than through malice." Phillip M. Hoose*

Many landowners are motivated to become stewards by a deep sense of pride in their land. Others, however, need more encouragement. Accessible stewardship programs and resources can benefit in either case.

The most important aspect of voluntary private land stewardship is that the individual land owner must considered and respected in any attempt to protect natural areas in the long term. As well,

stewardship programs should offer landowners options and involve them in planning stage of the program.

Information and education on the needs of the land and on stewardship options

Landowners' stewardship goals vary. Some maintain or enhance habitat simply for the pleasure of attracting wildlife or improving the aesthetics of natural features. Others wish to control soil erosion, or to propagate particular plant species.

To attain these goals, landowners and users must be aware of habitat needs and values, and therefore must have access to the necessary information. Unfortunately, neither information nor technical. assistance are easy to obtain. Sources include the local BC Ministry of Environment, Lands and Parks, libraries, colleges, municipal planning offices, naturalist clubs, land trust organizations or the Conservation Data Centre (a joint BC Environment/The Nature Trust of British Columbia/Nature Conservancy of Canada project). Local landscaping companies specializing in indigenous species may be able to advise on planting gardens for local wildlife. Other sources of information could include, given the development of new programs and future funding:

- a community or regional resource centre for stewardship information,
- - a 1-800 information number,
- - community-based experts providing advice for a fee-for-service,
- - a regional landowner contact program in which conservation agencies reach out to owners of land having particular habitat values.

Manotick, Ontario's LandOwner Resource Centre reaches out:

"Need help managing your land? Why not get all the technical advise and financial assistance available.
One call does it all! . . . The new LandOwner Resource Centre is a one-stop information shop on all current forestry, agriculture, shoreline, wetland, water quality, wildlife, and land stewardship programs . . . A free service to landowners in the Rideau Valley and all of the Regional Municipality of Ottawa-Carleton."
A group of government and non-government agricultural and conservation agencies cooperate in providing this "one window approach" to assisting landowners in the management of their properties.

The more informed a community is about its regional ecosystem, the more likely community members are to support private stewardship initiatives. Schools, museums and nature centres have much to offer, and "hands-on" projects such as those funded by Environment Canada's Environmental Partners Fund and Citizenship Initiatives, and by the Habitat Conservation Fund, encourage community members to get involved.

Recognizing good stewards

Landowners who set aside or manage their land for conservation purposes must be recognized and rewarded.

Rewards can range from such tangible symbols as certificates, clothing with emblems, and signs or plaques to media attention which can bring to the landowner community esteem. In Ontario a landowner who enters into a stewardship agreement with the Natural Heritage League is presented with a plaque signed by both the Ontario Premiers and the Chair of the Ontario Heritage Foundation. In BC, the Ministry of Environment, Lands and Parks presents the Minister's Environmental Awards to individuals or organizations who have distinguished themselves by their efforts for the environment. Should this award program be expanded to apply to stewardship activities, or should there be an award that is dedicated solely to stewardship?

Wildlife Tomorrow:

In Saskatchewan, Lidio Vidotto was able to both save wildlife habitat and honour his parents at the same time. Though the Wildlife Tomorrow stewardship program, he agreed to preserve the family's abandoned pioneer homestead for wildlife. Wildlife Tomorrow erected a sign on the property naming pioneers Liberal and Attilia Vidotto and recognizing the voluntary contribution to wildlife. Similiar signs appear on private lands all across Saskatechewan.

Encouraging landowners to increase their stewardship efforts

Education, media support, and stewardship campaigns can reach landowners are not aware of the benefits of stewardship. Grass-roots awareness can persuade landowners to become stewards with-out eroding the rights of private property owners.

Within the community, conservation and environmental clubs and "boosters" such as service clubs, chambers of commerce and community leaders are potentially effective sources of support and endorsement for private land stewardship.

Financial. assistance

While this paper focuses on the voluntary rather than the economic benefits of stewardship, incentives such as property tax credits and exemptions, or payments to landowners for managing or leasing land parcels can stimulate greater involvement.

Stewardship can incur costs, and payment is particularly appropriate where land uses which normally would produce income are restricted by conservation goals. Community fundraising projects can raise money and increase awareness simultaneously. Tax benefits for private land stewards are discussed later in this paper.

