AN ASSESSMENT OF INTEGRATED RESOURCE PLANNING AS A RESPONSE TO PRESERVATION VERSUS DEVELOPMENT CONFLICTS IN B.C.

by

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ABSTRACT

There are approximately 187 issues involving preservation versus development currently active in British Columbia. Many of these involve important forest lands. One of the typical responses to forest land use conflicts has been attempts at integrated resource planning. To reach an effective resolution, trade-offs and compromises are required. However, integrated resource planning appears to be ineffective at resolving preservation issues. This thesis seeks to reveal the reasons for ineffectiveness through the exploration of the nature of the preservation versus development debate and the integrated resource planning process as it is practised in British Columbia. The concepts of Dominant Social Paradigm (DSP) and New Environmental Paradigm (NEP) are employed to demonstrate that a fundamental difference in values exists between the protagonists involved in the planning process. Furthermore, by virtue of the values held by participants, the planning process is shown to be NEP oriented, reflecting a fairly strong degree of acceptance of the environmental message. The research also reveals distinct differences in perceptions of integrated resource planning as well as strong support for preservation as a preferred land use option. Differences in

perceptions of integrated resource planning are shown to generate considerable confusion and exacerbate the conflict. The thesis concludes that integrated resource planning will remain ineffective at resolving land use conflicts until there is a fundamental change in forest management and its philosophy. Specifically, both the philosophy and practice of integrated resource planning needs to be reformed to include preservation as a valid form of forest land use.

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CHAPTER ONE

Introduction

Research Problem and Thesis Structure

British Columbia is a province in transition--both socially and environmentally. The vision of a vast, wild landscape bountiful in natural resources is still evident in the collective cultural mind, expressing itself as a frontier ethic. However, more recently, doubts generated by rapid exploration and development of these resources have begun to surface. Underlying these doubts are concerns about the land's capability to sustain such rates of development. Manning (1985) states: "...Canadians continue to make decisions as if the resource base was not a factor to be considered--as if that resource base was infinite and its finite capacity could not affect the achievement of 'economic' goals" (p. 1). He goes on to admonish: "...ours is a history of failure to consider the long-term maintenance of the resource in our decisions, and where we do consider land resources, of a complacency bred of our frontier past" (p. 2). While he was speaking of Canada in general, his comments are especially appropriate to British Columbia--one of Canada's most recent frontiers.

Holding central place in B.C.'s history are its forests, its 'green gold.'[1] For a long time, this resource was believed to be so plentiful that the thought of demand

ever exceeding supply was nearly incomprehensible. However, in the Summary of the 1984 Forest and Range Resource Analysis (1984), this warning was issued: "It is evident from this analysis that the present forest resource cannot continue to support current harvest rates and still meet the long-term objectives of sustained yield..." (p. 48). Commenting on the possibility that improved forestry programs could alleviate this situation, the same report states: "Current intensive management programs fall short of resolving the problem and will not achieve the performance anticipated when the allowable annual cuts were established" (p. 49).

Faced with a diminishing resource, the Ministry of Forests and the industry have adopted strong possessive and defensive positions. This is especially so when confronted by other forest uses, such as wilderness preservation, which would preclude industrial use. Consequently, conflicts between resource development and preservation are becoming more common place. Efforts to effectively resolve these conflicts have had little success to date. Therefore, the purpose of this thesis is to facilitate a clearer understanding of the conflict between development and preservation with the view to the development of more effective conflict resolution methods. Specific reference is made to forest land use conflicts. In attempting to provide some understanding and direction towards the more effective

resolution of this type of conflict, the thesis addresses these questions:

1. Are there fundamental differences in values held by different groups underlying preservation versus development issues? If so, what are the values in conflict?

2. Is the planning process influenced by one particular set of values? and,

3. Are there differences in perceptions of integrated resource planning and public participation?

Subsequent chapters will explore these questions in more detail. Chapter two describes two integrated resource planning processes--Meares Island and the Valhallas--which will be used as case studies. Specific attention will be paid to the development of the conflict, to the form of the planning process, to the final decision, and to the positions of key actors within the process. Chapter three presents an indepth review of the literature on land use planning, public participation and the role of values in land use decisions. Chapter four presents an evaluative model and a methodology, while Chapter five presents the results of the application of the model and methodology to the case studies. Chapter six draws from the results some conclusions and recommendations pertaining to the improvement of integrated resource planning as a response to preservation versus development conflicts.

Context of the Conflict: Forest Policies and the Coming of the Wilderness Debate

Throughout much of British Columbia's recent history, the forests have been integral to economic well-being. Forest policies and legislations have tended to favour and encourage rapid exploitation of the forests.[2] When considering the history of forest exploitation in B.C., three distinct periods can be delineated, each with its own royal commission on forestry and each a product of prevailing environmental values and attitudes.[3] The first period of Green Gold ran from colonial times to the late 1920's or early 1930's. The next period of consolidation lasted from the early 1930's to the mid-1960's. The most recent period, that of scarcity, began during the mid-1960's and could well last into the next century. Each will be discussed in turn.

Initially, the vast forest lands of the province were given away as Crown grants, the largest of these being the Esquimalt and Nanaimo Railroad grant of 3/4 million hectares in 1883. Located on southeastern Vancouver Island, the land compromised some of the highest quality timber at the time, and, because of its proximity and accessibility, was also highly valuable. However, the new province was quick to realize that it was not getting a fair return on this resource exploitation. Consequently, commencing in 1884, the government imposed new forms of licences, collectively known as Old Temporary Tenures. These licences required the payment of an annual rental and placed certain restrictions

on timber harvesting (Pearse, 1976). However, this was a period of rapid expansion and the restrictions were soon put aside to encourage exploitation and revenue generation. In 1889, the cut from provincial lands was 1.24 million cubic metres (m^3). By 1907, the cut was 16.03 million cubic metres (Swift, 1983). This dramatic increase in the rate of cut was fuelled by regional shortages elsewhere in Canada and by a provincial government eager for public revenue. As Mackay (1985) notes: "In a short-sighted grab for quick public revenue, the number of leases rose from 1,600 to 15,000" (p. 50). Swift (1983) points out that: "...the conservative government of Richard McBride abolished the previous restrictions on the number of licences any single person could hold, thus encouraging speculation" (p. 58). Thus, the forests were sacrificed for economic growth. By 1907, nearly 4 million hectares had been alienated as Old Temporary Tenures (Pearse, 1976). Fearing that it was losing control of their source of revenue (the forest), the government began to consider new forms of allocation to timber rights.

Initiated in 1882, the Canadian Conservation Movement began to gain momentum. Inspired by Gifford Pinchot, Chief Forester of the United States Forest Service and special advisor to President Theodore Roosevelt, conservationists believed in wise use of the forests based on rational scientific management, leading to improved efficiency and less wastage in resource extraction (Culhane, 1981; Nash,

1976; Caldwell, 1970). Initially, the movement had failed to attract large scale enthusiasm, remaining essentially an eastern Canada phenomenon. However, as the forests of B.C. were being rapidly liquidated, conservationism spread westward. Sensing an opportunity to use the conservation argument to their advantage, the forest industry lobbied the government for long-term renewable licences to discourage "cut and get out" tendencies by some less honourable amongst them (Swift, 1983). In response to the conservationists and the forest industry, the provincial government established a royal commission under the direction of the Commissioner of Lands and Works, Mr. F. Fulton.

Through the Commission's work, the general perception emerged that enough land had been alienated to meet industrial needs except in certain areas to meet local needs or to rationalize operations (Pearse, 1976). To meet these local needs, Fulton recommended competitive bidding for Timber Sale Licences. Also out of the Royal Commissions's recommendations came the 1912 Forest Act and the establishment of the Forest Service and forest reserves. Unfortunately, one of Fulton's best recommendations, calling for the creation of a special forestry fund to be used for the replenishment and long-term maintenance of the forests, was ignored by the government. The prevailing attitude was that natural regeneration aided by fire suppression was enough. The opportunity to advance major forest policy

reforms was tempered by the awareness of the revenues generated for the public coffers by the industry. As Swift (1983) points out: "In 1900 the B.C. government received $136,000 in forest revenues and by the time of the Forest Act had been passed the Crown had pulled in $2.25 million in a single year" (p. 61). In return, the government had approved the industry's demand for renewability prior to receiving Fulton's final report.

Fulton's royal commission and its offspring--the Forest Act, the Forest Service and the forest reserves--did very little to check actual forestry practices. In 1924, a Dominion Royal Commission on Pulpwood reported that: "In British Columbia, it found what was, on paper, the best forest act in the country, but concluded the province was otherwise oblivious to the need for forest management" (Mackay, 1985:75). However, just one year before the Fulton Commission, the Provincial Parks Act had been declared. Against the backdrop of rapid forest harvesting, Strathcona, Mt. Robson and Garibaldi Provincial Parks were established during the period of 1911-1930, signalling the emerging need for preservation (Korpess, 1977).

The Depression of the 1930's ushered in a new era in forestry policies and practices, although it had bleak beginnings. Government cutbacks on staffing and budgets greatly reduced the Forest Service's ability to regulate the industry. Further, because many of the companies were in

financial trouble, sound forestry policies and practices were once again put aside. C.D. Howe was moved to remark:

> The governments have apparently lost interest in it [forestry]. In some cases government grants for the maintenance of forestry have been reduced far out of proportion to reductions in other public services. The cynic might say this was done because the governments knew that it could be done with less public protest than in any other field of public endeavour. Forestry controls few votes...the public should be led to such an appreciation of the importance of our objectives in terms of intelligent and orderly development of land use and of the forest industries, that it would not endure without protest, the abandonment or serious curtailment of great reforestation projects, the reduction of fire protection services to a dangerous limit and the wiping out of practically all investigative work upon which any sensible policy of handling our forest resources must be based[4] (Mackay, 1985:87-88).

However, as the Depression of the 1930's receded, concerns about forest management resurfaced. Provincial Chief Forester C.D. Orchard forwarded to the government of the day ideas as to how to bring the industry onto sustained yield management.[5] His ideas were thought to be too radical for immediate implementation, leading the government to establish a second royal commission under Chief Justice Gordon Sloan in 1945. Behind the Sloan Commission was the idea: "...to give companies such solid security of tenure and to subject them to such close regulation that they would embark on serious programs of forest renewal, which in turn would ensure long-term timber supply and commodity stability in an industry not noted for these features" (Swift, 1983:86).

The basic recommendations of Sloan were for the Crown lands to be organized into two types: Tree Farm Licences and Public Sustained Yield Units. In the former, the Crown maintained ownership and administrative responsibilities, while the industry would be responsible for the management of the forest lands. In the latter, the Crown maintained the responsibilities of administration and management. Tree Farm Licences (TFL's) were offered to forest companies who would combine their old licences and leases or private lands with other Crown lands in return for the obligation of managing the forests according to sustained yield policies. The Public Sustained Yield Units (PSYU's), later renamed Timber Supply Areas were to be held primarily for smaller operations.[6]

The 1930's and 40's was a period of consolidation and sustained yield was its banner. It appeared as if conservationism was finally beginning to penetrate forest land management mentality. With recreational use of the forest lands on the increase, the Provincial Parks were placed under the administrative control of the Forest Service. The need for parks as recreation areas was accepted as a demonstration of best or highest use; however, parks as wilderness preserves were resisted. But a wary note of cynicism still hung in the air. As Mackay (1985) points out: "H.R. MacMillan estimated it would take fifteen years to divert industry from exploitation to sustained yield"

(p. 100).[7]

The period of scarcity began ominously. During the early 1950's, "in B.C.'s coastal forests, where 1.6 million hectares had been logged or burned, only one-quarter was regenerating and cut-over areas were producing fifty times more useless hardwood than before" (Mackay, 1985:116). Sloan was called back for a second commission to evaluate progress made towards sustained yield. He found that the sustained yield policies were favouring the larger companies but avoided making recommendations to control the increasing concentration in the industry. Facing local shortages on the coast, the industry had also shifted its attention to the interior "where lumber production rose by 440 percent between 1945 to 1954" (Swift, 1983:87). The interior had previously been a stronghold for the small operators, but as time progressed many of these were taken over by larger companies who then gained access to new supplies of timber.

By 1966, storm warnings could no longer be ignored. At a three day conference on forestry held in Quebec, speaker after speaker painted a bleak picture of the industry and its future based on past history. The Science Council of Canada predicted there would be regional and local shortages, including British Columbia, and that these would intensify towards the turn of the century (Mackay, 1985). But the industry, in general, maintained an attitude of optimism based on a belief in improved technology. New

technologies, it argued, would allow the harvesting and milling of more inaccessible trees more efficiently and cost-effectively. In addition to this belief, there was a strong belief in the imperative of economic growth. Through this belief the industry argued that economics dictated the use of large clear-cuts, harvesting in more remote and environmentally sensitive areas, and the use of herbicides. But, the situation in the forests was grim. "B.C.'s un-regenerated backlog was estimated at 8 million hectares with only 40,000 hectares being planted" (Mackay, 1985:152).

The late 60's and early 70's was a time of environmental awakening[8] and understandably the industry soon found itself under attack. As one industry executive stressed to his colleagues: "They would have to learn to appreciate changing social values, the new emphasis on recreation and the threat posed by environmentalists" (Swift, 1983:204). Unlike the conservation movement which espoused wise use of the forests for economic progress, the environmentalists often sought preservation. Examples include: the Stein Valley (1976), the Cascades (1976), the Valhallas (1974), South Moresby Island (1974), and Tsitika Valley (1975). Preservation was a threat because it excluded timber harvesting and to the industry facing local and regional shortages, this was serious.

Into this politically charged milieu was thrust the fourth Royal Commission, in 1976, under the direction of

Peter Pearse, a resource economist. The Pearse Commission had five distinct objectives on which to inquire and make recommendations. These were:

> 1. The extent to which the forest resources of the Province are committed to use and to users under all tenure arrangements, including Crown grants:
>
> 2. The procedures for allocating rights under these various arrangements:
>
> 3. The provisions for conservation, management, utilization, protection and development of the forest resources allocated:
>
> 4. The taxes, royalties, rentals and other charges levied upon forest land, timber and primary forest products, excepting the general form of the stumpage appraisal system:
>
> 5. The implications of these tenure arrangements for the structure of the forest industry, having regard to its pattern of integration, concentration, ownership and control; and for the structure of markets for forest products produced in the Province
>
> (Pearse, 1976:xi-xii).

Addressing the pressures of the emerging environmental movement, Pearse (1976) stated: "Perhaps the most conspicuous development has been the emergence of problems relating to the protection of the natural environment" (p. 5). He also warned: "...their [forest managers'] most pressing challenge today is to develop effective means of reconciling industrial forestry with other forest uses and social objectives to realize the full range of potential values" (p. 5).

One of Pearse's chief concerns was company consolidations which he believed seriously discouraged competitiveness within the economy. In 1940, 52 per cent of the forests under TFL's was held by 58 companies. By 1950, 50 per cent was controlled by four companies. By 1965, approximately 66 per cent of the coastal forests were controlled by four companies, while in the interior, 82 per cent of TFL forests were controlled by eight companies. At the time of Pearse's inquiry, 73 per cent of the TFL forests were controlled by six companies and 40 per cent of the interior TFL forests were controlled by six companies (Swift, 1983). Pearse (1976) identified five major areas for policy reform:

1. Clarification of resource management goals;
2. Implementation of an industrial development strategy;
3. Improvement of timber supply security;
4. Enhancement of allocation flexibility; and
5. Improvement of administrative structures and procedures.

However, for those seeking major reforms, Pearse's recommendations were disappointing. For, while he called for "deliberate and careful shifts in priorities and introduction of new arrangements," Pearse emphasized that "these new policies should build on the strength of established structures and enterprises, and respect the commitments the

Crown has already made" (Pearse, 1976:377). Thus, Pearse advocated a conservative approach to forest policy reform in which the status quo was basically untouched.

In an attempt to offer a means of reconciling the demands for environmental protection and preservation, Pearse proposed a forest land classification system consisting of unharvestable lands, multiple use timber lands, primary timber lands, and unclassified lands. Unharvestable lands included not only environmentally sensitive areas such as alpine meadows but also areas set aside for parks or wilderness areas. In contrast, primary timber lands were to be managed almost extensively for their timber values. Multiple use timber lands would be areas in which timber harvesting was tempered to accommodate other uses such as recreation or wildlife habitat protection. Multiple use lands were areas of compromise, occupying the middle ground between unharvestable lands and primary timber lands.[9] Unclassified lands were areas waiting to be placed in one category or another, for example, lands under consideration for park status.

Two years after the Pearse Commission, the government came forth with two new acts: the Ministry of Forests Act and the Forest Act. The new acts incorporated some of the commission's recommendations, but chose to overlook others. One particular bright spot in the Ministry of Forests Act was section 4c which states:

> [To] plan the use of the forest, and the range resources of the Crown so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realization of fisheries, wildlife, outdoor recreation, and other natural resource values are co-ordinated and integrated, in consultation with other ministries and agencies of the Crown and with the private sector (Ministry of Forests Act, 1978:2).[10]

The section was widely perceived as a commitment to the concepts of multiple use (or integrated resource use, as it was becoming known) and public participation. Another bright spot was section 53 which gave the Crown the right to remove areas from timber harvesting. For areas amounting to less than 5% of a licence's annual allowable cut, no compensation was necessary. These two sections provided hope for those seeking the preservation of certain areas. However, this hope was tempered by the omission of Pearse's recommended forest land classification and by industry's belligerent attitude towards preservation. This attitude is reflected in these comments:

> MB [MacMillan-Bloedel] concludes that establishment of a large wilderness-type park and ecological reserve of doubtful value will serve only a small segment of the population to the detriment of the majority (MacMillan-Bloedel, 1975:26, Appendix E).

> The creation of openings in the mature forest will create a panorama of mountain views for all to see rather than for only those who are able by virtue of time and physical capability to obtain these views from long climbs into the alpine areas (Canadian Forest Products, 1975:39, Appendix D).

> and, The sameness of the overmature, decadent stand will be replaced by the everchanging appearance of young thrifty forest (Canadian Forest Products, 1975:39, Appendix D).

In retrospect, forest policies can be seen not only to favour the exploitation of a diminishing resource, but also to favour exploitation by an increasingly fewer large integrated companies. As the resource has dwindled, new technologies have been developed and implemented to facilitate the harvesting of more inaccessible trees and the milling of less commercially valuable trees. The quest for new supplies has led to the rapid diminishment of wilderness areas, sparking new battles such as Spruce Lakes (1980), Graystokes (1980) and Meares Island (1980). To secure long-term rights to the shrinking forests, the industry has found a sympathetic ear with the government of the day when the arguments were couched in terms of conservationism. "Wise use," "sustained yield," and "multiple use" became cornerstones for forest management. However, the more recent challenges of the environmental movement stand in sharp contrast to the beliefs of the conservation movement. Wilderness preservation became symbolic of the environmental movement's emphasis on intrinsic values and ecological integrity. The stage was set for intensifying conflict.

Integrated Resource Planning as a Response to Wilderness Conflicts

With the emergence of environmentalism during the late 1960's and early 1970's new demands and pressures were placed on forest management systems. These demands sparked a search for new methods of reconciliation and conflict resolution. Two different approaches were considered: integrated resource planning and multiple use. Wilson (1982) sets forth integrated resource planning as implying three conditions: "first, planning at a level broad enough to allow consideration of trade-offs and examination of specific land use questions in the context of regional development goals; second, planning based on 'among equals' bargaining and consultation by government agencies advocating different uses; and third, planning predicated upon analysis of higher uses or, at least analysis of the costs of alternatives" (pp. 2-3). Multiple use, on the other hand, takes a much more limited approach, in which the maximization of benefits (usually measured in economic terms) is the principal focus. Hence, some level of resource development is usually given. The Ministry of Forests and the industry favoured this latter approach, while environmentalists favoured integrated resource use. Wilson (1982) concludes that multiple use "won out," while "elements of an integrated resource planning system did take root..." (p. 3). The Ministry of Forests Act of 1978, through careful wording, established the supremacy of multiple use but it

also opened the door to institutionalized public participation. Prior to this time, public participation had been relatively ad hoc. More formal experiments were tried after 1978, but a growing dissatisfaction amongst concerned publics encouraged the Ministry of Forests to convene a special conference in 1980 to assist with the refining of the public participation component of its integrated resource planning program. Out of the conference came three recommendations:

1. the development of a public participation policy to demonstrate the level of political commitment,
2. the development of guidelines as to how the processes were to be structured and conducted, and
3. the evaluation of participation programs to assess their effectiveness

(Ministry of Forests, 1980).

In the following year, the government published a handbook of guidelines, an interim policy, and five program evaluations. In the forward of the handbook, the Minister of Forests sets forth the government's goal for public participation as the creation of "a favourable climate for resolution of the competitive pressures and problems that increasingly face forest resource management" (Public Involvement Handbook, 1981:4). However, as Bruce Fraser, the public participation program co-ordinator, pointed out: "Clearly, public involvement in forest resource planning is not, by itself, sufficient to address the many controversies

that surround current forest management practices or forest land allocation" (Public Involvement Handbook, 1981:6). His remarks were tempered even more by the perspective of the B.C. Council of Forest Industries, which stated: "Experience indicates that many controversies are mainly emotional issues which are resolved most often by political decisions, rather than by technical or economic assessments" (Public Involvement Handbook, 1981:11).

Forest planning occurs at five distinct levels: provincial, regional, timber supply area (or unit), sub-unit and operational. Public participation was designed to dovetail with the unit, sub-unit and operational levels, but most particularly at the unit level for contentious issues. These levels were large enough to accommodate compromises and trade-offs. However, this warning was also issued in the Public Involvement Handbook (1981): "...it is becoming harder to find a balance, as the population of the province grows and more demands are made on the fixed land base" (p. 23).

The interim public involvement policy released in 1981 delineated who would be contacted, what level of the Forest Service would do the contacting, at what level of forest planning participation would occur, what public involvement responsibilities were associated with the Tree Farm Licences, what powers sponsored groups would have, and what support services would be available to sponsored groups. The

policy reinforced the idea of focusing on the unit as the appropriate level of planning in which problem-solving and discussion of potential land uses could occur. An important deletion is noted under this heading. In the interim policy, the public were to be given the opportunity to develop and evaluate forest management alternatives, but in the 1983 official policy, this opportunity had been deleted, possibly reflecting mounting agency frustrations with contentious planning exercises. The Ministry of Forests were not the only ones encountering frustrations with attempts at integrated resource planning and public participation. The various evaluations revealed similar frustrations amongst the industry and concerned citizens.

Van der Horst (1982) studied the Spruce Lake Integrated Planning Process to "evaluate the effectiveness of one of the Ministry of Forests participation programs as a mechanism for information exchange, powersharing, and political accountability which could lead to a more efficient and equitable allocation of resources" (p. iii). Although the planning process was set up to address a number of resource management issues, by far the most contentious was a proposal for a large wilderness park in the Chilcotin Mountains in the study area. There were three main groups involved: the Ministry of Forests (the largest group), industry and a concerned citizens group. The Ministry's objective "was the establishment of a compromise between

preservationists and resource developers..." (Van der Horst, 1982:44). The industry's objective was to protect and maintain its timber harvesting rights which put them in direct confrontation with the citizen group seeking the preservation of the area. For the Ministry and the industry, one of the central beliefs was that some logging would occur. It was just a matter of when, where and how. This belief was in keeping with their concept of integrated resource planning.

The results of the evaluation revealed that, while the majority felt satisfied with the process, half of the participants were dissatisfied with the outcome (Van der Horst, 1982). More specifically, it was the perception of those seeking the area's preservation that agency and industry representatives remained essentially fixed in their positions throughout the entire process. As a result, the outcome was a compromise which strove to satisfy all interests. The Ministry of Forests agreed to a 20 year deferment of part of the area proposed for wilderness preservation. To get this, those seeking the area's preservation had agreed to a reduction in size of their proposal. They had hoped that in so doing they would gain park status for the area. For the industry, the solution was an irritation and an unnecessary delay.

Van der Horst (1982) concludes that: "...the plan can be criticized for failing to effectively address the key

issue of wilderness preservation and for a lack of commitment to utilization of public input" (p. 52). Indeed, participant dissatisfaction centered on this lack of commitment to preservation on the part of the Ministry and industry. For many of the participants, preservation was included in the concept of integrated resource planning, while for others, it did not. Consequently, as Van der Horst states: "participants had considerably different views on the definition of integrated resource management and on the efficacy of the integrated resource planning results" (p. 57). Van der Horst (1982) was led to conclude: "The Ministry of Forests favors a planning process which suggests that land is more productive if it is used for a variety of uses rather than any single use...this 'multiple use' approach to planning, however, stresses the notion of resource utilization rather than preservation" (p. 57). Further, he adds that: "From the perspective of the non-consumptive users such as wilderness recreationists, this form of integrated resource management is philosophically wrong because resource managers, particularly those within the Ministry of Forests, are more strongly oriented toward consumptive resource use such as forest extraction rather than the non-consumptive benefits which accrue from this resource use" (p. 58).

The Graystokes planning process also centered on the issue of wilderness preservation. Again, the Ministry of

Forests and industry sought a 'multiple use' compromise solution. In this planning process, an attempt was made to come to some agreement on various zones. However, after continued frustration in trying to get a wildland core accepted, several participants withdrew from the planning process (Feller, 1982). The end result of the process did not include a wilderness zone per se. However, environmentally sensitive areas which could suffer severe impacts from logging were identified and zoned for protection. Also, some of the area was set aside as a multiple use zone in which recreation values would be considered primary. This latter recommendation was amended shortly after the plan's final drafting to allow timber extraction (Feller, 1982).

Feller (1982) agrees with Van der Horst that participants appear to be operating under different beliefs and assumptions about integrated resource use and wilderness preservation. Noting that the Ministry of Forests operates under a multiple use philosophy as opposed to an integrated resource use philosophy and that the Ministry of Forests perceives preservation as a single use which precludes multiple use, Feller (1982) states: "participation on committees like the Graystokes will only lead to frustration for wilderness advocates" (p. 74). She goes on to state: "It is best for them not to be involved if they cannot accept compromises" (p. 74). In her evaluation of the planning process, Feller (1982) is also forced to conclude that it

was "less than satisfactory" and quite probably "diminished the chances of future effective public involvement..." (p. 93).

Summary

The Spruce Lakes and Graystokes are not unique. Many other integrated resource planning processes have been embroiled with the conflict between preservation and development and have experienced similar frustrations and problems. Examples include: the Stein Valley, the Cascades, the Valhallas, South Moresby Island, Tsitika Valley, Meares Island, and Tahsish Valley. In each situation, the pattern of conflict appears to be similar. An integrated resource planning process is initiated. The Ministry of Forests and industry usually strive for a compromise as some form of multiple use which excludes preservation. Those seeking preservation, feeling compelled to compromise, become frustrated and bitter and usually refuse to compromise. This puts them into the awkward position of being perceived as being unreasonable or extremist in their positions. In some instances, the dynamics of conflict have led to acts of civil disobedience, as recently witnessed on Lyell Island in the Queen Charlotte Islands.

