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## **THE CANADIAN ENVIRONMENT AND THE POLITICS OF PUBLIC AND PRIVATE DOMAINS: ENVIRONMENTAL POLICY IN THEORY AND PRACTICE**

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1/10/1918

Dear Sir,

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Yours faithfully,

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## 1. ABSTRACT

A review of pre-modern, modern and post-modern societal trends reveals that Canadian environmental policy is a composite of both the public and private domain perceptions of nature. These domains refer to either a perception of nature as a source of public benefits, or as source of private ones. The fact that both of these domains are expressed in policy both at the level of rhetoric and practice helps to disguise the true policy approach being taken by Canadian governments. It is submitted that Canadian governments are still using mainstream approaches to solve environmental problems. The fact that these mainstream environmental policies are being practised in a society for whom risk has become a norm, further explains why environmental deterioration persists. Using a case study of the siting of a regional sanitary landfill in Alberta, several flaws within the practice of developmental decision making are highlighted, such as: a continuing reliance upon risk assessment as a means of determining the economic and environmental consequences of a project; and, a requirement for increased governmental accountability. A discussion of proposed citizen initiatives suggests that the use of increased participation and legal trusts may be a means to achieve change. In conclusion, it is submitted that the Canadian government is incapacitated by both budgetary and constitutional restrictions in order to substantially change policy at the level of practice and therefore Canada has become caught in an environmental stalemate. Citizens through their demands for the right to be recognised as major stakeholders and for increased governmental accountability may be able to affect change in the future.

## 2. PUBLIC AND PRIVATE DOMAINS IN ENVIRONMENTAL POLICY

In Canada and other advanced industrial countries the Ministry of Environment has become a primary portfolio sought after by aspiring cabinet ministers due to its high profile status, complexity and breadth of focus. With increased international recognition of the environmental crisis, as exemplified by changes in the Earth's climate and topography<sup>1</sup>, the political correctness of national environmental policy is under heightened scrutiny and countries are pressured to meet international environmental standards. This pressure is observed through the diffusion of international language into national policies, such as the use of the term 'sustainable development' in the Canadian federal government's *A Guide to Green Government*, which purports to assist all federal government departments in developing sustainable development strategies (Canada 1996A).

Environmental policy has been and will continue to be a reflection of societal values as expounded by ruling political parties. For democratic societies these values are shaped by social, economic and political goals and historically have been translated into two types of environmental policy: a public one which dealt with 'the management of resources that continued wild and were subject to various kinds of hunting'; and, a private one for 'the management of resources that passed into ownership but required rules to prevent mis-use' (Tolba and El-Kholy 1992:696). Public and private used in this sense refer to the type of

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<sup>1</sup> Examples of this are: global warming; acid rain; desertification; deforestation; and, loss of biodiversity.

interest, or domain<sup>2</sup>, protected by the policy and which involve competing perceptions of nature. Although legal definitions state that a public domain refers to all property whose title is vested in the government and private domain to land which is held by private individuals (Black 1990:483), it is an environmental interpretation of these interests which is of importance in the present context.

An environmental interpretation of the public domain refers to the use of the natural environment in accordance with the belief that it cannot be owned *per se*, and instead must be utilised in accordance with principles of egalitarianism and communalism. In this respect, the natural environment is believed essential to the continuation of the human species, and therefore, valuable in and of itself. Private domain in contrast, refers to the belief that the natural environment is a resource to be utilised through individual initiative and is therefore for individual gain.

Again referring to other definitions of public and private, legal and economic, it is important to ascertain the degree of their similarity with the environmental definition. In law, private laws are those which define, regulate, enforce and administer relationships among individuals, associations and corporations (Black 1990:1196). In contrast to public law, private law deals with private individuals whereas public law deals with constitutional, administrative, criminal and international law as these areas of law are concerned with 'the organization of the state, the relations between the state and the people who compose it, the responsibilities of public officers to the state, to each other, and to private persons, and the relation of states to one another' (Black 1990:1230). Using these legal definitions for an examination of Canadian environmental policy is not particularly useful because public and private environmental interests can be held simultaneously by all social actors. Therefore a legal definition is too simplistic.

Economic definitions of private and public refer to the utility of a product or good. In this sense a public good is one that is supplied by government and has a joint benefit for citizens, such as subsidised health care and parks, or to services such as the military and development programmes (Barro 1990:284). The corollary of this is that private goods are for household use. An economic definition of public and private draws a distinction based upon the origin of the goods. Environment does not originate from humanity as it is not a product of our productive efforts.

However, both the legal and economic definitions illustrate a common thread for discussive purposes and that is that public refers to a collective or group interest whereas private refers to an individual interest. In Garrett Hardin's (1968) argument of the 'tragedy of the commons' pasture land was made available for use by a community and therefore there was by definition a public interest in the pasture. This is because the benefit of the land flows equally to all who choose to use it. It is upon this demarcation that public domain and private domain are used to define environmental interests. The public environmental interest is defined as a belief that the community has a collective right to the use and benefit of the environment, with no distinction being made whether the benefit can be characterised as an

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<sup>2</sup> Domain as defined in a legal context refers to 'a paramount and individual right of property in land' (Black 1990:483).

economic public or a private good. Furthermore, a characterisation of environment in this way restricts the ability of individuals to gain at the expense of the group, regardless if they are public or private in a legal sense. Similarly, a private domain perception of the environment sees it as a resource to be obtained and utilised through individual initiative (again whether private or public legally) and therefore its benefits and enjoyment (whether private or public economically) would result to the individual who has captured them. A Crown oil and gas corporation can be used for illustrative purposes. Such a corporation is a public individual in a legal sense but utilises the natural resources for a private benefit in an economic sense. However, the fact that the resource is extracted for use solely by this entity means that it is adhering to a private domain perception of the environment because it acts so as to capture natural resources for its own gain foremost and the collective interests of the rest of the community in the resource are ignored. While such a demarcation is subtle it can prove to be a valuable analytic tool especially when policy is purporting to harmonise both the public and private domain conceptualisations of the environment.

Another analytic distinction is to question which of three societal trends is thereby implicit in environmental policy: the pre-modern trend, which emphasises the public domain; the modern trend which emphasises the private domain; or, the post-modern trend which is a combination of both the public and private domains.

By characterising the prevailing domain(s) in current environmental policy the underlying societal value system can also be determined using an eco-political analysis.

[T]o understand adequately the inner workings of an ecosocial system - how natural and human systems interact, reinforce, maintain, and transform one another - it is crucial to explore the political dimension of these relationships (Guimaraes 1991:11).

The assumption made in such an approach is that there is a connection between the choices of environmental policy and the societal conditions that inform those choices (Guimaraes 1991:16). Therefore, an examination of the existence of societal trends can illuminate the biases in current perceptions, uses, and interactions with nature.

Such an examination of environmental policy reveals what it is designed to achieve and what changes are required to improve its effectiveness. It is proposed that when environmental policy is informed by the two competing domains it becomes difficult not only to enforce it but to specify it at all. This problem is further confounded in industrial societies because it has been posited that they have assumed a new character, that of the Risk Society (Beck 1995). If this is the case then the current challenge for environmental policy formulators is to create policy that will be successful in a society for whom the acceptance of risk has become a norm. Policy formulators must therefore design policy for a societal trend which is historically unprecedented.

### *Pre-Modern Environmental Policy*

Pre-modernity as a time period has been romanticised as an era when human beings lived in idealic harmony with nature as evidenced by the work of some anthropologists. These so-called simple communities, such as the Maring in Papua New Guinea, are believed to be

capable of revealing the 'principles of permanence' with respect to ecosystem management for industrialised communities (Clark 1977:372). Reality in fact has demonstrated the contrary since '[b]eginning with the development of agriculture 10,000 years ago, all forms of social organization of production have contributed to the destruction of the environment' (Foster 1994:34). This can be illustrated with the names of societies believed to have collapsed due to ecological factors such as: 'the Sumerian, Indus Valley, Greek, Phoenician, Roman, and Mayan civilizations' (Foster 1994:36).

What is important about pre-modern lifestyles is their perception of the natural world as something to be shared rather than solely being a source of commodities for individual use and gain. Aboriginal cultures provide evidence of this through their view of 'the Earth as home, as a place that is animated and sacred' (Wilson 1991:69). This type of identification with the surrounding ecosystem allows for a greater connection with it, since its existence is essential to the continued existence of the community. Furthermore, although ecosystem harm still occurs, the degree and the incentive to mitigate it are different. In this way, a communal perception of nature appears to be implicitly cognisant of ecological principles.

The pre-modern time period can also be characterised by its abundance of diversity, not only natural but social and cultural as well. It has been described as a world where human societies mirrored the 'diversity and autonomy of the myriad ecosystems of the world' (Rich 1994:221). In these societies knowledge, regardless of its source, from animals, plants, fire, and societal rituals were blended together in culture (Bernal 1954:48). Relationships of interdependence predominated both with respect to humankind and in relation to nature. These elements of society, diversity and interdependence, were reflected in policy which delineated individual property rights as required for the overall welfare of the community. In this manner the public domain superseded the private. In this way pre-modern environmental policies were not only designed for the purpose of limiting the destruction of nature, but also as a means of balancing every one's interest with respect to it. These policies further reflected the public interest of their locale, due partly to the lack of physical proximity and less frequent communication between communities, and proved to be effective in the sense that they were 'adaptive and sustainable' to local needs (Tolba and El-Kholy 1992:697).

A Canadian example of a pre-modern environmental interest can be made with reference to the difference in attitudes toward the land as perceived by the First Nations peoples and the European settlers. While a communal notion was utilised by the former, the latter not only harvested nature but perceived the First Nations people themselves as expendable. This was demonstrated by the European introduction of the concept of land ownership which enabled them to seize land for themselves where previously it had been utilised by several First Nations communities (Hall and Hanson 1992; Patterson II 1975).

Pre-modernity as a societal trend is not restricted to a particular historical time period as its influence is currently reflected in approaches to environmental policy. These approaches are predicated upon the centrality of a communal sharing of nature intertwined with an appreciation for the inherent value of nature itself. Such an approach necessitates the need to stop using environmental policies simply to mitigate pollution, by either avoiding degradation or restoring a pre-established standard for the quality of the Earth's resources, and rather to re-organise society itself (Guimaraes 1991:52). Such a structural change in societal institutions would be predicated upon a change in the concept of the "good-life" being



synonymous with high consumption levels, and would involve a recognition of "less being more" under a careful stewardship of nature (Gorz [1975] 1983). This type of environmental policy reflects an emphasis on the public domain with respect to the natural environment and the human use thereof.

### *Modern Environmental Policy*

The modern societal trend is characterised by a predominance of the private domain in environmental policy. The reason for this lies in the origin of modernity in the Enlightenment period of history, as it was here that humanity began to move away from a life with nature to one above it.

In general, modernity and its attending ethic of individualism altered the belief in a communal approach to the natural environment in favour of one based upon individual gain through the creation of commodities. Individualism, as a perverse vision of Charles Darwin's evolutionary theory regarding natural selection (Begon, Harper, and Townsend 1986:5), translated into the pursuit of power since power was everything, and the collection of wealth became both the means and the end.

Science became influential when humanity realised that through observation of the natural world the ability to make predictions regarding related natural phenomenon became possible. This differed from the previous belief in the ability to obtain knowledge *a priori*, from 'pure thought based on intuitively known general principles' (Hull 1959:196). The resultant convertance to a pursuit of science was rewarded by the discovery of natural laws based upon nature's uniformity and through their acceptance the perceived value of philosophy was diminished, as prediction brought the ability to triumph over and master nature, rather than being subject to it. The establishment of a world of fact that 'existed quite apart from human value and intention' (Wilson 1991:14) had started.

Science had provided the basis for this new ordering and as such was accorded the highest status. Every aspect of society was to be re-designed in its image, from the mode of production and its institutions, to even humanity itself. In furtherance of this pursuit of the homogenisation of difference, tools were required. These tools, were a mode of production (capitalism for most industrialised countries), institutionalisation, technocracy, and economic justification.

Capitalism, as a mode of production has been called a system of 'creative destruction' due to its infinite ability to transform all elements of existence into new commodities (Foster 1994:32). The ideology of capitalism is one 'of individualism, competitiveness, domination, and... consumption of a particular kind' (Hartmann 1992:344). Capitalism has resulted in the commodification of humanity and of nature, by reducing their perceived worth to a mere exchange value (Hodl and Kade 1972:141). It has taken several forms throughout history according to the type of accumulation that it has used, 'such as: mercantile; competitive monopoly; finance; and late capitalism' (Nederveen Pieterse 1995:2), and it upset the interdependence of humanity and nature as the pursuit of production resulted in increasing environmental destruction. The Earth was a resource to be exploited with examples of this being found in the loss of wildlife during the pursuit of furs for the fur trade, and the domination of other human beings in the pursuit of cash-crops such as sugarcane and tobacco.

(Foster 1994).

Institutionalisation was the **creation** of a system of marginalised experts each unable to move without permission from another. Institutions also served the further purpose of instructing citizens in the preferred values, **Purposes** and meanings of their society (Boulding 1991:27). As such, the institutions of government, law, and education came to predominate industrialised societies and to order the lives of the citizens (Gorz [1975] 1983).

Technocracy also flowed from modernity. It is a belief that everything can be remedied or solved through the application of a technical solution. In this sense it is a managerialist view of solution creation (Gandy 1993:23). The focus of technology is upon increased industrialisation, and this results in changes to both the social structure and the institutions of countries as wage labour is created and expanded (Martin 1991:36). Technology and wage labour have arguably undermined traditional lifestyles and institutions by 'engendering new forces of livelihood, consumption patterns and social values' (Bryceson 1985:7). A problem with the technocratic ideology is that technology is not neutral but incorporates capitalist relations of production and exchange, such that the accepted technical solutions are rarely the only ones possible (Gorz [1975] 1983:19).

Economics through its use of economic equilibrium which determines the price where a given supply and demand will be at rest (Russett 1966:5) also had an influence on modern environmental policy through its application by developmentalists. Development was to occur with industrialisation since an increase in productivity, through rising income per head, was to result in economic growth (Martin 1991:28). The problem with conventional economics is that it assumed an infinite supply of resources, '[t]he resource base is viewed as essentially limitless due to technical progress and [the] infinite substitutability among resources' (van de Laar 1996:16) as contrasted with the belief of ecologists in the finiteness of the Earth's resources.

These four elements of modernity acted in concert to produce a form of environmental managerialism and it was upon this ideology that modern environmental policy was developed and implemented.

The initial effect of the modern societal trend was the separation of humanity from nature. When individualism reigns humanity becomes a controller of nature. Nature then is perceived as requiring management in order to facilitate the removal and utilisation of its bounty, or 'natural resources'. Evidence of this can be found in the re-naming of 'nature' as 'the environment'.

Nature, when she {sic} becomes the object of politics and planning, turns into 'environment'. It is misleading to use the two concepts interchangeably for it impedes the recognition of 'environment' as a particular construction of 'nature' specific to our epoch. Contrary to its connotations we are currently being socialised into accepting, there has rarely been a concept that represented nature in a form more abstract, passive, and void of qualities than 'environment'...it makes nature appear passive, lifeless, merely waiting to be acted upon (Sachs 1992:34).

Managerialism is an approach which does not advocate change in the present values or patterns of production and consumption (Dobson 1990:13) but instead treats the natural environment as something which exists separate and apart from humanity. This is not true however as 'humans and nature construct one another' (Wilson 1991:13).

Strictly speaking, there no longer exists a physical environment somewhere "out there" that is influencing and being influenced by human beings. The environment is now defined, manipulated, and in many ways created by human beings (Guimaraes 1991:23).

The construction of nature by modern societies resulted in a decrease in the public domain and an increase in the private. The ideology of environmentalism was therefore itself designed to legitimate these structured societal changes.

Environmentalism flowed naturally out of the capitalist approach to development and economic growth and was 'a quest for a viable future, pursued through the implementation of culturally defined responsibilities' (Milton 1993:2). The modern society sought to create this viable future through the manipulation of cultural institutions, and therefore actively promoted, either implicitly or explicitly, policies which privileged some cultural perspectives over others (Milton 1993:6). It is for this reason that modern environmental policies fail. They have an inward gaze, toward humanity, rather than an outward gaze toward the Earth as a whole. By the 1970's most environmental policies were 'sectoral, reactive and uneven...[s]ometimes the rights of one sector to damage the environment in pursuit of personal gain had pre-eminence over the general interest of the community to be provided with clean air, safe water supplies and a productive environment' (Tolba and El-Kholy 1992:701). The few public policies left were for the 'offshore fisheries, marine animals and the minerals of the international deep sea bed' (Tolba and El-Kholy 1992:699-700).

The modern societal trend separated humanity from nature and in nature's place a constructed environment appeared. Environment became something to be described and explained and was no longer something to be enjoyed through experience. One author has stated that people used to be able to admire a view for itself but now views tend to be monopolised by signs, coin-operated binoculars, and brochures about the local fauna, geology or land use history (Wilson 1991:53). Canadian parks abound with this type of environmental construction.