Cultivating a spirit of community stewardship

Not all landowners possess large tracts of property. For most people, their own backyards can be the focus for stewardship. In Washington State, a Backyard Sanctuary program recognizes landowners and encourages them to plant native species, improve wildlife habitat, construct nest boxes, control cats, and to enthusiastically spread the principles of stewardship to friends and neighbours. Would such a program be helpful in BC?

Rewards for a backyard steward:

"By providing food, water and shelter even my small garden can provide for 20 or more bird species over the winter. The pleasure I get from watching and listening to birds feeding, drinking, bathing and preening in this safe haven I have created for them cannot be measured." Daphne Solecki, Federation of Bc Naturalists, Vancouver

Beyond education and involvement lies a community belief system that values land regardless of tenure. Such an ethic can build momentum for stewardship work. Public celebrations of nature can support the evolution of a stewardship spirit.

The Brant Festival:
The Parksville-Quallicum Beach area is an important stopping place for migrating Brant geese. To make the local communities aware of the Brant's habitat requirements , the Canadian Wildlife Service, community members and local businesses launched the first Brant Festival in 1991. The Mid Island Wildlife Watch Society now produces the Festival, with proceeds going to a Wildlife Watch Society now produces the Festival, with proceeds going to a Wildlife Legacy Fund used to preserve, enhance or manage important wildlife habitat.

Community Stewardship projects

Stewardship is based on partnerships. BC has a tremendous history of community-based stewardship of fish habitat which has been encouraged by the Department of Fisheries and Oceans' Salmonid Enhancement Program and the Ministry of Environment, Lands and Parks and implemented by many enthusiastic and dedicated volunteers. Stream and hatchery projects have expanded to include owners whose land borders the waterways. DFO has recently begun the Stream Keepers program to provide the public with information and ideas for potential community or individual projects, while BC Environment and partners have launched a complementary Stream Stewardship Educational Program.

Federation of BC naturalists' Land For Nature Project:

The Land for Nature Project was created in response to concerns expressed by naturalists about the degradation of environmentally sensitive areas. The Naturalists believe that by identifying and promoting awareness of ecologically significant sites, they can influence land use processes in a positive and cooperative manner. The Project assist local Naturalists Clubs in identifying habitat for preservation and in obtaining funding. To date, Okanagan, Lower Mainland, Vancouver Island and Kamloops clubs have participated.

The Ontario Wetland Habitat Agreement Program:

With help from Ontario's Wetland Habitat Agreement Program, Carol and Lyle Embury were able to protect the wetlands on their farm. Together with 37 neighbours, they protect over 720 hectares of the Emily Creek wetland.

The Cowichan/Chemainus Stewardship Pilot Project:

The Cowichan/Chemainus Stewardship Pilot Project (CCSP) was developed and is managed by the Pacific Estuary Conservation Program (PECP) under Contribution Agreement between Environment Canada and Wildlife Habitat Canada. The PECP is a co-operative program of seven government and non-governmetn organizations, including the Canadian Wildlife Service, department of Fisheries and Oceans, BC environment, BC lands, Ducks Unlimited Canada, Wildlife Habitat Canada, and the Nature Trust of British Columbia.

The Project goals are two-fold: to determine the feasibility and landowner acceptance of the conservation stewardship concept; and to sustain or enhance natural areas occurring on privately-owner lands by proving information on the natural significance of the landowners's property and offering assistance for the long term conservation of its natural amenities. Although the project is not yet complete, it appears that seven in ten landowners of the Cowichan/Chemainus lowlands are prepared to take the Stewardship Pledge. Given this level of interest, it appears likely that a community group will continue the project beyond its current deadline of May 31, 1994.

Community action for sustainable development:

The Willapa Alliance in Washington State is composed of local citizen's group and two environmental organizations, The Nature Conservancy and Ecotrust. The Alliance has raised $ 1 million dedicated to protecting Willapa Bay while creating jobs and a strong economy. The people and timber companies. Environmentally sustainable business ventures and a salmon recovery plan are among the initiatives underway.

Community Land Trusts

"Land Trust" is a term used primarily in the US to describe a non-government organization which manages land for conservation purposes according to a title held by the organization. Variations on this theme, such as Community Land Trusts and Land Stewardship Trusts, empower the people who live on the land to take responsibility for its ecological well-being while using it to benefit the community and its members.