Whether a conflict progresses this far or not, it is becoming increasingly apparent that integrated resource planning as a response to demands for preservation is

extremely problematic. Yet, some method or means for resolving the preservation versus development issue must be found as it now appears that neither demand will disappear. Indeed, it is reasonable to expect the situation to intensify as the forest industry of B.C. comes under greater competitive pressure, forcing it into more remote areas of the province. However, as Kelso (1963) observes: "It is not conflict that is the deterrent to efficient resource use and development. The deterrent is failure to resolve the conflicts..." (p. 294). This failure will ensure a frustrating future of confrontation. For preservationist and developer alike, confrontation is costly (Logan, 1982). Even the government decision-maker can not escape the costs of confrontation. Ervin et al (1977) point out that: "Depending on how individuals perceive their gains or losses and on their political resources and interests, those affected by a decision can be expected to allocate credit or blame and reward or punish the decision-maker. Thus, just as the political decision-maker allocates benefits and costs, he is in turn allocated the same" (p. 31). In summary, everyone involved with land allocation and use conflicts stands to gain from an improved method of conflict resolution as it pertains to preservation versus development issues.

Before abandoning previously tried methods, it is useful to evaluate why these methods proved less than satisfactory so as to avoid making the same errors in a

different approach. Indeed, it may arise that present methods can be retained with some changes. For this reason, the thesis takes the approach of evaluating integrated resource planning as it has been applied in B.C. to preservation and development issues.

Chapter One End Notes

1. The term "green gold" is taken from Green Gold: The Forest Industry in British Columbia by P. Marchak. (Vancouver: University of British Columbia Press, 1983).

2. For a detailed discussion of forest tenures in British Columbia, it is recommended that the reader see Timber Rights and Forest Policy in British Columbia, The Report of the Royal Commission on Forest Resources by P. Pearse (Victoria: Queen's Printer, 1976). For a general overview see "Forest Industry" by M.C.R. Edgell in Vancouver Island: Land of Contrasts, C.N. Forward (ed.), Western Geographical Series, vol. 17 (Department of Geography, Victoria: University of Victoria, 1979).

3. These delineations are somewhat arbitrary and the author acknowledges that other delineations are possible.

4. This lament is still frequently heard in British Columbia today, some fifty years after C.D. Howe first said it.

5. Sustained yield basically means that "in order to sustain productivity, employment and a constant flow of forest products, the annual cut should equal the annual growth." K. Drushka, Stumped: The Forest Industry in Transition (Vancouver: Douglas & McIntyre, 1985), p. 39.

6. Since many of the smaller operations did not have any outstanding licences or private lands to put up, they found themselves excluded from the TFL agreements.

7. MacMillan was, at the time, the Provincial Chief Forester. This was before he went on to form his highly successful lumber export company.

8. See Robert Rienow and Leona Train Rienow, Moment in the Sun: A Report on the Deteriorating Quality of the American Environment (New York: Ballantine Books, 1967); or Barbara Ward, Spaceship Earth (New York: Columbia University Press, 1966), as examples.

9. The concept of multiple use was one of the cornerstones to conservationism. Originally, as espoused by Gifford Pinchot, it meant the greatest good for the greatest number over the longest run. Therefore, it was seen as

a way to maximize the benefits which could be accrued for any given area. This concept will be discussed more fully in later chapters.

10. The 'private sector' was later clarified as including the general public. Public Involvement Handbook, Province of British Columbia, Ministry of Forests (Victoria: Queen's Printer, 1981).

11. For an overview of these various elements, see J. Wilson, "Integrated Resource Planning and the Management of Forest Land: The Response to Environmentalism" presented at Canadian Political Science Meetings, Ottawa, June 8, 1982 (Unpublished). For a more detailed evaluation of some of these elements see Bruce I. Heayn, "Integrated Resource Management: B.C.'s Regional Resource Management Committees," Masters of Arts Thesis, University of British Columbia, School of Community and Regional Planning (Unpublished)(1977).

12. As well as the two authors previously noted, Van der Horst (1982) and Feller (1982), see also North Island Study Group, Tsitika-Shoen Resources Study. A Summary Report prepared for Environment and Land Use Committee (Victoria: Province of British Columbia, 1975).

CHAPTER TWO

Forest Land Use Conflicts in British Columbia: Case Studies of Meares Island and the Valhallas

The battle for wilderness preservation has been gaining momentum since the late 1960's to early 1970's. Currently, in British Columbia, there are approximately 187 park and wilderness-related issues.[1] Many of these, such as the Stein Valley (1976) and South Moresby (1974), have a ten to twelve year history. The predominant response to these conflicts has been the attempt to reach compromise solutions through the development of an integrated resource plan. However, instead of compromise, these planning exercises have frequently generated increased frustration and sharp criticisms.[2] Meares Island and the Valhallas are two recent examples of attempts at developing an integrated resource plan where preservation versus development was at issue. The planning process for each is now complete with a government decision having been made, although the Meares Island issue is still active. Through a detailed discussion in which these two issues are compared and contrasted, clues to underlying patterns may be revealed. It is these clues which provide the direction for the thesis research.

The Valhallas

The movement to preserve part of the Valhalla Range, located in the southern interior of British Columbia

(Fig. 1), had a twelve year history. The first proposal for preservation was in 1970 but was not well publicized and drew little public support. In 1974, a second proposal for the preservation of 49,000 hectares of the Valhalla Mountain range was submitted to the Provincial Parks Branch. Coincidentally, Triangle-Pacific Company (later to become Slocan Forest Products) announced its intentions to log within the same area. The government responded by declaring a two year moratorium on the area, pending the findings of the Pearse Commission on Forestry, which would be available in 1976. In a brief to the commission in 1975, Triangle-Pacific stated that, while it deplored: "...single use withdrawal of forest land, in what is popularly called 'Parks'...what should be conserved is the alpine grandeur of the Valhalla Mountains and high elevation lakes where there is no conflict with forest land values..." (Triangle-Pacific Forest Products Ltd., 1975:17). Their proposal included the headwaters of Mulvey and the drainages of Gwillim, Evans and Beatrice Creeks (Fig. 2), which was the same area described in the first park proposal of 1970 by the Kootenay Mountaineering Club.

Also, in 1975, the Valhalla Wilderness Committee was formed to lobby specifically for the larger proposal.[3] Immediately, the Committee initiated a letter writing campaign to encourage government action. During this time, government decision-makers received a mixture of opinions on

Figure 1

Map showing location of the Valhallas

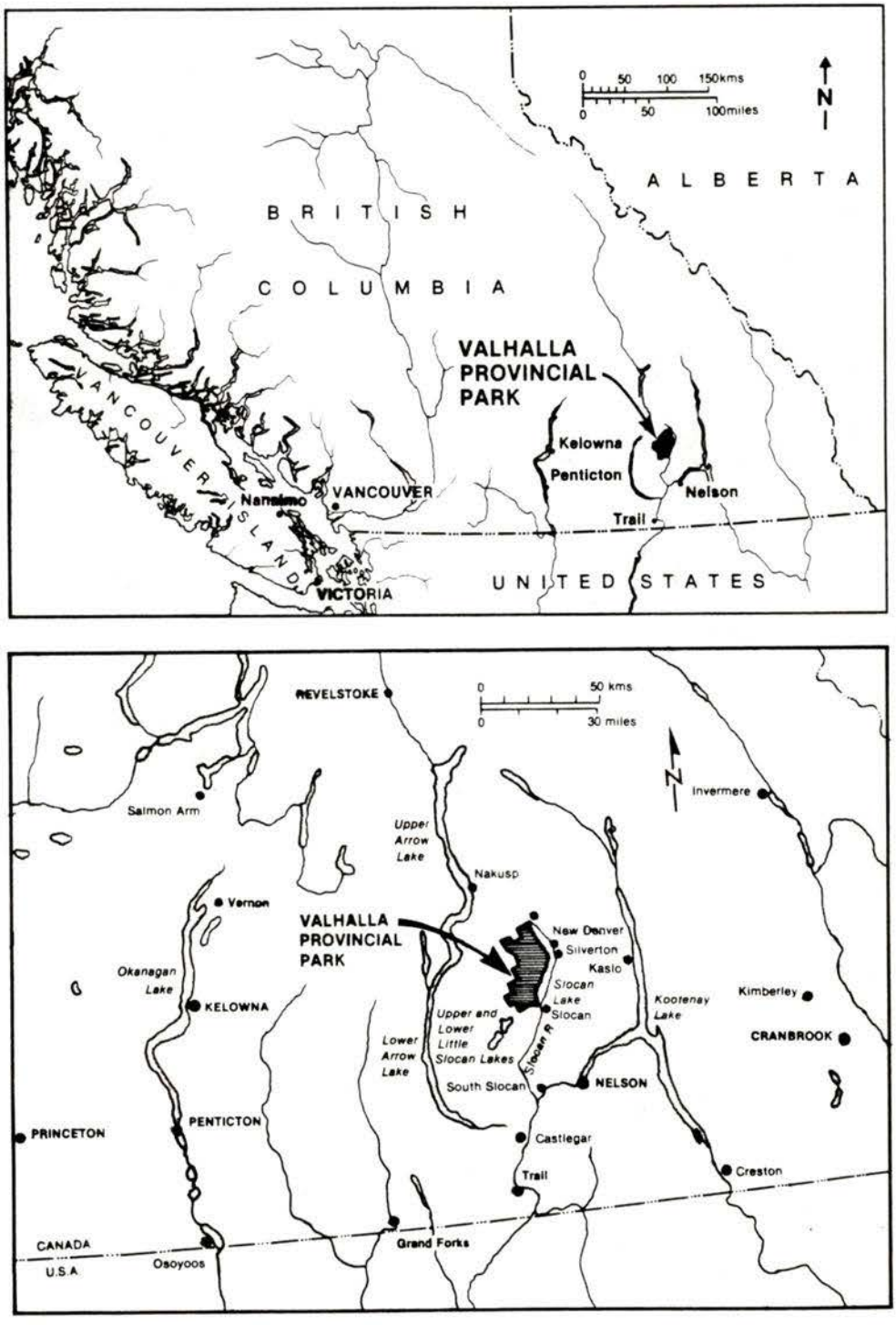
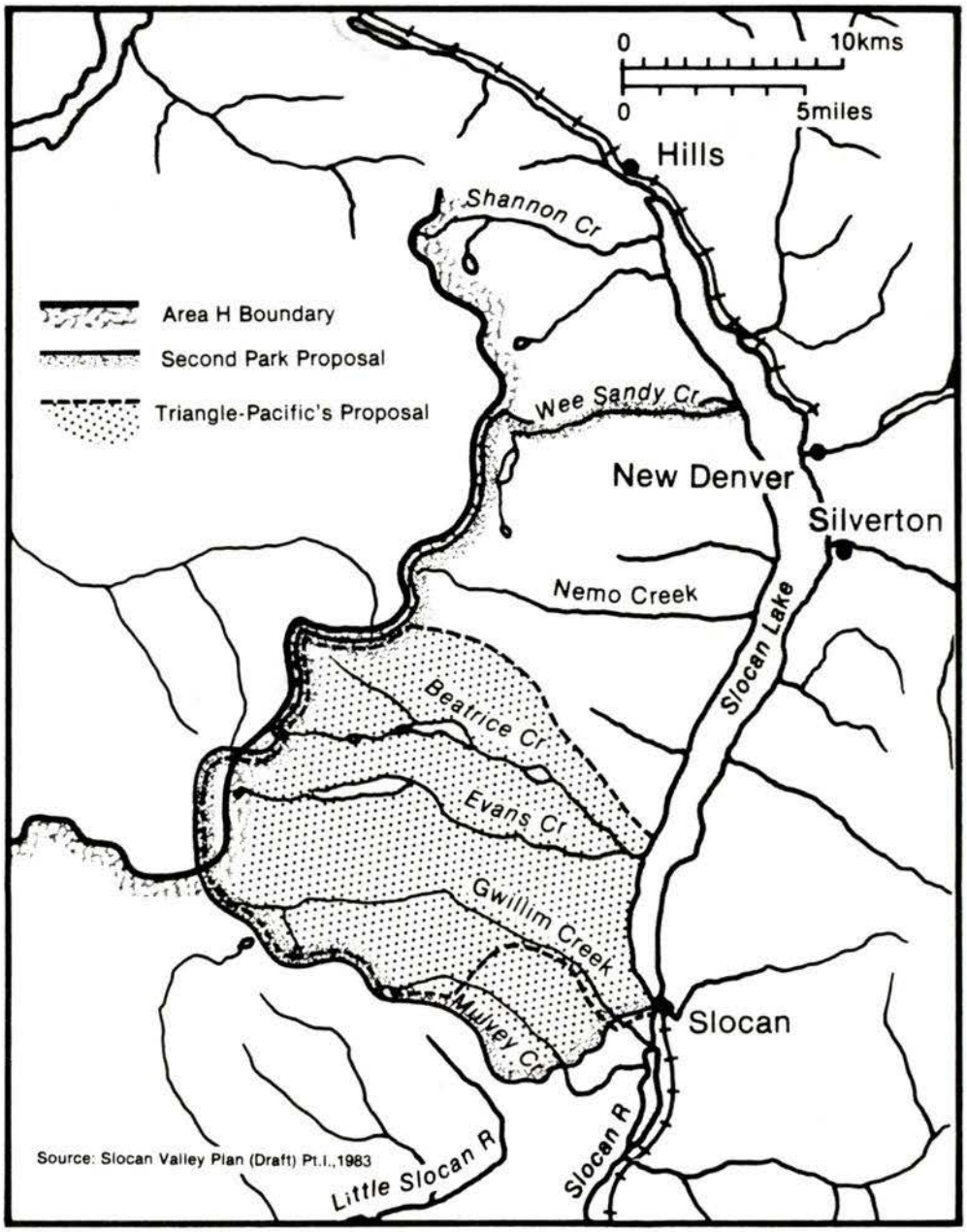


Figure 2

Map showing the government moratorium boundaries and the Triangle-Pacific proposal



what should or shouldn't be done with the area. In late 1975, Provincial Parks staff visited the area and, a year later, released a report which recommended a 'Class A' park designation[4] for the southern half of the proposal area as the Kootenay Mountaineering Club and Triangle-Pacific had advocated. The northern half was excluded as it contained some timber and mineral values.[5] This northern area was recommended to be managed under a multiple use philosophy, which would allow some resource development while protecting the recreational values. The Ministry of Forests and the company were generally pleased with the Parks Branch recommendations. However, neither the mining interests nor the Valhalla Wilderness Committee were pleased, although for two very different reasons. The mining community, in general, was against any alienation of Crown land that would exclude their rights to prospect and stake claims. On the other hand, the Valhalla Wilderness Committee didn't believe that the northern area should have been excluded and, therefore, decided to continue their lobbying efforts.

With the conflict gaining in momentum, the government, in 1976, decided to extend the moratorium for another two years instead of making a decision on the Parks Branch recommendations. During this period, the Kootenay Regional Resource Management Committee (KRRMC) was to study the issue and to come up with its recommendations.[6] Also, during this period, the Valhalla Wilderness Committee split from the

Valley Resources Society to become a society on its own.[7] This enabled the new society to consolidate its fund-raising efforts. The Valhalla Wilderness Society (VWS) developed brochures, launched a newsletter and produced an audio-visual program to further their lobbying efforts.

However, the Valhalla park proposal was only one of a number of pressing land use issues in the valley. Other concerns were settlement patterns, watershed management and economic diversification. In 1979, the Regional District of Central Kootenay (RDCK) approached the Environment and Land Use Committee (ELUC) of the provincial cabinet to initiate an integrated land use plan for the Slocan Valley.[8] Early in 1980 the KRRMC recommended the same approach. Later in the same year, it also requested a further extension of the moratorium by six months to one year in which such a plan could be developed. After many months of silence, the Minister of Environment, in March of 1981, announced that a special nine month study would be initiated. The study was special for a couple of reasons. Firstly, the plan was broad-based in its approach, encompassing both land use and economic development. Secondly, the plan was to be a co-ordinated joint initiative between the provincial government and the local government. Hence, the Slocan Valley Plan (hereafter referred to simply as the Plan) was perhaps the first true attempt at integrated resource planning, as defined by Wilson (1982).

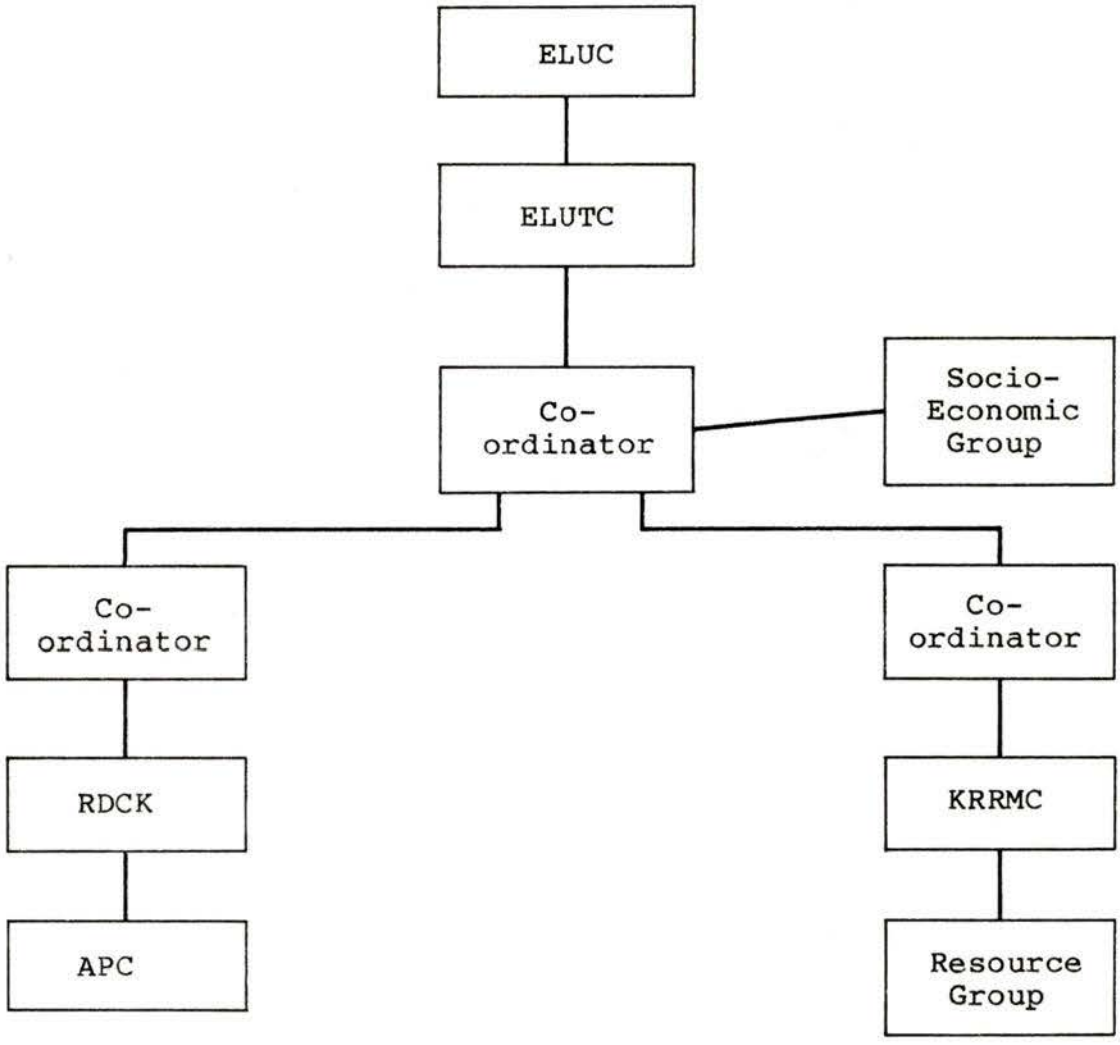
The planning structure was quite complex, reflecting the immensity of its task (Fig. 3). Assisting the RDCK was an advisory planning committee (APC) of local citizens, while a resource group of planners and technicians assisted the KRRMC. The RDCK contained the necessary authority relating to private lands, while the KRRMC contained regional authority for Crown lands. Each of these two bodies had their own coordinators, who were in turn coordinated by another coordinator. This person also had responsibility for the socio-economic group, largely based out of Victoria. This overall coordinator reported to ELUC through its technical committee comprised of deputy ministers.

The planning process was also to include extensive public input and participation. Aside from numerous mail-outs, the RDCK and APC hired a special public participation coordinator who held open office hours on a rotational basis throughout the valley's communities. This was to allow citizens to drop in and express their views. In addition, four sets of public meetings were scheduled to coincide with various points in the planning process: introduction to the planning process, issues identification, objectives and directions, and plan review. Each set consisted of a series of public meetings held in different communities.

Reaction to the government initiative by the VWS was swift and critical. A Society representative stated: "The planning process is fine but the Valhalla decision will

Figure 3

Slocan Valley Plan Structure



Key: ELUC Environmental Land Use Committee

ELUTC Environmental Land Use Technical Committee

RDCK Regional District of Central Kootenay

APC Advisory Planning Commission

KRRMC Kootenay Regional Resource Management Committee

be political--and we're going to lobby like hell" (Vancouver Sun, March 27, 1981:A10). Hence, it appeared that the Society thought the process to be irrelevant to final decision-making. They were also disappointed that the terms of reference did not specifically include an evaluation of timber harvesting management and practices or of the tourism potential of a park. Underlying these criticisms was a dissatisfaction with not having been involved with the defining of the terms of reference. However, throughout the public meetings, the Society maintained a high profile on the Valhalla wilderness issue.

In an effort to assert its position, the forest company, now called Slocan Forest Products (SFP), submitted a brief to the planning team, reaffirming the company's support for a park in the southern portion of the Valhallas. Further, SFP maintained that: "The remainder of the area encompassed by 'the Valhalla Proposal' should come under multi-use management for the benefit of all British Columbians and not a single-use group" (Slocan Forest Products, 1981:6). The company also made it clear that there were enough parks in the region, citing Kokanee Glacier Park as "one of our more underutilized parks" (Slocan Forest Products, 1981:4).

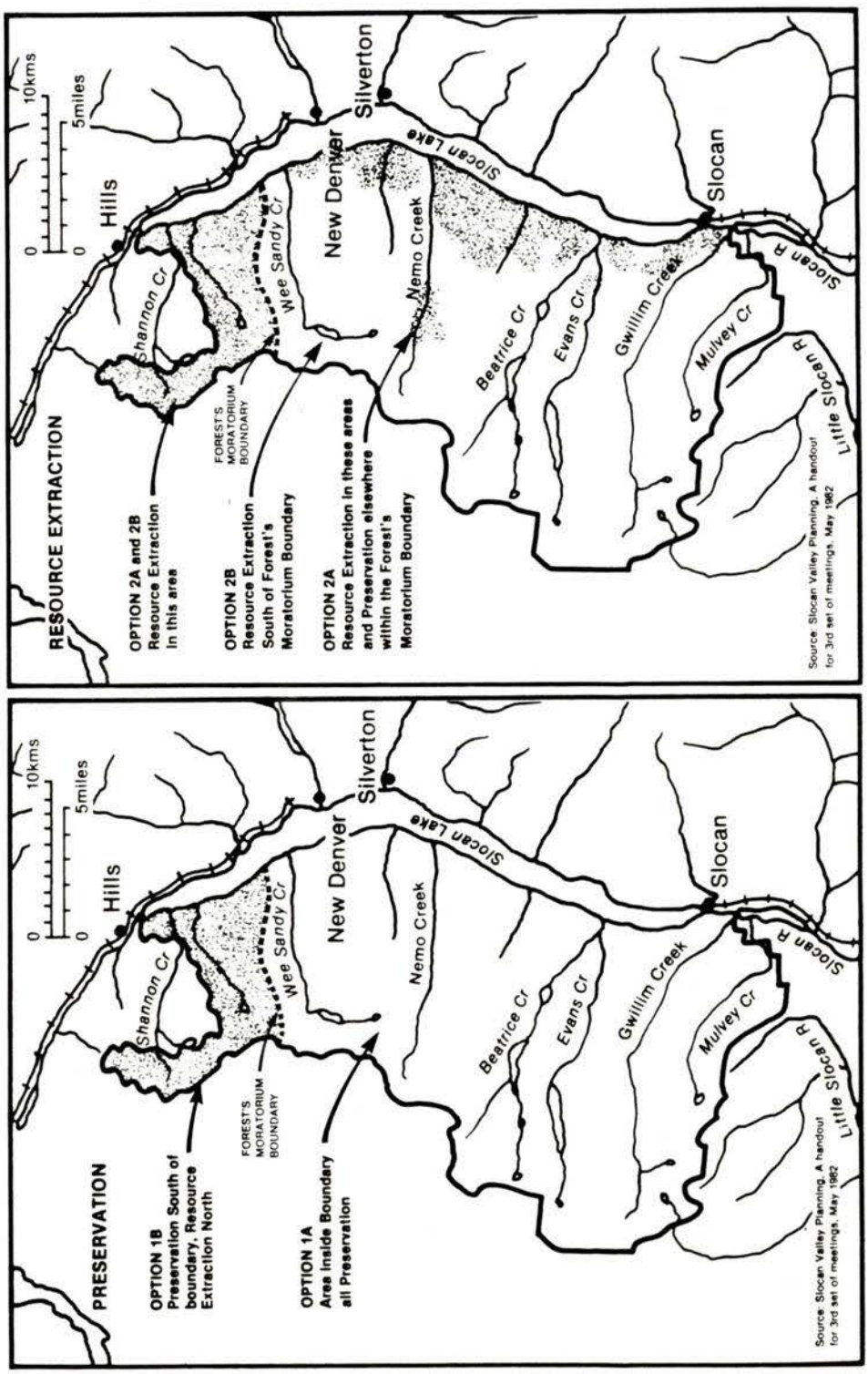
As the end of the nine month period drew nearer, it became apparent that the planning process would likely continue well on into late spring or early summer of 1982.

In March, the Minister of Forests publicly stated that compromises will have to be made by all sides (Vancouver Sun, March 16, 1982: D18). The Society responded quickly, asserting that a compromise would be "an outrageous double-cross" and that: "if Waterland [the Minister of Forests] has already made up his mind, then the planning process is shown to be a cynical ploy..." (Vancouver Sun, March 16, 1982: D18).

In May, a third set of public meetings was held to discuss alternative strategies, including the Valhalla park proposal. To many people's surprise, the presented options included an extension northward of the original moratorium (Fig. 4). The options presented were: a dominant preservation theme, preservation in Wee Sandy Drainage and Southward, including all the moratorium area, resource extraction in Nemo Drainage and the Eastern Face, preservation elsewhere and a dominant resource extraction theme (Slocan Valley Planning Program, Alternative Choices for a Valhalla Allocation Decision, May 1982). A couple of months later, in June, the RDCK met and passed a resolution recommending the establishment of a Valhalla park conforming in size to the moratorium area.[9] The park proposal received another boost when, in November, the Ministry of Forests made it clear that SFP never did depend on the trees from the Valhalla area, as it had cutting rights elsewhere (Cowell, 1982).