Both the pre-modern and modern societal trends involve a predominance of either the private or the public domain in their environmental policy. In contrast, post-modern environmental policy is a combination of them. This approach however has also met with difficulties most notably because the society for whom this composite policy has been implemented is not a union of the pre-modern and modern societal trends but a new trend altogether.

### *Post-Modern Environmental Policy*

Post-modernity as a time period is generally stated as having begun in the 1970's due to a perceived change in the socio-economic, political and cultural characteristics of industrialised nation-states at that time (Gandy 1993:21).

The phenomenon of postmodernism has been associated in particular with the

demise of orthodox Marxist political economy and 'grand theory'; changing cultural styles in architecture and art; a disaffection with the modernist Enlightenment project; and the emergence of 'flexible accumulation' and post-Fordism in response to the economic crisis of the 1970s in the core OECD countries (Gandy 1993:22).

Furthermore, the growing recognition of the existence of an international environmental crisis suggested the requirement for a new approach to environmental policy.

Post-modern environmental policies recognise a need to stop environmental degradation before it occurs through a combined process of anticipation and prevention of damage (Tolba and El-Kholy 1992:703). The main features of such an approach are: sectoral policies which take into consideration environmental impacts and constraints; cross-sectoral policies; economic regulatory instruments; greater efficiency and conservation in resource use; recognition of international environmental problems; greater public information and participation; and, better environmental science and monitoring (Tolba and El-Kholy 1992:704-5). They also reflect the neoliberal role of government as ineffective regulators and have instead turned to more market-based policy approaches in an effort to maintain environmental management goals (Gandy 1993:22). The belief in the ability of the market to act as a regulator is promoted by industry itself and achieved through: the negation of the current environmental crisis; the unfailing belief in the benefits of technology; and, the assertion that it is up to consumers to resolve environmental degradation through their consumptive choices (Guimaraes 1991:49). This attitude, coupled with governments' desire to balance the competing interests of industry and citizenry result in a greater policy attention being granted to industrial interests. This primarily occurs because governments' require information and co-operation from industry in order to meet their environmental policy goals (Verbruggen 1991:144-6). Therefore, market regulation as adopted in an effort to alleviate environmental damage, is unlikely to prove any more effective than the previous command-and-control form of regulation done by government itself.

Post-modern environmental policy was also shaped by the concept of Sustainable Development. The adoption of this term in the Brundtland Report in 1987 led to the international recognition of the need for a concept of development which could be balanced with the requirement for environmental protection. A development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs' was therefore proposed (Brundtland Report 1987:43). Seven objectives flow from the concept of sustainable development: reviving growth; changing the quality of growth; meeting essential needs for jobs, food, water and sanitation; ensuring a sustainable level of population; conserving and enhancing the resource base; reorienting technology and managing risk; and, merging environment and economics in decision making (Adams 1992:60). Such an approach while being acknowledged by some as an improvement over previous international discussions of economics and politics was still viewed as having failed to go far enough in altering development thinking (Adams 1992:64-65). Furthermore, sustainable development has also been criticised as being a continuation of the modernity thesis:

For ideas to retain their power, they must be legitimated. Sustainable development is one such idea, which seeks to legitimate its own propositions by recourse to what are assumed to be universal values. By incorporating the

concept of 'sustainability' within the account of 'development', the discourse surrounding the environment is often used to strengthen, rather than weaken, the basic supposition of progress. Development is read as synonymous with progress, and made more palatable because it is linked with 'natural' limits, expressed in the concept of sustainability. The essential discourse surrounding nature, and what are assumed to be natural laws, is viewed not as part of a broader socially constructed view of 'progress', but as part of an essentially non-human logic, located in biological systems (Redclift 1993:7).

Sustainable development also highlights the paradox of thinking in a post-modern society. It suggests that there can be a communal cognisance of equity for both the current generation, and the ones to follow, and yet industrialised societies continue to legitimate the pursuit of individualistic goals. This dichotomy can be found in policy where the environment is purported to be a public responsibility because each person has a role to play in providing a greener world. The contradiction is that '[p]eople are expected to act like egalitarians in a social system which is designed to produce only entrepreneurs and fatalists' (Milton 1991:16).

Furthermore, the fragmentation of the current environmental policy system makes the ability to protect the public domains impossible. Pollution of public areas results from the system of productivity utilised on privately-held properties. The public domain cannot therefore be protected without a curtailment of freedoms in the private one. Given that private property is sacrosanct in capitalist ideology, the circumscription of freedom with respect to the private domain is unlikely to occur.

Since development through industrialisation is still viewed as essential and is still measured economically with reference to Gross Domestic Product, a greener economics has been designed. However, these attempts at incorporating environmental values into economics have failed since it is impossible to attach monetary values to nature as a source of natural capital. The perceived ability to do so results in the continued social construction of the environment (Redclift 1993:15).

The challenge is to develop an effective environmental policy in which environmental conditions are not appended to current models as an 'add on' (Redclift 1993:18). One suggestion for remedying this has come in the idea of a harmonisation of the three current post-modern formulations of environmental policy. These three approaches are: structural economic change and grassroots mobilisation; international diplomacy and regime building; and, behavioural and cultural change (Sunderlin 1995:213). A stated benefit of such a synthesis would be 'a more dynamic, sophisticated, and effective search for solutions to global environmental problems' (Sunderlin 1995:220). A problem with this approach however, is that the *status quo* would be reinforced if a stalemate between the competing interests were to occur, and as such it would not be dynamic at all. A stalemate of this kind would result in a continuation of mainstream policies and the continuation of environmental problems and environmental construction. A true post-modern world would likely begin to resemble a landscape of co-ordinated theme parks and zoos where the unpleasantness of nature could be controlled.

What is required is an environmental policy designed for the current characteristics of industrial societies. Such an approach necessitates the need to discern these characteristics

first, and from them design an appropriate and effective environmental policy.

### *Environmental Policy for a Risk Society*

The work of Ulrich Beck (1992, 1995) characterises present industrial societies and provides a means of highlighting the ineptitude of current environmental policies. Beck states that current industrial society is in a second form of modernity called Risk Society. This form of society is intertwined with the concept of reflexive modernity which is premised upon the idea that a reflexive learning process can be effectively utilised to solve its problems. This can be differentiated from post-modern and modern approaches as it 'tries to accommodate the essential tension between human indeterminacy...and the inevitable tendency to objectify and naturalize our institutional and cultural productions' (Lash and Wynne 1992:6). Beck writes,

[i]n advanced modernity the social production of *wealth* is systematically accompanied by the social production of *risks*. Accordingly, the problems and conflicts relating to the distribution in a society of scarcity overlap with the problems and conflicts that arise from the production, definition and distribution of techno-scientifically produced risks... We are therefore concerned no longer exclusively with making nature useful, or with releasing mankind from traditional constraints, but also essentially with problems resulting from techno-economic development itself. Modernization is becoming *reflexive*; it is becoming its own theme. Questions of the development and employment of technologies (in the realms of nature, society and the personality) are being eclipsed by questions of the political and economic 'management' of the risks of actually or potentially utilizing technologies - discovering, administering, acknowledging, avoiding or concealing such hazards with respect to socially defined horizons of relevance (Beck 1992:19-20). (emphasis original)

In such a society the goal of environmental policy becomes one of risk allocation. This is exemplified by the increase in monitoring and testing of the environment, and of the deficiencies inherent in this practice.

Technicians study the contribution of farm runoff to nutrient overloads in streams and lakes, pesticide residue on foodstuffs, the concentration of heavy metals in sewage sludge, the effects of acid deposition on forests, and the effects of introduced parasites on pest populations. Treatment facilities tend to lag behind detection technologies....Detection technologies in turn lag behind the introduction of new chemicals, many of them untested, or tested under dubious conditions (Wilson 1991:75).

If we allow environmental problems to only be discussed in terms of science, rather than factoring in the social, cultural and political implications 'we run the risk of atrophying into a discussion of nature *without* people, without asking about matters of social and cultural significance' (Beck 1992:24) (emphasis original). An example used by Beck is the use of 'average' exposure to a given risk. When we begin to think only about the average exposure to a contaminant we lose sight not only that an average in itself is not a genuinely useful piece of information, but also of which group of people we are discussing, i.e. it might be average for a country but existing in high concentrations in only one region of that country.

Beck writes that environmental problems,

are generally viewed as matters of nature and technology, or of economics and medicine. What is astonishing about that is that the industrial pollution of the environment and the destruction of nature, with their multifarious effects on the health and social life of people, which only arise in highly developed societies, are characterized by a *loss of social thinking* (Beck 1992:25). (emphasis original)

The characteristics of the risk society are: that the hazards cannot be delineated spatially, temporally or socially; that the current means of handling risk such as attribution and liability are ineffective; that technology can only limit hazards, but not remove them; and, that there is a total lack of provision for the occurrence of a catastrophe (Beck 1995:1). This highlights the reality upon which current environmental policies are framed. They take as their baseline the belief that science will be able to predict the probability of a given situation occurring. The assumption behind this is one of a linear perspective of cause and effect. However the contrary is true as nature is dynamic and as such responds in a non-linear manner. It is not possible to predict the outcome of every interaction, as some variables may, or may not, have the predicted effect. Therefore, environmental policy is being developed without an ability to ascertain its effectiveness. It is predicated on the amount of risk that is acceptable in a given situation (Wells 1996:186-8). Risks therefore, are a concern not only in and of themselves but also due to what is immersed within their design.

Manifold policies, cultural assumptions, mechanisms and rules are built into them: maximum pollution levels, rules of attribution, principles of compensation, acceptance, etc. To ignore this fact is to lose one's way in the labyrinth of provable unprovability that science and law have become, in their ahistoricism and incorrigible abstraction (Beck 1995:7).

The relevance of risk society to our current environmental crisis is demonstrated by the contradictory information given by institutions about nature. In Canada on the shores of Lake Ontario fishermen are warned about the size, type, and amount of fish they should eat, to the extent that they are also provided with information about the removal of cancerous tumours from these same fish, and yet the public are also informed that the lake water is safe for drinking (Wilson 1991:76).

An environmental policy that is based upon the recognition of the inherent dynamism of the environment is required. Such an approach recognises that influences upon a dynamic system are infinite and that it is impossible to acquire enough information in order to predict the results of the interactions between humanity and nature (Wells 1996:187). Such an approach requires a recognition of the interconnectedness and complexity of the ecosystem and the numerous external and internal factors that influence it; that risk cannot be evaluated in terms of acceptable boundaries since the crossing of a boundary does not produce 'incremental and predictable results' but 'nonincremental and unpredictable' ones; and, a requirement for being honest about what is known and unknown about the environment (Wells 1996:188). This then leads to the assertion that 'justice is the appropriate starting point of an ethic for a global ecosystem' (Wells 1996:195).

The categorical imperative of preserving the ecological basis of life is an essential part of any moral system. The key ethical requirement that should guide human actions relative to that categorical imperative is this: Conduct oneself in such a way that the quality of the environment in the future is no less than is expected for oneself in the present (Wells 1996:198).

This approach requires that the future prospects of the least-favoured individuals are maximised over the generations to come (Wells 1996:197). This is the point where this approach can be distinguished from sustainable development as the latter, as a mainstream concept, is aimed at preserving the *status quo* of the more powerful countries at the disadvantage of the less powerful ones. True equitable measures aimed at stopping environmental destruction must upset the *status quo* in order to achieve justice for all.

Another proposed solution to the environmental crisis can be found in the work of Arran Gare (1995). Gare states that there is a need to move beyond post-modernity toward the generation of a new grand narrative which can replace that of modernity.

Quite apart from the need to relate individuals to the dynamics of the world economy, a new grand narrative is required to comprehend and reveal the inadequacies of the grand narratives which have dominated societies in the past, and which are still operative in the present (Gare 1995:140).

Nationalism becomes the cornerstone of the new narrative, as individuals are able to identify themselves in relation to their world on several levels.

Nationalism can then be redefined as the commitment by a regional community, through the stories by which it defines itself, to justice within the region, where justice is understood as the appropriate recognition and acknowledgement of all beings - individuals, communities, animals and eco-systems, in thought and action. It is the commitment to preserving and developing the potentialities of all beings - natural, cultural, social and individual - for survival, for a full life and for contributing to society, to humanity, to local and world culture and to life itself. Above all, as the ultimate condition of all potentialities, nationalism must involve a commitment to preserving and conserving the local environment, its fertility, the genetic diversity of its fauna and flora, the integrity of the eco-systems which maintain these and its mineral reserves; and to preserving and developing built-up environments which provide the conditions for the maintenance and development of local culture, society and its individual members (Gare 1995:153).

The new grand narrative is the 'global struggle for an environmentally sustainable civilization' (Gare 1995:160). In order to achieve this every level of every society must act in accordance with their own specific situations and from their combined actions an abatement of the environmental crisis would result. This inward looking by each group would not however preclude them from also looking outward, as further action must also be taken, through the power of nationalism, to remove the power of financial institutions and transnational corporations. This type of action, among others, would undermine the current hegemony



among the power holders and would redefine economics itself by placing the household at the centre (Gare 1995:162). What is required is an image of the future, not based upon the 'triumph of any particular movement, class or nation, but as the triumph of life' (Gare 1995:163). These sentiments accord with those of Bruce Rich who stated that 'different futures must not only be imagined, but liberated and allowed to happen' (Rich 1994:240).

To remedy the tensions found in current environmental policy by the dualism of the public and private domains an overall choice must be made to either pursue a global justice which extinguishes the requirement of risk analysis and mitigation as a role of environmental policy, or to accept the future for what it brings on its present trajectory. It is the first of these choices that optimistically must be chosen for to accept the latter is to be wilfully blind to the world's inequities.

A form of global justice can be found in the legal concept of *Jus Humanitatis* which takes the globe itself as the centre of its discourse.

[*Jus Humanitatis* expresses the aspiration to a form of governance of natural or cultural resources which, given their extreme importance for the sustainability and quality of life on earth, must be considered as globally owned and managed in the interest of humankind as a whole, both present and future (De Sousa Santos 1995:365).

The origins of this doctrine can be found in the international law doctrine of the common heritage of humankind which states that not only should particular areas of the Earth be protected from mishandling but that all humanity should have a voice with respect to them (De Sousa Santos 1995:366). The common heritage of humankind doctrine has been expanded to provide recognition for 'other spaces and resources, natural and cultural, quite often under national jurisdiction and even objects of private property' and it is from this that a transformation of the doctrine into the broader doctrine of *jus humanitatis* occurs.

Against capitalist expansionism, it proposes the idea of sustainable development; against private property and national appropriation, the idea of shared resource management, rational use and transmission to future generations; against nation-state sovereignty, the idea of trust, management by the international community or under its control on behalf of humankind as a whole; against the *hubris* of the pursuit of power that so often leads to war, the idea of peaceful use; against the political economy of the modern world system, the idea of equitable redistribution of the world's wealth, including resources still untapped. In sum the principle of the common heritage of humankind points forward to *jus humanitatis*, a law of and for humanity as a whole, the law of a decent human condition in a nondualistic, but rather mutualistic, interaction with nature (De Sousa Santos 1995:371-2). (emphasis original)

The achievement of a mutualistic interaction with nature can only be reconciled by the resolution of the public and private domain dualism of environmental policy and this in turn must be remedied by acknowledging the exclusionary capacities of these two positions. Each seeks to oust the other. Reality shows that capitalism and its ethics are not going to be altered

and reversed instantaneously if a policy that privileged the public domain were to be adopted. Instead the competitiveness of the domains must be converted into a harmonious relationship and this may be achieved through the adoption of a microstate approach to environmental policy.

The concept of legal microstates has been advanced with respect to the transnationalisation of nation-state regulation (De Sousa Santos 1995). In this context the disintegration of national legal fields is caused by international relations. This is observed through the loss of coherence of the state as a 'unified agent of social regulation' with the state then becoming 'a network of microstates, each one managing a partial dimension of sovereignty (or the loss of it) with a specific regulatory logic and style' (De Sousa Santos 1995:281). In the context of justice, a microstate approach to environmental policy would allow for a community and local approach to environmental policy as required for maintenance of the public domain, but also allow for the individualistic needs of the private one. If environmental policies are each designed to protect local environments, the global environment is no longer in danger. Furthermore, the interests of the private domain are allowed to flourish as long as the concerns of the locality are respected and adhered to. Risk for the microstate can be delineated since the local ecosystem interacts with its inhabitants and their knowledge of it, and ability to control it, are superior to the ability of those located at a distance from the risk source. Risk can therefore be circumscribed by the local population. Although this is still a form of risk management, it is anticipated that with such a policy approach, socially produced risks would gradually be overcome and such a role would no longer be required.

With reference to Wells and Gare, not only is such a micro-state approach the adoption of a nationalistic approach to nature but it also achieves justice for the less advantaged as they are those at risk from the continued domination of the private domain in environmental policy. To this end, environmental policy must be designed to reflect two things: first, the requirement of safeguarding both domains and the social, economic and political necessity of doing so; and second, the requirement of having a public domain over-ride of the private when the interests of the public domain are jeopardised. Such an approach empowers localities to take responsibility for their own environment and in so doing to take responsibility for the global environment as well.