A Community Land Trust:

Linnae Farm on Cortez Island is on land leased from the Turtle Island Earth Stewards, a land trust organization active on the west coast of the Us and Canada. The Linnae farm community manages the land within ecological centre, a place to practice permaculture, a working farm, protected areas for wildlife, and a hostel

FIRST NATIONS: THE ORIGINAL STEWARDS

The attitude of First Nations peoples to the land have traditionally been based on their spiritual beliefs and for the most part are ecologically sound. Their current land claims are motivated at least partly by their desire to resume stewardship of their lands.

While the purposeful, private, land-based stewardship programs discussed in this paper are uncommon on reserve lands, they are not non-existent. The Okanagan Similkameen Environmental Protection Society's program (described below) is one example. Further, many Indian bands throughout BC are involved in extensive fish or stream habitat conservation or rehabilitation projects.

First Nations of the Okanagan Similkameen Environmental Protection Society

The Okanagan Similkameen Environmental Protection Society is made up of four South Okanagan and Similkameen Valley Indian bands: the Osoyoos or Inkameet, the Penticton, and the Upper and Lower Similkameen. In 1990, the Society began a stewardship program when they realized that some excellent habitat existed on their reserves. The bands were also concerned about land use decision on the reserve and the lack of a habitat inventory. Funded by the Native Affairs Branch of BC Environment, the Canada Employment and Immigration and the Nature Trust of British Columbia, the Society hired a biologist to train one member from each band to classify habitat and carry out species inventories. The trainees are also enrolled in the Resource Management Program at the Nicola Valley Institute of Technology. The hope is that the participants will be eventually be employed by the bands in land use management. The trainees have completed initial biophysical inventories and habitat mapping, and drafted management plans. Additional funding is needed to implement the plans.

CORPORATE STEWARDSHIP: LIVING ON AND OFF THE LAND

Stewardship of agricultural lands

Farmers' economic interests may appear at odds with farmland's non-monetary value to fish and wildlife, especially as farmers are being assaulted by urban sprawl and changing trade rules. Yet private land stewardship programs in Canada began in the dust bowls in the 1930's, when the Prairie Farm Rehabilitation Administration of Agriculture Canada and Ducks Unlimited Canada endeavoured to replace lost soils and wetlands, thus benefiting both farms and ecosystems. Since then, both agencies have continued to contribute significantly to conservation.

Stewardship programs have continued to focus on both agricultural and wildlife needs by assisting landowners in acquiring seed for forage cover, renting or borrowing specialized equipment, obtaining and maintaining water control works, installing predator fencing, and the like.

Comox Valley Waterfowl Management Project:

under the auspices of the Pacific Coast Joint Venture, the Comox Valley Waterfowl Management Project was organized in 1991. The project's goals are to address local farming community concerns regarding crop damange by waterfowl, to promote farm management practices that help to maintain soil quality, and to provide seasonal habitat for wildlife, such as wintering habitat for trumpeter swans.

The Greenfield Project:

The Greenfield Project began in 1990 to develop a strategy that would allow farmland and wildlife in Delta, BC to coexist. The program is a cooperative venture between farmers and wildlife agencies to address issues related to crop damage, land productivity and habitat conservation. The project is currently funded by Environment Canada and administered by Ducks Unlimited Canada. The Primary component of the project is a cost sharing program that encourages the establishment of winter cover crops, an important soil conservation practice that also provides habitat for wildfowl.

Operation Burrowing Owl:

To improve survival of Saskatchewan's threatened burrowing owls, Operation Burrowing Owl posted signs in the yards of landowners who were committed to protecting the owl's habitat. Now 499 landowners participate, providing 16,000 hectares of habitat for 647 pairs of owls

P.E.I. Wetland Stewardship Program:

In Prince Edward Island, Steven Reaman's dairy herd no longer tramples streambeds, thanks to P.E.I. Wetland Stewardship Program. Reaman's and many other landowners now water their herds outside of streams and wetlands, By fencing livestock out of streams and wetlands, the area is enhanced for waterfowl and wildlife downstream.

Manitoba's Habitat Enhancement Land Use Program (HELP):

HELP worked with farmers Garry and Lorne Dunits of Shoal Lake, supplying information and fencing to help them create a pasture management system for rotational grazing. Healthier pasture, fatter cattle, and 13 waterfowl nests now exists where none were before. The $3 million, 8 year program helps farmers maintain and develop wildlife habitat, whether that means leasing land or providing seed for forage crops.