Figure 4

Maps showing alternative options for a Valhalla park



However, by January of 1983, rumours began to emerge that the government was not in favour of a park and was about to make a decision to the contrary. Spurred by this rumour, a Society spokesperson rebuked: "The government's intent to ignore the recommendations of its own study makes a farce of its much ballyhooed public involvement planning process...a wanton waste of $300,000 in taxpayer dollars as well as an unconscionable abuse of the public trust" (Valhalla Wilderness Society Newsletter #7, January 11, 1983). The long silence of the government was finally broken on February 16, 1983 when it announced the establishment of a 60,000 hectare Class 'A' park--the Valhalla Wilderness Park. In a government news release, the Chairman of ELUC stated that: "These decisions are consistent with this government's policy of informed multiple use." Further, he added: "In each case, we have weighed the demands being made on the affected areas and reached a conclusion which we feel represents the optimal use or combination of uses"[10] (Minister's Office, Ministry of Environment News Release, February 16, 1983). The Minister of Lands, Parks and Housing also affirmed that: "The designation was made after a detailed study of the entire Slocan Valley area showed that the most appropriate use of the Valhallas, in both social and economic terms, to be for recreational and tourism purposes. This conclusion is entirely consistent with the views of local residents and organizations who have expressed their

concerns about future use of the area, and follows detailed discussions between provincial government agencies and regional authorities" (Minister's Office, Ministry of Environment News Release, February 16, 1983).

For the Valhalla Wilderness Society (VWS), the decision was exciting. The planning process, which had been previously criticized by park proponents, now was given wide acclamation. Said one Society member: "Our planning process can be used as a model in the province" (Lang, 1983). However, the decision greatly fanned a growing flame of dissent within the valley. The dissent was strongest amongst the loggers, miners and their supporters. During the planning process, they had been fairly quiet for the most part, but now as the process was drawing to a close, they coalesced to form the Slocan Valley Residents Alliance, which also became known as the 'Can-the-Plan' group. Angered by the park decision, the group turned its attack on the planning process and on park proponents. Their attack was greatly aided by the re-election of a government whose mood had turned antagonistic towards planning. The re-election was in April and by July, as a demonstration of a new government mandate to facilitate economic growth, the RRMC's were dismantled. In this threatening atmosphere, the planning process struggled on. In October of 1983, the first drafts were circulated for public review and comment. The co-ordinator for the resource group was reassigned in

February. At the last set of public meetings, the Can-the-Plan group attended en masse and vociferously forwarded its concerns that their rights to a livelihood gained from resource extraction had been preempted by a bunch of "hippies" or "eco-freaks" and that the plan was an infringement of individual and private property rights.

Unable to quell this mounting backlash, the RDCK and its APC sought to bring the planning process to a quick end. To do this, the draft plan was rewritten as a set of guidelines containing a restatement of already existing legislations and policies. These were finally accepted in early 1985. Unfortunately, the watered-down plan did not address the outstanding issues of settlement patterns and watershed management, both of which are continuing to aggravate resource management in the valley. Perceiving the guidelines as a victory, the Can-the-Plan group disbanded late in the summer of 1985.

The Slocan Valley Plan was a bold initiative into what might have been real integrated resource planning. However, for a number of reasons, it was less than successful. Although a park was finally established, the Ministry of Forests and indeed the government, in general, had sent out mixed messages as to whether the planning process was striving for multiple use or integrated use. Both the Ministry of Forests and SFP had resisted the establishment of a large park, presenting it as a single use which

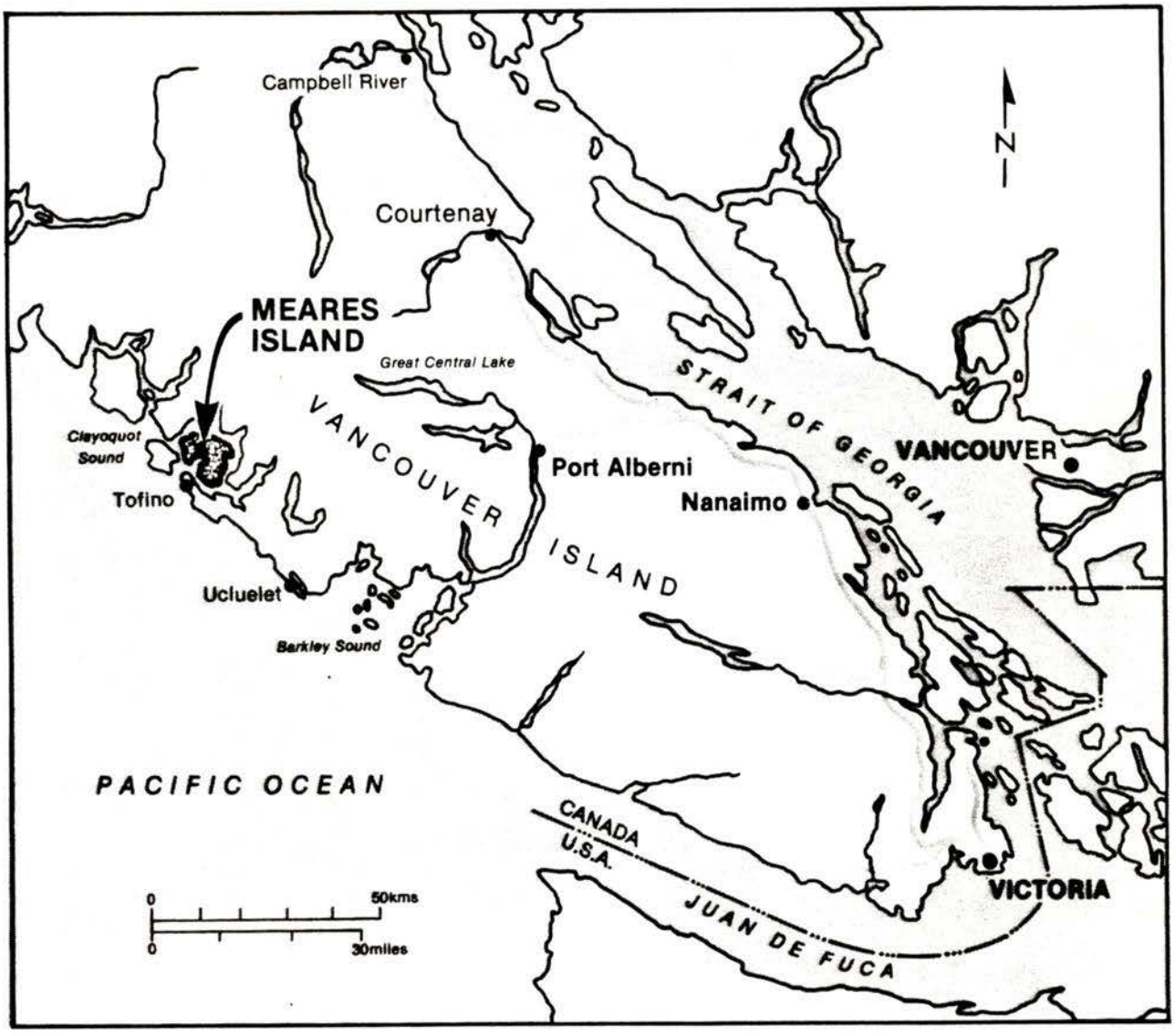
precluded multiple use. Consequently, many participants in the planning process were left confused and frustrated. Certainly the change in government attitude towards planning also had a negative impact on the Plan's effectiveness. However, perhaps the most important reason was the intransigence of key groups like the Valhalla Wilderness Society and the Can-the-Plan group. It seems obvious, therefore, that any attempt to assess integrated resource planning as a response to presentation issues should begin with these underlying differences in values and perceptions.

Meares Island

Meares Island, one-half kilometre north and east of Tofino on the west coast of Vancouver Island (Fig. 5), was scheduled to be logged, commencing in the winter of 1982. However, when MacMillan-Bloedel's (MB) plans were made public in 1980, protests were submitted to the Ministry of Forests from the town council of Tofino and concerned citizens in the area. In response, the Ministry temporarily halted company plans, pending completion of an integrated resource plan for the island.[11] The protests arose from a number of different groups. The local Indian band opposed the logging since it would violate part of their land claim. The Friends of Clayoquot Sound, a group of environmentally concerned citizens opposed the logging of the island on less tangible and aesthetic and ecological grounds. Residents of

Figure 5

Map showing location of Meares Island



Tofino also opposed the logging for they believed that logging would have a detrimental effect on the town's source of drinking water. There were also some concerns that the logging of the highly visible island would have detrimental impacts on the town's emerging tourism business. Some property owners whose lots faced Meares Island were also concerned with real estate devaluation.

The government's initial response, early in 1981, was to form a planning team consisting of representatives from MB and British Columbia Forest Products, which also had timber rights on the island, from various resource ministries and from the village council. Other groups, in particular, the Friends of Clayoquot Sound and the Clayoquot band asked to be included on the planning team, but were refused by the Ministry of Forests, who chaired the planning team. After several unsuccessful attempts at persuading various ministers that they should be included, these groups took their grievance to the provincial ombudsman, who ruled that the Ministry of Forests could not refuse their participation. As a consequence, the Ministry of Forests invited a wider participation into the planning team, including not only the Friends of Clayoquot Sound and the natives but also the International Woodworkers of America and Pacific Rim National Park. The Ministry was also forced to amend the planning team's terms of reference to include consideration of the preservation option. The terms of reference then

became:

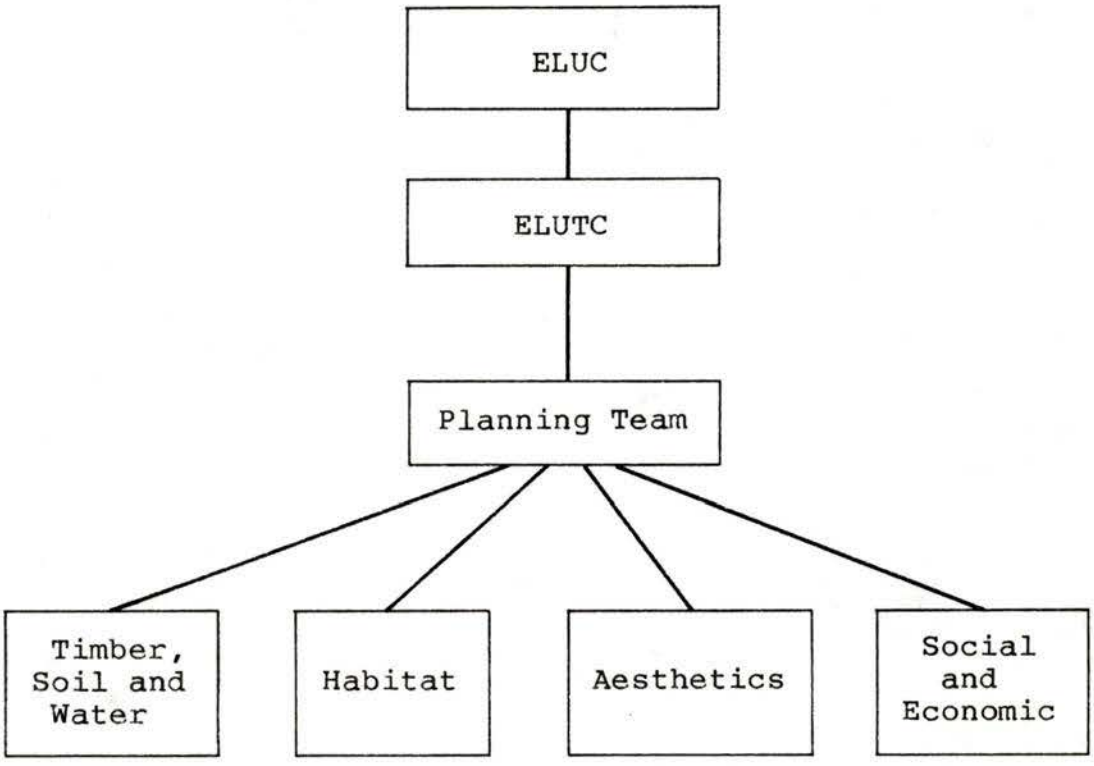
> To develop an Integrated Resource Management Plan for Meares Island consistent with Section 4(c) of the Ministry of Forests Act and examine and report the costs, benefits and implications of preserving Meares Island from logging (Meares Island Planning Options, (Draft) 1983:1).

Drawing from this wider participation, a public advisory committee was formed to consolidate input received from various concerned parties. The committee consisted of four working groups: Timber, Soil, and Water; Habitat; Aesthetics; and Social and Economic (Fig. 6). The public participation component of the planning process was to conclude by early 1982, with committee reports being received between May to November by the planning team.

Considerable suspicion of each other had already existed prior to the formation of the planning team and its public advisory committee. The ombudsman's involvement only exacerbated the intensity of suspicion. Thus, the planning meetings, which began in April of 1981, were operating in a strained atmosphere. From the beginning, the positions were quite clear and the search for compromise tumultuous. However, for a brief time, many of the participants believed a consensus on two important points was beginning to emerge. These points were that there would be no logging on the southwest slope of the island from which the town drew its drinking water and that, if logging was to proceed on the rest of the island, then it was to be done under very strict

Figure 6

The Meares Island Planning Structure



guidelines. But for some reason, this consensus soon vanished and, as the committee reports began to filter in throughout the summer of 1982, it became increasingly apparent that a compromise solution was not possible.

With the passage of the planning team's deadline of December 1982, the compilation of its final report began. Three options were outlined: total preservation, partial logging and deferral of the remainder of the island and partial preservation of the island with the deferral of the remainder (Meares Island Planning Options, 1983)(Figs. 7-9). Because there was no consensus amongst committee or planning team members on any of the options, the report recommended a more indepth economic study be initiated. Specifically, the study should be directed towards a cost/benefit analysis of logging the island in relation to its tourism value if preserved.

In March of 1983, the planning process was struck with a crippling blow when MB withdrew. In a letter to the planning team chairman--the Ministry of Forests District Manager--the company representative to the planning team pointed out that MB interpreted the terms of reference as requiring the consideration of two separate issues: "to develop an integrated resource plan (IRUP) for the <u>whole island</u> and to determine the implications and costs of preserving the whole island from logging" (R. Urban to R. Campbell, May 13, 1983). The company representative went

Figure 7

Option I (Total preservation)

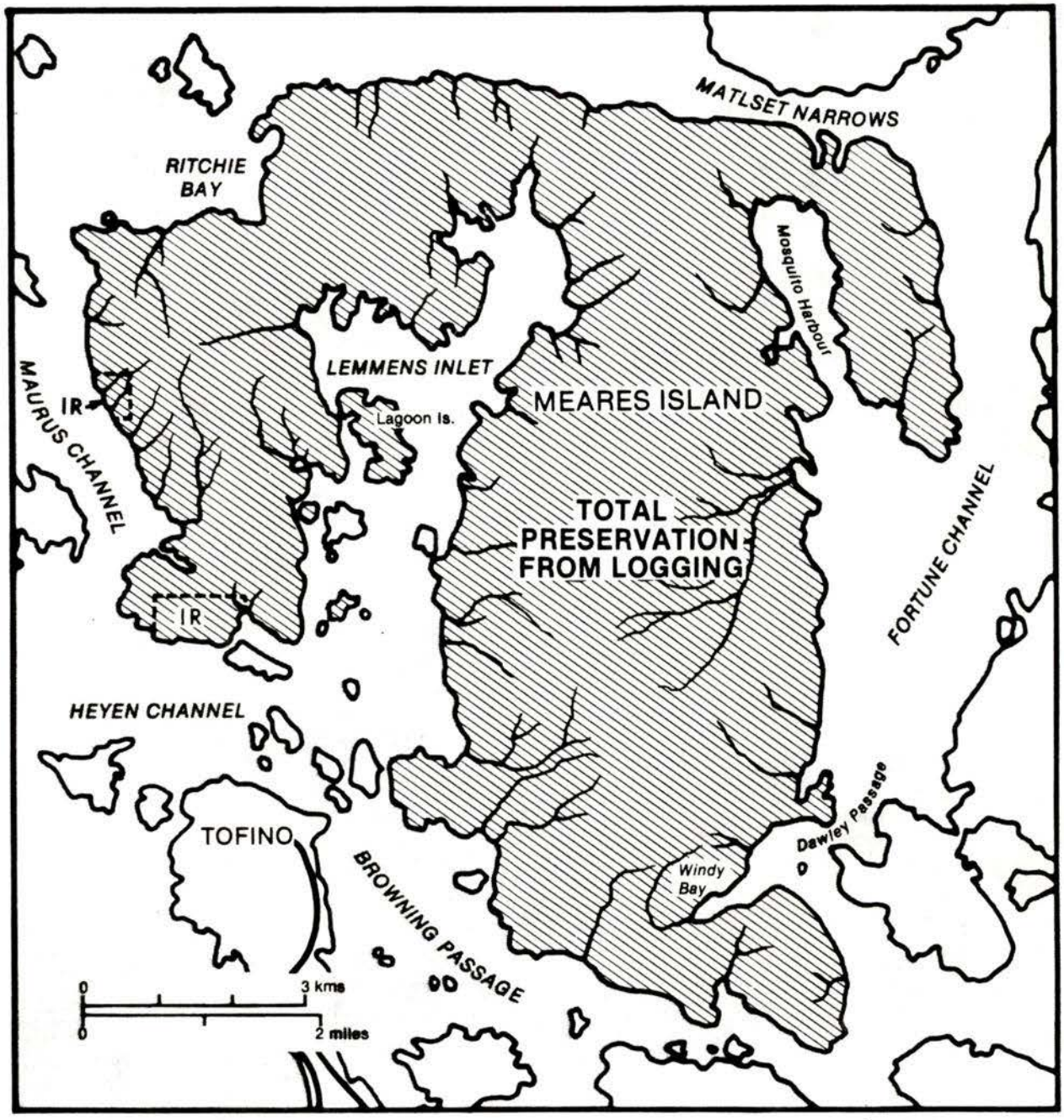


Figure 8

Option II (Partial logging, partial preservation)

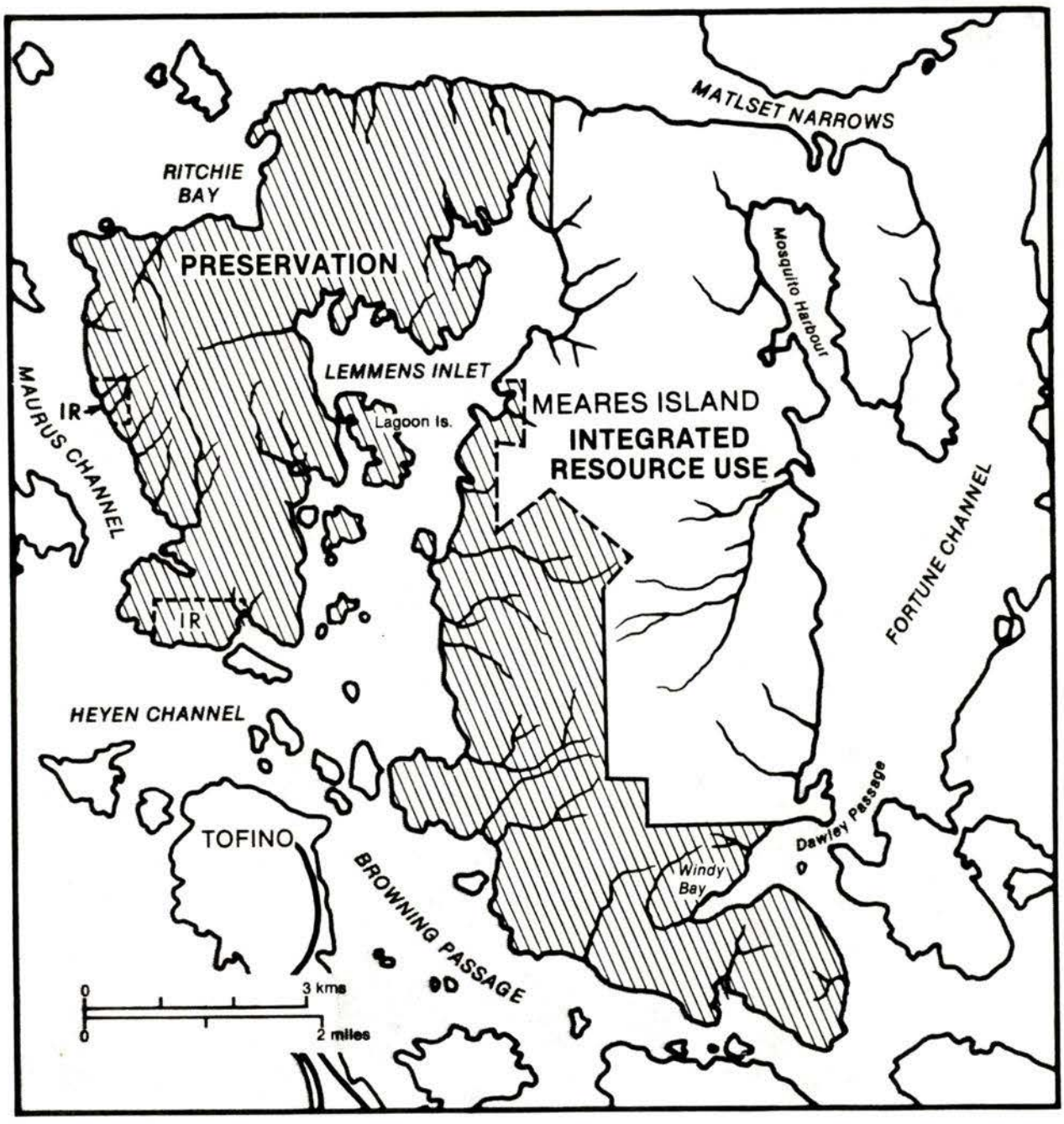
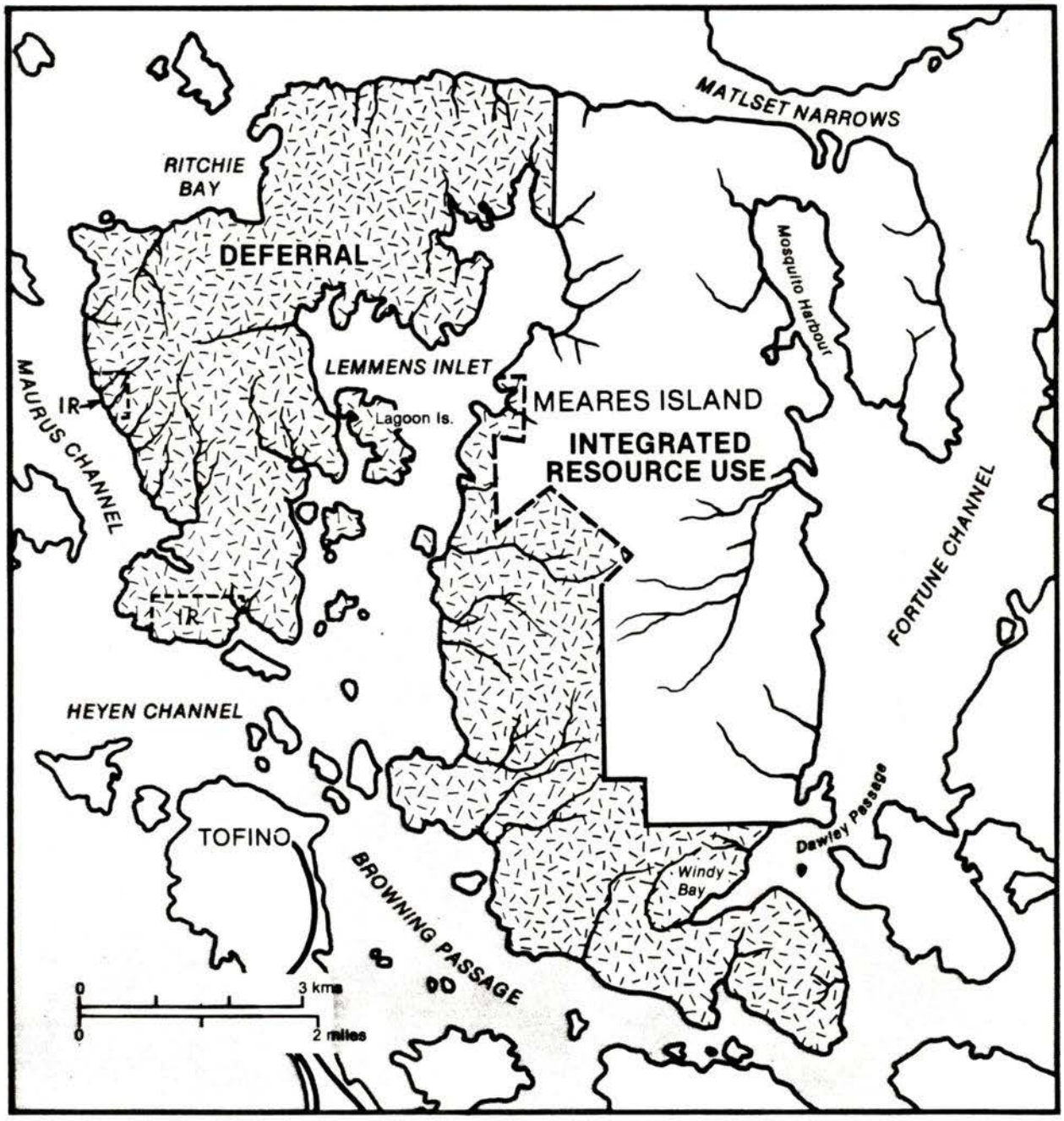


Figure 9

Option III (Partial logging with deferral)



on to state: "Our primary objection to the MIPT [Meares Island Planning Team] Draft Report is the absence of an IRUP for the whole island. This deficiency in the Report renders it questionable because the terms of reference were not complied with. It is also biased because the total preservation from logging is not balanced against an option which presumes timber harvesting on the whole island" (R. Urban to R. Campbell, May 13, 1983). Along with the letter, MB submitted its own option, which was an Integrated Resource Use Plan for the whole island. In the plan, they made clear the intention to commence harvesting on the southwest slope within the first five year period. In an attempt to placate concerns about logging in this area of the island, MB proposed to log over a longer than usual period of time so as to allow adequate "green up."[12] In so doing, the company concluded that "[their] plan will allow for more appropriate integrated resource management" (R. Urban to R. Campbell, May 13, 1983). To this proposal, MB added a warning that a quick decision was necessary in order to meet certain government deadlines for permits. Specifically, they predicted: "Deviation form this schedule will have adverse impacts on job continuity for the 1984-85 winter logging season (R. Urban to R. Campbell, May 13, 1983).

After the submission of the planning team's final report to ELUC in June, MB representatives met privately

with some of the ministers of ELUC to discuss the issue. In November of 1983, the government announced its own option in which MB would be allowed to cut all but a small part of the contentious southwest slope. This area was deferred from logging for 20 years. This decision totally ignored the options outlined by the planning team and outraged those who had sought the island's preservation as well as those who had faith in the planning process.[13]

While some may have thought the issue was over, many knew it was not. Throughout early to mid-1984, preservationists and local Indian bands continued to strengthen their alliance begun during the early phases of the issue. To many preservationists, the native land claim appeared to be their best hope. In an Easter ceremony, the island had been declared a tribal park in which the only forms of resource extraction that would be permitted were traditional hunting and gathering.

With rumours that logging would soon commence, several acts of civil disobedience took place, including the spiking of trees. In November, MB sent a small crew over to the island to commence initial road-building work. They were met by a determined group of protestors that refused to move aside and allow work to begin. The crew retreated and the conflict moved into a new phase. Court injuctions and counter-injunctions were quickly filed. MB filed for recognition to log and to have the protestors removed from

the island. Countering them, the local Indian band, supported by preservationists, filed that no logging could proceed until their land claim had been settled. In January of 1985, the Supreme Court of B.C. ruled in favour of the company; however, in March, the B.C. Court of Appeal ruled that the company could not proceed until the land claim had been heard (Financial Post, April 1985). The case is now waiting to be heard.