### *Conclusions*

The societal trends of pre-modernity, modernity and post-modernity have all influenced the type of environmental policy designed and implemented in the industrialised nation-states. These societal trends have all resulted in the formulation of environmental policy which expresses a tension between the public and private domains. The current requirement for a new policy approach, capable of dealing with the issue of risk as a predominating influence in these societies, must be addressed. Such an environmental policy must be designed so as to create a harmonious relationship between the competing domains. The creation of microstates, each able to design and implement environmental policy for local concerns, may serve to dispel the present fixation of environmental policy with risk management. Environmental policy must harmonise the public and private domains and where it is unable to do so, an override provision must be specified such that the public domain remains intact. An override provision of this nature must not be used recklessly but only in those situations where the competing public and private interests cannot be reconciled, and where to allow the

private interest to supersede the public would result in unnecessary harm to the natural environment.

In order to assess how this theory fits with the actual design and practice of environmental policy in an industrialised country, an examination of Canadian environmental policy will now be made.

### 3. CANADIAN ENVIRONMENTAL POLICY

Canada has an international reputation of being 'an established and valuable player in the diplomacy of the environment' (Hall and Hanson 1992:305). However, it is the practice of Canadian environmental policy domestically which is of importance to Canadians especially when environmental destruction does not appear to be lessening and collusion between industry and government remains apparent. This is evidenced by the political influence exerted by both pulp and paper, and mining companies in the country: where one company is allegedly able to set its own environmental standards; and, another threatens to withdraw funding from its activities if federal environmental assessments result in a delay of their proposed projects (Ross 1996).

A growing disenchantment with current environmental policies is demonstrated by the work of people like Mr. Daniel Green, a Canadian environmental activist, who has for many years mailed contaminated fish from the polluted St. Lawrence river to members of Parliament on April 1st, a day called April Fools or "poisson d'avril" in Canada (Brocklehurst 1996). The contamination of the St. Lawrence has also been graphically captured in the work of another environmentalist, Pierre Béland, titled the *Book of the Dead*, in which 194 entries of beluga whale deaths have been recorded since the fall of 1982 (Béland 1996). The author states that stillborn beluga calves are found to have toxic chemicals in their bodies which could only have been transmitted across their mother's placenta and therefore, these chemicals 'are passed on to the next generation like a family heirloom' (Béland 1996).

These examples highlight not only the political reality of environmental policy choices in Canada but also the physical reality of those choices. What becomes apparent is that Canada can be perceived as either being divided into constituent parts based upon an ecozone approach or upon political jurisdictions. What is important is how these two approaches interact as their harmony is a prerequisite for Canadian sustainable development.

When you utilise an ecozone approach your first observation relates to the sheer magnitude of the country. Canada is the world's second largest country with an area of 9,970,610 square kilometres representing 7% of the global land mass (Environment Canada 1996A). The country is surrounded by three oceans, the Atlantic, Pacific and Arctic, and has a diverse landscape of 'temperate forests and Arctic barrens, extensive river systems and coastlines, vast plains and imposing mountain ranges, farmscapes and wilderness, wetlands and deserts, immense lakes and prairie potholes' (Environment Canada 1996A).

An ecozone approach was designed in the 1980s by professionals from government and non-governmental organisations, universities and industry (Environment Canada 1996A). The

traits used to identify each ecozone were predominately natural such as landforms, soils, water features, vegetation and climate, but human activities were also taken into consideration where they were extensive (Environment Canada 1996A). The end result was the identification of 20 ecozones in Canada, 15 of them territorial and 5 marine (Environment Canada 1996A). The largest identified ecozone is the Boreal Shield or Boreal Forest which stretches across six provinces (Environment Canada 1996A) and occupies more than a third of the size of the country (Lanken 1996).

It is the forest of spruce and fir and pine and tamarack, of white birch and shimmering aspen groves, of sphagnum bogs and countless lakes, of quiet streams and thundering falls. It is the ancient home of northern birds and fur-bearing mammals...It is also the largest biome or ecological community in Canada, shaped over the ages by ice and water, locked half the year in a frozen grip, nurtured in short but clement summers, ravaged regularly by fire but rebounding with renewed vigour...Its riches have long been exploited, lightly in former times by aboriginals who found it supplied all their needs, more heavily in fur trade days, and most heavily now by pulp mills and lumber firms. The boreal forest is a warehouse of trees for an industry that employs thousands of Canadians and makes Canada the world's largest exporter of wood products (Lanken 1996:26-7).

It is the large size of the ecozones, most being greater than 200,000 square kilometres, which hampers its co-ordination with the political divisions of the country and therefore results in their management by multiple governments and environmental policies.

When a political jurisdictional approach is used to divide the country the appearance of the map changes significantly. Canada's governmental system is a constitutional monarchy with a federal system of democracy. Canada is divided between thirteen governments, one federal and twelve provincial and territorial legislatures of: Newfoundland and Labrador; Nova Scotia; Prince Edward Island; New Brunswick; Quebec; Ontario; Manitoba; Saskatchewan; Alberta; British Columbia; the Northwest Territory and the Yukon Territory.

The Canadian Constitution was established by the *Constitution Act, 1867*. This Act served to divide the numerous legislative powers of the country between the federal, provincial and territorial governments. Generally, each government has sovereignty over any subject of legislative power granted to it by the Act. All heads of federal power are found in s.91 and all heads of provincial or territorial power are found in s.92. This system works well for all of the specified powers and for those not specified the presence of a statement in the preface to s.91 states that the federal government may also legislate

to make Laws for the Peace, Order and good Government of Canada, in relation to all Matters not coming within the Classes of Subjects by this Act assigned exclusively to the Legislatures of the Provinces (*Constitution Act, 1867*).

This is important because the environment as a legislative power was not mentioned in the Act and as such its sole jurisdiction was not granted to either the federal, provincial or territorial levels of government. The result of this is that all governments are able to enact

legislation dealing with the environment where it is ancillary to a head of legislative power which they already hold. To have granted the federal government the ability to legislate exclusively with respect to the environment, as per the preface to s.91, would have greatly diminished provincial and territorial sovereignty and therefore the intention of a federalist constitution. Consequently, environmental policy is formulated under numerous legislative headings such as: s.91(12) sea coast and inland fisheries and s.92(13) property and civil rights in a province.

From this it becomes apparent that if the ecozone and political jurisdictional maps are overlain a fragmented approach to ecozone management occurs due to the fact that their boundaries are dissimilar. Before continuing with a discussion of the exact nature of current environmental policy it is first necessary to contextualise environmental policy formation with reference to the political economy of the country.

### *Canadian Political Economy*

The features which characterise the Canadian approach to public policy have succinctly been stated as:

Canada's historical origins in relation to the United States and the United Kingdom; French-English relations and Canada's evolving ethnic composition; the role of geographical and spatial/physical realities; the uneasy co-existence of capitalism, economic classes, and recently challenged traditions of statism; Canada's dependence on foreign trade and the extensive foreign ownership of major sectors of the economy (Doern and Phidd 1992:19).

Of particular concern to environmental policy are: Canada's reliance upon natural resources for trade; its trading relationship with the United States; the decentralisation of the federal government; and, the regional disparities found within the country.

In 1995 the population of the country was 29.7 million people, 80% of whom resided in the urban areas (Environment Canada 1996A), and over 30 % in just three Canadian cities: Toronto, Montreal and Vancouver. Canadians enjoy a high standard of living with a long life expectancy, a well educated labour force and a stable social system (Brooks 1993:49).

Although Canada has a mass-consumption urban society, like other advanced industrialised nations, its reliance upon a high export of natural resources differentiates it from them. The development of Canada's commercial and financial institutions and transportation companies were all based upon Canada's reliance upon natural resources as a primary export of trade (Brooks 1993:51).

The development of industry in the country was hampered by the protectionist import substitution industrialisation policies pursued by previous Canadian governments. The adverse effects these policies had included: a growing regionalism among the provinces on the basis of economic development; international industrial inefficiency; increased reliance on foreign technology; and, increased foreign direct investment by the United States; (Brooks 1993:52-4). The lack of controls over foreign direct investment and technology served to dominate Canadian industry and resulted in the positioning of Canada in an economically dependent

consultation and partnerships (Canada 1996A).

author finds however that the stated federal intention to implement sustainable development may in fact be coupled with a policy choice to not act as well, since choices made both to implement or not implement a chosen policy. Using budgetary allocations to implement this intention, he finds that the moneys allocated in pre-UNCED, -NAFTA and -Uruguay Rounds) were all comparable as contrasted with moneys allocated for the set-up and implementation of these international obligations. Whereas the post-UNCED budget is just over 1 million Canadian dollars both of the others have been allocated at 10 million more (Lavoie 1996). Furthermore, the author states that the Ministry of Environment has suffered a cut-back in its budget allocation of 20% over the last three years. UNCED vision of new environmental initiatives and practices (Lavoie 1996).

Environment Canada itself has addressed the scope of budgetary cutbacks in relation to its programmes of Enforcement and Ecosystem Initiatives. With respect to Enforcement they state that 'there will be no reductions to the department's core resources for ensuring compliance with federal laws and regulations aimed at reducing pollution and protecting life' (Environment Canada 1995A). However, with respect to Ecosystem initiatives they state:

Although the Program review will reduce funds available for the regional ecosystem initiatives, the Government of Canada remains committed to achieving its sustainable development goals through these initiatives. Current and planned activities within these initiatives will be adjusted to reflect fiscal restraint, while at the same time maintaining long-term environmental priorities and commitments (Environment Canada 1995B).

These two programmes, the latter is obviously the more creative and innovative policy. Environment Minister's response to the 1996 Federal Budget focused upon the continuing coordination of economic and environmental objectives by the federal government and he stated that the creation of the 'Technology Partnerships Canada Fund which will earmark money for the promotion and demonstration of Canadian environmental technologies' was particularly encouraging' (Environment Canada 1996C).

Retrenchment in mainstream policies can also be stated to flow from the non-conventionist strategies pursued by government. In this sense sustainable development is defined by those who support decentralised government, centralised sectors and free trade (Ross 1996). Therefore, those defining "our common future" are also those who deal with terms of an 'aggressive privatisation of global resources' (Ross 1996).

With respect to the exact policy choices made both federally, provincially and territorially, it has been argued that Canadian environmental policy has been fashioned in three distinct ways all based upon different perceptions of the problem to be addressed and the type of response to be chosen (Emond 1991). The author analyses environmental policy along a time dimension and differentiates it into three successive categories: symbolic regulation; preventative regulation; and, co-operative regulation. This linear approach is not particularly useful since three forms of policy currently coexist in Canada and therefore such an approach

oversimplifies the complexity and confusion of the Canadian reality. However, these generalised classifications do provide a useful means of categorising Canadian environmental policies and of highlighting some of their main characteristics.

The first type of policy is classified as "symbolic regulation" and was usually generated following an environmental catastrophe or scientific report regarding societal practices. The problem to be addressed was defined as arising due to either a market failure or a technological failure. So the approach was an adoption of: the "polluter pays principle"; an attempt to internalise costs; or, a need to find the best practicable technology (Emond 1991). The problem with these approaches is that they do not remedy the root cause of the problem which is a need to reorient society's focus toward inputs and productive processes, and as such their failure is due to: the process having a reactive rather than an anticipatory basis; that it lacks legitimacy since there is no public involvement; that it allows industry to blame government for a lack of stricter standards, when those in position fail to work; that success becomes synonymous with market alterations and technical fixes; and, that knowledge can only increase with increased regulation (Emond 1991:753).

There is still a belief that these types of policies, especially those which focus upon market incentives, are necessary in order to achieve sustainable development (Rankin 1991). Examples of these policies are: administrative penalties; emission and effluent charges; enlightened government procurement policies; and, the Environmental Choice product labelling programme used by the federal government (Rankin 1991). One reason given for a fixation with this type of policy approach is that when governments are engaged in a process of economic recovery their first priority becomes the promotion of business and industry (Hughes 1990:52). Limited financial resources mean that governments require the co-operation of industry and thus the avoidance of coercive measures of environmental protection (Hughes 1990:52).

"Preventative regulation" is designed to solve the problem of the growing number of 'exquisite' toxins which are appearing in the environment and are both difficult to identify and to remove (Emond 1991:753). These regulations are also in response to a growing civil society unease with government and industrial decision-making (Emond 1991). The result is a process that focuses upon: increased regulation with new types of liability, such as for corporate directors; in new environmental legislation aimed at the assessment of projects; at focusing upon clean-up and remediation; and, upon environmental audits. This type of regulation is also flawed due to: its reliance upon the costly form of adjudicative dispute resolution; its inherent bias toward the *staus quo*; and, the fact that it undermines any basis for co-operation between government and industry (Emond 1991:758-9).

A critique of environmental assessment techniques highlights its implicit assumption of the adequacy of conducting such an assessment only once, before a project begins, and that this would serve to determine all of the environmental impacts. The problem with this is that environmental assessments are not objective and value-free but rather 'a creative, culturally-based mix of science and art' (Jacobs et al. 1993:6). In reality there can be no beginning or ending to an identification of environmental impacts, not the least because human behaviour can change with development (Jacobs et al. 1993). Instead a system of continuous monitoring is required such that a revision of goals can be made. It has been suggested that the environmental assessment process should be replaced with a Strategic Environmental

Assessment which takes into account sustainability principles (Jacobs et al. 1993:7). Such an approach would: review all potential effects associated with development from the policy to project levels; consider the need and alternatives of the development; facilitate the identification and management of cumulative effects; and, catalyse a reorientation of environmental assessment toward sustainability (Jacobs et al. 1993:7).

A last form of policy approach is "cooperative problem solving". The premise behind this policy is that all of society must be involved in order to solve the problem of environmental degradation. Such an approach is 'based on principles that emphasize interdependence, connectedness, respect, obligation, and cooperative approaches to problem-solving' (Emond 1991:759). This type of approach is becoming more common due to the realisation that environmental problems need to be solved and that delays are costly, and also because of a converging value system (Emond 1991:760). The problems with this approach are: that it doesn't push for changes in current societal and political institutions, and that compromise among stakeholders is not always possible. The promise in this type of policy however is that when placed alongside the other two forms, of symbolic and preventative regulation, it offers an interesting alternative.

This last type of policy has been adopted by government when they interact with other stakeholders, such as during the NRT movement, and also when they negotiate with other governments with respect to a particular environmental issue. This latter type of interaction has been compared with the soft law that is generated in international negotiations. The soft law process consists of an advancement from general principles, to the adoption of legally binding rules, and then to formal intergovernmental agreements (Kennett 1993:647). The Canadian challenge is how to: co-ordinate all of the environmental assessment regimes found in the country; deal with the issue of sovereignty; negotiate all of the technical details a harmonisation of policy would involve; and, choose which regime would take precedence in the case of a conflict of jurisdiction (Kennett 1993:659).

An example of this type of intergovernmental agreement is the *Canada-Alberta Agreement for Environmental Assessment Cooperation* (Canada-Alberta 1993). This agreement expressly deals with Alberta projects in which the federal government has an interest and the necessity of 'avoiding unnecessary duplication, delays and confusion that could arise from separate environmental assessments' of such projects (Canada-Alberta 1993). The agreement then deals specifically with the creation of a co-operative environmental assessment but adds that the agreement does not preclude an individual assessment by either party in the event that co-operation can not be reached and as such serves to protect each government's sovereignty (Canada-Alberta 1993).

However, a concern with this type of policy is that intergovernmental negotiations are really a form of 'executive federalism' where the executive arms of each government negotiate with respect to governmental matters and therefore acts to erode democracy (Brooks 1993:85; Walters 1991:431). While constitutional ambiguity with respect to environmental issues encourages co-operative federalism, this type of policy approach can be 'associated with backroom collusion, not open democracy' (Walters 1991:432).

It would appear that the future of sustainable development in Canada will be challenged by the constitutionally determined political jurisdictions of government, as the ability to



implement sustainable development principles,

demands a re-evaluation of the principles underlying the Constitution. If interjurisdictional cooperation is necessary - and no doubt it is - the resiliency of the ideals of federalism and democracy within which this cooperation occurs is contingent upon a clear definition of the constitutional responsibilities of federal and provincial governments over natural resources and the environment (Walters 1991:422).

Of all of the tenets of sustainable development the three which have the most important constitutional implications are: the institutional requirement for those responsible for the management of natural resources to also be responsible for related environmental issues; the democratic requirement for political accountability such that the areas of political jurisdiction match the areas of impact; and, that an ecosystem approach be adopted for environmental management (Walters 1991:441).

The Canadian reality therefore becomes trapped between the requirement of choosing to either centralise the environmental legislative authority with the federal government, or to decentralise it with the provinces and territories. Centralisation is not an option since natural resource management is primarily a head of provincial and territorial legislative power, but to take a decentralised approach is to ignore the sustainable development requirement of an ecosystem approach. Decentralisation also ignores the impact of developmental externalities since decentralisation can not control externalities which effect neighbouring political jurisdictions (Walters 1991:441). If instead the power granted to the federal government within the preface to s.91 is utilised, more commonly referred to as the "Peace Order and Good Government" (POGG) power, than anything that would attract a national dimension would fall within federal authority. The problem then becomes how to determine when an externality crosses the threshold of provincial concern in such a manner that the POGG power is attracted. A decision by the Supreme Court of Canada in *Crown Zellerbach* has held that there is a judicial recognition of the unity of environmental issues, but that governments must act according to their Constitutional authority such that externalities must be patently obvious in order to attract the POGG power (Walters 1991:443-4). The determination of whether the threshold test of provincial capability, with respect to externalities, is low or high is yet to be made.