Stewardship of forested lands

Forest fragmentation, soil erosion, loss of old-growth forests and forest wetlands, and conserving biodiversity are among the most crucial forest management issues in BC today. Forest stewardship, or sustainable forestry, on both public and private lands is far too broad a topic to be dealt with adequately here. These notes reflect only a sample of activities taking place.

The proposed BC Forest Practices Code's first objective is "To set standards for enhanced stewardship for the province's forests." Private lands, however, are not emphasized. While many of the Code's objectives can apply to private forest land, in many other North American jurisdictions, forest practices are explicitly directed to apply to private lands. BC's coastal and Interior Fish Forestry Guidelines have provided a strong basis for the development of the proposed Forest Practices Code.

The Forest Alliance of BC, an industry-oriented non-government organization, has drawn up "Principles of Sustainable Forestry." Signed by the CEO's of all of BC's major forest companies the principles include the protection of fish and wildlife habitat and biological diversity.

Two notable stewardship incentives exist for the individual woodland owner apart from the satisfaction which comes from managing a woodlot for conservation purposes, aesthetic reasons or for the long term benefit of future generations.

The first incentive is a property tax assessment based on "managed" forest use, which carries a lower rate than "unmanaged" use or residential use. To receive a "managed" forest designation, the owner must show the assessor a forest management plan. This plan enables the owners to maintain biological diversity by using low impact management techniques and be rewarded with lower property taxes.

The second stewardship incentive is provided by the federal-provincial Forest Resource Development Agreement's small-scale forestry program, although conservation oriented activities are not specified. Under this program, a landowner may receive up to 90% of costs for management activities such as planting, thinning and pruning.

Education on ways of managing land for biodiversity values is critical to the ability of the forest company, woodlot owner or the farmer to voluntarily practice stewardship on their land and its resources.

Prince Edward Island Stewardship Program:

Under the Prince Edward Island Stewardship Program, Mike and Cathy Edwards permanently protected a 100-metre strip of rare old growth hemlock forest along the Pinette River. The family placed a restrictive covenant on the land deed, specifying that the forest would be protected even if the land is sold.

The Alberta Landowner Habitat Program:

To tackle the problem of severely depleted wildlife habitat, The Alberta Landowner Habitat Program offered annual lease payments to landowners who would assist. For 20% less than the going rate, landowners agreed to dedicate 132 acres of aspen parkland to the program, so that the shrubs and understory necessary to wildlife such as the white-tailed deer could grow back.

Stewardship of lands owned by corporations

One fifth of forested land on Vancouver island is privately owned, mostly by large corporations. While a forest land reserve designation similar to the Agricultural Land Reserve has been proposed, another possibility is that corporate owners will voluntarily adopt a stewardship approach to protect biological diversity.

BC Hydro, although not a private corporation, has set an example by managing some of its corridors to ensure that fisheries and wildlife habitat needs such as spawning grounds, winter range and wildlife movement are maintained. In the US, the Wildlife Habitat Enhancement Council helps corporate workers to develop management plans for land they are involved with by supplying ecological and planning advice. Such stewardship activities boost worker morale and instill a sense of pride.

The Eastern Habitat Joint Venture:

In 1991, Nova Scotia initiated a stewardship strategy aimed at conserving wetland habitats on corporate lands through the Eastern Habitat Joint Venture. In 1993, the province and Scott Maritimes Ltd. signed an agreement to protect and manage wetlands on approximately one million acres of forest land owned by Scott and another 200,000 acres of Crown lease. The Scott agreement is the third largest agreement of this type for Nova Scotia

MANAGING FOR STEWARDSHIP: INSTITUTIONAL AND ORGANIZATIONAL CATALYSTS
The role of local an regional governments

Demand is increasing for ecologically sensitive planning at the municipal level, and municipalities are responding with policies on Greenways, Natural Features Inventories, and Environmentally Significant Areas projects.

Greenways are protected strips of habitat along waterways and transportation routes which are connected to other of land parcels containing habitat. The Provincial Capital Commission is recently considering implementing Greenways policies. Vancouver's Urban Landscape Task Force recommended that a Greenway Trust be established to coordinate development of a Greenway system which would include habitat within private land. The Greater Vancouver Regional District's Green Zone aims to place a boundary on urban growth and protect important "green" lands. GVRD would also coordinate stewardship activities to protect these lands.