Both sides of the issue have been consistent and steadfast in their positions throughout the debate. The company's chief executive officer was quoted as saying: "the company will not compromise because there is no compromise" (Maclean's, January 1985). In this position, they are supported by the provincial government. The Chief of the local Indian band, Moses Martin, has said: "We wouldn't have started what we did if we had any intention of allowing logging" (Times-Colonist, March 1985). The Indians are supported by others seeking the island's preservation.

Like the Valhalla issue, the Meares Island integrated resource planning process engendered a strong backlash. Throughout the process, attempts had been made to find a compromise solution. Option two developed by the planning team called for partial logging of the island, combined with deferral of the remainder, in particular the contentious southwest slope nearest the village of Tofino. From many perspectives, this was a compromise position.[14] However, MB

could not accept any of the options and subsequently pulled out, moving one village councillor to remark: "I can't imagine what they were thinking...any support [MB] had here went out the window" (Timney, 1985:5). By their actions, then, MB alienated themselves from those who supported option two and hence aggravated the conflict. This aggravation was provoked still further by a government decision favouring MB. In retrospect, it seems little wonder that the situation has progressed as it has. Certainly for many people, strong, lingering doubts remain about the ability of integrated resource planning to effectively resolve preservation versus development issues.

Case Study Analysis and Directions for Research

On the surface, both the Meares Island and the Valhalla issue appear very similar. However, by comparing and contrasting the two issues, underlying patterns and directions for more detailed research are revealed. With regard to similarities, both issues became a labyrinth of conflict which ensued over preservation versus development debates. The principal actors remained the same: government decision-makers, resource planners and managers, developers, preservationists and local community representatives. In each case, the government's response was to initiate an integrated resource planning process in an attempt to resolve the conflict. These planning processes included

representatives from each of the principal roles in the search for resolution. However, instead of reaching a mutually acceptable solution, the planning processes became characterized by intransigence. In both issues, government decisions have provoked a strong backlash, which, in the Meares Island case, has kept the debate active and casts uncertainty on the decision made.

But there are some unique differences. While both were attempts at integrated resource planning, it is the Valhalla case that comes closest to approximating this planning approach, as defined by Wilson (1982). Meares Island, on the other hand, appears to be much more of a multiple use approach. Another significant difference is the respective decisions. In the Valhalla issue, the decision was for preservation, while in the Meares Island issue, the decision was for development.

A major theme which emerges from this brief analysis is the inability to achieve mutually acceptable solutions in such conflicts. Further, this inability appears related to differing values placed on the desired ends: preservation or development. As noted in the executive summary of Meares Island Planning Options (1983): "there are several reasons why positions on Meares Island differ...they are differing evaluations of the technical resource information, and differing value systems are basis for alternative positions." In addition, these differing values have led to allegations

of bias in the planning processes. As a result, considerable frustration and misunderstanding concerning integrated resource planning has been generated. Therefore, in an attempt to understand why integrated resource planning, as it has been applied to B.C., has not been able to effectively resolve preservation versus development conflicts, this thesis has endeavoured to make explicit the more precise nature of these value differences and to show how these differences are related to the positions taken and the inability to compromise.

Chapter Two End Notes

1. Peter Dooling (ed.). Parks and Protected Areas in British Columbia in the Second Century. Vancouver: University of British Columbia, 1985.

2. For examples, see Michael Gregson, "Decision on the Tsitika," Forestalk, vol. 2(11), 1978; Paul George, "Public Process--What Do We Gain?" Pacific-Yukon Environmental News, vol. 1(5), 1983; and Peter Grant, "What's Going On Up There?" Wildlife Review, vol. XI(2), 1984-85 Winter.

3. This committee was part of the Valley Resources Society which advocated greater local autonomy in resource management in the Slocan Valley.

4. A 'Class A' designation confers the highest level of protection to an area in which resource development is prohibited and motorized access or use are restricted.

5. Estimates of timber and mineral values varied greatly. The forest company placed a high value on the trees and yet one resource planner confided that the trees were really of marginal value. As for the mineral potential, a couple of long-time residents of the area, both of whom had some prospecting experience, stated that the west side of Slocan Lake had very little mineral value. In fact, one of these respondents stated that, to the best of his knowledge, "not one gunnysack full of minerals had ever been taken out of the area." This statement contradicts the high estimates given by groups such as the East Kootenay Chamber of Mines.

6. The Kootenay Regional Resource Management Committee was only one of such committees, collectively known by the acronym of RRMC or RMC for short. These committees consisted of the regional directors of various resource ministries who would meet to work on mutual problems. The committees were one of the elements of the integrated resource planning approach that took hold. Unfortunately, they were phased out in 1983. For a detailed analysis of RRMC's, see Bruce Heayn, "Integrated Resource Management: B.C.'s Regional Resource Management Committees," Masters of Arts Thesis, University of British Columbia, School of Community and Regional Planning (Unpublished)(1977).

7. Fundamentally, the split was between those who took a hard-line on the preservation of the larger area and those who were willing to consider a smaller area.

8. The Regional District of Central Kootenay is a local government unit which administers matters pertaining to private lands. Administration is by a board of local, elected representatives from the various communities within a particular region. Each region is broken into sub-units or electoral districts. The Slocan Valley was encompassed by electoral district H. Environment and Land Use Committee is a special cabinet committee consisting of the ministers of the various resource agencies. The committee's role is the "resolution of policy conflicts and major allocation problems with respect to resource and land use" (British Columbia Environment and Land Use Committee Role Statement, 1978:1).

9. The decision was made to address the Valhalla issue separately, as it was dominating the other issues of settlement and watershed management.

10. The decisions referred to were the Valhalla park and Quinsam Coal development.

11. It should be noted that, although MB's plans were temporarily halted, the Chief Forester of the Ministry of Forests had given an approval in principle to the plans (Meares Island Planning Options, 1983).

12. Simply put, green-up means the return of adequate ground cover as to give the appearance of green after an area has been clearcut.

13. For examples, see "Planning Sham," Bob Peart, Letters to the Editor, Times-Colonist, December 16, 1983; "Super, Natural Scene Soon to Disappear," Stew Lang, Times-Colonist, November 25, 1983: B6; "Meares Island Team Report Ignored," C. Bell-MacGillvrary, Pacific and Yukon Environmental News, vol. 1(5), 1983.

14. While this option would have likely satisfied the Village of Tofino Council and the Tofino Chamber of Commerce, it would not have likely satisfied the local Indian band.

CHAPTER THREE

Literature Review
Resource Planning and Values

A considerable body of literature has been amassed regarding environmental conflicts and various resolution techniques (Lesnick & Crowfoot, 1981; Ehrmann & Bidol, 1982). While much of this literature has focused on techniques, there has been an increasing recognition of the influence of values on conflict and conflict resolution in resource planning (Henning, 1971; Burch, 1972; Moffitt, 1975; O'Riordan, 1977, McAllister, 1980; Jeske, 1981; Baldwin, 1985). Most recently, within the past five to seven years, attention has been focused on development of the methods to tap underlying values and to make them explicit (Dunlap & Van Liere, 1978, 1984; Cotgrove, 1982). The application of these methods, as one might expect, is even more recent.[1] Before discussing these recent innovations, it is useful to review the literature on resource planning, particularly as it pertains to forest land use planning. From such a review, a model can then be constructed, providing a context for the application of research techniques.

Resource Planning and Conflicts

Human wants and needs have been demonstrated to be infinite, however, as Manning (1985) emphasizes: "The land

base is the common denominator where the resource demands encounter the constraints of the environment" (p. 2). Under these constraints, land use conflicts have become increasingly commonplace, complicating attempts at resource planning.[2] Therefore, a growing effort has been directed towards the exploration of conflict and the development of resolution techniques.

Wood (1976) has suggested that conflicts may arise out of differences in perceptions, interests or attitudes and values. Bidol and Lesnick (1984) suggest a typology of policy priorities, resource allocation, and environmental quality standards. However, they observe that: "...underlying causes of the conflict may be attributed to differences in the parties' perceptions of economic development, the proper role of government or image of the future" (p. 3). Rosenbaum (1976) conjectures that land use issues may also revolve around the concept of property rights, while de Neufville (1981) surmises that "land use conflicts are often associated with ideas about individualism, democracy, and freedom and therefore are battles over the most basic values" (p. 2).

Conflicts create stress. Where a conflict of values exists, the stress may be incredibly intense because of the push for and resistance to change. Abcarian and Palmer (1974) suggest that within a society, stress may be approached in three ways: dismissal, force and co-option, or

accommodation and reforms. With regard to the first two approaches, Peck (1978) states:

> The painful effort required [for change] seems frightening, almost overwhelming. What we do more often than not, and usually unconsciously, is to ignore the new information. Often this act of ignoring is much more than passive. We may denounce the new information as false, dangerous, heretical, the work of the devil. We may actually crusade against it and even attempt to manipulate the world so as to make it conform to our view of reality. Rather than try to change the map, an individual may try to destroy the new reality. Sadly, such a person may expend much more energy ultimately in defending an outmoded view of the world than would have been required to revise and correct it in the first place (45-46).

The "most basic values" are the constructs of world views.[3] Hence, it is not surprising that dismissal, force or co-option may be the first reaction when these values are threatened. Commenting on societal conflicts, Kelso (1963) declares: "Conflicts are not 'resolved' in the sense that the sources of irritation--like a stone in a shoe--have been removed, but only in the sense that a workable degree of social order and interpersonal mutuality have been maintained..." (p. 301). This suggests that the latter approach of accommodation and reform is best for conflict resolution. However, as Peck (1978) has noted: "The process of making revisions, particularly major revisions, is painful, sometimes excruciatingly painful" (p. 45). Therefore, it is reasonable to expect that another dimension to conflict may be a perceived need for change versus faith and support in

the status quo. But more fundamentally, the various perceptions of private property rights, individual rights, economic growth or status quo, can be seen as constituting different value systems and world views. This fundamental difference, Cotgrove (1981) suggests, frequently, is at the root of environmental conflicts. In his words: "Too often the protagonists face each other in a spirit of exasperation, talking past each other with mutual incomprehension" (p. 122).

Coincidentally, with the rise in environmental conflicts, there has been a rapid development and application of resolution techniques (Fogg, 1985). Planning, however, continues to be one of the most frequent responses to land use conflicts (Culhane, 1981). The more elaborate techniques, such as third party intervention, are usually evoked when planning has reached an impasse. Fogg (1985) suggests that these more elaborate approaches strive "to get beyond simple compromise of demands and try to satisfy the needs behind the demands" (p. 332). But Amy (1983) cautions that these approaches may "shed light only on certain types of disputes," performing best "in disputes that are primarily local and that do not involve basic value conflicts or structural choices" (p. 18). This caution is congruent with Garcia (1983), who argues that an awareness of values and the role they play in planning is essential to understanding how conflicts arise and how they may be resolved.

Ideally, a plan emerges from the interplay between citizenry and planners or decision-makers (Rosenbaum, 1976; Culhane, 1981). The interplay is one of rationing and bargaining (Kelso, 1963). Sewell and O'Riordan (1976) refer to this interplay as the 'political culture,' which they suggest: "establishes roles, rules and social norms that frame all policy making activities and permit peaceful resolution of conflict" (p. 10). Ervin et al. (1977) perceive planning as occurring in a sociocultural environment of social norms, political inequality, and institutionalized working rules. They assert that conflicts associated with land use:

> provide an excellent example of changes in values, norms, rights and policy. The impetus for these changes comes from the increasing value to some citizens of environmental goods such as clean air and water, the preservation of open space and wilderness, and the maintaining of agricultural lands. The attainment of these goods often clashes with two sets of values that continue to be held by a large number of people 1) liberty and security associated with real property, and 2) right of and need for economic expansion (p. 33).

Hence, constraints come into play because changes may conflict with widely accepted values. Ervin et al. (1977) add:

> Further limitations on policy alternatives may be expected when reallocations of rights redistribute them from the more politically influential to the less and when the outcomes of a proposed reallocation are uncertain (p. 34).

The concept of rights is also problematic, whether they may be rights to access and use, as in property rights or rights to bargain in the resolution of conflicts. As Ervin et al. (1977) point out: "because rights cause and are caused by prevailing practices, and because practices influence and are influenced by norms, there is a strong tendency in all societies to see what is as what is right" (p. 33). In other words, rights are the partial products of social norms, which, in turn, reflect dominant social concepts, beliefs and values. Hence, present land use patterns persist because they serve those who stand the most to gain from them. Tips and Gysels (1980) contend that planning is embedded with a strong growth-economy bias and that problems associated with goal-setting are not methodological but rather "originate from different world views [which] sometimes radically oppose each other" (p. 14). O'Riordan (1976) goes further, claiming that "where problems pose solutions which challenge the dominant values and values of political consensus, substantial power may be directed at keeping this challenge out of the political arena" (p. 58).

Frequently, the favoured resolution to an environmental conflict is some form of compromise as opposed to win/lose outcomes. However, there are several problems with the concept of compromise. Firstly, it assumes that most things are tradeable (McAllister, 1980). But more fundamentally, it

usually means that the conflict is redefined into terms of equally valid competing interests and away from terms of morality--right or wrong. From the former perspective, 'splitting the difference' is the fair and just solution to the conflict because each party gets some of what it wants. Between developers and preservationists, the compromise is typically some form of 'responsible development,' showing a growth-economy bias.[4] The former perspective also puts pressure on conflicting parties to be 'reasonable,' give up some of their 'extremist' demands, and compromise on a 'responsible' plan for development (Amy, 1983). Under the latter perspective of right versus wrong, there is a possibility that the burden of proof lies on the developers who stand to gain from any development. As Amy (1983) exhorts: "Compromise with those who are wrong would itself be seen as immoral" (p. 14).

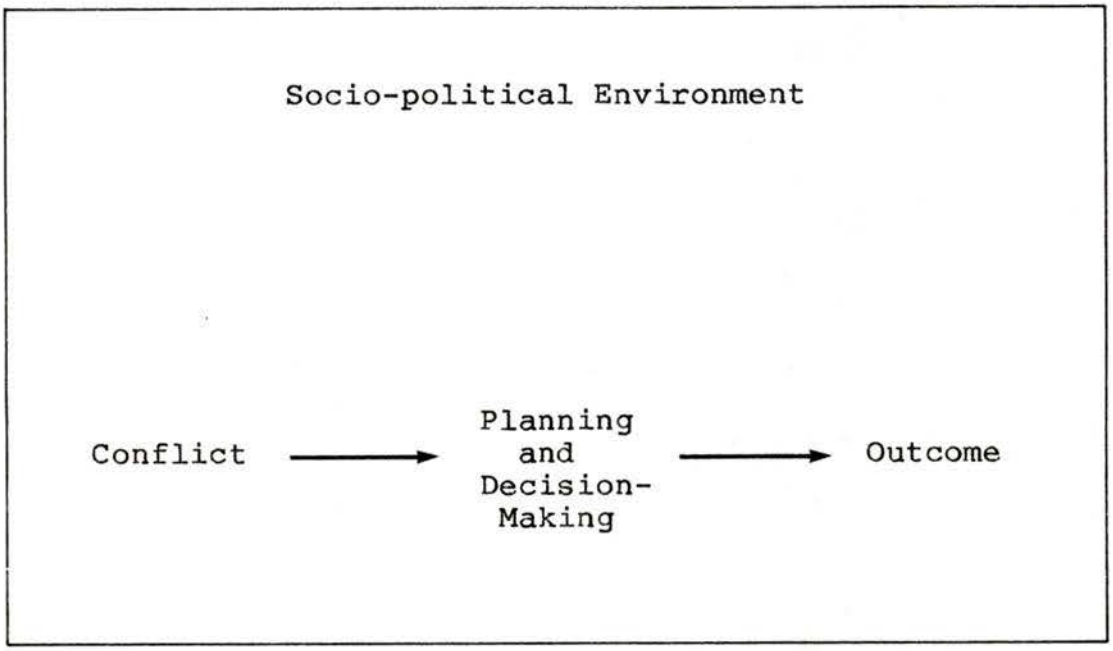
Demand for change is another consideration. Boschken (1982) argues that: "Zero-sum outcomes can provide fundamental change, but positive-sum outcomes from mutual accords are too 'compromised' to represent such change" (p. 199). He adds that: "if one attributes status quo to the ability of dominant interests to continually gain the bulk of advantage from public policy, one is likely to believe that a decision rule which distributes political power more evenly is the primary means of progress for a broader spectrum of interests. A watered down outcome means that dominant

factions were prevented from maintaining their status quo advantage and had to share the benefits of public policy with others" (Boschken, 1982:199-200). This argument stands in sharp contrast to Amy's and together they form the dilemma for those seeking change: reform versus radical change. While reform or minor changes are more acceptable, they often involve compromise. Radical or major changes are less acceptable, as noted by Peck (1978) and Ervin et al. (1977), but usually do not involve compromise. It is this dilemma which has generated much debate in the conservation-environmental movement.[5]

From this review, it can be seen that resource planning is influenced by the dominant social values of the socio-political environment. These values influence how a conflict is defined, addressed, and eventually resolved. A simplified model illustrating this influence is shown as Figure 10. This model is supported by O'Riordan, who suggests that planning and decision-making are influenced by "personality characteristics of the key actors, the influences of the social, political and/or institutional environment in which they work; and the nature of the issue over which social choices are made" (pp. 63-64). The model emphasizes the importance of planning not to become isolated from the sociopolitical environment, especially since the underlying values are not static and shift over time. As Garcia (1983) warns that ineffective plans frequently arise when planners

Figure 10

A Simplified Model Showing Relationships Between Values of the Sociopolitical Environment and Conflict Resolution



and decision-makers "...use their own values or world experiences in direct contrast to seeking the public's values" (p. 287). In other words, ineffectiveness may occur when what were once good plans or decisions are now perceived as bad plans or decisions (Ervin et al., 1977). Public participation has been posited as an effective means for planners and decision-makers to stay in touch with the larger sociopolitical environment (Susskind, 1981). Before reviewing what public participation is and what purpose and roles it can fulfil in resource planning, it is necessary to examine the literature on forest land use planning with special attention to conflicts between development and preservation.

Multiple Use and Wilderness

Historically, the forests of North America have been managed primarily for their industrial values. Recently, in response to broadening demands for recreation and wildlife protection, the emphasis has shifted from 'single use' to 'multiple use.' Clawson (1977) defines multiple use as "the degree or extent to which the output of one product or service is intentionally restricted in order to increase the output of another good or service or combination of goods and services; it does not necessarily require that all kinds of goods and services be produced from the same area" (p. 304). Culhane (1981) defines multiple use as "to optimize the provision of goods and services from the forest by

providing for uses while ensuring, by managerial restrictions on permitted uses, that one use does not diminish the land's ability to support other uses in perpetuity" (p. 327). There are some subtle and yet important differences in these two definitions which reveal why the concept of multiple use has generated much criticism.[6]

Before examining these differences and the nature of the criticism, the purpose of multiple use needs to be explored. However, even here, sharp differences in opinions are encountered. Behan (1967) suggests that multiple use has two goals: conflict resolution by blending or integrating the various uses and maintenance of productivity by protecting the land. On the other hand, Miller (1971) states that: "the ultimate goal of resource management must be an integrated system which produces the greatest array and amount of benefits from a given area" (p. 29). This purpose is solidly rooted in the Conservation Movement's principle of 'the greatest good for the greatest number over the longest run.' Unfortunately, over time, this principle has become subverted to mean the greatest good as determined primarily by economic criteria. Hence, as a planning goal, it is biased towards resource development and a growth-economy view. On the other hand, Behan's (1967) purposes suggest temperance and balance. Reflecting back to the two definitions of Clawson and Culhane, it should be noted that

Clawson's definition implies the possibility of exclusion of some uses, while Culhane's suggests a compromise through permitted uses and regulation. It is this latter definition which appears to be the most generally accepted version.

Because of the inherent differences and contradictions in the concept, multiple use as a planning approach is problematic. First is the issue of exclusion as raised by Clawson (1977), who warns that: "severe conflicts among users would occur if an effort were made to apply multiple use management to every acre at every point in time" (p. 302). This possibly of exclusion is critical in the preservation versus development debate. Increasingly, new sites for timber harvesting are also the remnants of old growth forests and wilderness. Some of the greatest increases in outdoor recreation have been non-consumptive use of wildlife and wilderness (Miller, 1971; Hendee & Roggenbuck, 1984). Hence, there is increasing pressure for preservation. However, the forest agencies and industry tend to view wilderness areas as a single use (Culhane, 1981). To these interests, preservation is not only incompatible with timber harvesting and economic progress, but also with the concept of multiple use. Therefore, there has been a strong reluctance to include the value of wilderness preservation or those seeking preservation into forest planning (Culhane, 1981).

A second problem with the concept of multiple use is the determination of priority. This has been typically done through the reliance on economic criteria. However, many uses of forest lands such as wilderness, do not lend themselves to economic evaluation (Krutilla & Haigh, 1977). This has given rise to a feeling that forest managers fail to incorporate other kinds of values, such as ecological and aesthetic, into forest land use decisions or plans (Willhite et al., 1973; Hendee, 1984). Hendee et al. (1978) argue that wilderness preservation is a desirable forest management goal, as it completes the multiple use spectrum, balancing lands managed primarily for intensive timber harvesting. If wilderness preservation is accepted as a desirable goal, then as Clawson (1977) states: "the real issue is not whether values should be placed on different forest outputs, but how such values will be estimated, how explicitly the problem will be faced, and how accurate the results are" (p. 290). In the final analysis, as Willhite et al. (1973) conclude: "People must realize that the priorities one chooses in forest resource management will be consistent to his own values, which may be far different from those of others who are affected by the final decision" (p. 365).

As a consequence of these problems, multiple use planning has been criticized for failing to integrate particular uses, most notably wilderness. As Miller (1971) observes: "We still manage our forests for maximum timber

production, usually disregarding other possible resource benefits..." (p. 22). Behan (1967) adds: "The limitations and compromises are acceptable only to the professional forester: the goodness and propriety of multiple use exists far more in his mind than in the judgement of the forest users" (p. 482). Subsequently, there have been calls for sociological research into the attitudes and values towards forest management, specifically differences in values (Willhite et al., 1973; Clawson, 1977; Hendee, 1984).

Resource Planning and Public Participation

Public participation has become an inherently controversial aspect of resource planning. Some perceive it as an unnecessary delay, increasing costs in time and dollars, while others perceive it as a method of cooption (Schectman, 1977). However controversial it may be, planners and decision-makers are usually unwilling to criticize public participation or to examine its basic assumptions since this could engender denoucements of attacking a democratic right (Wengert, 1976). Be that as it may, since the advent of public participation programs in the 1960's and 1970's, there has arisen a copious body of literature focused on program implementation and evaluation (Sewell, 1979). However, throughout this body of literature, there exists considerable confusion and contradiction for a variety of reasons. Kweit and Kweit (1984) suggest that one important

reason is that studies have failed to reveal the factors affecting public participation and "to relate these variables in systematic ways to the various impacts that participation is hypothesized to produce" (p. 100). Before examining some of these hypothesized impacts and seeking clues to variables which could affect the impacts, some basic definitions are required.

Throughout the literature, there appear to be as many definitions of public participation as there are researchers interested in this area of study. Some of the more common terms include: public participation, citizen participation and public involvement. Definitions convey the sense that public participation is seen as both a structure and a process or behaviour. For example, Culhane (1981) defines public participation as a set of mechanisms designed: "to channel and legitimize interest group access to administrative decision-making" (p. 233). On the other hand, Langton (1978) defines it as "purposeful activities in which citizens take part in relation to government" (p. 17). He further distinguishes between government-initiated programs and citizen-initiated programs. The former he refers to as citizen participation, while the latter he terms citizen action. Smith (1984) takes this definition one step further. He defines public participation as "any action taken by an interested public (individual or group) to influence a decision, plan, or policy beyond that of voting in an election"

(p. 2). Perhaps the most strident definition, possibly reflecting the liberalism of the 1960's, is that of Arnstein's (1969), who defines it as:

> ...a categorical term for citizen power. It is the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future. It is the strategy by which the have-nots join in determining how information is shared, goals and policies are set, tax resources are allocated, programs are operated, and benefits like contracts and patronage are parceled out. In short, it is the means by which they can induce significant social reform which enables them to share in the benefits of the affluent society (p. 216).

This definition cum purpose has enjoyed considerable support. Sewell and O'Riordan (1976) state that public participation: "...seeks a greater degree of power-sharing through the politization of the citizen's awareness of his or her potential role as a member of the community of interest in shaping the quality of the environment" (p. 16). They add: "Thus the ultimate aim of participation is community participatory design where citizens, resource professionals and politicians work together to resolve legitimate disagreements and fairly allocate environmental resources" (p. 16). Implicit is the notion that participation facilitates the achievement of better plans and decisions (Heberlein, 1975). Rosenbaum (1976) states: "An effective citizen involvement program contributes to more rational decisions by revealing the pattern of public preferences and

by stimulating decision-makers to incorporate this information explicitly in their deliberations and decisions" (p. 72). Ducsik (1981) elaborates: "...the real objective of participation...is to incorporate a broader set of values and perspectives into the process of making the difficult tradeoffs..." (p. 161). Thus, public participation emerges as one of the essential linkages between the planning and decision-making process and the sociopolitical environment (as shown in Figure 11) and is an important component in conflict resolution.

Before discussing in more detail the role of public participation's role in conflict resolution and potential blocks to its effectiveness, it is worthwhile to note the reasons for the wide acceptance and support for public participation. There are generally five reasons advanced:

1. The democratic right of an individual to be informed and consulted on a decision which could have a significant impact upon the individual (Davidoff, 1965; Burke, 1968; Sewell & O'Riordan, 1976; Haefele, 1981).

2. An apparent breakdown in traditional mediating institutions such as political parties (Langton, 1978).

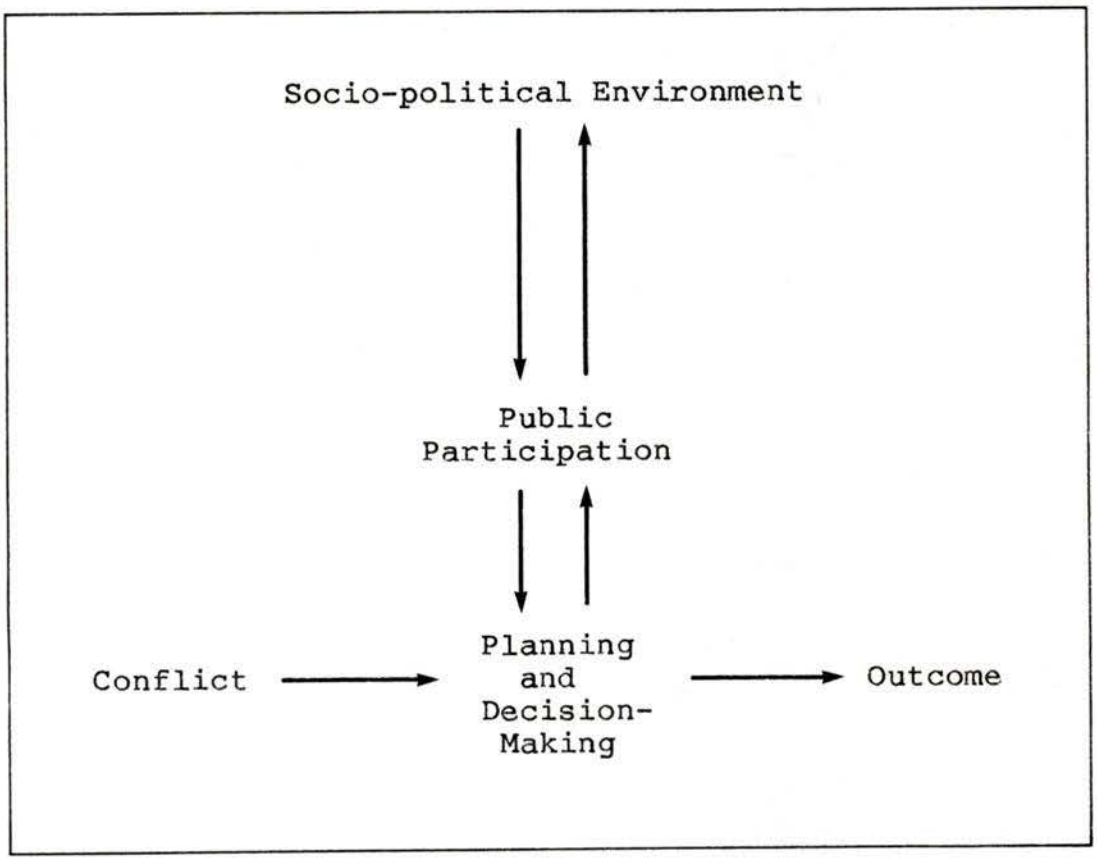
3. A perceived need to ensure governments and their agencies remain accountable to the governed (Wengert, 1976; Langton, 1978; McAllister, 1980; Creighton, 1983).