Another proposed solution with respect to the interjurisdictional problems of environmental issues is the development of a new process rather than the continuing alteration and amendment of the *status quo* (Hughes 1990). The new process would consist of two levels, the first involving a comprehensive policy review and the second, the development of an appropriate method. Each stage of the process would have to address: the interjurisdictional conflict; economic and scientific information; and, public participation (Hughes 1990:64). Although it is noted that this type of process would involve considerable time and money,

'[t]he importance of trying to resolve these issues before policies are finalised, before decisions are made, and certainly before implementing steps are taken (for example, enacting legislation), cannot be underestimated...The overriding concern is that government should experiment to discover the better models now, while there is time to do so, rather than waiting for a crisis of change to

occur (Hughes 1990:64-6).

The solution therefore is one of needing the levels of government in Canada to harmonise and co-operate with respect to the environment, but to do so in a manner that is consistent with the Constitution and the principles of democracy.

While the federal, provincial and territorial governments attempt to find a means of co-operation and harmonisation with respect to environmental issues, the daily approval of development projects continues in Canada, each of which has important environmental implications. It is therefore of value to highlight one case of decision-making at a provincial level which shows the promise of a new approach. A 1993 decision made by an administrative tribunal in Alberta, the Natural Resources Conservation Board (NRCB), has been hailed as a landmark decision in the practice of sustainable development (Kennett 1994). The issue which the NRCB decided was whether to grant approval for a recreation and tourism development in an ecologically significant and scenic part of Alberta. The proponents promoted the project's economic and recreational benefits and the opponents emphasised the negative effects it would have on the wildlife and ecosystem of the area. The NRCB gave the project conditional approval on the understanding that the project as proposed would not be in the public interest and therefore certain conditions would have to be met (Kennett 1994:2). This decision was based on the findings that the project was inappropriate on environmental grounds and that a development of the magnitude envisioned by the proponents was unacceptable for the chosen location. The conditional approval was based upon the understanding that environmental impacts must be minimised and, that a more restrictive zoning should be made for adjacent lands so as to mitigate potentially adverse effects (Kennett 1994:2).

The exceptionality of this decision was stated to flow from four aspects of the decision making process used by the Board. First, that it provided a well reasoned and creative solution to a dispute which 'raised complex economic, social, and environmental issues' (Kennett 1994:5). Second, that the decision recognised the economic, recreational, scenic and ecological values of the area and stated that they must be managed in a co-ordinated way. Third, that it illustrated an integrative analysis by combining sustainable development principles with cumulative effects assessment and ecosystem analysis. Lastly, that it suggested the need for 'proactive land use planning to provide a more developed policy framework for the project approval process' (Kennett 1994:5). It would appear that this is the innovative and creative decision making that is required to put sustainable development into practice.

### *Conclusions*

Environmental policy in Canada is highly fragmented and is predicated more upon a political conceptualisation of the country than one based upon ecozones. However, it is often the Constitutional division of powers which results in a current inability to pursue the principles of sustainable development without violating another government's jurisdiction as there are attempts at all levels of government to apply sustainable development principles. As such it appears that it will remain the responsibility of each government to ensure that their actions will be sustainably justifiable. The use of soft law agreements between federal, provincial and territorial governments can be useful but in an era of growing civil awareness and scepticism of governmental motives a more accountable system other than that of executive federalism

must be forthcoming. It is the political acceptability component of sustainable development that has yet to be addressed and this will be done along with the means of achieving it, later in the paper.

Is the NRCB West Castle decision a turning point towards a more enlightened decision making process? It is interesting to contrast the NRCB decision with a case study which is also located in Alberta, at Pine Lake. This case study mirrors some of the issues addressed in the NRCB decision but the future of Pine Lake is yet to be determined.

#### 4. THE PINE LAKE CASE STUDY

An effective means of evaluating current environmental policy in Canada is to observe how it is translated into action in a specific case. Pine Lake, Alberta and the regional sanitary landfill being constructed within its watershed, serves such a purpose. Pine Lake is a small lake, 8 kilometres in length and 0.8 kilometres in width with an average depth of 5 meters, located approximately 40 kilometres south-east of Red Deer, Alberta. Its location makes it a favourite recreation area for many Albertans, up to 5000 users on busy weekends, who enjoy both the campgrounds and boating access that it provides. Pine Lake also has approximately 130 summer and full time residents living in cottages and houses around its perimeter. Geographically Pine Lake is situated in rolling agricultural land and is fed from a large watershed area, 120 square kilometres, with seven streams and creeks feeding into it (The Pine Lake Restoration Society 1996; Alberta Environment 1979). The lake's outflow is into Ghost Pine Creek which subsequently flows into the Red Deer river. This river in turn flows across the provincial boundary of Alberta and into the neighbouring province of Saskatchewan.

The decision to site a regional sanitary landfill in the vicinity of Pine Lake was made by the Central Alberta Waste Management Authority (CARWA). CARWA represented the 23,000 residents of the towns of Penhold, Bowden and Innisfail, and the County of Red Deer. CARWA's goal was to:

establish a waste management system which [would] serve all residents within the Authority in an equitable manner and which [would] provide all residents an economical, environmentally sound method of disposing of their wastes (Mather 1990).

The landfill would also relieve the necessity of having several smaller sites operating within the County (RDRHU 1993:11). The site selection process began in 1977 (Pierce 1994). During this time a map titled the *Hazardous Waste Implementation Program: County of Red Deer*, dealing with the geological and hydrogeological constraints of the County was available. This map rated the County area with numerical grades according to its potential suitability, with the dominant characteristics of each area being evaluated numerically. Numbers 1-4 being unsuitable, and 8-10 being most suitable for hazardous waste disposal (Western Soil and Environmental Services 1981). CARWA reviewed thirty potential sites. Of these thirty sites sixteen were rejected without any hydrogeological testing, and of the remainder only one was found to have enough suitable area, 80 acres, for a sanitary landfill which would use a trench

method of waste disposal (Stoyberg 1989). This site was located at NW 10-37-25-W4 beside the current Modified County of Red Deer Landfill and was a distance of approximately 5 kilometres north of Pine Lake. According to the County map, regarding geological and hydrogeological constraints, this site's characteristics would be evaluated as a 1 and a 3, meaning that it was considered geologically and hydrologically unsuitable for hazardous waste (Western Soil and Environmental Services 1981). Although it is generally believed that hazardous waste requires more engineered features to deal with its leachate<sup>3</sup> than a sanitary landfill, as required in Alberta Environment's *Guidelines for Industrial Landfills*, this is not true (Cowling 1993:41). Hazardous wastes are also present in sanitary landfills due to their introduction 'through commercial refuse and ordinary household garbage, such as: oven cleaners, solvents, pesticides, paint thinners and bleaches (Cowling 1993:41). The danger of leachate can also be demonstrated by their adverse effects on human health as a function of its toxicity and carcinogenic potential. Municipal landfill leachate has been found to contain '32 chemicals [that] cause cancer, 13 [that] cause birth defects, and 22 [that] cause genetic damage' (Montague 1988:1-2).

Alberta Environment (AE)<sup>4</sup> assisted CARWA by providing them with a provincial grant for the estimated cost of the design and construction of the landfill in the amount of \$1.877 million (Inkpen October 9, 1992). The hydrogeological suitability of the site was also assessed by AE's Environmental Protection Department (AEP). Test drilling was made on the site in August 1988 and January 1989 and AEP concluded that the nature of the soil consisted of low permeability glacial till suitable for the development of a sanitary landfill (Epp 1991:1). This opinion of the site's hydrogeological suitability remained unaltered throughout the contradictory evidence that was to be later heard (Chandler 1991). The involvement of AEP in the various aspects of landfill development was to become an issue during the siting process. AEP characterised their involvement as:

a facilitator for the development of regional waste management systems. We provide funding and technical support to groups of municipalities, regional authorities and commissions involved in developing and operating regional waste management systems. The enforcement of conditions and requirements for design and operation of the regional waste management systems is the responsibility of the organisations making these conditions and requirements (Lack 1994B).

Opposed to the selection of this site for a landfill were a group of landowners from the Pine Lake area, and in January 1989 they formed the Society of the Concerned Citizens of Pine Lake. Their concern was two-fold, one for the decline in economic value of their own properties, as mortgagors increasingly inquired as to the nature of neighbouring properties and would adjust their decisions accordingly (CCPL 1993:8) and secondly, for the protection of

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<sup>3</sup> 'Leachate is the liquid that is produced when rain falls on a landfill, sinks into the wastes, and picks up chemicals as it seeps downwards' (Montague 1988:1).

<sup>4</sup> Alberta Environment has several divisions a number of which became involved during the siting of the landfill at Pine Lake. The term Alberta Environment is therefore being used for simplicity except in those cases where a specific department is specified.

the lake ecosystem<sup>5</sup>. It is with respect to this second concern that the Society was actually formed as they characterised themselves as being 'dedicated to the protection and enhancement of the lake' (CCPL 1993:1). In general, the CCPL rejected the proposed site for several reasons because it was located '850 meters uphill from an intermittent creek feeding into Pine Lake...[and] would also be located above a number of domestic water wells which [were] located downstream from the landfill' (Schalin February 28, 1991). This reaction by the lake users had been anticipated by the Red Deer Regional Planning Commission who had stated that the siting of the landfill within the headwaters of Pine Lake:

may prove to be the greatest obstacle to the site being accepted. Pine Lake is a very high priority recreation resource that is constantly fraught with controversy regarding water quality, water levels and fish maintenance. Therefore, it will be very difficult to assure lake users and recreation facility operators on the lake that some additional risks and indeed some specific contaminants will not enter the lake from a regional landfill located at the stated site (Red Deer Regional Planning Commission 1989:2).

The CCPL expressed their concern with respect to the chosen site to the Minister of Environment. A reply from the Minister, dated October 26, 1989, stated that AE 'had suggested' to CARWA 'that they conduct an Environmental Impact Assessment with regard to the proposed regional landfill near Pine Lake' (Klein 1989). AE further offered to assist CARWA 'in the preparation and review of the Environmental Impact Statement' (Klein 1989). CARWA did not have to implement an Environmental Impact Assessment (EIA), since it was not mandatory. In 1989 the governing legislation was the *Land Surface Conservation and Reclamation Act*. Under this the Minister of Environment may order an EIA for activities that will result in 'surface disturbance' if the Minister 'considers that it is in the public interest to do so' (Cowling 1993:24). A report may also be required to assess a proposed operation or activity regarding the 'prevention and control of pollution of natural resources' (Cowling 1993:24) but this also was not done.

The position of the Environment Minister was further emphasised with two public comments. In August 1989 he stated with respect to Pine Lake:

Well, the soil testing is extensive to the point of ensuring that the site is safe from a hydrogeological point of view, from a geological point of view, and that there won't be leaching. Basically, the examination of the site in itself is an environmental impact assessment document, because we have to make absolutely sure that the site is safe before we recommend it for selection (Stoyberg 1989).

The Minister's second comment, made in 1991 again tried to dissuade the public from a fear of landfills.

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<sup>5</sup> The residents of Pine Lake have also demonstrated their concern with the maintenance of the lake through their formation of the Pine Lake Restoration Society in 1993. This society, continuing the work of the Lake Advisory Committee have set as their goal a restoration of the lake and have thereby provided an 'example of the extent to which citizens are committed and willing to assume stewardship for the environment' (Arrison 1995).

The environment, in itself, is a growing business, one of the largest industries in the world....we now have towns, municipal districts and county's throughout this province say, help us get some garbage...everyone wants a piece of this garbage business. The not-in-my-backyard syndrome doesn't seem to be as prevalent as it was because people understand in a responsible, clean environmentally safe manner and there is a profit to be made{sic}...there are still communities that with nice safe landfills, environmentally friendly landfills saying, just send us your garbage we will take it, who knows what the tippage fee will be but we will take your garbage, so there is money to be made in this{sic} (Author unknown 1991:3).

In January 1990, CARWA declined to review an alternate location as requested by the CCPL (Mather 1990), and proceeded to a hearing before the Red Deer Regional Health Unit (RDRHU) to obtain written approval for the siting of the landfill, as per the requirements of the *Public Health Act* and the *Waste Management Regulations* (Cowling 1993:5-12). The CCPL made a submission to the Health Unit requesting CARWA's application be denied on the basis of it being within the Board's discretion to find that it was in the public interest to do so. The CCPL's presentation to the Board was based upon their belief that the site evaluation conducted by AEP was flawed and also that the Proposed Sanitary Landfill Design Report completed by Serv-Alta Engineering Ltd., CARWA's contractor, was also flawed (CCPL 1990:2). In support of their position the CCPL submitted the opinion of Dr. A.M. Stalker, a Professor of Geology at the University of Lethbridge. Dr. Stalker's opinion with respect to the Serv-Alta Report was not positive. He stated concern with the validity of the hydraulic conductivity figures used which could result in a miscalculation in the groundwater flow and also with the authors' poor knowledge of geology (Stalker 1989). The CCPL also addressed concerns regarding the fact that the alternate sites reviewed by CARWA had not been made public and indicated that the Serv-Alta Report admitted deficiencies in the Pine Lake site but stated that it was the most suitable site found as 'the likelihood of finding another site for a regional sanitary landfill in the County of Red Deer is not good' (CCPL 1990:4).

In the alternative, the CCPL requested that the Board stay CARWA's application until: an EIA was conducted; CARWA's site selection criteria was examined; alternate sites had been reviewed and selected; and, CARWA had made a disclosure of the aforementioned information to the public and allowed for public involvement in a new site selection process (CCPL 1990:6-7). However, the RDRHU decided to approve CARWA's application for the site and this decision was then appealed by the CCPL to the Public Health Advisory and Appeal Board (PHAAB).

At the PHAAB hearing more expert testimony was given by both parties. A report prepared by Mr. T. Dance of Golder Associates, a hydrogeological firm hired by CARWA, did not help CARWA's case as it stated that the site would be located on sand and gravel deposits and that the rate of leakage of leachate from the landfill would be greater than previously thought.

As opposed to a travel time of 1 cm/year for leachate formed at the landfill, Golder Associates estimated that it would take only 7 years for the leachate to travel from the site to the creek, located some 850 metres away, and feeding into Pine Lake. The author of this report refused to endorse the proposed site

as being hydrogeologically suitable. In addition his report gave the proposed site a failing grade, using Alberta Environment's guide-lines for siting landfills (Schalin 1991).

In addition to Dr. A.M. Stalker, who had also assisted the CCPL at the RDRHU hearing, the CCPL relied upon Dr. G. Garven, an associate Professor of Groundwater Geology at Stanford University, California. Dr. Garven had previously in 1978-1980 studied the groundwater hydrology of the Pine Lake watershed. He stated:

I am astonished that Alberta Environment recommended this site as being suitable for landfilling even though they appear to have little or no basic idea on groundwater flow patterns in the section or surrounding area...There is no question in my mind that the report submitted by Serv-Alta Engineering Limited represents a shoddy piece of work, particularly in regards to geological and hydrological aspects...Their statements that there would be no impact on the surface and subsurface water quality in the Pine Lake watershed is totally naive and misleading (Garven 1990).

On July 23, 1990, CARWA won the appeal of the RDRHU decision in front of PHAAB. Of the several stringent conditions that were enumerated two of the most important ones were the requirement of a double clay liner in the landfill cells and that the bore holes in the site area were to be properly abandoned (sealed) to the satisfaction of RDRHU (PHAAB 1990:17).

In a Predevelopment Report Supplemental No.2, dated October 21, 1991, Serv-Alta Engineering stated that 'all testholes at the site that fall within the active landfill zone, that have not been properly abandoned, will be reworked. These testholes will be reamed out to the full depth and sealed with bentonite' (Block 1991:6). AE had expressed this requirement in a review of Serv-Alta's Design Report for the RDRHU, and stated that '[t]est holes in trench areas should be sealed with bentonite and not clay on abandonment' (Fernandes 1989:2). This confirmed an argument presented to RDRHU in 1990 in which an engineering opinion was expressed that the proposal by CARWA to abandon the boreholes by the 'packing of native clay' was incorrect since 'such an abandonment does not guarantee proper seal' and furthermore that holes 'abandoned in this manner may become hydraulic conduits and induce contaminant migration' (Dabrowski 1990:1).

Dr. G. Garven, then of John Hopkins University, Baltimore, Maryland, stated an opinion about the boreholes in a letter dated December 26, 1991. He wrote:

You could drill more shallow testholes south of the proposed landfill site to map out the distribution of outwash sand, but it seems CARWA is determined to landfill regardless of any hydrologic and geologic data. If more testholes are planned, it would be worth having them drilled to a depth of about 200 feet so as to further map and monitor any sandstone aquifers in the bedrock which would become contaminated south of the site. I don't believe, however, that more testhole drilling is really warranted. The basic hydrogeology was outlined in my January report: this site is unsuitable for a landfill (Garven 1991:1)

Dr. A.M. Stalker also expressed an opinion regarding the utility of AEPs boreholes. He criticised the placement of the boreholes (all were located in one area of the site) and added that they should have been drilled to the depth of the bedrock in order to be of value and to obtain any worthwhile information from them (Stalker 1991).