Also in the Lower Mainland, several municipalities have undertaken studies of their rural lands, open space, or environmentally sensitive areas. In the interior, the Greater Vernon Park and Recreation District, the City of Kelowna and the Central Okanagan Regional District have begun Natural Features Inventories. Similar initiatives have been taken elsewhere in the Province.

The Commission on Resources and Environment has suggested that municipalities need to be empowered to protect sensitive areas, while others have called for better bylaws to protect habitat . Municipal land use planning and zoning under the Municipal Act dictate the activities allowed in urban areas. Although development permits are needed where Official Community Plans designate areas for "protection of the natural environment", municipalities cannot prohibit development in such areas. Local Councils have encountered opposition from landowners who felt their property rights were affected when lands were designated as environmentally significant. Clearly, planners need grass-roots support to ensure that municipalities consider ecological values and receive the landowners' buy-in.

Management of Environmentally Significant Areas in Surrey:

Surrey has completed an Environmentally Significant Area Study which identifies 147 sites. The map and data are being used to integrate environmental impact assessment into the development permit review process.

Municipalities may also protect greenspace by requiring developers to set aside open spaces as a portion (up to 5%) of the developed site, or to contribute funds for acquiring park land elsewhere. Increasingly, developers are recognizing that future residents of their homes place a high value on balancing nature with the built environment. When urban densities are increasing to protect outlying agricultural areas, maintaining greenery and park space is essential.

At the municipal level, technical capabilities are as important as legal capabilities. As urbanization increases, training municipal staff and developers to consider ecological principles would help ensure that habitat needs are addressed.

Some non - statutory tools for stewardship

Private land owners often need to be assured that stewardship does not reduce their control over their land. Voluntary arrangements permit a decentralized, cooperative and flexible approach that takes into account local circumstances, site-related factors and the landowner's needs and wishes. When the title for habitat lands remains with the landowner, when development permit zoning is absent and when licences, leases, easements and covenants do not apply, the remaining stewardship tools are truly voluntary. These tools, in order of increasing habitat protection include land owner awareness, handshake agreements, written agreements and management agreements.

Success in applying these tools depends on resource managers developing a trusting, respectful relationship with landowners. Managers need to be pro-active, encouraging cooperation, integrating habitat management with other resource planning, and using all the stewardship tools available. Government agencies must support such efforts by providing program funding and staff. Partnerships between agencies and community involvement also significantly expand the potential for stewardship.

Resource managers who are responsible for promoting stewardship need detailed habitat information. Presently, both managers and landowners find it equally difficult to obtain such information, although community-based ecological research projects have attempted to alleviate this problem. From bird counts to green space vision projects, these initiatives identify ecosystem components, map critical habitat and consolidate habitat information.

The South Okanagan Conservation Strategy (SOCS):
SOCS provides a model for a scientifically based analysis of habitat requirements for priority stewardship projects. SOCS has prepared for management plans containing significant landowner contact components by mapping biophysical features and preparing species status reports. SOCS is a partnership between BC Environment, The Nature Trust of British Columbia, BC universities, the Canadian Wildlife Service, local Indian bands, the Royal BC Museum and the Regional District of Okanagan/Similkameen.

Contacting landowners has been a cornerstone of rural stewardship programs for some time. Informing landowners about their land's natural value can improve their attitudes toward conservation even if no formal land protection agreement is reached. Often a handshake is enough to confirm a stewardship commitment.

Management Agreements

A management agreement, sometimes called a stewardship agreement, is a contract between the landowner and a second party who will assist in managing the land. Management agreements provide expertise and advice to strongly committed landowners, enabling them to actively protect, mange and enhance their land for fish and wildlife. This arrangement is particularly effective for protecting vulnerable sites containing rare species or nest sites.

Ducks Unlimited Canada's Conservation Agreement:
This is a 21 year contract with the landowner in locations that have been identified by Ducks Unlimited as having important natural wildlife habitat, especially for migratory birds. DU acts as the agent for the landowner in securing a water license and in implementing measures to preserve the area for habitat. For example, at Echo Valley Farm on Vancouver Island, DU and the landowner have joined forces to provide overwintering habitat for Trumpeter Swans and other waterfowl which use the property. DU controls the property's water levels to make sure that there are wet areas available when needed by the Trumpeter Swans.