4. Rapidly changing societal values and lifestyles generating new demands and conflicts (Sewell & O'Riordan, 1976; Wengert, 1976; McAllister, 1980).

5. Increased general awareness of problems facilitated by the mass media (Langton, 1978).

Figure 11

An Expansion of Previous Model with Inclusion of the Role of Public Participation



It has been suggested (e.g., Irland, 1975; Ducsik, 1981) that any process of conflict resolution should not add to the conflict, should seek accommodation wherever possible, and be perceived as legitimate by interested publics even when their demands are not met. Public participation is presumed to be able to do this by opening lines of communication. As Wengert (1976) observes: "[the assumption is] that sharing points of view increases understanding and tolerance and that the very process of involvement weakens the tendency towards dogmatic assertions and reduces personal biases and mistrust" (pp. 26-27). However, it has been noted by a number of authors, that in certain conflict situations, public participation may actually exacerbate the conflict (Hendee, Clark & Stankey, 1974; Susskind, 1981; Wengert, 1976; Twight & Carroll, 1983). Twight and Paterson (1977) emphasizes that public participation can be characterized with group stereotyping in which individual group judgements are questioned as being biased. This strategy of "exaggerating the differences between rivals," Twight (1977) argues, builds "cohesion, identity, and commitment within a group" (p. 771). Further, he adds: "Once such a strategy has been set in motion, reinforcement processes within the group make it hard to reduce polarization" (p. 771). Sewell and O'Riordan (1976) warn: "Hence, in the absence of a tremendous amount of forethought, good faith and patience, most participatory programs will probably fail. Indeed, they

may even prove to be counterproductive in the sense that sincerely motivated citizens may become deeply frustrated, resentful and cynical about the whole political process and the holders of power" (p. 20).

To this warning can be added a long list of criticisms. Some have alleged that public participation co-opts environmentalists, leading to legitimization of plans or decisions or, at the very least, that public participation is a public relations ploy (Burke, 1968; Lucas, 1976). Davidoff (1965) warns that citizens are not often involved in goal-setting and therefore are forced into a reactionary position. Applegate (1977) criticizes that: "...citizens seldom learn whether their efforts have any effect on the agency's final decision" (p. 448). Burch (1976) claims that public participation is "an activity for the select few who accept the established rules" (p. 46). The select few, he portrays, are conservationists, their supporters--the middle class, and resource professionals. Indeed, Burch (1976) concludes that: "Conservation, like most social reforms in the United States, is the property of the middle class" (p. 48). By inference, then, Burch's criticism appears to be that resource planning through public participation is unduly influenced by a select few who did not necessarily represent the larger public interest. Additional charges are that public participation is often very expensive and time-consuming in relationship to perceived benefits. Therefore,

it is not surprising that public participation has frequently generated considerable frustration and cynicism instead of understanding and harmony.

One of the variables most often recognized as having some influence on the effectiveness of public participation and yet requiring more investigation is values. Ducsik (1981) states: "...most professionals in the field of collaborative problem-solving recognize full well the realities of value conflicts and the need, therefore, to select modes of interaction specifically designed to operate under such circumstances" (p. 165). Twight and Carroll (1983) observe that: "The conditions under which public involvement facilitates consensus or forments additional conflict--and the techniques associated with such effects--are as yet poorly understood" (p. 732). More specifically, Willhite et al. (1973) contend that: "very little is known about the structure of differences in opinion or social values involved" (p. 351). Finally, Kweit and Kweit (1981), in their evaluation of public participation, acknowledge the influential role of values, but do not attempt an indepth analysis of this role.

This brief review of the literature on public participation appears to confirm one of the major themes arising from the reviews of resource planning and multiple use planning, the need to investigate and make more explicit the role of values in relationship to the effectiveness of

planning and public participation. The next section attempts to delineate some of the values relevant to the research problem, that is, the apparent ineffectiveness of integrated resource planning as a response to preservation versus development issues. These values constitute the fundamental elements of the research instrument used in this thesis.

Values, World Views and Paradigm Shifts

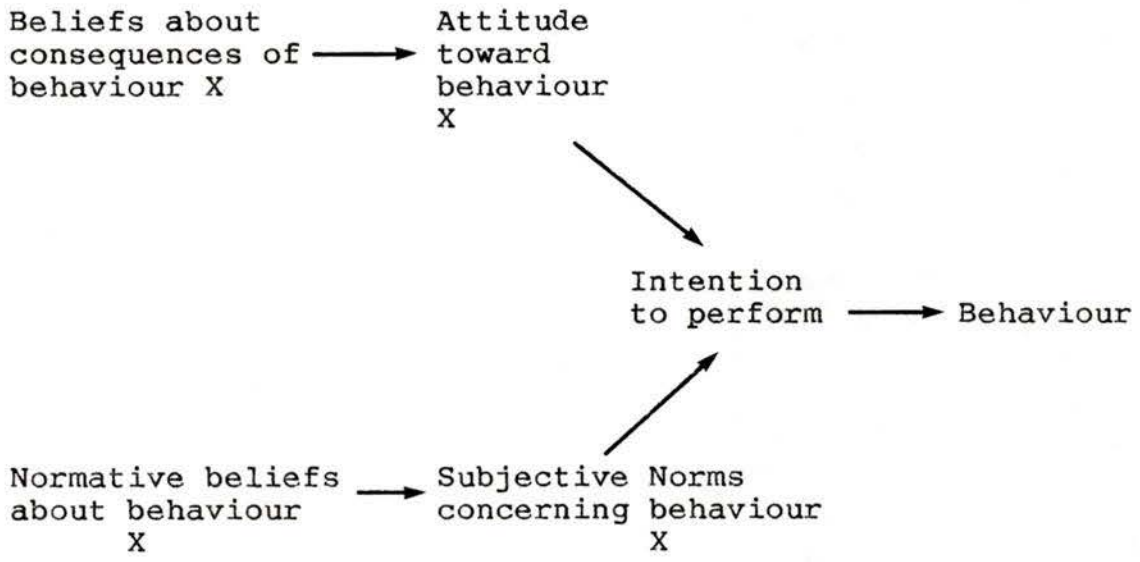
It has been suggested that resource conflicts are frequently associated with differences in degree of commitment to such values as: economic development (Bidol & Lesnick, 1984; Ervin et al., 1977), laissez-faire government (Bidol & Lesnick, 1984), future prosperity (Bidol & Lesnick, 1984), property rights (Rosenbaum, 1976; Ervin et al., 1977), and individual rights (de Neufville, 1981). It has also been argued that these differences in values influence the resolution of conflict (Ervin et al., 1977; O'Riordan, 1976). As McAllister (1980) points out: "Human values serve as guides for personal decision-making, attaching significance and importance to objects and events, directing choices toward things considered desirable or good and away from things considered undesirable or bad" (p. 13). Young (1966) suggests that values set the context as to what ought to be realized or ought not to be violated.

Rokeach (1968) defines values as: "abstract ideals, positive or negative, not tied to any specific attitude

object or situation, representing a person's beliefs about ideal modes of conduct and ideal terminal goals" (p. 124). Two main points emerge from this definition; that values are more general than attitudes and that values not only determine desirable ends but also desirable means to achieve the ends.[7] Rokeach also conceives values as a type of belief. Fishbien and Ajzen (1975) suggest that: "The totality of a person's beliefs serves as the informational base that ultimately determines his attitudes, intentions and behaviours" (p. 14). Fishbien and Ajzen's model (Fig. 12) has two points worth noting; that knowledge of beliefs or attitudes does not necessarily lead to the prediction of behaviour (intentions must be also accounted for) and that behaviour to some degree influences beliefs and attitudes. The model, therefore, addresses the argument that: "attitudes, metaphysics and ideas do not necessarily induce behaviour but may, on the other hand, themselves be determined by behaviour..." (Sandbach, 1980: 28). Most importantly, the model establishes probable linkages between values and behaviours.

Rokeach (1968) states that: "A belief system may be defined as having represented within it, in some organized psychological but not necessarily logical form, each and every one of a person's countless beliefs about physical and social reality" (p. 123). Accordingly, the concept of belief system encompasses ideology which he defines as: "an

Figure 12



Schematic presentation of conceptual framework for the prediction of specific intentions and behaviours.

Source: Fishbien and Ajzen, 1975.

organization of beliefs and attitudes--religious, political or philosophical in nature--that is more or less institutionalized or shared with others, deriving from external authority" (p. 123). Examples of ideologies include: conservatism, capitalism or catholicism. With each society, there tends to be one dominant belief system that: "...organizes the way that people perceive and interpret the functioning of the world around them" (Milbrath, 1985: 163). Hence, this dominant belief system also constitutes one world view, encompassing such things as technology, nature and government. Milbrath (1985) argues that: "Social paradigms condition individual goals and expectations, provide a definition of social problems, establish a structure of social and metaphysical rewards for various types of preferred behaviour, and create shared gains and deprivations that make social harmony in complex societies possible" (p. 163). This dominant belief system is also known as the Dominant Social Paradigm (DSP).

However, since the late 1960's, the DSP has come under increasing attack as being at the root of many social and environmental problems.[8] Ophuls (1974) argues that: "Virtually all values i.e., legitimacy of self interest, primacy of the individual and his inalienable rights, economic laissez-faire, and democracy as we know it--need to be changed as they are products of a period of abnormal abundance" (p. 37). Consequently, there have been calls for,

and increasing attention paid to, the development of a new paradigm based on concern for the environment and the principles of ecology. Catton (1980) states: "We have come to a time when old assumptions that compel us to misunderstand what is happening to us to be abandoned" (p. 5). He then exhorts: "New and different imperatives now must be faced. Their ecological basis must be seen" (p. 6). This emerging paradigm is often referred to as the New Environmental Paradigm (NEP),[9] while the movement from the DSP to NEP is termed a 'paradigm shift.'

The two paradigms stand in sharp contrast to each other as polar opposites. Cotgrove (1981) distinguishes the two paradigms according to core values and values relating to economy, polity, society, nature and knowledge (Table 1). However, as Van Liere and Dunlap (1983) clarify, individuals may be located at any point between the competing paradigms, reflecting what they term incomplete 'cognitive integration.' This incomplete integration, they conclude gives rise to inconsistencies in attitudes and behaviours. However, they contend elsewhere (1984), that in the long run "there is a tendency for individuals to reduce the 'dissonance' created by conflicting cognitions" (p. 13). This reduction is usually achieved by decreasing support for a particular paradigm while increasing support for more appropriate attitudes and behaviours. They also assert that "the societal-level equivalent of dissonance is paradigmatic

Table 1

Competing Social Paradigms

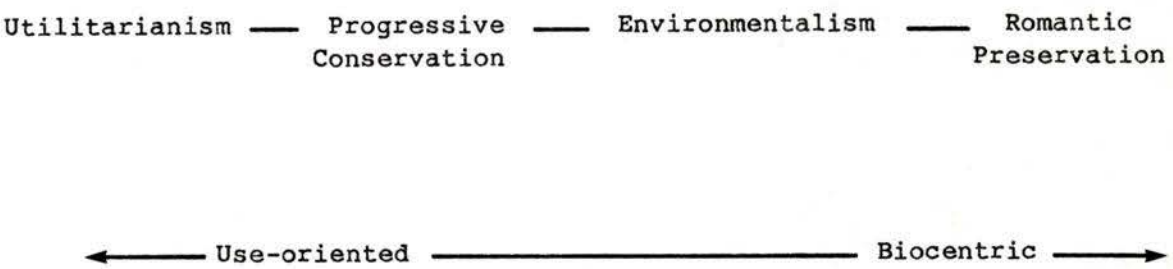
	Dominant Social Paradigm	Alternative Environmental Paradigm
Core values	Material (economic growth)	Non-material (self-actualisation)
	Natural environment valued as resource	Natural environment intrinsically valued
	Domination over nature	Harmony with nature
Economy	Market forces	Public interest
	Risks and Reward	Safety
	Rewards for achievement	Incomes related to need
	Differentials	Egalitarian
	Individual self-help	Collective/social provision
Polity	Authoritative structures: experts influential	Participative structures: (citizen/worker involvement)
	Hierarchical	Non-hierarchical
	Law and Order	Liberation
Society	Centralised	Decentralised
	Large-scale	Small-scale
	Associational	Communal
	Ordered	Flexible
Nature	Ample reserves	Earth's resources limited
	Nature hostile/neutral	Nature benign
	Environment controllable	Nature delicately balanced
Knowledge	Confidence in science and technology	Limits to science
	Rationality of means	Rationality of ends
	Separation of fact/value, thought/feeling	Integration of fact/value, thought/feeling

Source: Cotgrove (1981).

conflict, or the presence of competing sets of beliefs and values throughout the society" (p. 13).

Recent research (e.g., Catton, 1980; Cotgrove, 1982) has used the concepts of competing paradigms to make explicit differences in values. However, only a few studies have attempted to identify value differences and to relate these to resource planning issues. Culhane (1981) focused on the planning of U.S. Forest Service and Bureau of Land Management lands, although he did not use the concepts of competing paradigms. Instead, he developed a continuum of resource philosophies consisting of utilitarianism, conservatism, environmentalism and preservationism (Fig. 13). Each of these philosophies he characterizes according to certain underlying values, beliefs and assumptions. For instance, utilitarians generally hold that nature is infinite and is to be exploited for individual and societal gain. Utilitarianism is driven by the Judeo-Christian ethic to: "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth"[10](Genesis, line 28: 1). Another driving force is laissez-faire conservatism of "free-market, capitalistic economic theory and individualistic interpretations of the libertarian principles..." (Culhane, 1981: 3). About utilitarianism, Culhane (1981) concludes: "Thus, both the Judeo-Christian tradition and nineteenth-century conservatism

Figure 13



Natural Resource philosophy dimension

Source: Culhane, 1981.

helped transform exploitative materialism into a religiously and politically legitimate--even inevitable--means of economic, cultural, and spiritual growth" (p. 3). With its inherently anti-nature and strongly anthropocentric stance, it is not surprising that utilitarianism led to widespread and severe environmental degradation, leading many to argue for a new orientation towards nature and the land. One of the first to call for this new perspective was George Perkins Marsh (1864). Basically, he argued for a sense of stewardship based on sound scientific management.

Marsh's idea of scientific management captured the attention of Gifford Pinchot, who became generally accepted as one of the most influential leaders of the Conservation Movement.[11] Generally, conservationism accepted that nature was not infinite, that there were limits. Nature was still to be used to further individual and societal gain; however, because of the limits, conservationism emphasized 'wise-use,' as determined by scientific management. Wise-use became encapsulated in Pinchot's principle of 'greatest good for the greatest number in the long run' (Nash, 1976). Pinchot's concept of wise-use later evolved into the policy of multiple use (Culhane, 1981; Frome, 1984).

Although conservationism advocated less reckless attitudes and behaviours, it still remained essentially anthropocentric, ascribing only instrumental values to nature. Laissez-faire capitalism also remained quite

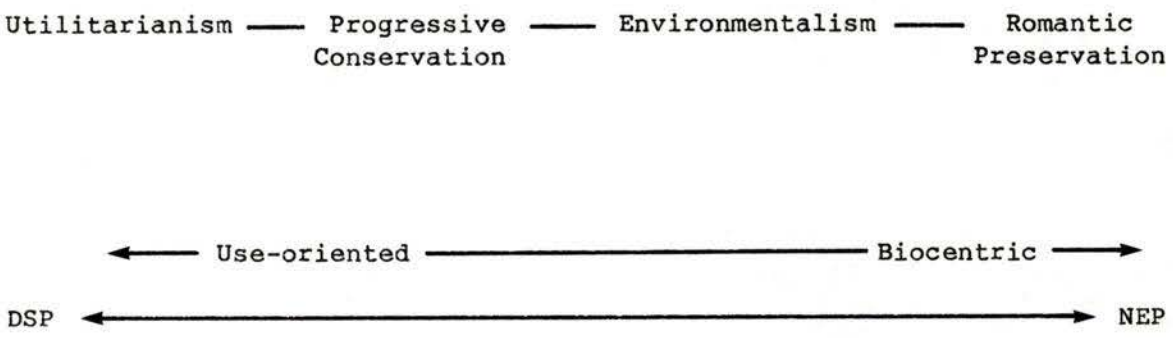
influential. Consequently, although there was an emphasis on little wastage, use was frequently predicated on economic imperatives (Culhane, 1981). From this viewpoint, wilderness preservation was either a non-use or a single use, which preclude 'proper'-use. Either way, wilderness was often perceived by conservationists as a waste of good resources. This viewpoint shattered an emerging friendship between Gifford Pinchot and John Muir, an ardent preservationist, and more fundamentally, forced a schism in the conservation/ environmental movement that exists today (Fox, 1981).

Muir was greatly influenced by the writings of people, such as Emerson and Thoreau for whom "nature, and especially wilderness, was a place of transcendental experience..." (Culhane, 1981: 6). Nature: "was a retreat from the artificiality and disharmony of urban, technological culture" (Culhane, 1981: 6). Indeed, to the preservationists, mankind was totally interdependent with Nature for all needs, especially spiritual. Preservationists also accepted that all wild things--be they inanimate or animate--had intrinsic values, quite apart from human needs. Therefore, preservationism stands in sharp contrast to utilitarianism and conservationism since it is biocentric as opposed to anthropocentric in orientation to nature. However, Muir was ahead of his time and his ideas regarding nature were largely overshadowed by conservationism.

Conservationism as a natural resource philosophy enjoyed a position of dominance till the mid- to late 1960's. Then, a new movement, with its own philosophy, emerged to rival the Conservation Movement. The Environmental Movement is threatening to the Conservation Movement for several reasons. First, through the writings of people such as Rachael Carson, environmental degradation was shown to directly affect human health and safety. In so doing, support for the Environmental Movement was deepened. Second, the new movement spoke of such concepts as 'balance of nature' and 'limits to growth.' It also stressed the interrelationship of mankind with nature in a 'web of life.' Consequently, environmentalism had a biocentric orientation (although not as strongly as preservation) and advocated restrained human utilization of nature balanced to maintaining ecological integrity. To conservationists, this stance often posed unnecessary concerns and subsequent delays to efficient utilization.

A number of important points emerge from Culhane's classification with respect to paradigms. First, utilitarians appear to be strong supporters of the Dominant Social Paradigm (DSP), while preservationists appear to be strong supporters of the New Environmental Paradigm (NEP), with conservationists and environmentalists occupying points in between (Fig. 14). Second, a noticeable shift in resource management philosophy has occurred from utilitarianism to

Figure 14



Natural Resource philosophy dimension

With acknowledgements to Culhane, 1981.

conservationism. Third, this shift was led by a few who saw the need to respond to changing environmental conditions. Fourth, a further shift is now being advocated, spurred by the Environmental Movement of the 1960's and 1970's. Fifth, recent studies indicate that the general public are environmentally sympathetic and are shifting in the direction of environmentalism[12] (Milbrath, 1984). Finally, with each shift there has been some resistance to change from those who stood the most to gain from the status quo. This last point is reinforced by Culhane's (1981) findings in which he found resource developers more oriented to the old utilitarian position and resource managers more oriented towards conservationism.

The significance of these points with respect to land use conflicts and resource planning is perhaps best summarized by Creighton (1983). He notes that many resource agencies were established during a time when there was a great degree of consensus centered around conservationism. However, with the advent of environmentalism, Creighton (1983) contends that there was a breaking-up of the consensus and values spread over a broader range. Creighton concludes:

> The effect of this was to leave agency mandates and policies stranded without a consensus. Political strength was distributed across a broader range of values. New groups emerged who saw the agencies as adversaries--and from their value position, rightly so, because the agencies now spoke on behalf of one segment of the public

> (occupying the values position on which formerly there was a consensus) rather than a consensus of the public at large (p. 150).

Given this conclusion, it is possible to surmise that integrated resource planning is likely to be embedded with old conservationism traditions such as multiple use. But more fundamentally, it would not be unreasonable to expect that resource planners and managers would hold different values than preservationists, as found by Culhane (1981).

Unfortunately, Culhane's (1981) study did not make explicit the more precise nature of value differences. Thus, the need for research, as identified by Garcia (1983), Willhite et al. (1973), Clawson (1977), Hendee (1984), Twight and Carroll (1983) and Kweit and Kweit (1981) became the basis for this thesis.

Chapter Three End Notes

1. For an example of this recent work, see E.L. Jackson, Recreation, Energy, and the Environment: A Survey of Albertans' Preferences and Behaviour. A Report to the Recreation, Parks and Wildlife Foundation and Alberta Recreation and Parks, February 1985.

2. For the purposes of this thesis, conflicts are defined as "purposeful struggles between collective actors who use social power to defeat or remove opponents and to gain status, power, resources, and other scarce values" (Joseph S. Himes, Conflict and Conflict Management Athens: The University of Georgia Press, 1980:14). Conflicts are distinguished from competition as being direct and personal. Competition is conflict which is not total, it is mostly indirect and impersonal, and it can be bridged through trade. And as trade develops, the market emerges to give natural regulation... (James A. Schellenberg, The Science of Conflict New York/Oxford: Oxford University Press, 1982:43). Conflict, therefore, may also be distinguished from competition by the breakdown of bridges such as the market place.

   Resource planning is taken as defined as "a process for determining appropriate future action by utilizing scarce resources in such a way as to maximize the attainment of ends held by the system (D.M. McAllister, Evaluation in Environmental Planning: Assessing Environmental, Social, Economic & Political Trade-Offs Cambridge: The MIT Press, 1980).

3. The concept of world views and their relationship to value and belief systems will be discussed later in this chapter.

4. For more detailed discussions, see W. Tips and H. Gysels, "The Structure of Goal Sets in Planning and the Environment," Journal of Environmental Management, 1980, vol. 10, 13-23; and D.J. Amy, "The Politics of Environmental Mediation," Ecology Law Quarterly, vol. 11(1), 1983: 1-19.

5. As an example, John A. Livingston's book, Fallacies of Wildlife Conservation (Toronto: McClelland and Stewart Limited, 1981) contains a critique of the reformist approach to wildlife conservation.

6. For excellent critiques of multiple use, see R.W. Behan, "The Succotash Syndrome, or Multiple Use: A Heartfelt Approach to Forest Land Management," Natural Resources Journal, vol. 7(4), 1967:473-484; G.R. Hall, "The Myth and Reality of Multiple Use Forestry," in D.L. Thompson (ed.), Politics, Policy and Natural Resources (New York: Free Press, 1972); R. Applegate, "The Multiple Use Planning Process: Descent Into The Maelstrom?" Environmental Law, vol. 8 (1977-78): 427-460.

7. For definitional comparisons, see Milton R. Baker, R.L. Doran and A.A. Sarnowski, "An Analysis of Environmental Values and Their Relation to General Values," Journal of Environmental Education, vol. 10(1), Fall 1978.

8. This attack has come from nearly all disciplines. For examples, see C.A. Reich, The Greening of America (Bantam edition)(New York: Bantam Books, Inc: 1971); Theodore Roszak, The Making of a Counter Culture (New York: Anchor Books, Doubleday & Company, Inc., 1968); Erich Fromm, The Revolution of Hope: Toward a Humanized Technology (Bantam edition)(New York: Bantam Books Inc., 1968); John A. Livingston, One Cosmic Instant: A Natural History of Human Arrogance (Toronto: McClelland & Stewart Ltd., 1973).

9. Catton (1980) presents the two competing paradigms as 'Ostriches' (DSP) versus 'Realists,' while O'Riordan (1977) suggests 'technocentrics' versus 'ecocentrics.' Cotgrave (1982) conceives the two paradigms as 'cornucopians' versus 'catastrophists.'

10. There is an ongoing debate as to the more precise nature of the Judeo-Christian influence in environmental degradation. Initially, it was touched off by a somewhat of a classic essay by Lynn White, "The Historical Roots of Our Ecological Crisis," which originally appeared in Science, vol. 155, 1967, pp. 1203-1207. However, it is also found in T.G. Barbour (ed.), Western Man and Environmental Ethics (Reading: Addison-Wesley Publishing Company, 1973). This was followed by a critique by John Passmore, Man's Responsibility For Nature (London: Duckworth & Co. Ltd., 1974). A more recent analysis is by Robin Attfield, The Ethics of Environmental Concern (Oxford: Blackwell Publisher Ltd., 1983). The conclusions appear to be that the type of influence largely depends on

which Testament (Old or New) is looked to for guidance. While the Old Testament encourages domination over nature, the New Testament encourages stewardship of nature.

11. At the peak of his influence, Pinchot was the Chief Forester of the newly-created U.S. Forest Service, as well as special advisor to President Theodore Roosevelt. This was in the early 1900's.

12. This shifting of public values has engendered the anger of old 'rearguard' defenders, who have attempted to dissuade the public through attacks on environmentalism. For example, see W. Tucker, Progress or Privilege: America in the Age of Environmentalism (1st ed.) Garden City, NY: Anchor Press/Doubleday, 1982.

CHAPTER FOUR

Methodology

The primary purpose of this thesis is to assess the effectiveness of integrated resource planning as a response to preservation versus development issues. In order to achieve this purpose, these specific questions are posed:

1. Are there fundamental differences in values held by different groups underlying preservation versus development issues? If so, what are the values in conflict?
2. Is the planning process influenced by one particular set of values? and,
3. Are there differences in perceptions of integrated resource planning and public participation?

Study Design

The concepts of Dominant Social Paradigm (DSP) and New Environmental Paradigm (NEP), as conceptualized by Cotgrove (1981) and others, provide the basis for the study design. Dunlap and Van Liere (1978, 1984) have developed these concepts into two scales--the DSP scale and the NEP scale. Both scales consist of statements to which a respondent replies in a Likert-type manner. The DSP scale initially consisted of 37 items grouped into eight sub-scales: (1) support for laissez-faire government; (2) support for status quo; (3) support for private property rights; (4) faith in science and technology; (5) support for

individual rights; (6) support for economic growth; (7) faith in material abundance; and (8) faith in future prosperity (Dunlap & Van Liere, 1984). The scale was tested on a statewide sample of adult residents of Washington. As a result of factor analysis, eight items were eliminated because they failed to yield consistent separations. The NEP scale consists of 12 items.