In order to commence construction of the landfill CARWA was required to obtain a development permit under the *Planning Act*. The purpose of this Act was to achieve an orderly, economical and beneficial development and use of land, and of patterns of human settlement. The Municipal Planning Commission (MPC) approved CARWA's application which was then appealed to the Development Appeal Board (DAB) by the CCPL.

At the DAB hearing CARWA's hydrologist, Mr. T. Dance, was questioned about the ability of the landfill's liners to prevent leachate from escaping from the site. He stated that approximately 2.5 million litres of water would escape into the creek annually but that the leachate would be diluted by spring water before it reached the lake (Proby 1992).

'All landfills generate leachate, he said. But with a good design and careful monitoring, the amount of contamination would be minimal' (Proby 1992).

Another opinion at the hearing, for a worst case scenario, was given by Dr. Hrudey for CARWA. He stated that if the site was 'properly engineered and operated' there would be 'no significant environmental or public health impact' and this was based upon the flow rates for leachate as stated by Mr. Dance of Golder Associates (Weisenburger 1994:20). However, if this assumption, regarding correct construction and operation, was not met then it would cause increased concentrations of various substances in the lake water which would exceed the Canadian Drinking Water Guidelines by several magnitudes: Iron 1000 times; Manganese 7 times; Benzene 18 times; and, Lead 22 times (Hrudey 1992).

In a decision dated April 16, 1992, DAB stated several conditions that were to be met by CARWA and this included a requirement for the proper sealing of the boreholes, as stated in the Serv-Altá Predevelopment Report supplement. DAB further specified that each cell on the site 'shall have a double clay liner composed of the proposed leachate collection system, followed by at least 0.75 meters of compacted clay over a further leachate/detection layer (separating the clay layers) followed by at least 0.75 meters of compacted clay' (DAB 1992:11). This condition was more strict than that previously specified by PHAAB. A further stipulation was the requirement for an independent engineering firm to 'supervise and certify the construction of each liner to ensure it meets specifications' (DAB 1992:11). Furthermore, copies of the certification reports were to be given to the CCPL and the County Development Officer, as well as all groundwater monitoring results. The DAB decision stated:

After hearing the evidence, the Board is of the opinion, that this site, without extensive engineering, would not be suitable for a landfill site, due to the existing soil conditions, groundwater flow estimates, and considering the need to protect the natural environment of the area and its economy. The Board believes that if the landfill were to experience a substantial failure, there would be unacceptable damage to the local environment and economy... Without strict construction standards and operational enforcement, this site would not be suitable (DAB 1992:1-2, 13).



The result of the hearings in front of RDRHU, PHAAB, MPC and DAB was a highly engineered design for the regional sanitary landfill at Pine Lake. This was later acknowledged by the RDRHU, in 1993, who stated '[w]e believe that the refuse handling and control methods, the liner system, the leachate extraction system and the surface water drainage systems proposed by the Applicants are representative of the extraordinary measures which are to be expected in circumstances such as this' (RDRHU 1993:10). The Regional Pine Lake Sanitary Landfill was not typical of sanitary landfills in Alberta and this has to be credited to the tenacity of the CCPL. As Mr. B. Weisenburger, Chairman of the CCPL later stated '[i]n Canada, there is no other landfill for domestic waste with such stringent conditions' (Maynard 1993). Other concerns however were still to materialise in the upcoming years as the strict standards that the CCPL had fought for during the hearings would have to be enforced in the construction and operation phases of the site.

The CCPL did attempt in 1991-1992 to have a federal review of the proposed landfill conducted by Environment Canada under the *Fisheries Act* due to the potential harm that could arise from leachate (Rothwell 1991). The Department of Fisheries and Oceans later initiated a review of the landfill site pursuant to the federal *Environmental Assessment and Review Process* (EARP) but were unable to proceed due to a Supreme Court of Canada decision which stated that the relevant sections of the *Fisheries Act* could no longer be used to initiate a review under EARP and therefore precluded any federal government involvement (Crosbie 1992).

In 1993 the CCPL became concerned with the apparent conflict of interest inherent in AE's roles with respect to the development of the landfill and wrote to the Alberta Ombudsman regarding this. In response the Assistant to the Ombudsman stated:

In the Pine Lake project, the Department acted both as a consultant, when it did hydrogeological studies, and as a funding and evaluation agency. These two functions are, in my view, in conflict. Therefore, I believe the Ombudsman should recommend the Department remove itself from the consulting business (Johns 1992:1).

Further letters to the CCPL from the Office of the Ombudsman, stated that this recommendation had been made to AE by the Ombudsman's office (Johnson 1992) and that AEP recognized that it needed to 'separate itself from consulting activities and that it had been moving in that direction' (Johnson 1993).

In May the CCPL made a court application to the Court of Queen's Bench of Alberta alleging that CARWA had failed to "substantially" complete the landfill within a two year time period as stipulated by the *Public Health Act* and the *Waste Management Regulations*. The CCPL based their argument on the statutory definitions of a waste management facility, sanitary landfill, trenches and cells. They stated that since a sanitary landfill must have trenches, and that these had not been made, that the construction of the landfill had not been substantially commenced during the two year period (Virtue 1993). Justice Virtue in deciding the case found that although the trenches had not yet been constructed enough work had been done by CARWA through: the preparation of plans; the evidence of the hydrological testing made at the modified landfill; CARWA's application for a development permit and the granting thereof by DAB; the tendering for construction; the construction of a chain link fence; and,

the commencement of earthwork for the access roads and the burning pit (Virtue 1993). Therefore, the Court held that the landfill had been substantially commenced as CARWA's actions met both the subjective and objective tests of whether 'the Waste Authority evinced a *bona fide* intention to continue the project to conclusion and is there evidence of that intention which would be recognised by an objective observer' (Virtue 1993:7).

On August 23, 1993, CARWA was granted a permit for the operation of the landfill by the RDRHU pursuant to the *Public Health Act* and the *Waste Management Regulations*. The RDRHU decision upheld the conditions established by the previous PHAAB and DAB hearings and listed additional requirements pertaining to the operation and closure of the landfill. The decision stated,

The presence of the landfill will, by its very nature, work some degree of hardship on neighbouring owners. Landfills also have the capacity to do considerable harm to the environment. It remains incumbent on the landfill operator, therefore, to make extraordinary efforts to: (a) carefully monitor the operation of the facility; (b) operate the facility in a manner least likely to cause harm or damage; and (c) design safeguards and other mitigative measures aimed at lessening the risk association{sic} with landfill operations (RDRHU 1993:10).

The CCPL were concerned when CARWA was granted the permit to operate since a letter received by CCPL from the RDRHU regarding the permit decision stated that the boreholes (testholes) 'would be completed as is required in the PHAAB decision' (Elliot 1993:2). However this was supposed to have been done before the landfill became operational and yet CARWA had already been granted their operating permit. The CCPL reply to the RDRHU letter stated this and added 'if CARWA can not establish that this condition has been met with a definitive engineering opinion, that all the boreholes have been properly abandoned, the landfill should not be opened for operation' (Weisenburger 1993:2).

On September 23, 1993 a Stop Work Order was issued by the Development Officer after learning that one of the clay liners was not the required thickness of at least 0.75 meters, but was instead 0.712 meters in parts (McLeod 1993). The landfill at this time was estimated to be almost 80% complete and the CCPL had not yet received any reports from an independent engineering firm regarding the construction (Maynard 1993). A daily inspection report filed by Thurber Environmental Consultants on August 6th had reported the flaw, but it had not been fixed before the Stop Work Order was given. Three times CARWA would attempt to appeal the imposition of the Stop Work Order of the County to DAB and each time they were denied (Stebner 1993; Stebner 1994A; Stebner 1994B).

The cost to remove the faulty liner was estimated to be \$300,000.00, and this CARWA stated would have to be borne by Serv-Alta, Thurber Engineering, and any other firms responsible for the construction of the landfill (Maynard 1994). This issue later became the subject of a civil suit filed by CARWA with the Court of Queen's Bench, Judicial District of Red Deer, against the aforementioned parties (Sharek and Nelson 1994).

In January 1994, the controversy continued when AE officials admitted that they would 'very unlikely' be able to properly seal the boreholes made on the landfill site. AE said that the

wells were hard to locate since both construction and grazing cattle had served to dislodge the monitoring pipes (Stewart 1994). Of the 56 testholes made upon the property, 26 were unable to be found (CCPL December 1994:2). AEP acknowledged that it was their responsibility for the proper abandonment of the boreholes but it was the joint responsibility of AEP and CARWA to preserve them for proper abandonment (Lack 1994B). Given that the grant agreement for design and construction of the landfill between AE and CARWA had an Indemnification clause, its presence appears to lessen the actual legal obligation of AEP if CARWA could be held responsible for the inability to locate some of the boreholes.

11 (a) The Municipalities shall indemnify and hold harmless the Minister, his employees and agents from any and all claims, demands, actions and costs whatsoever that may arise, directly or indirectly, out of any act or omission of the Municipalities, the Committee, their employees or agents in the performance by the Committee of this Agreement. Such indemnification shall survive termination of this Agreement (Inkpen 1992:5).

In a letter from AE to the CCPL, dated May 17, 1994, AE stated that they would not be able

to relocate and abandon all wells constructed on the site. Seven of the destroyed wells will be in the area designated for landfill construction as shown in the design drawings. Since it is a condition of the PHAAB that all wells in the site are properly abandoned to the satisfaction of the Health Unit, I expect that if any wells are identified during further site excavation they will be properly abandoned by CARWA. In addition, the landfill liners will adequately seal off any wells which may be missed. I do not believe that the wells which have not been abandoned will create an environmental problem. We will be continuing discussions with the Red Deer Health Unit on this issue (Lack 1994A:2).

This letter served to once again cause the CCPL to request an investigation of AE's actions by the Ombudsman.

Alberta Government employees are interfering with the Judicial Process by making statements in the press and by communicating with Local Authorities regarding proper borehole abandonment problems that are contrary to stipulated requirements (Weisenburger 1994:3).

In a response dated November 23, 1994 the Office of the Ombudsman stated that they were unable to act on the complaints raised by the CCPL either due to jurisdictional reasons or because some of the issues were already being handled by other government departments (Johnson 1994).

On August 4, 1995, AEP released The Pine Lake Regional Landfill - Groundwater Monitor Well Abandonment Report. The report stated that 51 holes were drilled on the site. Of this number 23 were used for the sole purpose of collecting geological data and as such were immediately abandoned on completion of drilling. Of the remaining 28 boreholes, 26 had been properly abandoned. The two not abandoned were unable to be located since they were drilled in an area which was disturbed during the construction of the first landfill cell (AEP

1995:4). The report then used a risk analysis, taking into consideration 'worst case assumptions' involving the production of leachate, liner and leachate collection failure, and the wells acting as conduits for the migration of the leachate. These factors when combined with the native permeability's of the soil and the possibility of the underlying bedrock being fractured, resulted in their conclusion of a 'low risk' for any leachate being released into the environment (AEP 1995:5-6). An AE official also reflected this position in a comment to a local paper when he stated that agriculture and sewage concerns in the area would be more detrimental than any leakage from the landfill and that if the landfill was built to plan no change should occur in the water quality (Innisfail Staff 1994).

The AEP report was important due to the reliance to be placed upon it by both CARWA and the new amalgamated David Thompson Health Region, as part of their decision-making regarding the acceptability of the site construction, as was known by AEP. The CCPL believed the report to be flawed and in a letter to an internal investigator of AEP they state that the report 'contains many statements that are not completely factual', and that they had evidence that not all of the 26 boreholes had been properly abandoned as claimed by AEP and further suggested that an investigation of this issue might be useful (Weisenburger 1995A:2). The CCPL had also written to the David Thompson Health Authority urging them to reject the AEP report (Weisenburger 1995B).

The Stop Work Order was finally lifted on September 21, 1995, two years after it had been made, and work on the landfill was allowed to be resumed subject to a few conditions which were: ascertaining the cause of the leaks in the lower leachate collection system that had been recently observed; and, adherence to the conditions of the DAB, PHAAB and RDRHU hearings (McLeod 1995A). Later the requirement to meet the DAB condition of borehole abandonment was waived when the Development Officer sent a letter to CARWA stating that:

we are not requesting compliance with regard to the closure and abandonment of the boreholes and ground water monitoring wells. This concern has been addressed by Alberta Environment and will be monitored by the Health Unit (McLeod 1995B).

A letter to the Development Commissioner from the CCPL on January 2, 1996, addressed several issues such as: the necessity of an independent engineering firm to evaluate the adequacy of the liners, and other aspects of construction; the fact that the landfill cell had filled with water and overflowed for a second time, even though the sides were sloped so as to prevent water from entering, and it had also been a period when the area had received little precipitation (Weisenburger 1996A). The letter further stated that the David Thompson Health Region had tested groundwater from the Pine Lake Modified landfill, located adjacent to the contested regional landfill site, and had found a level of phenol which exceeded the Canadian Drinking Water Guideline by 935 times (Weisenburger 1996A). The CCPL wrote,

If leachate or Phenol a caustic, poisonous, crystalline acidic compound entered the water table across the fence, *how will CARWA or the County of Red Deer be able to identify the source.* It appears that it is not a concern at present because of no significant movement and that "the solution to pollution is dilution" in an area described as a recharge area for local water (Weisenburger 1996A). (emphasis original)

Again the CCPL sent a request to the Ombudsman for a review of AE's involvement in the site selection process and with the borehole abandonment report (Weisenburger 1996B). The CCPL again pointed to the involvement of AE through the supply of technical assistance, funding and government approval of the project. They alleged that not only had AEP used a faulty technique for the hydrogeological evaluation of the area which resulted in erroneous ground water flows but, that AEP had not complied with the proper abandonment of the boreholes, even at the level of their own guidelines, and lastly, that AEP had given a report regarding borehole abandonment that was not completely factual. These allegations were made by the CCPL and in response the Ombudsman's office agreed to investigate the complaint regarding the accuracy of the Well Abandonment Report prepared by AEP. The review was to be limited to 'whether or not the Department has accurately portrayed its success or lack of success in abandoning boreholes on the Pine Lake Regional Landfill Site' (Johnson 1996A). This review was later cancelled when an investigator of the Pollution Control Division of AEP decided to undertake the same task (Johnson 1996B).

The CCPL had previously written to the Investigatory authority of AEP requesting a review of the AEP report as per section 186 of the *Environmental Protection and Enhancement Act*. This section deals with investigations regarding violations under the Act, and an alleged falsification of information by AEP regarding the boreholes qualified as an offence. In a letter dated March 12, 1996 the investigation was accepted (Schulte 1996A).

At this time another issue regarding the ability of CARWA to meet all of the DAB conditions became prominent. This was with respect to the requirement of an independent engineering firm to certify the liner and was addressed by the Development Officer in a letter to CARWA dated March 15, 1996. The letter requested that CARWA provide a certification for the entire liner as made by the independent firm and requested that this be provided within ten days of the receipt of the letter, or to provide reasons for non-compliance with the request (Hoskins 1996). No information about compliance with this DAB condition was forthcoming until August 12, 1996 when CARWA responded and indicated that the conditions had been met (Mather 1996). This included the requirement for certification by an independent engineering firm. CARWA stated that this had been done by Thurber Environmental Consultants Ltd. and Omni-McCann, who had previously given copies of their reports to the CCPL. The CCPL had previously inquired as to the nature of CARWA's relationship with respect to these two firms but had not been answered prior to CARWA's letter of August 12, 1996 (Weisenburger 1996A). The fact that CARWA stated that Omni-McCann was acting as an independent contractor is different information from that the CCPL had obtained from a Mr. McCann of that firm who had stated that he had 'not been requested by CARWA to certify the liner' (Weisenburger 1996A). The CCPL are likely to remain sceptical about the actual neutrality of at least Omni-McCann given that the firm has waste management and waste disposal experience from numerous sites in Alberta and may, therefore, have been chosen by CARWA for their political correctness.

In May of 1996, the landfill cell again filled with water for the third time in two years thus again emphasising another construction concern. A statement made by the RDRHU in 1993 regarding the landfill's liners is relevant here as it addresses the required competency of the liners and the leachate collection system.

[T]he leachate collection system is built with two drainage layers, the top one

to drain leachate away. It stops draining leachate when clogged. The bottom layer should not have water in it. The performance of the liner is measured by two factors, the top drainage layer draining leachate and the bottom not having water in it (CCPL 1996:3).

The cause of the leakage was later stated to be due to a manhole that was not properly sealed such that 'water entered through the cracks between the blocks' (Elliot 1996). The source of the water however was unknown and CARWA was to continue to try and establish its source (Elliot 1996).