Stewardship programs in BC

Among those cooperating in stewardship programs in BC are the Ministry of Environment, Lands and Parks, Habitat Conservation Fund, Environment Canada (the Environmental Citizenship Initiative) the Canadian Wildlife Service ,Wildlife Habitat Canada, Ducks Unlimited Canada, The Nature Trust of British Columbia, the Islands Trust and community groups. BC stewardship schemes are often complemented by wide-ranging international (the North American Waterfowl Management Plan), National (the Green Plan), and provincial (the Pacific Estuary Conservation Program) programs.

The Interior Wetlands Program
The Interior Wetlands Program focuses on demonstration projects and extension/education activities involving landowners (mainly ranchers) and land managers in BC's Interior. The program promotes land-use practices which enhance watershed hydrology, wetland and adjacent upland habitats. The Canadian Wildlife Service and Ducks Unlimited Canada deliver the program in cooperation with BC Environment, Ministry of Forests, and the BC Ministry of Agriculture, Food and Fisheries.

The Islands Trust Fund:
The Islands Trust Fund assist the Islands Trust, the regional government for most of BC's Gulf Islands, in carrying out its conservation-oriented mandate. The goals of the Islands Trust Fund Board include raising the awareness of owners of property in the Trust Area of the significance of areas and features located on their property, and encouraging and providing incentives to landowners to practice good stewardship in the management of significant areas and special features of the Trust Area.

THE LEGAL FOUNDATION: STATUTORY TOOLS FOR VOLUNTARY STEWARDSHIP

The traditions surrounding private land ownership assume that owners are entitled to do what they want with their land and to pass it on to another owner unencumbered by use restrictions. Landowners who wish to be stewards may choose to forego some of these privileges to ensure their land is legally protected over the long term.

Current provisions for Conservation covenants and Easements

Conservation easements and covenants both involve a landowner accepting restrictions and/or obligations on the management of their land. Under these arrangements the landowner makes a promise, which is attached to the title to the land, to the holder of the easement or covenant. The provisions of a particular easement or covenant will vary depending on the natural features of the land and the conservation objectives. The holder of a covenant has responsibility for monitoring and enforcing it over time. At present, non-government organizations can only hold conservation organizations under a limited set of legal provisions.

A comprehensive reference source on legal tools for conservation is Here Today, Here Tomorrow: A Catalogue of Legal Tools for the Protection of Private Land in British Columbia, by Barbara Findlay and Ann Hillyer, published by the West Coast Environmental Law Research Foundation.

Stewardship arrangements in which the landowner gives the rights to monitor and protect the land to someone else with no transfer of title:		
Common law covenants Common law easements Heritage Conservation Covenants (Heritage Conservation Act) Section 215 Covenants (Land Title Act)	Long Term leases Profits a prendre	Statutory building schemes Statutory right of way

Information For Conservation:
The West Coast Environmental Law Research Foundation has developed a computer-disk library of legal resources dealing with protection of private land in British Columbia. This is a useful and accessible information base on methods for protecting private land. The library includes a catalogue of legal tools including a bibliography, relevant statutes, a resource list, tax information and more. (For information contact WCELF at 604-684-7378.)

The need for better arrangements

The laws in BC allowing non-governmental organizations to hold conservation covenants on their own need to be reformed. This would increase flexibility, maximize the landowners' freedom to preserve their land as they choose, reduce government's management and enforcement burden, broaden the applications of covenants, and provide landowners who do not wish to enter into agreements with government with an alternative.

An example of how the new Conservation Covenant could apply:

A landowner could grant a covenant to a conservation organization to protect important wildlife habitat on the landowner's property. The conservation covenant would describe the area to be protected and the measures necessary to maintain the habitat. The landowner would be permitted to use the property in ways that did not jeopardize habitat protection. The conservation covenant might cover all, or just a protion, of the landowner's property.

Bill 70:

The Ministry of Environment, Lands and Parks has proposed changes to the Land Title Act and via Bill 70, the Heritage Conservation Statutes Admendment Act, 1993. These changes would allow the Minister to delegate authority to approved non-government conservation groups to enter into environmental dovenants.

Tax incentives for Stewardship

The Canadian Income Tax Act may penalize private land stewards who claim a capital gains tax after donating or selling a covenant or easement. Under the proposed new covenant arrangement, land which loses market value due to the covenant may qualify as a charitable gift for income tax purposes. In that situation, the capital gains tax would not be charged.