On the basis of their results, Dunlap and Van Liere (1984) conclude that a strong commitment to the DSP: "leads to lower levels of concern for environmental protection" (p. 1023). They further conclude that: "the DSP scales explain considerably more variation in levels of environmental concern than do the demographic variables, and that controlling for the latter has little effect upon the negative relationship between commitment to the DSP and environmental concern" (p. 1023). However, they warn that "the negative relationship between commitment to the DSP and concern for environmental protection is far from perfect, reflecting the fact that many people endorse the DSP and support environmental protection efforts" (p. 1025). In the long-run, however, it is expected that individuals will seek to reduce the dissonance by increasing support for a particular paradigm while decreasing behaviours inconsistent with that paradigm (Van Liere & Dunlap, 1983). The three dimensions of the DSP scale which demonstrated consistently strong (negative) effects on environmental concern were: support for

private property rights, support for economic growth and faith in material abundance (Dunlap & Van Liere, 1984). Support for laissez-faire government also demonstrated negative effects, although not as strong as the dimensions previously noted.

Dunlap and Van Liere (1978) also tested their NEP scale on state of Washington residents as well. Based on the results, they concluded that the NEP items constitute an internally consistent and unidimensional scale and that none of the twelve items needed to be eliminated. The results also showed a great degree of acceptance of the NEP throughout the sample, which led Dunlap and Van Liere (1978) to suggest that: "the proponents of the NEP may have been more successful in getting their message across to the public than has generally been imagined,..." (p. 13). As was expected, environmentalists tested showed a much stronger orientation towards the NEP scale than the general public (Dunlap & Van Liere, 1978).

Of the two scales, the NEP scale appears to have been the focus of the most testing. Albrecht et al. (1982) tested the scale on urban and rural residents of Iowa. Based on their findings and using factor analysis, Albrecht et al. (1982) were forced to conclude that the NEP scale was not unidimensional, but rather consisted of three dimensions: balance of nature, limits to growth and man over nature. More recently, Geller and Lasley (1985) were also unable to

confirm the unidimensionality of the NEP scale but were able to confirm three dimensions similar to Albrecht et al. (1982). The significance of whether the NEP scale is unidimensional or not is summarized by Albrecht et al. (1982), who state: "...collapsing of all 12 items into a single scale score may, at best, be losing valuable data. At worst, such collapsing may be masking important differences in respondents' environmental dispositions" (p. 42). Since subsequent tests of Geller and Lasley's (1985) findings do not appear to have been completed, this thesis followed the suggestion of Albrecht et al. (1982) to use three dimensions as opposed to one. All items, as suggested by Dunlap and Van Liere (1978, 1984), were used; however, a number of minor modifications were necessary. Most of these included changing words or phrases relevant to the United States.

Selection of Case Studies

The case studies selected were Meares Island and the Valhallas. Case study selection was completed after a review of issues, apparently involving the preservation versus timber harvesting conflict. Sources for this review included: planning reports, minutes of meetings and newspaper articles. Of particular interest was the existence of a preservation versus timber harvesting as a central issue and whether or not an integrated resource planning process was implemented to resolve the conflict. Another major

consideration was the availability of primary data sources. Both the Meares Island and Valhalla issue are very recent; therefore, informed persons were easier to locate than would be the case for less recent issues.

Sample

The population was defined as all those who participated as members of the planning teams or associated committees. The population was determined by the research goal, which was to assess integrated resource planning. A list of 79 potential respondents was compiled from a review of planning reports and documents. An *a priori* classification was developed and consisted of resource planners and managers, local community representatives, developers, preservationists and others (primarily consultants).[1]

Initially, an effort was made to do a census, that is, to interview all 79 people. However, towards the end of the data gathering phase, it became apparent that very little new information was being added, therefore, interviews were terminated with 53 completed and partially completed (Table 2), leaving 26 uncompleted (Table 3).

There were six partially completed interviews. Some of the reasons for partial completion included constraints of the interview environment, such as a crowded restaurant or a speeding outboard motorboat. Two respondents refused to complete the scales even after a lengthy warm-up period.

Table 2

Proportion of Sample by Sub-groups
for Completed and Partially Completed Interviews

Planners/managers	51%	(27)
Local community representatives	23%	(12)
Preservationists	11%	(6)
Developers	9%	(5)
Others	6%	(3)
	100%	53

Table 3

Proportion of Sample by Sub-groups
for Uncompleted Interviews

Planners/managers	65%	(17)
Local community representatives	27%	(7)
Preservationists	8%	(2)
	100%	26

Table 4

Proportion of Sample by Sub-groups
by Case Study

	Meares	Valhallas	Both
Planners/managers	19% (5)	66% (18)	15% (4)
Local community representatives	17% (2)	83% (10)	
Preservationists	83% (5)	17% (1)	
Developers	60% (3)	40% (2)	
Others		100% (3)	
	15	34	4

They expressed strong suspicion and cynicism as to the merit of the scales.

By case study, the proportion of the sample was: Meares 28% (15) and Valhallas 64% (34), with the remaining 8% (4) being respondents who participated in both case studies (Table 4).

Approach

Within the social sciences, interviews and questionnaires tend to be the two most commonly used techniques for data gathering. Each has its own unique advantages and disadvantages depending on the problem under study. Interviews offer a high degree of flexibility, allowing the interviewer to probe respondents' answers for deeper meanings. However, questionnaires are often less expensive or time consuming. Questionnaires also provide greater structure, thereby reducing the potential of bias. Unfortunately, they cannot allow for exploratory questions to responses. Given the complexity of land use conflicts, interviews were chosen as the primary means of data gathering. This was supplemented with an extensive review of the relevant bodies of literature and of planning documents, reports and minutes of meetings.

Interviews can be unstructured, semi-structured and structured. To derive the most information from the interviews, a schedule was designed which was both structured and

semi-structured. The schedule consisted of three parts: a scale to tap value differences; open-ended questions on integrated resource planning and public participation; and a few socio-demographic questions (see Appendix I).

Construction of Interview Schedule

Both the scale and the socio-demographic sections were relatively straightforward. The scales were adapted from the work of Dunlap and Van Liere (1978, 1984) with a few minor adjustments. The socio-demographic questions are standard. However, considerable attention was required to develop the open-ended questions. The basis for each question was derived from a review of the literature, planning reports and newspaper articles. Each question strove to reveal the respondent's values and perceptions of integrated resource planning and wilderness issues. For example, Question one asked respondents for their definition of integrated resource planning. Of particular interest was whether or not respondents' perceived preservation included in integrated resource use. Also of interest was whether respondents perceived a difference between integrated resource planning and multiple use planning. Question two asked respondents about their concerns regarding forestry in B.C. It was expected that developers would be concerned about the designation of forest lands to protected status, while preservationists would be concerned about the lack of

wilderness preservation. Questions three and six both attempted to gain respondents' perceptions of the reasons for the conflicts and whether or not they thought value differences were involved. Question four asked respondents about the potential role of the Ministry of Forests in wilderness preservation. This question related to Question one in that a respondent's answer would depend upon perceptions of the Ministry's mandate, vis a vis, integrated resource use or multiple use and wilderness preservation.

Questions five and seven through to, and including ten, referred to the involvement of the public in integrated resource planning. Of interest was whether compromise arising out of better understanding was perceived as a goal for public participation. Also, attention was focused on individual goals. Here it was expected that planners and managers would seek compromise, while protagonists would seek their respective goals of preservation or development. Question ten specifically strove to assess the degree of understanding that was generated in the planning process, quite apart from any desires for a compromise resolution.

Pre-Test

The interview schedule was pre-tested on 15 individuals, including graduate students, public servants and consultants. The primary objective was to assess the scale's ability to differentiate respondents by their values. The

pre-test also attempted to establish the order of the interview schedule.

As a result of the pre-test, some wording was changed in the open-ended questions to improve clarity. The order of the scale and open-ended questions did not appear to be critical to the scale's reliability. However, it was observed that respondents were more favourably predisposed towards completing the scale after the open-ended questions, which provided a warm-up period. No changes to the scale were necessary as a result of the pre-test.

Interviews

Interviews can be completed either by telephone or person to person. Where possible, the latter approach was used to enable a more indepth interview to occur. Interviews were arranged by telephone and, where a person to person interview was not possible, a telephone interview was either conducted on the spot or arranged for a later date.

Interviews varied in length, ranging from 45 minutes to 4 1/2 hours, with the average interview being 2 1/4 hours. During the longest interview, the author helped fix a broken down garbage truck and watched the till while the respondent serviced the customer. Respondents were given their choice of interview locations to meet their schedules and needs for comfortableness. Locations included: small coffee shops, fishing wharfs, and a speeding motorboat. Each of these

locations had varying degrees of isolation and confidentiality.

Interview data was recorded primarily by hand, although an initial attempt was made at using a tape-recorder to compliment handwritten notes. However, acting upon a suspicion that respondents were holding back because of the recorder, this interviewer began to experiment early in the interviews with switching it off during the interview. The results of this experimentation led to the abandonment of the recorder after twelve interviews, because it was found that respondents would be more open and candid in their remarks when the recorder was turned off. Data was recorded on standard looseleaf. The responses to scale items were reverse scored when necessary and then later placed onto columned pages. Responses to the open-ended questions were recorded verbatim.

Summary

Central to this thesis is the concept of conflicting paradigms. Dunlap and Van Liere (1978, 1984) have developed two scales--the DSP and NEP scales--to operationalize the concept of paradigms. These scales facilitate a clearer definition of underlying values and have been applied to geographical problems (Jackson, 1985). While the results look encouraging, further testing has been advocated (Dunlap & Van Liere, 1978, 1984: Albrecht et al., 1982). The

application of the DSP and NEP scales to the research case studies was expected to lead to greater understanding of land use conflicts and more effective resolution methods. In addition, areas for scale improvement could be identified.

Chapter Four End Notes

1. In general, resource planners and managers were public servants of various resource agencies; local community representatives were citizens elected to serve the regional district; developers were representatives of the forest companies involved; and preservationists were members of environmental groups.

CHAPTER V

Results

This chapter is organized into five parts. The first discusses data analysis. The remainder use the data to examine the two central questions of this thesis, perceptions of integrated resource planning and value differences. This is followed by a brief discussion of the socio-demographic results. Finally, a chapter summary is presented, encapsulating the results.

Data Analysis

Analysis of the data was of two types. Content analysis was the approach used with the open-ended questions. With this approach, major themes in the responses were identified and, to some extent, quantified (see Appendix 2). However, due to the exploratory nature of the questions and the often rambling nature of the responses, a high degree of precision could not be achieved. On the other hand, the scale lent itself to a quantitative approach in which the data was summarized as frequency distributions, means, and percentages. Significant differences were established using the Mann-Whitney 'U' test and a significance level of .05 (i.e., 95% confidence limit) or above.[1] (All raw data and calculations are presented in Appendix 3). The scale data was first analyzed according to the *a priori* categories; and

secondly according to the preferred planning option. This latter classification broke respondents into three groups: those who preferred preservation only; those who preferred some preservation with some multiple use; and those who preferred multiple use only. The rationale for this classification will be explained in the section discussing the scales.

Integrated Resource Planning, Public Participation and Reasons for Conflict

The results from content-analysis of the open-ended questions are organized around four major topics: integrated resource planning; public participation; preservation versus development; and reasons for conflict. Frequencies of responses are shown as a proportion of the sample as well as by group: planner and managers (P/M); local community representatives (LCR); preservationists (P); developers (D); and others (O). Each of the topics will be discussed in turn.

Integrated Resource Planning

Table 5 summarizes respondents' perceptions regarding integrated resource planning. The results indicate that there is general agreement 74% (39) amongst planning participants that integrated resource planning necessitates some compromises and trade-offs. Forty-one percent (22) of the sample believe that preservation is included in the concept of integrated resource use.

Table 5

Perceptions of Integrated Resource Planning

Group	Cp	Wp	Rd	Sb	Cv	Su
P/M	(89)24* (61%)	(52)14* (64%)	(52)14* (44%)	(30) 8* (44%)	(18) 5* (36%)	(30) 8* (44%)
LCR	(58) 7* (18%)	(25) 3* (14%)	(58) 7* (22%)	(33) 4* (22%)	(33) 4* (28%)	(17) 2* (11%)
P	(17) 1* (3%)	(83) 5* (22%)	(83) 5* (16%)		(83) 5* (36%)	
D	(100) 5* (13%)		(80) 4* (12%)	(80) 4* (22%)		(100) 5* (28%)
O	(67) 2* (5%)		(67) 2* (6%)	(67) 2* (12%)		(100) 3* (17%)
Total	(74)39*	(41)22*	(60)32*	(34)18*	(26)14*	(34)18*

Key

* - Actual number of participants

(n) - Proportion of sub-group

(n%) - Proportion of total

Cp - Compromise
Wp - Wilderness preservation
Rd - Resource development
Sb - Sincere belief
Cv - Cynical view
Su - Single use

However, to a great many 60% (32), integrated resource use meant that some level of resource development was a given. But, within this group, there were really two sub-groups. Thirty-four percent (18) appear to sincerely believe that some level of development is implicit in the term. Twenty-six percent (14) voiced the more cynical feeling that integrated resource use meant "logging as usual," that is, preservation was too often excluded. As would be expected the developers fell into the former group, while the preservationists fell into the latter group.

Part of the problem appears to revolve around whether or not preservation was perceived as a 'single use.' Thirty-four percent (18) believed that it was and therefore precluded integrated resource use. It should be noted that throughout the respondents, the terms of 'multiple use' and 'integrated resource use' were often used interchangeably. When the term 'single use' was probed, two common responses were noted: either that there really were very few instances of single use designations, of which preservation was not one; or that a single use meant the exclusion of resource development from an area.

Public Participation

An essential component of attempts at integrated resource planning in B.C. has been public participation. The implicit assumption has been that by bringing people

together they can talk through their difficulties and come to a mutual understanding of each other. In this hopefully congenial atmosphere, compromises can be worked out. However, the results (Table 6) indicate a contradictory perception of public participation. When participants were asked whether they felt that public participation led to the "creation of a favourable climate for resolution" (actual phrase used in interview), 72% (38) responded that it did not. Yet, 70% (37) of the participants felt that their level of understanding of others had increased (Table 7). This suggests that the reasons for conflict are deep-rooted and not likely to be resolved easily, even though a greater degree of understanding is achieved.

When asked what goals public participation should achieve, the primary ones identified were: information exchange 51% (27), values identification 43% (23), education 42% (22), and compromise 38% (20). Of less importance were achieving increased government and industrial accountability 13% (7) and self-satisfaction 6% (3)(Table 8). Information flowing from citizens, about such things as local site or community characteristics, was seen as an important source of data for the planning process. On the other hand, citizens appreciated being informed about decisions or plans which could have significant impacts on their lives. The identification of wants, concerns, and beliefs within communities and amongst concerned citizens

Table 6

Creation of a Favourable Climate for Conflict Resolution

Group	Yes	No
P/M	(18) 5* (62%)	(70)19* (50%)
LCR	(17) 2* (25%)	(75) 9* (24%)
P	(17) 1* (13%)	(83) 5* (13%)
D		(80) 4* (10%)
O		(33) 1* (3%)
Total	(15) 8*	(72)38*

Table 7

Increased Understanding as a Result of Public Participation

Group	Yes	No
P/M	(59)16* (43%)	(22) 6* (60%)
LCR	(100)12* (32%)	
P	(67) 4* (11%)	(33) 2* (20%)
D	(40) 2* (5%)	(40) 2* (20%)
O	(100) 3* (9%)	
Total	(70)37*	(19)10*

Key

* - Actual number of participants

(n) - Proportion of sub-group

(n%) - Proportion of total

Table 8

Goals for Public Participation

Group	I	V	A	Ss	Cp	Ed
P/M	(63)17* (63%)	(52)14* (56%)	(4) 1* (14%)	(7) 2* (67%)	(41)11* (55%)	(48)13* (59%)
LCR	(25) 3* (11%)	(33) 4* (17%)	(17) 2* (29%)		(25) 3* (15%)	(50) 6* (27%)
P	(17) 1* (4%)	(67) 4* (17%)	(67) 4* (57%)		(17) 1* (5%)	(17) 1* (4%)
D	(100) 5* (18%)			(20) 1* (33%)	(40) 2* (10%)	(40) 2* (10%)
O	(33) 1* (4%)	(67) 2* (10%)			(100) 3* (15%)	
Total	(51)27*	(43)23*	(13) 7*	(6) 3*	(38)20*	(42)22*

Key

* - Actual number of participants

(n) - Proportion of sub-group

(n%) - Proportion of total

I - Information exchange
V - Value identification
A - Accountability
Ss - Self-satisfaction
Cp - Compromise
Ed - Education

was also considered critical by resource planners and managers. One resource developer noted that: "If strong beliefs exist, these must be identified and taken seriously. If not, there will be problems." Unfortunately, as one resource manager commented: "Ministers don't believe that environmentalism is widespread and that a large part of the public is sympathetic with environmental concerns." As a consequence, the strong beliefs of those who desire preservation are dismissed as those of extremists. Instead, this resource manager argued: "The politicians are hearing what their supporters are telling them, that environmental concerns restrain economic growth."

Typically, the education role is presented as one way, with resource managers and planners educating the citizens about the complexities of resource development. Many of the respondents agreed with this presentation of public participation, but they also saw it fulfilling an important reciprocal function as well. One resource manager stated: "I have a reasonable appreciation for aesthetics and was concerned with becoming brainwashed. Other interests as opposed to logging will keep this alive." A developer also admitted that, as a result of his exposure to other interests, he had gained new respect for some of the preservationists. Too often in conflict situations, stereotyping blocks learning and understanding. For this developer, people he would have previously discounted became important sources of

information "worth checking out."

Compromise is an extremely problematic goal with a pejorative connotation for many. While a strong desire to reach mutually acceptable solutions was noted throughout the respondents, the positions appear fixed with very little flexibility. Developers perceive the concept of multiple use as a compromise already in which logging is tempered by recreation, wildlife and aesthetic constraints. Preservationists perceive multiple use as "logging as usual" and, therefore, not a compromise. However, the preservation of certain areas would be a compromise. Resource managers and planners are split on this issue. Thus, there is a lack of agreement as to what constitutes a compromise.

Table 9 summarizes the principal goals that the various respondents had hoped to achieve through their involvement in the planning process. As was expected, all of the preservationists sought preservation as their primary goal, while all of the developers favoured a multiple use plan. Nearly half 48% (10) of the resource managers also favoured a multiple use plan. The third goal was education. Thirty-eight percent (20) of the participants mentioned the goal to educate as well as to become educated.

Table 9

Principal Goals Sought by Various Planning Participants

Group	P	Mu	Ed
P/M	(11) 3* (30%)	(37)10* (48%)	(52)14* (70%)
LCR	(8) 1* (10%)	(33) 4* (19%)	(42) 5* (25%)
P	(100) 6* (60%)		
D		(100) 5* (24%)	
O		(67) 2* (9%)	(33) 1* (5%)
Total	(19)10*	(40)21*	(38)20*

Key

* - Actual number of participants

(n) - Proportion of sub-group

(n%) - Proportion of total

P - Preservation
Mu - Multiple use
Ed - Education

Preservation versus Development

It was expected that resource developers would be most concerned with the exclusion of forest land from development, while preservationists would be most concerned about the need for more preservation of forest lands. In general, the results (Table 10) indicate that only 19% (10) of the participants shared the former concern, while still less 8% (4) shared the latter concern. More specifically, it would appear that the developers were more concerned about the loss of forest land as a forestry issue than preservationists concerned about lack of protection of forest lands. Of prime concern to many (83%), 44) was the management of the forests. This concern included:

- diminishing forests
- overcapacity of mills
- overcommitment of forests to large multinationals
- understaffing of the Ministry of Forests at the field level
- destructive harvesting methods: wastage, overuse of clearcutting and road building
- lack of sufficient reinvestment into forest regeneration
- arrogant industry attitudes
- forest management illiteracy amongst the public.

Two specific concerns which reappeared frequently were bias or control of the Ministry of Forests by the industry 34% (18) and bias of forest management by short-term economic considerations (28%), 15).

The perceived bias of the Ministry of Forests gives rise to an inherent mistrust of the agency. This mistrust

Table 10

Concerns Regarding Forestry in B.C.

Group	Lf	Pf	Fm	Bi	Be
P/M	(18) 5* (50%)	(7) 2* (50%)	(78)21* (48%)	(37)10* (56%)	(22) 6* (40%)
LCR	(8) 1* (10%)		(92)11* (25%)	(25) 3* (17%)	(50) 6* (40%)
P		(33) 2* (50%)	(100) 6* (14%)	(67) 4* (22%)	(50) 3* (20%)
D	(80) 4* (40%)		(60) 3* (7%)		
O			(100) 3* (7%)	(33) 1* (5%)	
Total	(19)10*	(8) 4*	(83)44*	(34)18*	(28)15*

Key

* - Actual number of participants

(n) - Proportion of sub-group

(n%) - Proportion of total

Lf - Loss of forest land
Pf - Preservation of forest land
Fm - Forest management
Bi - Bias by industry
Be - Bias by economics

was demonstrated in the responses to whether or not the Ministry's mandate should be expanded to include wilderness allocation. Table 11 summarizes the results, which indicate an even split with 47% (25) in favour and 47% (25) opposing. However, by cross-referencing with responses indicating a perceived bias of the Ministry of Forests towards resource development, it appears that perceived bias accounts for 72% (18) of those opposing the expansion of the mandate.

Encouragingly, the results (Table 12) also indicate 72% (38) of the participants support the idea of preservation in principle, while only 6% (3) oppose. Going from the general to the specific, the results indicate that for the two case studies combined 32% favoured total preservation, 32% favoured a combination of multiple use and preservation for the area, while only 11% favoured total multiple use of the area involved. These results confirm one resource manager's perception that "up to the Deputy Ministry level there is an awareness of the need for preservation," although "government is not interested in preservation."

Reasons for Conflict

When participants were asked their impressions of what generated the conflict that arose in either of the two case studies, four main themes emerged: perceived need for change versus status quo; materialistic values versus non-materialistic values; us versus them; and differences in

Table 11

Expansion of the Ministry of Forest's Mandate to Include Wilderness Allocation

Group	Yes	No
P/M	(52)14* (56%)	(41)11* (44%)
LCR	(58) 7* (28%)	(33) 4* (16%)
P	(17) 1* (4%)	(83) 5* (20%)
D	(20) 1* (4%)	(80) 4* (16%)
O	(67) 2* (8%)	(33) 1* (4%)
Total	(47)25*	(47)25*

Key

* - Actual number of participants

(n) - Proportion of sub-group

(n%) - Proportion of total

Table 12

Support for Preservation

Group	Y	N	Wp	Wp/Mu	Mu
P/M	(74)20* (53%)		(26) 7* (41%)	(33) 9* (53%)	(18) 5* (45%)
LCR	(67) 8* (21%)	(8) 1* (33%)	(33) 4* (23%)	(42) 5* (29%)	(17) 2* (9%)
P	(100) 6* (16%)		(100) 6* (36%)		
D	(60) 3* (8%)	(40) 2* (67%)		(20) 1* (6%)	(80) 4* (36%)
O	(33) 1* (2%)			(67) 2* (12%)	
Total	(72)38*	(6) 3*	(32)17*	(32)17*	(21)11*

Key

* - Actual number of participants

(n) - Proportion of sub-group

(n%) - Proportion of total

Y - Supports preservation in principle
N - Does not support preservation in principle
Wp - Supports preservation as preferred option
Wp/Mu - Supports a combination of some preservation and some multiple use as preferred option
Mu - Supports multiple use as preferred option

man-land beliefs (Table 13). Perceived need for change was identified by 64% (34) participants as giving rise to the conflict. As one resource manager stated: "[The problem is] the good old boys who are not prepared to be run out by alternative lifestyle people." Or, as a preservationist put it: "The industry is sick from the top to the bottom and management is pigheaded, stuck in a good old boy's way of thinking." When this reason for conflict was probed as to what constituted a "good old boy's" mentality, part of the answer usually included the perception of a frontier or pioneer attitude towards the land. One local community representative asserted: "Resource extraction leaders are still living in the nineteenth century and so is the legislation." Another community representative commented that the conflict over the Valhalla issue arose from "...seeing the death throes of the old order in this area where the pioneering attitude is still hanging in there."

Seventy percent (37) of the participants stated that materialistic values in opposition to non-materialistic values generated the conflict. The former set of values was made apparent in statements such as: "Certain things should be preserved; however, they must demonstrate higher worth or value than the forest industry," or "we restricted ourselves to economics. We stayed clear of value judgements, i.e., worth of Valhallas as a park. Our approach was volumes, annual allowable cut and jobs." Non-materialistic values

Table 13

Reasons for Conflict

Group	Cs	Mv/Mv	U/T	M/L
P/M	(59)16* (47%)	(70)19* (51%)	(37)10* (36%)	(52)14* (58%)
LCR	(75) 9* (26%)	(58) 7* (19%)	(67) 8* (29%)	(17) 2* (8%)
P	(83) 5* (15%)	(83) 2* (13%)	(50) 3* (11%)	(100) 6* (26%)
D	(40) 2* (6%)	(80) 4* (11%)	(80) 4* (14%)	(40) 2* (8%)
O	(67) 2* (6%)	(67) 2* (6%)	(100) 3* (10%)	
Total	(64)34*	(70)37*	(53)28*	(45)24*

Key

* - Actual number of participants

(n) - Proportion of sub-group

(n%) - Proportion of total

Cs - Perceived need for change versus status quo

Mv/Mv - Materialistic values versus non-materialistic values

U/T - Us versus them

M/L - Differences in man-land beliefs

included: concern for aesthetics, recreation, or ecological integrity.

A third reason for the conflict can be best summarized as "us versus them." (Fifty-three percent (28) of the participants mentioned this as a reason.) In its more caustic form, it was often expressed as "hippies versus rednecks." Usually, it was the so-called hippies who were viewed as different. They were frequently characterized as being unnecessarily or overly concerned about the environment and usually better educated; therefore, able to work the system to their advantage. This latter point included the preparation and presentation of briefs as well as writing and obtaining grants. Deriving even a partial income in this manner struck deep in some respondents, who place a high value on making a livelihood of "honest and sincere work" as opposed to "mining the government." Anger was exacerbated by the perception of "counter culture types," having more time to fight for their desired goals which, because of their concern for the environment, frequently conflicted with the more resource-extraction oriented "us." Another aspect of the us versus them argument was the portrayal of the "hippies" as outsiders, misfits and escapists. In its blackest form, this aspect took on shades of racism and bigotry.

Differences in beliefs and perceptions regarding man-land relationships were attributed to be a reason for the

conflict by 45% (24) of the participants. This was best expressed by one resource manager who characterized the difference as: "Man not to tinker with Nature versus Nature put it [a resource] there to be consumed." This latter point is illustrated by one resource developer, who asked: "If only a small percentage of a park or wilderness area is used, what is the rest for? Wilderness must be used." Generally, the preservationists stressed a harmonious relationship with the land in which resource development was constrained by a respect for the land. On the other hand, the resource developers saw man-land relationships constrained primarily by technological and economic considerations.