In a letter dated May 24, 1996 AE Regulatory Services, Pollution Control, state that an investigation of the landfill site had revealed four monitoring wells that had not been reclaimed properly. Only four wells were identified at that time, and the investigation for more wells was to continue (Schulte 1996B). On August 2 the investigation was deemed to have been concluded although no more wells were able to be located. The four wells previously located were found to have been reclaimed properly with a bentonite seal but had not had their tubing cut off below the surface as was required. This was later remedied. The investigators stated '[o]n the basis of our investigation we believe the 26 wells do not pose a hazard to the underlying aquifers' (Schulte 1996C). The CCPL in a letter dated August 26, 1996 inquired as to the means that such an extrapolation from four located wells to all 26 wells had been made and also for the information that the inspectors had been provided with in order to reach such a conclusion (Weisenburger 1996C). In response to this it was stated that the decision was based upon a review of monitoring well survey data, interviews of key individuals involved with the reclamation of the wells and by an examination of the four located wells (Schulte 1996D).

The smaller Red Deer County modified landfill is expected to be full in the fall of 1996 and Red Deer officials are then faced with the problem of what to do with the municipal garbage in the event that the regional sanitary landfill does not open. It appears that if the modified landfill cannot be expanded the garbage will then have to be shipped to another landfill in the province at an increased expense to the taxpayer (Michelin 1996). In order for the sanitary landfill to open the Environmental Health Services Director for the David Thompson Health Region stated that CARWA must be able to assure them that the bottom liner will no longer collect water (Michelin 1996).

Finally, it is worth noting that the future of landfills in Alberta will undergo revision as the siting process itself is revised by proposals that place the regulation of municipal waste management facilities under the control of AEP instead of Alberta Health, by September of 1996 (Watson 1996). AEP distributed a *Draft Code of Practice for Landfills* to Stakeholders for comments and input into the proposed changes. The Code would be used for all landfills receiving less than 10,000 tonnes of waste per year and would allow municipalities to build these landfills without public consultation. These smaller landfills which currently comprise more than 500 of Alberta's 557 waste facilities would no longer be required to hold public hearings or to obtain approval from a health board (Advocate Staff 1996). AEP made the following statement about the proposed changes:

The transfer will reduce the number of approvals required to construct and operate a waste management facility. The revised regulatory system should

eliminate duplication and red tape. It will be efficient, streamlined and responsive to rapid changes in the waste management industry (AEP 1996).

It would appear that the future of landfilling in Alberta is far from certain.

The Pine Lake Regional Sanitary Landfill case study highlights many of the concerns raised regarding Canadian environmental policy and as such can now be used in conjunction with both of the previous discussions of environmental policy and theory, to form an opinion regarding the acceptability and practicability of current environmental policy and its implementation in Canada.

## 5. FROM THEORY TO PRACTICE: A SYNTHESIS

Pine Lake provides an opportunity to examine Canadian environmental policy in practice as it relates to developmental projects. It not only reflects the roles of various social actors and their relative power with respect to each other but what the motivating decision making factors are, such as the need to avoid costs or risks. It is to several issues which were raised by the case study that the discussion now turns.

### *Social Actors and Their Interests*

The social actors which are highlighted in the Pine Lake case study are: provincial government Ministries and municipal government authorities; statutory non-governmental organisations, such as administrative tribunals; institutional experts such as lawyers, engineers and scientists; and, the private citizenry. Each of these actors will be discussed and reference will be made to their role in developmental decision making.

In the Pine Lake case study the role of government predominated almost every aspect of the landfill siting process. At a provincial level, two government Ministries were involved: Alberta Health and Alberta Environment. The former was responsible for ensuring that the siting and operation of the site would meet the health regulations of the province. The latter was involved with many aspects, such as: the approval of grant moneys for the development; the physical testing of the site for its suitability; making recommendations to the various administrative Boards; supplying guidelines for the construction of the landfill; ensuring that environmental legislative procedures were followed, such as the reclamation of the boreholes; investigating alleged breaches of their own departments; and, acting in a public relations capacity for issues related to the development. Municipal governments were involved as the landfill proponents and as such are visible throughout the process. What this demonstrates is the extent to which governments, in a decentralised manner, have become involved with the proposal, design, construction and operation of local public projects, such as a regional sanitary landfill. It also emphasises the extent of control they can exert in order to ensure a desired outcome, not only through their ability to determine whether statutory requirements and government guidelines have been met, but also at the level of influencing public opinion as to the exact ramifications and consequences of a given project.

Administrative Boards are created statutorily by provincial legislation, such as the Alberta

*Public Health Act* or *Planning Act*, but their members are appointed by provincial or municipal government and may be municipal officials or members of the public depending upon the statutory stipulations for their appointment. While the role of the Boards is also stipulated by statute, with respect to their realm of authority and procedural constraints, there is no requirement for the positions to be filled by individuals with knowledge of the areas over which they will be adjudicating. This results not only in Board members for whom scientific and technical data are taxing but an inborn need for the members to rely on external assistance. This results in the fact that government bodies, who may be requested to testify on behalf of an applicant regarding site suitability, may also be providing technical assistance to Board members. When this occurs the Board's appearance of neutrality is severely diminished. At Pine Lake, Alberta Environment provided evidence to the Health Board regarding the suitability of the site and was also later involved in dealings with the Health Board regarding the alleged ability to disregard borehole reclamation procedures.

During a project's development both proponents and opponents rely on the services of various experts for legal, engineering and scientific advice. Legal services are utilised throughout the process to ensure: that all of the statutory requirements are met; that procedural matters are dealt with, such as the formal ratification of contracts, obtaining of leases, etc.; and, that their clients are properly represented in front of the various Boards. Engineers and scientists are involved not only in the design and construction of the project but also as hired experts at hearings. If the experts are not affiliated with the development directly they can be "purchased" for their opinion if required. This tendency to gather experts which support one's position leads to a belief that they can be hired by the highest bidder. It is worth noting that citizens groups are generally able to mobilise expert support of their position without having to pay them. This was the case with two of the CCPL's expert witnesses, Dr. A.M. Stalker and Dr. G. Garven who both provided their assistance on a *pro bono* basis.

Finally, it is interesting to discuss the position of citizens in relation to the previously mentioned groups. Citizen involvement begins when there is a public perception that the development of a project is contrary to their interest. Although citizen participation of this nature has been characterised as a NIMBY (Not In My Backyard) reaction it often is based upon much broader issues regarding the environmental effects which will ensue from the development. Their ability to mobilise and engage as a resistance to a given project appears to be a function of both leadership and financial resources. In the case of the CCPL two members in particular, Ms. S. Schalin originally, and later Mr. B. Weisenburger, both demonstrated a willingness to devote personal time, effort and funding to the maintenance of the CCPL position. The finances for a lot of these organisations originates in their immediate community and therefore, effort must be made to maintain a high profile for the generation of a greater public awareness and support. The CCPL has been successful in these undertakings but the fact that a group's success is largely determined by these two factors serves to highlight the weakened bargaining position of citizens in general. In most situations money, or intervenor funding, has not been established by statute for the assistance of citizens who wish to participate in Board hearings and/or obtain expert assistance. It is also important to note that citizens at hearings are not always afforded the same procedural benefits, such as the ability to cross examine witnesses or even the ability to speak. It is often the case that submissions can only be made in the form of a written brief, such as at the Pine Lake Health Board hearing regarding site selection. This type of procedural pre-emption from hearings is especially frustrating when the public has been excluded from decision making leading up



to the hearing. Democratic participation does not always seem to extend to developmental decision making.

After discussing the relative authority of these social actors at a practical level it is worth while analysing the basis for their beliefs with respect to cost and risk aversions.

### *Cost and Risk Aversions*

When Ulrich Beck's analysis of risk society was discussed in Chapter One it was done as a characterisation of advanced industrial society in general (Beck 1992). What is interesting now is to analyse Pine Lake for a determination of where risk is being generated and for what rationale. Pine Lake is an extreme case and one that is highly symbolic of industrial societies since it regards a regional sanitary landfill which is required for the disposal of household waste from an over-consuming Canadian public. In this sense it provides a bit of irony as well. Not only does environmental destruction result from productive and consumption choices but disposal choices as well. The fact that Pine Lake will be contaminated by leachate was not as much a debated issue during the hearings as was the quantification of the amount of leachate and over what time frame (Schalin 1991; Garven 1990; Proby 1992; Weisenburger 1994; Hrudey 1992). Experts for the proponent discussed the dilution of the leachate in the creek leading to the lake and stated that although leachate would reach Pine Lake it would be diluted and therefore of no concern (Proby 1992). Why do the proponents feel that leachate is acceptable? The answer to this appears to be based on factors which have an economic basis, such as: the fact that they do not believe that they will find a better site; the fact that they have invested considerable time and expense in the siting process; and, the fact that if this site were not to become operative, additional costs would ensue for the hauling of the garbage to an alternative site.

Another factor which must not be overlooked is the actors' reliance upon risk analysis as a means of assessing the appropriate courses of action to take. This was demonstrated by AEP's assessment of the risk to Pine Lake if all of the boreholes were not properly abandoned (AEP 1995). It is obvious from this example that the costs of the loss of the Pine Lake ecosystem are not factored into the calculation even with an economic value. Externalities which are apparent from the evidence are disregarded. This failure to weigh environmental externalities against development cost is not only dangerous but negligent in an era of environmental awareness.

On a more theoretical level it is worthwhile musing about the evolution of risk assessment in developmental decision making. To whom does such a benefit result and what is its nature? It is submitted that it does not provide a benefit to anyone at least on a health and environmental level, but even still the propagation and acceptance of this type of rationale has become common place, as exhibited by its use in rural Canada. From this flows a proposition that risk is acceptable when its acceptance is economically efficient. This means that in situations where environmental externalities are known to exist a development project will proceed when the benefits from its occurrence are economic, such as providing a source of income or costing less than an alternative decision.

The faith in humanity's ability to make predictions is often based upon a misunderstanding of prediction itself. This can be demonstrated with the predictive logic applied by fighter

pilots in the World Wars. They would calculate their chances of continuing survival based upon how many successful sorties they had already flown. Their confidence or fear was false as it was predicated upon an incorrect application of prediction with respect to dependent and independent variables. When factors are independent, and are characterised as such, then a prediction of resulting harm would not be misguided. If in reality the factors are dependent, but are characterised as independent, the risk analysis would be incorrect because the probability of harm would be incorrect for the actual situation. This is important because current environmental policy is premised upon a belief in the uniformity of nature's responses, or their independentness, when in fact nature's responses are non-linear, dynamic and dependent (Wells 1996). The correlations which exist between environmental factors are in this way excluded from decision making and as such development projects which act on these assumptions remain a hazard.

A final step in the discussion of the Pine Lake case study and Canadian environmental policy must be an evaluation of the relative expression of the environmental public and private domains.

### *Public and Private Domains*

To recapitulate what was stated in Chapter One, public domain is being used to define the interest expressed in environmental policy and practice which is consistent with a communal approach to nature. It has found expression in law through statutes which are designed to preserve natural spaces and also in the concept of sustainable development. In contrast, private domain refers to a perception of nature as something to be owned and utilised for individualistic gain and hence, the greatest economic benefit. In law this perception has found expression in a readiness to protect the rights of owners of private property and indirectly by an absence of law which prohibits polluting in its entirety.

Pine Lake demonstrates the blurring of the line between the public and private domains because actors can hold composite interests with respect to the environment. While citizens worry about a potential decline in the economic value of their own property, they also worry about the decline in environmental value of both their own property and of the lake. Citizens therefore perceive the public domain from a private domain position. Egalitarianism is expressed in their actions but individual motivations are also in existence. This is the crux of the problem. Upon whom is the loss of the lake inflicted? Does society perceive it as a loss to the private domain or the public one? Not only will the leachate result in economic loss to the community but an in environmental loss as well. The landfill is a public good but the ramifications of its siting are not addressed in terms of public loss but public gain. The community gains a landfill and loses a lake. In this way the landfill is valued more highly due to the economic benefits which flow from its development than those which result from the lake through public recreational enjoyment and private lifestyle. It would appear that the only way to separate the public domain from the private is for society to accept that some developmental decisions are wrong, not because economically they are less viable but, because they result in unnecessary environmental harm. Unnecessary environmental harm in this sense refers to the results of decisions for whom safer environmental alternatives existed.

Given that Boards have a statutory duty to properly adjudicate development projects and to determine whether their beneficial effects exceed their negative ones, and given that they have

the discretion to refuse an application where it is in the public interest to do so, Boards should become the forums for the expression of the public domain. The fact that public interest refers to the welfare of the community and which must therefore incorporate consideration for any deleterious environmental effects, Boards must place a more onerous burden upon applicants to demonstrate why the public environmental interest should be overridden by a public or private economic one. In order to achieve this they should start with the assumption that it is not. When applicants face a more onerous burden of proof they will be more likely to undertake projects for whom the environmental interest is greater than the economic in order to ensure that their application is approved. This shifts the burden of proving a *bona fide* public environmental interest from the citizens to the applicants who also hold more resources at their disposal.

### *Conclusions*

Pine Lake demonstrates that private and public domains of interest within environmental policy are premised upon their economic value and not their environmental one. Development proceeds on the basis of risk assessment and the domination of public interest in general as citizens are not afforded the opportunity to express an environmental collective interest as strongly as proponents are able to express an economic one. Until the adjudication of projects incorporates the expression of public environmental concerns environmental policy, in practice, will continue to reflect the interests of those individuals who advance a "public goods" definition for the environment.

The result of this is a continuing evolution toward a post-modern environment where public areas will continue to be perceived as adjuncts to private. A post-modern environment will continue to propagate the distance between humanity and the environment such that any enjoyment of nature will be for economic benefit first, and natural second. This can be demonstrated by the fact that industrialised humanity's environment is fast becoming an artificial construct of theme parks and shopping malls. In this way nature becomes useful when it can be used to sell products if in fact it is not required to make them.

## **6. BEYOND THE ENVIRONMENTAL STALEMATE**

The preceding Chapters result in the conclusion that Canada is engaged in an environmental stalemate. This has been caused by the constraints of budgetary cut-backs, industry interests, constitutional deadlock and developmental decision making practice. One issue that is left to be discussed with respect to the implementation of sustainable development in Canada is how to ensure the democratic requirement of political accountability such that political jurisdiction and impact are equivalent. It is submitted that the answer to this lies with the forgotten environmental stakeholder: the citizen. It is proposed that the environmental stalemate can be broken by citizens who demand increased democratisation of decision making through increased citizen participation and the use of trust law.

### *Civic Environmentalism*

Citizens have a role to play not only through their votes which determine who the policy

makers are but, to ensure that appropriate policies are implemented and followed. The issue is governmental accountability. If Canadian governments are expressing an intention of sustainable development internationally, nationally, provincially and territorially then they must be made to incorporate such an intention into their daily decisions and to not let it remain at the level of policy rhetoric. This challenge must be met by citizens. It is no longer sufficient to wait for governments to enact the "good" policies but to push them to do so. In order to achieve this citizens must become engaged with their surroundings and challenge decision makers to act prudently in their statutory roles.

DeWitt John, in his book *Civic Environmentalism* regarding the United States, states that there is a means to unite government, environmentalists and citizens through a form of decentralised environmental regulation which has a grass-roots perspective (John 1994). He calls this union "Civic Environmentalism" and states that it is not an alternative to federal regulation but rather a 'powerful complement to it' (John 1994:xiv). The key is to ensure that environmental considerations including: the benefit of a clean environment; the unpredictability of environmental impacts; and, the risks of environmental collapse, be taken into consideration in all decisions regarding the investment of society's wealth (John 1994:4). Civic environmentalism utilises a different style and type of environmental policy than mainstream methods because: it focuses on a different set of environmental problems; uses different tools; seeks to overcome regulatory fragmentation; and, searches for alternatives to confrontation such as collaborative approaches (John 1994:9). Such an approach 'may provide an effective way of making decisions about how environmental values can be balanced with other values to increase the chances of achieving an economically and environmentally sustainable society' (John 1994:16).

Using three practical examples of civic environmentalism in the United States, John concludes that it flows from three changes already taking place in society: the realisation that states can make an effective contribution to environmental issues due to their comparative advantage in being able to use non-regulatory tools; the growing necessity for, and utilisation of, information by government coupled with the greater availability of specific information at local levels; and, that there has been a political dimension lacking in discussions of sustainable development which can be aided by a state agenda which assists firms and public works projects with the incorporation of sustainable development principles (John 1994:270-8). The result of this is the emergence of a local agenda which combines policy making, planning, environmentally sound economic development and environmentally sound investments in public infrastructure (John 1994:291). However, federal support is still required in the form of: financial assistance; contributions of skills and knowledge; the formation of partnerships; helping with the evaluation of environmental initiatives; through the maintenance of strict regulatory and enforcement regimes; and, by evaluating regulatory effectiveness (John 1994:292-4).

Can civic environmentalism be utilised in Canada as a means of increasing the democratisation of decision making? Although Canada has a different political system than that of the United States the concepts of collaborative and decentralised decision making found in the concept of civic environmentalism are valuable. Citizens, as demonstrated by Pine Lake, are currently involved in developmental processes in Canada, even at the level of providing input into proposed governmental legislation. The ability to provide local knowledge to decision makers would be a valuable step toward environmentally sound

development decisions. Furthermore, with increased participation will come increased governmental accountability as citizens will be involved in the process and will therefore aid in the determination of development decisions.