In BC, covenants and easements reduce the assessed value of land, and therefore the property tax on it, if the impact of the restriction on the use of the land reduces its market value. For example, a farmer may donate a conservation covenant which prohibits the use of the land for anything other than agricultural purposes. If that land is on the border of a growing urban centre, its value will be reduced. However, in many cases conservation measures will raise the monetary value of the land as its aesthetics and recreational attraction increase. Amendments to provincial taxation laws are required to ensure that private land stewards do get a tax break for their efforts. The government could ensure lower assessments, or implement a system of property tax rebates to encourage the use of conservation covenants.

Ontario's Conservation Land Tax Reduction Program:

The Ontario Ministry of Natural Resources began implementation of the Conservation Land Tax Reduction Program in 1987, after the passage of the Conservation Land Act., The program recognizes, encourages and supports the long-term private stewardship of specific types of conservation land by offering up to a 100% property tax rebate to landowners who agree to protect their property's natural heritage values. The land must contribute to provincial conservation and heritage objectives. The landowner may be required to pay back the grant with interest if the property's use changes. Three provincial ministries administer the program.

THE STEWARDSHIP COMMITMENT

This discussion paper is intended to provide food for thought as we enter into three days of intense discussion and deliberation at Stewardship '94. What are some of the priorities for voluntary, private land stewardship suggested by this brief overview?

- If biodiversity is to be maintained in BC, a protected areas system must be supplemented by habitat conservation strategies on private lands.
- Laws and regulations are limited in their ability to oblige landowners to protect habitat. Existing regulatory approaches must provide information and incentives for landowners to voluntarily take action.
- Stewardship initiatives will only be successful if the needs and wishes of landowners are respected and if mutually supportive relationships between the landowner, the community and the stewardship program administrators are created.
- Non-governmental organizations and local groups sponsor or manage many stewardship projects and will continue to play a significant role in conserving habitat in BC. However, such groups rely primarily on volunteer efforts and need continuing support from funding agencies.
- In these times when both government and non-government organizations are faced with limited funds, creative partnerships are crucial to successfully acquiring the fiscal resources needed to support private land stewardship. Government decision-makers who contribute resources to stewardship programs need to recognize that the volunteer time contributed by both non-governmental partners and landowners represent "value added" to their investment. Such programs also yield long term benefits such as reduced ecosystem rehabilitation costs and increased biodiversity.
- BC's stewardship tool kit needs to be strengthened through both statuatory and non-statutory mechanisms such as:
  - surveys and contacts with landowners to determine their views regarding the most important and practical stewardship options;
  - contact programs and printed resource material for stewardship proponents working with landowners;
  - training and educational programs for planners, land managers, developers and landowners;
  - ways of recognizing people who contribute their time and energy;
  - easily accessed resource centres which provide ecosystem data, land management advice, and program information.

Community support is one of the most important ingredients for successful private land stewardship programs. The foundations for a land ethic are laid within communities.

If we were to realize a vision of the future for stewardship in BC, every community would have:

- an understanding of local and regional ecosystem functions and needs;
- a common stewardship ethic; and;
- a complete set of stewardship tools which meet both the needs of the people living "off" the land, as well as the plants and animals living "on" it.

What else should our vision include? How far are we along in reaching it? What needs to change to get us there faster? The symposium will indeed be a success if it can generate even some of the answers to these far-reaching questions.

Wildlife Habitat Canada: Ingredients for Landowner Contact Programs

- it must be voluntary;
- it must be flexible and adaptive;
- it must be acceptable to the landowner and supported locally;
- it must be fair and equitable;
- it must have defined goals from which progress can be measured;
- it must by acceptable to those who pay for it;
- it must recognize the costs to the landowner;
- it must provide for a least yearly follow-up to the landowner;
- it should accommodate participation by a variety of individuals and groups;
- it should affect a large land base or a large section of the natural area to be secured;
- it should involve minimum investment in capital construction and maintenance;
- it should accommodate public access wherever possible.

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Ducks Unlimited Canada
WRPS - Box 39530
White Rock, BC V4A 9P3
Tel. (604) 591-1104

Environment Canada
- Environmental Citizenship Initiative
- Canadian Wildlife Service
Fraser River Action Plan

- Environmental Citizenship Division
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- Canadian Wildlife Service
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Pacific Estuary Conservation Program
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