Underlying all of these reasons for conflict, a deeper, more fundamental difference is apparent--a difference in world views. It is made apparent by the different values such as work, economic progress, and the environment. As one frustrated resource manager stated: "They [preservationists] have a different sense of reality. I do not understand their value system."

In summary, the wilderness preservation issue calls into play two very different sets of values and beliefs, as exemplified by these comments:

"We are all natives of the planet earth."

and

> "We are always in such a rush to develop. Like Pogo, we have seen the enemy--they are us."

versus

> "The Valhallas is not a wilderness. It is a silviculture slum and there was a need for improvement."

or the purpose of public participation in integrated resource planning is:

> "To help achieve the greatest utilization of the largest amount of resources within an area."

Succinctly put by one resource manager, the debate is "preserve for tomorrow versus I'm hungry today." Commenting on the Valhalla experience, one resource planner remarked that the conflict was a "battle of ideologies," while a consultant stated: "it was just a microcosm--a small battle in a larger war."

The war in question appears to arise out of different values and beliefs regarding the environment and the struggle to gain or maintain public support. For those desiring more resource preservation, the task is nearly overwhelming and the progress frustratingly slow, leading one respondent to cynically comment: "attrition is the only thing that is going to save us. As the old guard dies off, we are one step closer." On the other hand, for those whose livelihood and histories have been inextricably linked to resource development, change is coming too fast, leaving

them equally frustrated and angry. As one resource manager exclaimed bitterly: "environmentalists are perceived as missionaries to save people and whales and they are gaining greater credibility." He went on to describe them as "white knights" and "present-day saints." A resource developer accused: "the planning people were pro-park." The perceptions are that not only are there distinct differences in values or sense of reality but also that the planning process is biased in favour of one's opponents. The next section explores these two perceptions in greater detail.

Value Differences and Participant Predisposition

The data of the value scale, as developed from the work by Dunlap and Van Liere (1978, 1984), were analyzed at three levels and in two ways. The levels of analysis were: by item, by dimension, and by scale. Each level reveals different insights with regard to value differences amongst planning participants and value predisposition of the participants as a whole, i.e., DSP oriented or NEP oriented. The data can be organized in two ways: according to participant's role or participant's preferred option. The first approach reveals the differences between groups and similarities within a group; however, the second approach exposes the underlying differences and similarities between the groups. (A further advantage is that the number of groups are collapsed from five to three, increasing the

number of participants in each group and facilitating greater statistical accuracy.) Combined, these approaches yield a clearer picture of the conflict dynamics.

The results will be discussed: first, by participant role and then by preferred option. In both cases, discussion will progress from item to scale level.

Results of Analysis by Participant Role

The results of response analysis are shown in Table 14. The items are arranged by dimension to facilitate comparisons.[2] Along with frequencies, mean scores are also shown for the total sample as well as for each group (as previously described). Mean scores were calculated according to the procedure footnoted on the table.

In general, the items yielded a good spread in participant responses: for example, 87% (41) of the participants agreed that "humans must live in harmony with nature in order to survive," while 78% (37) disagreed with the statement that: "humans need not adapt to the natural environment because they can remake it to suit their needs." Certain items split the participants, such as: "British Columbians are going to have to drastically reduce their level of consumption over the next few years." Forty-two percent (20) agreed with this statement, while 39% (18) disagreed.

Table 14

Item Analysis according to Roles within the Planning Process

#	G	SA %	A %	N %	D %	SD %	MEAN** SCORE
1		4% (2)	23% (11)	28% (13)	45% (21)		3.06
	P/M	4% (1)	31% (8)	19% (5)	46% (12)		3.08
	LCR	10% (1)	10% (1)	30% (3)	50% (5)		3.20
	P			50% (2)	50% (2)		3.50
	D		50% (2)	50% (2)			2.50
	O			33% (1)	67% (2)		3.67
27*		6% (3)	37% (18)	39% (19)	12% (6)	6% (1)	2.66***
	P/M	4% (1)	46% (12)	46% (12)	4% (1)		2.50
	LCR	10% (1)	10% (1)	40% (4)	30% (3)	10% (1)	3.20
	P		25% (1)	25% (1)	50% (2)		3.25
	D	25% (1)	75% (3)				1.75
	O		33% (1)	67% (2)			2.67
17		2% (1)	17% (8)	15% (7)	62% (29)	4% (2)	3.49
	P/M		8% (2)	15% (4)	73% (19)	4% (1)	3.73
	LCR	10% (1)	20% (2)	20% (2)	50% (5)		3.10
	P		25% (1)		50% (2)	25% (1)	3.75
	D		50% (2)		50% (2)		3.00
	O		33% (1)	34% (1)	33% (1)		3.00
21		15% (7)	32% (15)	30% (14)	23% (11)		2.83
	P/M	8% (2)	30% (8)	35% (9)	27% (7)		2.81
	LCR	20% (2)	30% (3)	20% (2)	30% (3)		2.80
	P	50% (2)	25% (1)	25% (1)			1.75
	D	25% (1)	50% (2)	25% (1)			2.00
	O		33% (1)	34% (1)	33% (1)		3.00
33		6% (3)	14% (6)	25% (12)	40% (19)	15% (7)	3.45
	P/M	4% (1)	15% (4)	23% (6)	46% (12)	12% (3)	3.46
	LCR	10% (1)	10% (1)	20% (2)	30% (3)	30% (3)	3.40
	P			25% (1)	50% (2)	25% (1)	4.00
	D	25% (1)	25% (1)	25% (1)	25% (1)		2.50
	O			67% (2)	33% (1)		3.33

36	2% (1)	23% (11)	6% (3)	60% (28)	9% (4)	3.49
P/M		19% (5)	4% (1)	74% (19)	4% (1)	3.61
LCR	10% (1)	10% (1)	10% (1)	40% (4)	30% (3)	3.70
P		50% (2)		50% (2)		3.00
D		50% (2)		50% (2)		3.00
O		34% (1)	33% (1)	33% (1)		3.00
39*		9% (4)	17% (8)	70% (33)	4% (2)	3.70***
P/M			8% (2)	88% (23)	4% (1)	3.96
LCR		20% (2)	30% (3)	40% (4)	10% (1)	3.10
P			25% (1)	75% (3)		3.75
D		50% (2)	25% (1)	25% (1)		2.75
O			34% (1)	66% (2)		3.67
9*	11% (5)	47% (22)	8% (4)	32% (15)	2% (1)	2.68***
P/M	8% (2)	61% (16)	4% (1)	23% (6)	4% (1)	2.54
LCR	10% (1)	40% (4)		50% (5)		2.90
P			75% (3)	25% (1)		3.25
D	50% (2)	25% (1)		25% (1)		3.00
O		33% (1)		67% (2)		3.33
4	2% (1)	10% (5)	15% (7)	60% (28)	13% (6)	3.70
P/M		8% (2)	11% (3)	70% (18)	11% (3)	3.85
LCR	10% (1)	10% (1)	10% (1)	60% (6)	10% (1)	3.50
P		50% (2)	50% (2)			2.50
D				50% (2)	50% (2)	4.50
O						
18		13% (6)	11% (5)	70% (33)	6% (3)	3.70
P/M		8% (2)	4% (1)	88% (23)		3.81
LCR		20% (2)	20% (2)	60% (6)		3.40
P		50% (2)			50% (2)	3.50
D			25% (1)	50% (2)	25% (1)	4.00
O			34% (1)	67% (2)		3.67
28		6% (3)	6% (3)	66% (31)	22% (10)	4.02
P/M		8% (2)	4% (1)	69% (18)	19% (5)	4.00
LCR			10% (1)	60% (6)	30% (3)	4.20
P		25% (1)	25% (1)	50% (2)		3.25
D				50% (2)	50% (2)	4.50
O				100% (3)		4.00

30		30% (14)	10% (5)	43% (20)	17% (8)	3.47
P/M		23% (6)	15% (4)	54% (14)	8% (2)	3.46
LCR		30% (3)		50% (5)	20% (2)	3.60
P			25% (1)	25% (1)	50% (2)	4.25
D		50% (2)			50% (2)	3.50
O		67% (2)		33% (1)		2.67
7	2% (1)	19% (9)	15% (7)	53% (25)	11% (5)	3.51
P/M		19% (5)	15% (4)	62% (16)	4% (1)	3.50
LCR	10% (1)	10% (1)	20% (2)	40% (4)	20% (2)	3.10
P			25% (1)	50% (2)	25% (1)	4.00
D		25% (1)		50% (2)	25% (1)	3.75
O		66% (2)		34% (1)		2.67
40*		19% (9)	8% (4)	60% (28)	13% (6)	3.66***
P/M		8% (2)	8% (2)	76% (20)	8% (2)	3.85
LCR		20% (2)	10% (1)	40% (4)	30% (3)	3.80
P		50% (2)		25% (1)	25% (1)	3.25
D		50% (2)		50% (2)		3.00
O		33% (1)	34% (1)	33% (1)		3.00
10		6% (3)	8% (4)	49% (23)	37% (17)	4.15
P/M		4% (1)	8% (2)	58% (15)	30% (8)	4.15
LCR			10% (1)	40% (4)	50% (5)	4.40
P				50% (2)	50% (2)	4.50
D		25% (1)		25% (1)	50% (2)	4.00
O		33% (1)	33% (1)	34% (1)		3.00
5	2% (1)	23% (11)	19% (9)	52% (24)	4% (2)	3.32
P/M		38% (10)	15% (4)	47% (12)		3.07
LCR	10% (1)	10% (1)	20% (2)	40% (4)	20% (2)	3.50
P				100% (4)		4.00
D			25% (1)	75% (3)		3.75
O			67% (2)	33% (1)		3.33
13	2% (1)	17% (8)	11% (5)	53% (25)	17% (8)	3.66
P/M	4% (1)	8% (2)	15% (4)	65% (1)	8% (2)	3.65
LCR		30% (3)		50% (5)	20% (2)	3.60
P				50% (2)	50% (2)	4.50
D		25% (1)	25% (1)		50% (2)	3.75
O		66% (2)		34% (1)		2.67

34*		2% (1)	23% (11)	15% (7)	53% (25)	7% (3)	3.38***
	P/M		19% (5)	15% (4)	66% (17)		3.46
	LCR	10% (1)	10% (1)	20% (2)	40% (4)	20% (2)	3.50
	P		50% (2)		25% (1)	25% (1)	3.25
	D		25% (1)		75% (3)		3.50
	O		67% (2)	33% (1)			2.33
31		2% (1)	62% (29)	17% (8)	17% (8)	2% (1)	2.38
	P/M		65% (17)	27% (7)	8% (2)		2.42
	LCR		60% (6)		30% (3)	10% (1)	2.90
	P		50% (2)	25% (1)	25% (1)		2.75
	D		50% (2)		50% (2)		3.00
	O	34% (1)	66% (2)				1.67
22*		4% (2)	11% (5)	11% (5)	62% (30)	11% (5)	3.66***
	P/M		11% (3)	8% (2)	73% (19)	8% (2)	3.85
	LCR		10% (1)	20% (2)	50% (5)	10% (1)	3.30
	P	50% (2)			50% (2)		2.50
	D		25% (1)		50% (2)	25% (1)	3.75
	O			34% (1)	66% (2)		3.67
37*			11% (5)	13% (6)	63% (30)	13% (6)	3.79***
	P/M		11% (3)	11% (3)	67% (17)	11% (3)	3.77
	LCR			20% (2)	60% (6)	20% (2)	4.00
	P		25% (1)	25% (1)	50% (2)		3.25
	D		25% (1)		50% (2)	25% (1)	3.75
	O				100% (3)		4.00
14*		2% (1)	40% (19)	19% (9)	33% (15)	6% (3)	3.00***
	P/M	4% (1)	54% (14)	15% (4)	27% (7)		2.65
	LCR		30% (3)	36% (3)	30% (3)	10% (1)	3.20
	P			25% (1)	25% (1)	50% (2)	4.25
	D			25% (1)	75% (3)		3.75
	O		67% (2)		33% (1)		2.67
8*		4% (2)	28% (13)	8% (4)	54% (25)	6% (3)	3.30***
	P/M	4% (1)	38% (10)	8% (2)	50% (13)		3.03
	LCR		20% (2)	10% (1)	70% (7)		3.80
	P			25% (1)	50% (2)	25% (1)	4.00
	D	25% (1)			25% (1)	50% (2)	3.75
	O		34% (1)		66% (2)		3.30

32		34% (16)	19% (9)	43% (20)	4% (2)	3.17
	P/M	46% (12)	15% (4)	35% (9)	4% (1)	2.96
	LCR	20% (2)	20% (2)	50% (5)	10% (1)	3.50
	P		50% (2)	50% (2)		3.50
	D		25% (1)	75% (3)		3.75
	O	67% (2)		33% (1)		2.67
23	4% (2)	49% (23)	25% (12)	20% (9)	2% (1)	2.66
	P/M 4% (1)	65% (17)	20% (5)	11% (3)		2.38
	LCR	30% (3)	30% (3)	40% (4)		3.10
	P	25% (1)	50% (2)		25% (1)	3.25
	D 25% (1)		25% (1)	50% (2)		3.00
	O	66% (2)	34% (1)			2.33
2	17% (8)	34% (16)	11% (5)	30% (14)	8% (4)	2.79
	P/M 8% (2)	50% (13)	8% (2)	30% (8)	4% (1)	2.73
	LCR 40% (4)	10% (1)	10% (1)	30% (3)	10% (1)	2.30
	P		25% (1)	25% (1)	50% (2)	4.25
	D 50% (2)	50% (2)				1.50
	O	34% (1)		66% (2)		3.33
26		15% (7)	17% (8)	50% (23)	18% (9)	3.72
	P/M	15% (4)	11% (3)	65% (17)	9% (2)	3.65
	LCR	10% (1)	20% (2)	40% (4)	30% (3)	3.90
	P			25% (1)	75% (3)	4.75
	D	25% (1)	50% (2)		25% (1)	3.25
	O	33% (1)	34% (1)	33% (1)		3.00
15	6% (3)	39% (18)	12% (6)	39% (18)	4% (2)	2.96
	P/M	38% (10)	19% (5)	38% (10)	5% (1)	3.07
	LCR 10% (1)	20% (2)	10% (1)	66% (6)		3.20
	P	50% (2)		25% (1)	25% (1)	3.25
	D 25% (1)	75% (3)				1.75
	O 33% (1)	33% (1)		34% (1)		2.33
3*	2% (1)	37% (17)	13% (6)	23% (11)	25% (12)	3.34***
	P/M 4% (1)	35% (9)	15% (4)	27% (7)	19% (5)	3.23
	LCR	30% (3)	10% (1)	20% (2)	40% (4)	3.70
	P	25% (1)		25% (1)	50% (2)	4.00
	D	505 (2)	25% (1)		25% (1)	3.00
	O	(2)		(1)		2.67

12*	6% (3)	38% (18)	20% (9)	32% (15)	4% (2)	2.89***
P/M		42% (11)	27% (7)	27% (7)	4% (1)	3.19
LCR	10% (1)	30% (3)	10% (1)	40% (4)	10% (1)	3.50
P		25% (1)	25% (1)	50% (2)		3.25
D	50% (2)	25% (1)		25% (1)		2.00
O		67% (2)		33% (1)		2.67
19*	4% (2)	8% (4)	2% (1)	60% (28)	26% (12)	3.94***
P/M	4% (1)	8% (2)		65% (17)	23% (6)	3.96
LCR	10% (1)	10% (1)		50% (5)	30% (3)	3.80
P			25% (1)	25% (1)	50% (2)	4.25
D			25% (1)	50% (2)	25% (1)	4.00
O		67% (2)		33% (1)		2.67
20*		8% (4)	13% (6)	62% (29)	17% (8)	3.87***
P/M		11% (3)	12% (3)	65% (17)	12% (3)	3.77
LCR		10% (1)	10% (1)	60% (6)	20% (2)	3.90
P			25% (1)	25% (1)	50% (2)	4.25
D			25% (1)	50% (2)	25% (1)	4.00
O				100% (3)		4.00
6*	6% (3)	20% (9)	4% (2)	38% (18)	32% (15)	3.79***
P/M		23% (6)	8% (2)	50% (13)	19% (5)	3.65
LCR	10% (1)	10% (1)		20% (2)	60% (6)	4.10
P	25% (1)				75% (3)	4.00
D	25% (1)	25% (1)		25% (1)	25% (1)	3.00
O		(1)		(2)		3.33
24*	2% (1)	28% (13)	19% (9)	49% (23)	2% (1)	3.21***
P/M		30% (8)	24% (6)	46% (12)		3.15
LCR		10% (1)	20% (2)	60% (6)	10% (1)	3.60
P		25% (1)	25% (1)	50% (2)		3.25
D	25% (1)	25% (1)		50% (2)		2.75
O		(1)		(2)		2.67
25*		11% (5)	2% (1)	59% (28)	28% (13)	4.04***
P/M		8% (2)		69% (18)	23% (6)	4.97
LCR		10% (1)		50% (5)	40% (4)	4.20
P				50% (2)	50% (2)	4.50
D			25% (1)	50% (2)	25% (1)	4.00
O		67% (2)		33% (1)		2.67

38*		24% (11)	6% (3)	55% (26)	15% (7)	3.62***
	P/M	24% (6)	11% (3)	61% (16)	4% (1)	3.46
	LCR	10% (1)		50% (5)	40% (4)	4.30
	P			50% (2)	50% (2)	4.50
	D	75% (3)		25% (1)		2.50
	O	33% (1)		67% (2)		3.30
11	9% (4)	55% (26)	15% (7)	17% (8)	5% (2)	2.53
	P/M 4% (1)	70% (18)	15% (4)	11% (3)		2.35
	LCR 10% (1)	40% (4)	20% (2)	20% (2)	10% (1)	2.80
	P			75% (3)	25% (1)	4.25
	D 25% (1)	75% (3)				1.75
	O (1)	(1)	(1)			2.00
16	2% (1)	19% (9)	15% (7)	30% (14)	34% (16)	3.74
	P/M	15% (4)	24% (6)	42% (11)	19% (5)	3.65
	LCR	20% (2)		10% (1)	70% (7)	4.30
	P				100% (4)	5.00
	D 25% (1)		25% (1)	50% (2)		3.00
	O	100% (3)				2.00
29		28% (13)	8% (4)	51% (24)	13% (6)	3.49
	P/M	38% (10)	4% (1)	50% (13)	8% (2)	3.26
	LCR		10% (1)	70% (7)	20% (2)	4.10
	P			50% (2)	50% (2)	4.50
	D	50% (2)	25% (1)	25% (1)		2.75
	O	33% (1)	34% (1)	33% (1)		3.00
35		11% (5)	11% (5)	48% (23)	30% (14)	3.98
	P/M	11% (3)	12% (3)	65% (17)	12% (3)	3.77
	LCR		10% (1)	40% (4)	50% (5)	4.40
	P				100% (5)	5.00
	D	25% (1)		25% (1)	50% (2)	4.00
	O	33% (1)	33% (1)	34% (1)		3.00

** Mean score based on strongly Agree-1; Agree-2; Neutral-3; disagree-4; strongly disagree -5.

*** Scores were reversed for the calculation of these mean scores, i.e., strongly agree-5; strongly disagree-1; thus all low scores indicate a DSP orientation and high scores indicate a NEP orientation.

Of particular interest are the items which separated the preservationists (P) from the developers (D). Specific statements, which elicited a significant difference (p=0.05) in values (Appendix 3a) were:

#27 There should be more government regulation of business. (P = 3.25, D = 1.75)*

#4 We should know if something new will work before taking a chance on it. (P = 2.50, D = 4.50)*

#2 Economic growth improves the quality of life of all citizens in British Columbia. (P = 4.25, D= 3.25)*

#11 Humans have the right to modify the natural environment to suit their needs. (P = 4.25, D =1.75)*

#16 Mankind was created to rule over the rest of nature. (P = 5.00, D = 3.00)*

#29 Plants and animals exist primarily to be used by humans (P = 4.50, D = 2.75)* and

#38 Mankind is severely abusing the environment. (P =4.50, D = 2.50)*

* Mean scores

Items 11, 16 and 29 are related to the dimension of man over nature. Scores above the mean of 3 reflect a biocentric orientation in which humans are considered a part of Nature, while scores below 3 reflect an anthropocentric orientation in which, at its extreme, humans are considered apart from Nature. As can be seen, preservationists are strongly biocentric, while developers are slightly anthropocentric. The significance of this difference is made most apparent in item #16, dealing with the modification of the environment.

Developers appear to strongly endorse the concept of human right to modify, in keeping with their role of resource development. However, preservationists strongly reject the right to modify the environment.

Culhane (1981) and others have argued that support for economic growth is usually associated with the Judeo-Christian tradition of man over nature and has led to the rapid exploitation and development of the environment. The results (Table 14) indicate that developers mildly disagree that "economic growth improves the quality of life for all citizens..." (item #2), instead of showing support as would be expected. This mild opposition could reflect a re-evaluation of the belief in economic growth. Preservationists, on the other hand, strongly reject the imperative of economic growth. Cotgrove (1981) has proposed that the core values of the competing paradigms, i.e., DSP and NEP, are: materialism versus non-materialism, instrumental values in nature versus intrinsic values, and domination over nature versus harmony with nature. It is these core values, then, which appear to be most in conflict between the preservationists and developers participating in the planning processes.

Item 27 also produced a significant difference in rank scores between the preservationists and developers. Preservationists mildly support more government intervention or control over business; however, the developers strongly

support a laissez-faire approach. For the preservationists, government regulation is a means for protecting the environment. But to the developers, government regulation is likely perceived as an unnecessary obstacle to the efficient utilization of resources. Both stances are consistent with the respective core values.

Item 4 (Table 14) relates to perceived need for change versus support for the status quo. Interestingly, the preservationists appear to be much more conservative than the developers. Thus, the results would seem to support the opponents of environmentalism such as Tucker (1982), who alleges that "the environmental movement has become an extremely conservative doctrine--fearful of the future, despairing of human effort, worried about change and wed to the status quo" (p. 42). However, upon closer examination, another possible interpretation of the results emerges. It is entirely possible that the scale items fail to distinguish between technological change or socio-political change. For the preservationists, technological change may be viewed as environmentally threatening, e.g., nuclear warfare or bio-genetic engineering, and therefore, would oppose change. However, if the items were interpreted as meaning socio-political change, i.e., "the system," then it is likely the preservationists would have strongly endorsed change, especially in light of the results from the open-ended questions. Given these two possible interpretations,

it would appear that the preservationists took item 4 as meaning technological change which led to their apparent support for the status quo. This would also be consistent with their opposition to faith in science and technology as indicated in items 5 and 13. Therefore, in response to Tucker (1982), it is likely that had the items related to status quo been interpreted as meaning 'the system,' the developers would conceivably have been the more conservative since they would stand to lose more in changes from the status quo.

Although other items failed to produce a statistically significant difference in values, visual inspection reveals potential conflict in other items. These potential conflict areas can be tested by combining the items into their respective dimensions. Tests show significant differences between preservationists and developers in three dimensions: laissez-faire government, economic growth and man over nature (see Appendix 3b). These results confirm the findings of Dunlap and Van Liere (1984) concerning the DSP dimensions. They report that both support for economic growth and support for laissez-faire government have consistent strong (negative) effects on environmental concern.

At the combined scale level, the preservationists tend to be NEP oriented (mean 149.75), while developers are slightly NEP oriented (mean 125.5)(Table 15). Tests

Table 15

Combined Scale Scores by Group

Group	Range	Mean Score
P/M	100-152	134.2
LCR	93-169	142.7
P	134-167	149.7
D	108-148	125.5
O	118-123	120.3
Total	93-169	135.7

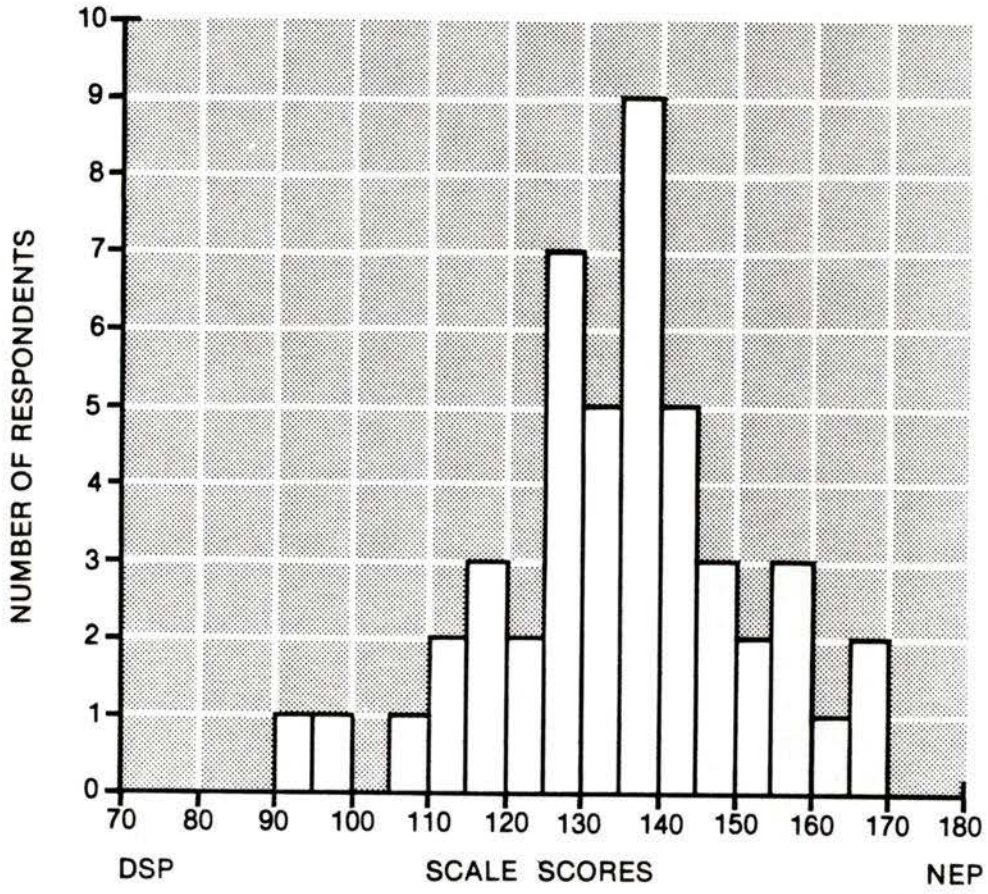
(Appendix 3c) failed to produce a significant difference between these two groups ($p = 0.05$). However, the very small sample size of each ($n = 4$, $n = 4$) must be considered. Even though significant differences between preservationists and developers were not shown at the scale level, fundamental differences do exist with regard to the key dimensions of laissez-faire government, economic growth and man over nature.

The predisposition of the participants as a whole was also of interest to this thesis. According to Dunlap and Van Liere (1984), a DSP orientation is associated with negative attitudes regarding environmental protection. By implication, a NEP orientation would be associated with positive attitudes regarding environmental protection. If the planning participants as a whole were found to be NEP oriented, then it is likely they would be predisposed towards preservation. If, on the other hand, the planning participants were found to be DSP oriented, then it is possible they would be predisposed towards development. Figure 15, which plots individual total scores, indicates that the participants as a whole are NEP oriented with a mean of 135.7.