Civic environmentalism also encourages co-operation with other social actors, such as business and industry, and the sharing of information. The value of these types of relationships can only aid in a move toward change.

However, civic environmentalism fails to address how citizens can ensure that decentralised decisions will in fact be environmentally sound. Notwithstanding civic participation, bad environmental choices are being made for political and economic reasons that fall outside the scope of open decision making. A remedying of this situation is also required and this is what will now be addressed.

### *The Environmental Trust*

Canadian society is governed by the overarching principle of the Rule of Law which ensures that government officials operate within their statutorily defined duties. The creation of the Canadian Charter of Rights and Freedoms, *Constitution Act, 1982*, has led to a greater civil awareness of what constitutes inappropriate government action. This has led some authors to call for the generation of a Charter right to a safe natural environment (Cameron 1991; Giagnocavo and Goldstein 1990) but the time, expense and indeterminacy of such a pursuit are all factors which have kept this remedy from being currently available. What is required is a practical means of ensuring governmental accountability and one way to design such a means is to focus upon governmental policy and to combine it with trust law.

The idea of using trust law has been previously advanced by Edith B. Weiss in her paper titled *The Planetary Trust: Conservation and Intergenerational Equity*. Here she presented an argument that humanity holds the natural and cultural resources of the planet in trust for all generations (Weiss 1985:232). While this 1985 argument mirrors the 1987 Brundtland Report's conceptualisation of sustainable development, Weiss' presentation is posited at a practical level by examining the ability to create such a trust within the Anglo-American legal tradition.

Weiss characterises the elements of such a declaration of humanity as trustees over a planetary trust. She notes that a fiduciary relationship which imposes a duty upon the trustee to act on behalf of the trust beneficiaries is essential and that this can be inferred from the 'nearly universal recognition and acceptance among peoples of an obligation to protect the natural and cultural heritage for future generations' (Weiss 1985:233-4). She writes:

The law of charitable trusts offers a particularly valuable analytic framework, because many of the problems, goals, and implementation processes of the planetary trust are similar to those of the charitable trust. The charitable trust need not have ascertainable beneficiaries; under the planetary trust all human generations, born and unborn are beneficiaries. The charitable trust can be of unlimited duration; the planetary trust will operate for as long as humans exist. The charitable trust must be designed to accomplish objectives which are beneficial to the community; the basic purpose of the planetary trust is to

sustain the welfare of humanity (Weiss 1985:237).

While Weiss concluded that it was not possible to actually construct the charitable trust, it is submitted that this may no longer be the case in Canada.

Since the publication of Weiss's article in 1985, a lot of international and national agreements, policies and legislation have been developed which recognise either implicitly or explicitly the concept of sustainable development. The result of this revelation is that it may now be possible to utilise trust law as a means of ensuring that government rhetoric and practice, with respect to environmental concerns, are equivalent and as such, that one of sustainable development's main tenets is met. The argument to be presented here is that the law of charitable trusts will allow citizens to hold governments, as trustees, to a duty to maintain the environment for future generations, for to act otherwise would result in a breach of trust which is remediable in law.

The Canadian charitable trust can be argued as being available for the above stated purpose if the concept of sustainable development can be characterised as a norm of Canadian law<sup>6</sup>. As was discussed previously in Chapter Two, sustainable development permeates Canadian public policy in general and is being taken into consideration not only by Ministerial departments through their conceptualisation of future undertakings, but also by administrative tribunals like the Natural Resource Conservation Board in Alberta. If this is true, then a legally enforceable fiduciary duty may exist on the part of the government to ensure that sustainable development occurs.

A second requirement is the ability to characterise the government as having made an express declaration of their intention to act as trustees of the environment. It is submitted that this has occurred through the Canadian signing of various international agreements and especially of Agenda 21. Although the federal government of Canada has the power to sign international agreements under their Peace Order and Good Government power, found in s.91 of the *Constitution Act, 1867*, they cannot bind the provinces or territories to the performance of international obligations where to do so would interfere with provincial or territorial legislative powers (Hogg 1985:253). In this situation, as was observed in the lead-up to the UNCED Conference in 1992, the federal, provincial and territorial governments worked together to define a Canadian policy platform. This type of co-ordination for UNCED was provided by the Canadian Council of Ministers of the Environment, a permanent body for ensuring policy co-ordination between the different levels of government (Lavoie 1996), and as such all levels of government can be stated to have acquiesced to their position as trustees. If it can not be argued that formally such a declaration of trusteeship has been made, then in the alternative, it can be implicitly demonstrated through the governmental actions which have placed sustainable development into policy and practice.

The result of the fulfilment of these two conditions of a fiduciary duty and an intention of trusteeship, is that it would allow citizens to demand that government act as a trustee with respect to the environment, and would therefore significantly alter governmental interactions

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<sup>6</sup> For more specific information regarding the Law of Trusts in Canada reference can be made to Oosterhoff and Gillese (1992).

with nature. The duties of: preserving the trust assets; not profiting from the trust; and, acting prudently; all have implications for government. If citizens were to allege that a government had acted in a speculative manner, such as by making decisions based upon the probability of a risk, the government might be found to be in breach of their trust obligations and as such an equitable remedy would be forthcoming.

A breach of trust provides both personal and proprietary remedies against the trustee (Oosterhoff and Gillese 1992:711) and are restitutive in nature such that they attempt to restore the trust property to the beneficiaries. Some of these remedies include: declaratory judgements; injunctions; the refusal of specific performance; and, the setting aside of transactions (Oosterhoff and Gillese 1992:756). These remedies are useful because they can be used to stop government performance where it is feared that a breach of trust will result and not just where it has. Declaratory judgements and orders can be obtained from a court where it is feared that a trustee's action or proposed action is a breach of trust. An injunction can be used to restrain the actions of the trustee from committing a breach of trust or compel them to carry out the terms of the trust. Specific performance allows courts to set aside a contract entered into by the trustee, with a third party, when the making of the contract constitutes a breach of trust. Courts may also set aside transactions where they were conducted because of a breach of trust (Oosterhoff and Gillese 1992:756). The fact that remedies are available for proposed courses of action is important as the ability to use these can afford a greater environmental protection.

Although an argument for a breach of trust would be difficult to make against government it would provide an innovative way of holding government accountable for their decision making at the level of developmental practice. Such an approach would in effect provide a means of incorporating an over-ride of the private domain by the public domain in current environmental protection practices.

### *Conclusions*

By focusing upon a need for ensuring government accountability two opportunities have been evaluated. Citizen participation and the use of law are but two means of attempting to break the environmental stalemate and as such other solutions still need to be sought. Innovation and creativity are required to provoke change and these types of solutions generally only arise when people from different perspectives talk and thereby share knowledge. The point is that Canadian citizens must not become complacent and wait for government to show them which road leads to environmental safety. Citizens must remember that they construct government and they are the ones who must ensure that government works to achieve all of their legitimate interests and not just the mainstream economic ones.

Perhaps attention should be directed toward the First Nations peoples of Canada and their fight for the right to self-determination. In their pursuit of collective rights they have challenged the traditional concept of government sovereignty and as De Sousa Santos states have achieved a new way of conceptualising state, law and community (1995:326). Perhaps the road to change entails a harmonisation of competing interests and a reorganisation of their power such that a more equitable process results.





## 7. CONCLUSIONS

The preceding sections contain theory, fact and aspirations, all of which reflect the current state of the Canadian environment. The Canadian environment is controlled and organised into a myriad of distinctive governmental jurisdictions, some of whom apply an ecozone approach and some a political one. Not only is the Canadian landscape varied but so to its economy(s) and therefore both the desire to remedy the current *status quo* and the means to do so. Sustainable development as an overarching ideal is propagated in government rhetoric but not in consistent practice. This demonstrates the continuing tension between the environmental public and private domains. Whereas, sustainable development suggests that the public and the private domains are being harmonised, the practice of developmental decision making suggests otherwise. At this level the private interests prevail over those of the public as risk assessments determine the economic efficiency of the project.

The appearance of Canada from an environmental policy perspective is one of confusion. No one appears to know what to do or how to do it. Governments are constitutionally incapacitated in their environmental decision making, the result of which is a loss of accountability. Citizens challenge decision makers but their lack of identity as major stakeholders precludes them from being taken seriously, and hence their characterisation as NIMBY objectors. While some administrative Boards have the capacity to be innovative, others clearly do not. Industry and business are regionalised, and pressure government to include them in decision making and government obliges so that they can learn what they should be able to learn from their own research, if there was money. This is the Canadian environmental stalemate.

But, it must not be said that there is no incentive to step beyond this quagmire. Government, industry and citizens are challenging the present Canadian reality and pushing for change. The fact that government engages in multi-stakeholder meetings and has a visible international presence, demonstrates that they are making attempts not only to obtain fresh viewpoints but to act as a motivating force for other international governments, who in turn exert a pressure to act legitimately. If budgetary constraints are an issue for governmental implementation of new initiatives then ineffective policy should be culled and newer policies inserted.

Industry is an identified stakeholder and a primary actor with respect to the required alleviation of environmental problems. They therefore need to step out of their corporate attire and view society as other private individuals do. While several corporations now undertake their own sustainable development assessments, their focus still needs to shift away from a constant determination of their goals in terms of economic efficiency. A little environmental friendliness would raise their accountability in public's eyes and thereby result in an opportunity to open a dialogue.

Citizens need to continue to push for developmental decision making which incorporates environmental considerations as an equal partner of development. They also need to pursue innovative means of ensuring government accountability and to not be afraid of using obscure legal methods to achieve this. It was not that long ago that sustainable development was unheard of. Citizen action can only serve to stimulate new directions for environmental problem solving.

Finally, Canadians must be urged to look at their natural surroundings not as a social construction called environment but as nature. They do not need scientific assessments to tell them that pollution is bad, they need only use a bit of common sense. There is a common Canadian complaint that persons who have obtained a high level of education, have lost their common sense. Perhaps that is why decision making has gone astray and perhaps its regaining can be a starting point for a new dialogue with nature.

## REFERENCES

- Adams, W.M. (1992), *Green Development: Environment and Sustainable Development*. London: Routledge.
- Advocate Staff. (1996), 'Public May Have Little Say in Where Small Landfills Go', *The Red Deer Advocate*. March 2, 1996.
- Alberta Environment. (1979), *Pine Lake*. Water Quality Control Branch, Pollution Control Division.
- Alberta Environmental Protection. (1996), *Changes to Regulation of Municipal Waste Management Facilities*. Chemicals Assessment and Management Division.
- (1995), *Pine Lake Regional Landfill Groundwater Well Abandonment Program*. Groundwater Protection Branch. July 1995.
- Arrison, S. (1995), 'Environmental Stewardship - The Pine Lake Example', *Environmental Protection News*.
- Author unknown. (1991), 'Klein Delivers Impressive Speech on Environmental Issues', *The Innisfail Province*. April 30, 1991.
- Barro, R.J. (1990), *Macroeconomics*. 3rd ed. New York: John Wiley & Sons, Inc.
- Beck, U. (1995), *Ecological Politics in an Age of Risk*. Trans. A. Weisz. Bonn: Polity Press.
- (1992), *Risk Society: Towards a New Modernity*. Trans. M. Ritter. London: Sage Publications.
- Begon, M., J.L. Harper, and C.R. Townsend. (1986), *Ecology: Individuals, Populations, and Communities*. Sunderland: Sinauer Associates, Inc., Publishers.
- Béland, P. (1996), 'The Book of the Dead', *Canadian Geographic*. Special Issue on the Environment. May/June 1996: 46-7.
- Bernal, J.D. (1954), *Science in History*. London: Watts & Co.
- Black, H.C. (1990), *Black's Law Dictionary. Definitions of the Terms and Phrases of American and English Jurisprudence, Ancient and Modern*. 6th ed. Coauthors J.R. Nolan and J.M. Nolan-Haley. St. Paul, Minnesota: West Publishing Co.
- Block, R. (1991), *Central Alberta Regional Waste Authority. Proposed Regional sanitary Landfill NW10-37-25-W4 & SW10-37-25-W4. Predevelopment Report, supplemental No.2*. Serv-Alta Engineering Ltd. October 21, 1991.
- Boulding, K.E. (1991), 'What do we Want to Sustain? Environmentalism and Human

- Evaluations', in *Ecological Economics: The Science and Management of Sustainability*, ed. R. Constanza, 22-31. New York and Oxford: Columbia University Press.
- Brundtland Report. (1987), *Our Common Future*. World Commission on Environment and Development. Oxford: Oxford University Press.
- Brocklehurst, A. (1996), 'It's Not Easy Being Green', *Canadian Geographic*. Special Issue on the Environment. May/June 1996: 36-45.
- Brooks, S. (1993), *Public Policy in Canada. An Introduction*. 2nd. ed. Toronto: Clelland & Stewart Inc.
- Bryceson, D.F. (1985), *Women and Technology in Developing Countries: Technological Change and Women's Capabilities and Bargaining Positions*. Santo Domingo, Dominican Republic: United Nations International Research and Training Institute for the Advancement of Women (INSTRAW).
- Cameron, J. (1991), 'Environmental Protection in a New Constitution', *Intervenor* 16(4): 5-6.
- Canada, Government of. (1996A), *A Guide to Green Government*. Internet site: grngvt@cpgsv1.am.doe.ca.
- (1996B), *Environmental Protection Legislation Designed for the Future - A renewed CEPA*. CEPA Review: The Government Response to the Recommendations of the Standing Committee on Environment and Sustainable Development Outlined in its Fifth Report. Internet site: <http://www.doe.ca>. November 11, 1996.
- (1992), *1991-1992 Annual Review: National Round Table on the Environment and the Economy*.
- Canada-Alberta, Governments of. (1993), *Canada-Alberta Agreement for Environmental Assessment Cooperation*. August 6, 1993. Internet site: <http://www.ceaa.gc.ca>. November 6, 1996.
- Chandler, R.L. (1991), Alberta Environment. Wastes and Chemicals Division. Letter to Mr. L. Mcleod, Development Officer, County of Red Deer. November 29, 1991.
- Clarke, W. (1977), 'The Structure of Permanence: The Relevance of Self-subsistence Communities for World Ecosystem Management', in *Subsistence and Survival*. T. Bayliss-Smith and R. Freachem, eds., 363-384. London: Academic Press.
- Concerned Citizens of Pine Lake. (1996), Newsletter. June 1, 1996.
- (1994), Newsletter. December 1, 1994.
- (1993), Newsletter. November 1993.

----- (1990), *Submission of the Concerned Citizens of Pine Lake to the Red Deer Regional Health Unit, January 18th, 1990.*

*Constitution Act, 1867.* U.K., 30 & 31 Victoria, c.3.

Cowling, R.L. (1993), *Sanitary Landfill Siting in Alberta: A Battlefield of Process.* unpublished Thesis. Natural Resources Practicum, Faculty of Law, University of Calgary, Alberta, Canada.

Crosbie, J.C. (1992), Minister of Fisheries and Oceans and Minister for the Atlantic Canada Opportunities Agency. Letter to Ms. S. Schalin, Chairman of Concerned Citizens of Pine Lake. October 8, 1992.

Dabrowski, T.L. (1990), Piteau Engineering Ltd. Letter to Mr. Clinton Ford, Legal Counsel for the Concerned Citizens of Pine Lake. January 16, 1990.

De Sousa Santos, B. (1995), *Toward a New Common Sense: Law, Science and Politics in the Paradigmatic Transition.* New York: Routledge.

Development Appeal Board, County of Red Deer No. 23. (1992), *In the Matter of the Land Use Bylaw and The Planning Act; and in the Matter of an Appeal by the Concerned Citizens of Pine Lake Regarding the Issuance of a Development Permit for the Development of a Regional Landfill Site by the Central Alberta Regional Waste Authority.* Decision. April 16, 1992.

Dobson, A. (1990), *Green Political Thought: An Introduction.* London: Harper Collins Academic.

Doern, G.B. and R.W. Phidd. (1992), *Canadian Public Policy: Ideas, Structure, Process.* 2nd ed. Scarborough: Nelson Canada.

Emond, D.P. (1991), 'The Greening of Environmental Law', *McGill Law Journal* 36: 742-69.

Environment Canada. (1996A), *The State of Canada's Environment - 1996 (Highlights).* Ministry of the Environment. Internet site: <http://199.212.18.12>. November 4, 1996.

----- (1996B), *Environment Canada.* Internet site: <http://unep.unep.no>. September 10, 1996.

----- (1996C), *Budget '96 and the Environment.* Ottawa, March 7, 1996. Internet site: <http://www.ec.gc.ca>. November 1, 1996.

----- (1995A), *INFO Program Review Environment Canada: Enforcement.* February 27, 1995. Internet site: <http://www.ec.gc.ca>. November 4, 1996.

----- (1995B), *INFO Program Review Environment Canada: Ecosystem Initiatives.* February 27, 1995. Internet site: <http://www.ec.gc.ca>. November 4, 1996.

- Elliot, J.R. (1996), Director, Environmental Health Services, David Thompson Health Region. Letter to Mr. B. Weisenburger, Chairman of the Concerned Citizens of Pine Lake. April 2, 1996.
- (1993), Director, Environmental Health Services, Red Deer Regional Health Unit. Letter to Mr. B. Weisenburger, Chairman of the Concerned Citizens of Pine Lake. September 3, 1993.
- Epp, T. (1991), *Proposed Regional Landfill, County of Red Deer - Pine Lake Area NW10-37-25-W4*. Alberta Environment Groundwater Protection Branch. July 31, 1991.
- Fernandes, A.L. (1989), Alberta Environment Wastes and Chemicals Division, Industrial Wastes Branch. Letter to Mr. J. Gifford, Public Health Inspector, Red Deer Regional Health Unit. August 10, 1989.
- Foster, J.B. (1994), *The Vulnerable Planet: A Short Economic History of the Environment*. New York: Cornerstone Books.
- Gandy, M. (1993), *Recycling and Waste: Exploration of Contemporary Environmental Policy*. Aldershot: Ashgate Publishing Limited.
- Gare, A.E. (1995), *Postmodernism and the Environmental Crisis*. London: Routledge.
- Garven, G. (1991), Professor, Department of Earth and Planetary Sciences, The Johns Hopkins University. Letter to Ms. S. Schalin, Chairman of Concerned Citizens of Pine Lake. December 26, 1991.
- (1990), Associate Professor of Groundwater Geology, Stanford University. Letter to Ms. S. Schalin, Chairman of the Concerned Citizens of Pine Lake. June 28, 1990.
- Giagnocavo, C. and H. Goldstein. (1990), 'Law Reform or World Re-form: The Problem of Environmental Rights', *McGill Law Journal* 35: 345-86.
- Gorz, A. [1975] (1983), *Ecology as Politics*. Trans. P. Vigderman and J. Cloud. London: Pluto Press.
- Guimaraes, R.P. (1991), *The Ecopolitics of Development in the Third World: Politics & environment in Brazil*. Boulder: Lynne Rienner Publishers.
- Hall, J.D. and A.J. Hanson. (1992), *A New Kind of Sharing. Why We Can't Ignore Global Environmental Change*. Ottawa: International Development Research Centre.
- Hardin, G. (1968), 'The Tragedy of the Commons', *Science* 162:1243.
- Hartmann, H. (1992), 'The Unhappy Marriage of Marxism and Feminism: Towards a More Progressive Union' In *Feminist Philosophies: Problems, Theories and Applications*, eds. J.A. Kournay, J.P. Sterba, and R. Tong, 343-55. New Jersey: Prentice Hall.

- Hodl, E., and G. Kade. (1972), 'On the Political Economy of Environment Disruption', in *Political Economy of Environment: Problems of Method*. Environment and Social Sciences, no.2, 139-146. Paris: Ecole Pratique Des Hautes Etudes, VI Section.
- Hogg, P.W. (1985), *Constitutional Law of Canada*. 2nd ed. Toronto: The Carswell Company Limited.
- Hoskins, B. (1996), Development Officer, County of Red Deer. Letter to Mr. D. ~~atx~~, Central Alberta Waste Management Authority. March 15, 1996.
- Hughes, E.L. (1990), 'Government Response to Environmental Issues: Institutional inadequacies and Capacity for Change', *Journal of Environmental Law and Practice* 1: 51-66.
- Hrudey, S.E. (1992), *Water Quality Considerations for the Central Alberta Regional Solid Waste Authority Proposed Sanitary Landfill*.
- Hull, L.W.H. (1959), *History and Philosophy of Science*. London: Longmans, Green and Co. Ltd.
- Inkpen, W. (1992), Acting Director of Alberta Environment Wastes and Chemicals Division. Letter to Mr. B. Weisenburger, Chairman of Concerned Citizens of Pine Lake. October 9, 1992.
- Innisfail Staff. (1994), 'Landfill Won't Affect Clean-up', *The Innisfail Province*. Monday, August 15, 1994.
- Jacobs, P., P.R. Mulvihill and B. Sadler. (1993), 'Environment Assessment: Current challenges and Future Prospects', *Resources: The Newsletter of the Canadian Institute of Resources Law* No.43(Summer 1993): 6-7.
- John, D. (1994), *Civic Environmentalism. Alternatives to regulation in States and communities*. Washington: Congressional Quarterly Inc.
- Johns, D. (1992), Assistant to the Ombudsman. Letter to Mr. C. Brooks, member of the Concerned Citizens of Pine Lake. October 16, 1992.
- Johnson, H. (1996B), Ombudsman. Letter to Mr. B. Weisenburger, Chairman of the concerned Citizens of Pine Lake. April 4, 1996.
- (1996A). Ombudsman. Letter to Mr. B. Weisenburger, Chairman of the concerned Citizens of Pine Lake. March 12, 1996.
- (1994), Ombudsman. Letter to Mr. B. Weisenburger, Chairman of the concerned Citizens of Pine Lake. November 23, 1994.
- (1993), Ombudsman. Letter to Mr. B. Weisenburger, Chairman of the concerned Citizens of Pine Lake. February 8, 1993.

- (1992), Ombudsman. Letter to Mr. B. Weisenburger, Chairman of the concerned Citizens of Pine Lake. November 13, 1992.
- Kennett, S. (1994), 'The NRCB's West Castle Decision: Sustainable Development Decision-Making in Practice', *Resources: The Newsletter of the Canadian Institute of Resources Law* No.46 (Spring 1994): 1-5.
- (1993), "Hard Law, Soft Law and Diplomacy: The Emerging Paradigm for intergovernmental Cooperation in Environmental Assessment", *Alberta Law Review* XXXI (4):644-61.
- Klein, R.P. (1989), Minister of Environment. Letter to Mrs. J. Brook, member of concerned Citizens of Pine Lake. October 26, 1989.
- Lack, J.C. (1994B), Director, Alberta Environmental Protection, Chemicals Assessment and Management Division. Letter to Mr. B. Weisenburger, Chairman Concerned Citizens of Pine Lake. November 7, 1994.
- (1994A), Alberta Environment, Waste and Chemicals Division. Letter to Mr. C. Brook, member of Concerned Citizens of Pine Lake. May 17, 1994.
- Lanken, D. (1996), 'Boreal Forest' *Canadian Geographic*. Special Issue on the environment. May/June 1996: 26-33.
- Lash, S., and B. Wynne. (1992), 'Introduction', in *Risk Society: Towards a New Modernity*. U. Beck. 1-8. London: Sage Publications.
- Lavoie, M. (1996), *Bringing the Earth Summit Home: Canada's Experience*. Final assignment of MPC 214 Course, Institute of Social Studies, The Hague, The Netherlands.
- Martin, K. (1991), 'The Evolution of Modern Development Theory' in *Strategies for Modern Development: The Politics of Industrialization*, 27-71. MacMillan.
- Mather, D.P. (1996), Secretary-Treasurer of Central Alberta Regional Waste Authority. Letter to Ms. B. Hoskins, Development Officer, County of Red Deer. August 12, 1996.
- (1990), Secretary-Treasurer of Central Alberta Regional Waste Authority. Letter to Ms. S. Schalin, Chairman of the Concerned Citizens of Pine Lake. January 12, 1990.
- Maynard, A. (1994), 'Official Warns of Flawed Landfill', *The Red Deer Advocate*. November 15, 1994.
- (1993), 'Landfill Construction Blocked: Clay Liners too Thin at Pine Lake Dump Site', *The Red Deer Advocate*. October 7, 1993.
- Macleod, L. (1995B), Development Officer, County of Red Deer. Letter to Central Alberta



- Regional Waste Authority, attention of Mr. D. Mather. September 22, 1995.
- (1995A), Development Officer, County of Red Deer. Letter to Central Alberta Regional Waste Authority, attention of Mr. D. Mather. September 21, 1995.
- (1993), Development Officer, County of Red Deer. Letter to Mr. D. Mather, Central Alberta Regional Waste Authority. September 23, 1993.
- Michelin, L. (1996), 'Landfill Frustrating County', *The Red Deer Advocate*. August 16, 1996.
- Milton, K., ed. (1993), *Environmentalism: The View from Anthropology*. London: Routledge.
- (1991), 'Interpreting Environmental Policy: A Social Scientific Approach', *Journal of Law and Society* 18(1): 4-17.
- Montague, P., ed. (1988), 'Leachate from Municipal Dumps has Same Toxicity as Leachate from Hazardous Waste Dumps' *Rachel's Hazardous Waste News* #90. Providing News and resources to the Movement for Environmental Justice. August 15, 1988.
- Nederveen Pieterse, J. (1995), *Different Capitalisms*. Unpublished manuscript.
- Oosterhoff, A.H. and E.E. Gilless. (1992), *Text, Commentary and Cases on Trusts*. 4th ed. Scarborough, Ontario: Carswell.
- Patterson II, E.P. (1975), 'Indian-White Relations in Canada', in *Politics of Race*. D.G. Baker, ed. Westmead: Saxon House.
- Pierce, J. (1994), 'Garbage Proposal calls for Burning at Bowden Institute', *The Innisfail Province*. October 17, 1994.
- Proby, J. (1992), 'Emotional Plea to Save Pine Lake', *The Advocate*. February 21, 1992.
- Public Health Advisory and Appeal Board. (1990), *In the Matter of the Public Health Act, and Amendments Thereto; and in the Matter of an Appeal to the Public Health Advisory and Appeal Board by Shirley Schalin and the Concerned Citizens of Pine Lake, Dated July 23, 1990*. Decision.
- Rankin, M. (1991), 'Economic Incentives for Environmental Protection: Some Canadian Approaches', *Journal of Environmental Law and Practice* 1: 241-58.
- Redclift, M. (1993), 'Sustainable Development: Needs, Values, Rights', *Environmental Values* 2(1):3-20.
- Red Deer Regional Health Unit. (1993), *Decision. Permit to Operate Regional Sanitary Landfill NW 1/4-10-37-25-W4*. August 23, 1993.

- Red Deer Regional Planning Commission. (1989), Director: R.R. Cundy, M.C.I.P. Letter to Mr. J. Gifford, Public Health Inspector, Red Deer Regional Health Unit. June 29, 1989.
- Rich, B. (1994), *Mortgaging the Earth*. London: Earthscan Publications Ltd.
- Ross, E.B. (1996), *Environment, Economy and Equity: Challenging the Consensus on Sustainable Development*. SCHOLAS Public Lecture. November 1, 1996.
- Rothwell, K. (1991), Head, Environmental Assessment Section, Alberta District, Environment Canada, Environmental Protection Western & Northern Region. Letter to Mr. R. Peet, Division Manager, resource Allocation and Habitat Management, Fisheries and Oceans Canada. August 1, 1991.
- Russett, C.E. (1966), *The Concept of Equilibrium in American Social Thought*. London: Yale University Press.
- Sachs, W. (1992), 'Environment' in *The Development Dictionary*. W. Sachs, ed., 26-37. London: Zed Books Ltd.
- Schalin, S. (1991), Chairman of the Concerned Citizens of Pine Lake. Letter to Mr. R. Klein, Minister of the Environment. February 28, 1991.
- Schulte, F.J. (1996D), Director of Alberta Environmental Protection, Environmental Regulatory Services, Pollution Control Division. Letter to Mr. B. Weisenburger, Chairman of Concerned Citizens of Pine Lake. August 29, 1996.
- (1996C), Director of Alberta Environmental Protection, Environmental Regulatory Services, Pollution Control Division. Letter to B. Weisenburger, Chairman of Concerned Citizens of Pine Lake. August 2, 1996
- (1996B), Director of Alberta Environmental Protection, Environmental Regulatory Services, Pollution Control Division. Letter to B. Weisenburger, Chairman of Concerned Citizens of Pine Lake. May 24, 1996
- (1996A), Director of Alberta Environmental Protection, Environmental Regulatory Services, Pollution Control Division. Letter to B. Weisenburger, Chairman of the Concerned Citizens of Pine Lake. March 12, 1996.
- Sharek, G.W. and R.R. Nelson. (1994), *Town of Bowden, Town of Penhold, Town of Innisfail, County of Red Deer No.23 and Town of Bowden, Town of Penhold, Town of Innisfail and County of Red Deer No.23 jointly operating as Central Alberta Regional Waste Authority, Plaintiffs. v. Northside Engineering Ltd., Serv- Alta Engineering Ltd., Randy M. Block, Thurber Environmental Consultants Ltd. and Laurentian P & C Insurance Company, Defendants*. Statement of Claim. In the Court of Queen's Bench of Alberta, Judicial District of Red Deer. Filed March 15, 1994.

- Stalker, A.M. (1991), Letter to Ms. S. Schalin, Chairman of the Concerned Citizens of Pine Lake. October 24, 1991.
- (1989), Department of Geography, University of Lethbridge. Letter to Mr. C.W. Ford, Legal Counsel for the Concerned Citizens of Pine Lake. October 30, 1989.
- Stebner, G.J. (1994B), Secretary, Development Appeal Board. Letter to Mr. D.P. Mallon, Legal Counsel of Central Alberta Regional Waste Authority. December 7, 1994.
- (1994A), Secretary, Development Appeal Board. Letter to Mr. D.P. Mallon, Legal Counsel of Central Alberta Regional Waste Authority. May 19, 1994.
- (1993), Secretary, Development Appeal Board. Letter to Mr. B.A. Sjolie, Legal Counsel of Central Alberta Regional Waste Authority. October 22, 1993.
- Stewart, J. (1994), Pine Lake Landfill May Not Meet Criteria. *The Innisfail Province*. January 10, 1994.
- Stoyberg, E. (1989), *Attention*. Chairman of Central Alberta Regional Waste Authority Newspaper unknown. August 2, 1989.
- Sunderlin, W.D. (1995), 'Global Environmental Change, Sociology, and Paradigm Isolation', *Global Environmental Change* 5(3): 211-220.
- The Pine Lake Restoration Society. (1996), *The Community Stewardship Lake Book*. J. Elves, ed. Oil City Press.
- Tolba, M.K., and O.A. El-Kholy, eds. (1992), *The World Environment 1972-1992*. London: Chapman & Hall on behalf of UNEP.
- van de Laar, A. (1996), *Economic Theory and the Natural Environment: A Historical Overview*. Institute of Social Studies, Working Paper Series, no. 209. The Hague: Institute of Social Studies.
- Verbruggen, H. (1991), 'Political Economy Aspects of Environmental Policy Instruments', in *Environmental Policy and the Economy*, ed. F.J. Dietz, F.v.d. Ploeg and J.v.d. Straaten, 141-149. Contributions to Economic Analysis, no. 206. Amsterdam: Elsevier Science Publishers B.V.
- Virtue, C.J. Justice. (1993), *Society of Concerned Citizens of Pine Lake v. Red Deer Regional Health Unit and Central Alberta Regional Waste Authority*. Court of Queen's Bench of Alberta, Judicial District of Calgary. Action No. 9301-06402. May 19, 1993.
- Walters, M. (1991), 'Ecological Unity and Political Fragmentation: The Implications of the Brundtland Report for the Canadian Constitutional Order', *Alberta Law Review* XXIX(2): 420-49.

- Watson, P. (1996), *Alberta Environmental Protection Draft Code of Practice for land fills*.  
Regional Director, Alberta Environmental Protection, Environmental Regulatory  
Services. May 24, 1996.
- Weisenburger, B. (1996C), Chairman of the Concerned Citizens of Pine Lake. Letter to F.J.  
Schulte, Director of Alberta Environmental Protection. August 26, 1996.
- (1996B), Chairman of the Concerned Citizens of Pine Lake. Letter to Mr. H.  
Johnson, Ombudsman. February 14, 1996.
- (1996A), Chairman of the Concerned Citizens of Pine Lake. Letter to Mr. L. dæd  
Development Commissioner, County of Red Deer. January 2, 1996.
- (1995A), Chairman of the Concerned Citizens of Pine Lake. Letter to Mr. J.  
McKinley, Investigator, Alberta Environmental Protection. December 15, 1995.
- (1995B), Chairman of the Concerned Citizens of Pine Lake. Letter to Mr. J.R.  
Elliot, Director, David Thompson Regional Health Authority. August 21, 1995.
- (1994), Chairman of the Concerned Citizens of Pine Lake. *Re: Alberta  
Environment's Additional Conflicting Involvement in the Pine Lake Regional Sanitary  
Landfill in Particular their Responsibility to Proper "BOREHOLE" Abandonment and  
Alberta Environment's Interference with Local Authorities Stipulated Requirements*.  
Brief to Mr. H. Johnson, Ombudsman. October 19, 1994.
- (1993), Chairman of the Concerned Citizens of Pine Lake. Letter to Mr. J.R. Elliot,  
Director of Environmental Services, Red Deer Regional Health Unit. September 15,  
1993.
- Weiss, E.B. (1985), 'The Planetary Trust: Conservation and Intergenerational Equity',  
*Land Use and Environment Law Review* 229-315.
- Wells, D.T. (1996), *Environmental Policy: A Global Perspective for the Twenty-First  
Century*. Upper Saddle River: Prentice Hall.
- Western Soil and Environmental Services. (1981), *Hazardous Waste Implementation  
Program: Geologic-Hydrologic Constraints*.
- Wilson, A. (1991), *The Culture of Nature: North American Landscape from Disney to the  
Exxon Valdez*. Toronto: Between the Lines.