There are a number of important discrepancies amongst the participants which revolve around the dimensions of economic prosperity and man over nature. With regard to the former, 64% (30) of the participants agreed that "through

Figure 15

Graph showing the predisposition of planning participants



science and technology we can continue to raise our standard of living." Yet, 60% (28) of the participants agreed that "British Columbians are going to have to learn to do without many of the things they took for granted in the past." In the man over nature dimension, 64% (30) of the participants agreed that "humans have the right to modify the natural environment to suit their needs," but 64% (30) disagree with "plants and animals exist primarily to be used by humans." These discrepancies indicate a critical element of dissonance amongst the participants. The existence of dissonance, Van Liere and Dunlap (1983) have suggested, reflects a lack of integration. Within the planning participants, therefore, it appears that integration of more environmentally sensitive values and beliefs is not complete.

Another apparent inconsistency is the strong agreement (mean score of 1.75) of the preservationists on "The provincial government has too much power over citizens and local government" (item 21). In general, the preservationists support greater government intervention and so their response to this item appears contradictory. However, a distinction is necessary between government control of industry or citizens. Preservationists tend to be supportive of the former, but strongly disagree with the latter. This trend is consistent with their responses to the items related to individual rights. It would appear that a high

value is placed on personal autonomy and in matters affecting an individual, local government is the appropriate authority. At this level, individuals are likely to feel more able to participate in and influence decision-making. This perspective is consistent with Cotgrove (1981), who suggests that smaller, participatory forms of government are favoured by those who are NEP oriented.

Results of Analysis by Preferred Option

The results of response analysis sorted by preferred option are shown in Table 16. The items are arranged by dimension to facilitate comparisons. As before, both frequencies and mean scores are shown for each group, i.e., those who favoured preservation (P), those who favoured multiple use (Mu), and those who favoured a compromise of some preservation and some multiple use (Cp). Mean scores were also calculated as before.

Analysis of individual items shows differences between those favouring preservation and those favouring multiple use on many items. Specific statements which elicited a significant difference ($p = 0.05$) in values (Appendix 3d) were:

#17 Government regulation and planning always lead to bureaucracy, inefficiency and stagnation (P 4.86, Mu 3.00)*,

#33 The provincial government should not interfere with the free enterprise system (P 4.00, Mu 2.77)*,

Table 16

Item Analysis according to Preferred Land Allocation Option

#	G	SA %	A %	N %	D %	SD %	MEAN** SCORE
1		3% (2)	24% (9)	30% (12)	41% (16)		3.08
	P	7% (1)	7% (1)	29% (4)	57% (8)		3.36
	Cp	6% (1)	31% (5)	25% (4)	38% (6)		2.94
	Mu		33% (3)	45% (4)	22% (2)		2.88
27*		8% (3)	30% (12)	44% (17)	15% (6)	3% (1)	2.74***
	P	7% (1)	21% (3)	43% (6)	29% (4)		2.93
	Cp		38% (6)	44% (7)	12% (2)	6% (1)	2.87
	Mu	22% (2)	33% (3)	45% (4)			2.22
17		3% (1)	15% (6)	13% (5)	64% (25)	5% (2)	3.62
	P		7% (1)		79% (11)	14% (2)	4.86
	Cp		19% (3)	19% (3)	62% (10)		3.44
	Mu	11% (1)	22% (2)	22% (2)	45% (4)		3.00
21		17% (7)	26% (10)	33% (13)	24% (9)		2.61
	P	29% (4)	29% (4)	29% (4)	13% (2)		2.28
	Cp	12% (2)	25% (4)	25% (4)	38% (6)		2.87
	Mu	11% (1)	22% (2)	56% (5)	11% (1)		2.67
33		5% (2)	13% (5)	23% (9)	44% (17)	15% (6)	3.51
	P		7% (1)	14% (2)	50% (7)	29% (4)	4.00
	Cp		12% (2)	38% (6)	38% (6)	12% (2)	3.50
	Mu	22% (2)	22% (2)	11% (1)	45% (4)		2.77
36		3% (1)	25% (10)	3% (1)	61% (24)	5% (3)	3.46
	P		14% (2)	7% (1)	72% (10)	7% (1)	3.57
	Cp		31% (4)		63% (10)	6% (2)	3.62
	Mu	12% (1)	44% (4)		44% (4)		2.78

39*		8% (3)	18% (7)	69% (27)	5% (2)	3.69***
	P		14% (2)	79% (11)	7% (1)	3.93
	Cp	6% (1)	19% (3)	75% (12)	10% (1)	3.69
	Mu	22% (2)	22% (2)	44% (4)	12% (1)	3.44
9*		13% (5)	43% (17)	10% (4)	31% (12)	3% (1)	2.66***
	P	7% (1)	29% (4)	29% (4)	35% (5)		2.93
	Cp	6% (1)	50% (9)		32% (5)	6% (1)	2.75
	Mu	33% (3)	45% (4)		22% (2)		2.11
4		3% (1)	11% (4)	17% (7)	56% (22)	13% (5)	3.67
	P	8% (1)	14% (2)	14% (2)	64% (9)		3.36
	Cp		12% (1)	19% (3)	57% (10)	12% (2)	4.19
	Mu		12% (1)	22% (2)	33% (3)	33% (3)	3.88
18			12% (5)	13% (5)	67% (26)	8% (3)	3.64
	P		21% (3)	14% (2)	58% (8)	7% (1)	2.93
	Cp		12% (2)	12% (2)	76% (12)		3.62
	Mu			22% (2)	67% (6)	11% (1)	3.89
28			8% (3)	5% (2)	61% (24)	26% (10)	4.05
	P		7% (1)	7% (1)	64% (9)	22% (3)	4.00
	Cp		7% (1)	7% (1)	61% (10)	25% (4)	4.06
	Mu		11% (1)		56% (5)	33% (3)	4.11
30			28% (11)	10% (4)	44% (17)	18% (7)	3.51
	P		13% (2)	29% (4)	29% (4)	29% (4)	3.71
	Cp		31% (5)		56% (9)	13% (2)	3.50
	Mu		44% (4)		44% (4)	12% (1)	3.22
7		3% (1)	13% (5)	15% (6)	56% (22)	13% (5)	3.67
	P			21% (3)	58% (8)	21% (3)	4.00
	Cp		19% (3)	12% (2)	63% (10)	6% (1)	3.56
	Mu	111% (1)	34% (3)	11% (1)	33% (3)	11% (1)	3.00

40*		20% (8)	8% (3)	59% (23)	13% (5)	3.64***
	P	14% (2)		72% (10)	14% (2)	3.85
	Cp	12% (2)	12% (2)	57% (9)	19% (3)	3.81
	Mu	44% (4)	12% (1)	44% (4)		3.44
10		8% (3)	3% (1)	51% (20)	38% (15)	4.20
	P	7% (1)		43% (6)	50% (7)	4.36
	Cp	6% (1)	6% (1)	50% (8)	38% (6)	4.19
	Mu	11% (1)		67% (6)	22% (2)	4.00
5	3% (1)	23% (9)	18% (7)	51% (20)	5% (2)	3.33
	P	14% (2)	14% (2)	65% (9)	7% (1)	3.64
	Cp	25% (4)	25% (4)	44% (7)	6% (1)	3.31
	Mu	11% (1)	33% (3)	11% (1)	45% (4)	2.89
13	3% (1)	15% (6)	10% (4)	52% (20)	20% (8)	3.72
	P	14% (2)		57% (8)	29% (4)	4.00
	Cp	12% (2)	12% (2)	57% (9)	19% (3)	3.81
	Mu	11% (1)	22% (2)	22% (2)	34% (3)	11% (1)	3.11
34*	3% (1)	23% (9)	18% (7)	49% (19)	7% (3)	3.36***
	P	14% (2)	7% (1)	57% (8)	23% (3)	3.85
	Cp	25% (4)	25% (4)	50% (8)		3.25
	Mu	11% (1)	33% (3)	23% (2)	33% (3)		2.78
31	3% (1)	58% (23)	18% (7)	18% (7)	3% (1)	2.59
	P	43% (6)	36% (5)	21% (3)		2.79
	Cp	6% (1)	64% (10)	12% (2)	12% (2)	6% (1)	2.50
	Mu	78% (7)		22% (2)		2.44
22*	8% (3)	10% (4)	13% (5)	61% (21)	8% (3)	3.51***
	P	15% (2)	7% (1)		71% (10)	7% (1)	3.50
	Cp	6% (1)		25% (4)	63% (10)	6% (1)	3.94
	Mu		33% (3)	11% (1)	45% (4)	11% (1)	3.33

37*			13% (5)	13% (5)	64% (25)	10% (4)	3.72***
	P		14% (2)	14% (2)	64% (9)	8% (1)	3.64
	Cp		12% (2)	12% (1)	64% (10)	20% (3)	3.87
	Mu		11% (1)	22% (2)	67% (6)		3.55
14*		3% (1)	41% (16)	17% (7)	32% (12)	7% (3)	3.00***
	P		21% (3)	29% (4)	36% (5)	14% (2)	3.43
	Cp	6% (1)	57% (9)	12% (2)	19% (3)	6% (1)	2.75
	Mu		44% (4)	12% (1)	44% (4)		3.00
8*		5% (2)	31% (12)	7% (3)	49% (19)	8% (3)	3.23***
	P	7% (1)	21% (3)	15% (2)	50% (7)	7% (1)	3.29
	Cp		38% (6)	6% (1)	50% (8)	6% (1)	3.15
	Mu	11% (1)	33% (3)		45% (4)	11% (1)	3.11
32			36% (14)	21% (8)	38% (15)	5% (2)	3.13
	P		29% (4)	14% (2)	50% (7)	7% (1)	3.36
	Cp		44% (7)	19% (3)	31% (5)	6% (1)	3.00
	Mu		33% (3)	34% (3)	33% (3)		3.00
23		5% (2)	46% (18)	28% (11)	18% (7)	3% (1)	2.67
	P		43% (6)	29% (4)	21% (3)	7% (1)	2.93
	Cp		56% (9)	31% (5)	13% (2)		2.56
	Mu	22% (2)	34% (3)	22% (2)	22% (2)		2.44
2		18% (7)	31% (12)	8% (3)	33% (13)	10% (4)	2.87
	P	14% (2)	8% (1)	14% (2)	43% (6)	21% (3)	3.57
	Cp	13% (2)	50% (8)		31% (5)	6% (1)	2.69
	Mu	33% (3)	33% (3)	12% (1)	22% (2)		2.22
26			15% (6)	18% (7)	44% (17)	23% (9)	3.74
	P			7% (1)	57% (8)	36% (5)	3.93
	Cp		19% (3)	12% (2)	44% (7)	25% (4)	3.75
	Mu		33% (3)	45% (4)	22% (2)		2.44
15		5% (2)	38% (15)	10% (4)	42% (16)	5% (2)	3.02
	P		29% (4)	14% (2)	43% (6)	14% (2)	3.29
	Cp		50% (8)	6% (1)	44% (7)		2.93
	Mu	22% (2)	33% (3)	12% (1)	22% (3)		2.55

3*		5% (2)	38% (15)	13% (5)	21% (8)	23% (9)	3.18***
	P	14% (2)	21% (3)	7% (1)	21% (3)	37% (5)	3.43
	Cp		50% (8)	12% (2)	26% (4)	12% (2)	3.00
	Mu		46% (4)	22% (2)	11% (1)	22% (2)	3.11
12*		8% (3)	38% (15)	21% (8)	31% (12)	2% (1)	2.82***
	P		29% (4)	29% (4)	36% (5)	6% (1)	3.21
	Cp	6% (1)	50% (8)	19% (3)	25% (4)		2.62
	Mu	22% (2)	33% (3)	12% (1)	33% (3)		2.55
19*		5% (2)	10% (4)	3% (1)	54% (22)	26% (10)	3.87***
	P			7% (1)	57% (8)	36% (5)	4.29
	Cp	6% (1)	13% (2)		62% (10)	19% (3)	3.75
	Mu	11% (1)	22% (2)		45% (4)	22% (2)	3.44
20*			10% (4)	16% (6)	54% (21)	20% (8)	3.85***
	P			7% (1)	50% (7)	43% (6)	4.36
	Cp		12% (2)	19% (3)	69% (11)		3.56
	Mu		22% (2)	22% (2)	34% (3)	22% (2)	3.55
6*		8% (3)	21% (8)	8% (3)	30% (12)	33% (13)	3.61***
	P	7% (1)	15% (2)	21% (3)	21% (3)	36% (5)	3.29
	Cp		26% (4)		37% (6)	37% (6)	3.81
	Mu	22% (2)	22% (2)		34% (3)	22% (2)	3.11
24*		3% (1)	28% (11)	15% (6)	51% (20)	3% (1)	3.27***
	P		14% (2)	28% (4)	50% (7)	8% (1)	3.55
	Cp		25% (4)	13% (2)	62% (10)		3.37
	Mu	11% (1)	56% (5)		33% (3)		2.55
25*			10% (4)	3% (1)	56% (22)	31% (12)	4.07***
	P				43% (6)	57% (8)	4.57
	Cp		12% (2)		76% (12)	12% (2)	3.87
	Mu		22% (2)	11% (1)	45% (4)	22% (2)	4.11
38*			27% (10)	4% (2)	54% (21)	15% (6)	3.59***
	P		7% (1)	7% (1)	57% (8)	29% (4)	4.07
	Cp		31% (5)		56% (9)	13% (2)	3.50
	Mu		44% (4)	12% (1)	44% (4)		3.00

11	10% (4)	49% (19)	21% (8)	15% (6)	5% (2)	2.56
P		29% (4)	21% (3)	43% (6)	7% (1)	3.29
Cp	12% (2)	63% (10)	19% (3)		6% (1)	2.25
Mu	22% (2)	56% (5)	22% (2)			2.00
16	3% (1)	15% (6)	13% (5)	33% (13)	36% (14)	3.85
P			7% (1)	29% (4)	64% (9)	4.57
Cp		25% (4)	12% (2)	38% (6)	25% (4)	3.62
Mu	11% (1)	22% (2)	22% (2)	34% (3)	11% (1)	3.44
29		26% (10)	8% (3)	51% (20)	15% (6)	3.56
P		7% (1)	7% (1)	57% (8)	29% (4)	4.07
Cp		31% (5)		56% (9)	13% (2)	3.50
Mu		45% (4)	22% (2)	33% (3)		2.88
35		13% (5)	10% (4)	44% (17)	33% (13)	3.97
P			7% (1)	29% (4)	64% (9)	4.56
Cp		13% (2)	6% (1)	62% (10)	19% (3)	3.87
Mu		33% (3)	23% (2)	33% (3)	11% (1)	3.22

** Mean score based on strongly Agree-1; Agree-2; Neutral-3; disagree-4; strongly disagree -5.

*** Scores were reversed for the calculation of these mean scores, i.e., strongly agree-5; strongly disagree-1; thus all low scores indicate a DSP orientation and high scores indicate a NEP orientation.

#2 Economic growth improves the quality of life of all citizens in British Columbia (P 3.57, Mu 2.22)*,

#26 The positive benefits of economic growth far outweigh any negative consequences (P 3.93, Mu 2.44)*,

#11 Humans have the right to modify the natural environment to suit their needs (P 3.29, Mu 2.00)*,

#16 Mankind was created to rule over the rest of nature (P 4.57, Mu 3.44)*,

#29 Plants and animals exist primarily to be used by humans (P 4.07, Mu 2.88)*,

#35 Humans need not adapt to the natural environment because they can remake it to suit their needs (P 4.57, Mu 3.22)*, and

#38 Humankind is severely abusing the environment (P 4.07, Mu 3.00)*.

Combining these items into their respective dimensions (Appendix 3e) confirms the previous finding that the dimensions of laissez-faire government, economic growth and man over nature are particularly contentious. Tests reveal significant differences ($p = 0.05$) between those favouring preservation and those favouring multiple use along these dimensions.

At the combined scale level, those favouring preservation as the preferred option tend to be NEP oriented (mean 147.1), while those favouring multiple use show no strong orientation in either the DSP or NEP direction (Table 17). Tests produced a significant difference ($p = 0.05$)(Appendix 3f) between the two groups. The

Table 17

Mean Scores for Single Scale by Preferred Option

Option	Range	Mean Score
P	123-169	147.1
P/Mu	115-164	134.5
Mu	93-141	120.3
Total	93-169	135.7

Key

P - Preservation only
P/Mu - Preservation and Multiple use
Mu - Multiple use only

difference is illustrated in Figure 16. Therefore, not only are there basic differences in specific values, such as laissez-faire government, economic growth and man over nature, but also there are fundamental differences in world views with those favouring preservation being strongly NEP oriented in opposition with those favouring multiple use who are neutral or, at best, very weakly NEP oriented.

Analysis of Socio-Demographic Data

The principal socio-demographic characteristics of interest to this thesis are age, gross household income and education, since these characteristics are hypothesized to have the greatest influence on levels of environmental concern (Van Liere & Dunlap, 1980). Tables 18 and 19 summarize this data according to participant role and preferred option respectively. The results indicate that the participants are generally young, reasonably well paid, and well educated. However, a good variation in age (25-66+) and income ($7,500 to $45,000) were noted. Noticeably absent were low levels of education, i.e., less than senior high school. Hence, it would appear that these results partially confirm Burch's (1976) allegation that planning and public participation are for a select few.

Closer inspection of the results also reveals some interesting differences amongst the groups. Most significantly, those favouring preservation tend to be the

Figure 16

Graph illustrating differences in values amongst participants sorted according to preferred options

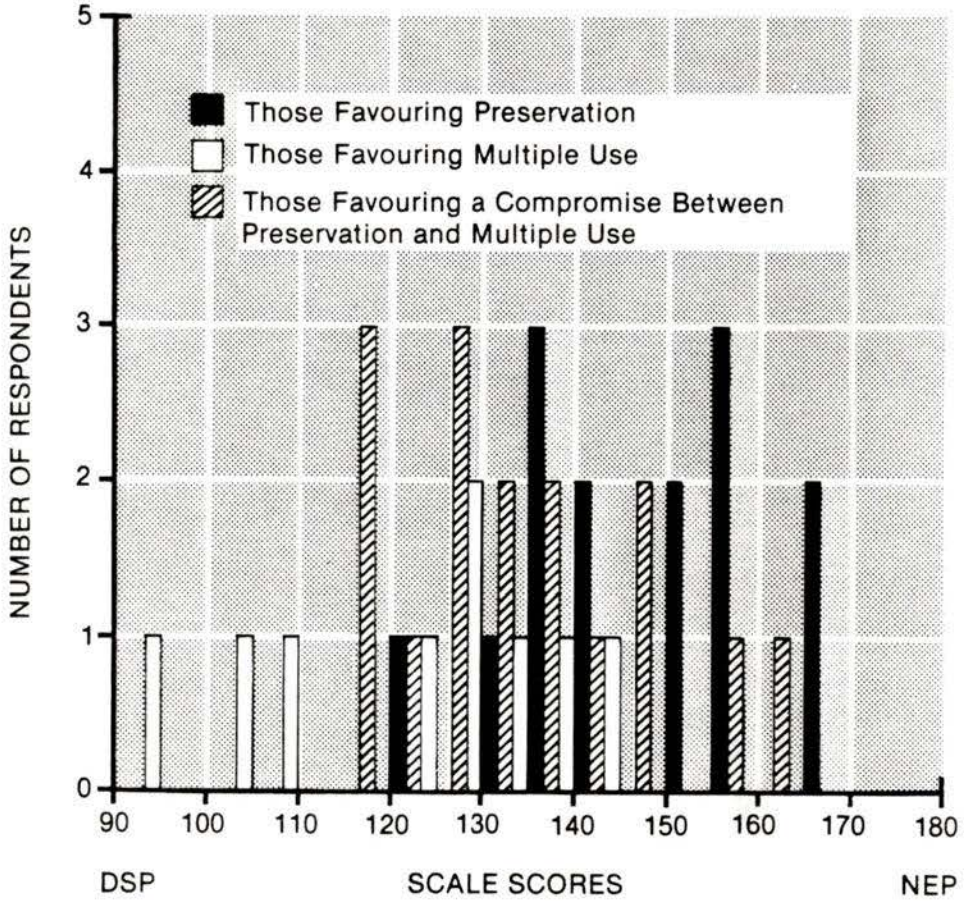


Table 18

Socio-Demographic Characteristics
by Participant Role (Group)

Group	Age*	Income*	Education*
P/M	51	$37,000	5
LCR	66+	$25,000	4.4
P	37	$15,000	4.75
D	40	$45,000	5
O	37	$30,000	4.6
Total	48	$30,000	4.8+

Key

* - Mean value

\+ - 1. No education
2. Elementary
3. Junior high school
4. Senior high school
5. Post-secondary (university of technical)

Table 19

Socio-Demographic Characteristics
by Preferred Option

Group	Age*	Income*	Education*
P/M	38	$24,000	4.7
P/Mu	37	$33,000	4.8
Mu	40	$40,500	4.9
Total	38	$33,000	4.8+

Key

P - Perservation only
P/Mu - Perservation and Multiple use
Mu - Multiple use only
\+ - 1. No education
2. Elementary
3. Junior high school
4. Senior high school
5. Post-secondary (university or technical)

lowest in terms of incomes. This is likely reflective of lifestyle choices based on non-materialistic values as opposed to materialistic values and is consistent with their NEP orientation (Cotgrove, 1981).

Summary

The results have indicated that a fundamental difference in values underlies the conflict between preservation and development in both case studies. This appears to be true whether the data is analyzed according to participant role or to preferred option. Specific value differences appear to center primarily on the dimensions of laissez-faire government, economic growth and man over nature. The results also indicate that, as a whole, the values of the participants are more oriented towards the New Environmental Paradigm (NEP) than towards the Dominant Social Paradigm (DSP). Differences in perceptions regarding integrated resource planning and public participation have been shown to exist as well. Most of these differences in perceptions are related to the issue of preservation. Lastly, analysis of the socio-demographic characteristics has shown that participants were generally young, well-educated, and well-paid. The major exceptions to this trend were those supportive of preservation who are associated with the lowest gross household incomes of all the participants. From these results, various conclusions can be drawn

regarding integrated resource planning as a response to the preservation versus development issue. These will be the subject of discussion in the next chapter.

Chapter Five End Notes

1. It should be noted that there are two tables for the Mann-Whitney "U" test--one being more conservative than the other. Tests of significance are based on the more liberal tables.

2. Laissez-faire government 1, 27, 17, 21, 33, 36, 39, and 9; Status quo 4, 18, and 28; Property rights 30, 7, 40 and 10; Science and technology 5, 13, 34, and 31; Individual rights 22 and 37; Faith in Material Abundance 14 and 8; Faith in Future Prosperity 32 and 23; Economic Growth 2, 26 and 15; Limits to growth 3, 12, 19 and 20; Balance of nature 6, 24, 25, and 38; and Man over nature 11, 16, 29 and 35.

CHAPTER SIX

Conclusions and Recommendations

The purpose of this thesis is to assess integrated resource planning as it has been applied in B.C. to preservation versus development conflicts. Specifically, this thesis sought to make explicit the influence of values on integrated resource planning. Based on the results, three major conclusions can be drawn. This chapter provides a discussion of each as well as a discussion of their implications for integrated resource planning. A number of recommendations are also provided. In addition, the chapter sets forth the limitations of the research and possible directions for future research. A brief summary of the study concludes the chapter.

The Role of Values in Preservation versus Development Conflicts

The principal questions asked in this thesis were:

1. Does the conflict and the inability to achieve a mutually acceptable solution arise out of divergent value systems,

2. Do the participants in integrated resource planning processes exhibit any particular value orientation, and

3. Are there distinct differences in the interpretation of integrated resource planning amongst planning participants and consistent with their values?

From the results, three conclusions related to these questions can be drawn. First, a fundamental difference in belief systems or world views has been shown to exist between those supporting preservation and those seeking multiple use in the two case studies. Cotgrove (1981) has argued that when such a difference exists, communication and understanding becomes extremely difficult due to the lack of common beliefs and assumptions. Specifically, the results have shown that those supporting preservation are more oriented towards the New Environmental Paradigm (NEP), exhibiting a high level of environmental concern. On the other hand, those seeking multiple use of an area under consideration for preservation are much less oriented towards the NEP and also much less environmentally concerned. The results further indicate that the differences between these two groups involve material values versus non-material values and man over nature versus man in nature as well as self-controlled development versus government controlled development. Cotgrove (1981) has proposed that these constitute core values and as such issues involving them are characterized by intense conflict.

A second conclusion is that, according to the scale, those involved in the planning process are more NEP oriented than DSP. Consequently, they are shown to be environmentally sympathetic. The results also show that the participants place a higher priority on quality of life (non-material

values) as opposed to standard of living (material values). However, there is still a moderate desire for economic growth.

Lastly, it is concluded that there are distinct differences in interpretations of integrated resource planning consistent with participant values. As would be expected, those supporting preservation perceive integrated resource use as including this land designation and excluding resource development in certain areas. However, to others, integrated resource use means some level of resource development will occur and, therefore, preservation is excluded. As has been already concluded, preservation as a preferred land designation is associated with a strong emphasis on non-material values, harmony with nature and government control of resource development. Opposition to preservation and support for resource development are associated with a strong emphasis on material values, exploitation of nature and little government intervention in resource development. The results indicate not only a high level of environmental concern amongst the planning participants, but also a high degree of support for preservation as a land designation.

Implications for Integrated Resource Planning

There are two critical implications which arise from the aforementioned conclusions. The implications relate to

need for change versus maintaining the status quo in forest land planning and achieving a balance between preservation and development. Each of these is discussed in turn.

Perceived Need for Change versus Maintaining the Status Quo

Forest planning in B.C. has made considerable progress in the recent decade considering its past history. However, forest planning and land use continue to be dominated heavily by an economic growth bias and a man over nature attitude. The Ministry of Forests Act (1978), while stating protection and conservation of the forests as one of its goals, encourages "maximum productivity" and a "vigorous, efficient and world competitive timber processing industry" (p. 2). Because of increasing social and environmental impacts, there have been calls for new values and attitudes to guide forest planning and land use. Typically, these calls have been dismissed as those of environmentalists only who oppose every form of economic growth and progress in every instance (Tucker, 1982). However, this study has shown that, amongst the planning participants of Meares Island and the Valhallas, concern for the environment is widespread, as is support for its protection. A Ministry of Environment survey concluded much the same (Times-Colonist, Feb. 11, 1983: C-12). Beyond the provincial boundaries, at the national and international levels, other studies are also concluding that values and attitudes are shifting towards

more of an environmentally sympathetic position (Macleans, Jan. 7, 1985; Milbrath, 1985). Consequently, there is a need for forest planning to remain sensitive to shifting public values. Economic goals need to be balanced with environmental goals. As Bloomgarden (1983) points out: "Those who say the goals of economic development and environmental preservation are irreconcilable--be they leaders in government, business, or the environmental movement--are out of touch with public sentiment..." (p. 47).

Preservation and Development--A Balance

On the issue of wilderness preservation, this thesis has concluded that there is a relatively widespread support for this land designation in principle. In many ways, wilderness is symbolic of environmental quality. Unfortunately, there is a strong resistance to wilderness preservation, particularly by those who have direct interests in resource development. Many of these people argue that B.C. still has a vast reservoir of wilderness and that there is no real urgency for its preservation. However, the assault by forestry and other resource extraction industries has led to a greatly diminished reservoir and, hence, the growing concern and conflicts. Hendee (1984) warns those opposed to preservation that: "[they] need to emphasize forestry's involvement and expertise in wilderness management, and not blight [their] public image with

intractable opposition to all wilderness allocations" (p. 343). He adds: "Any forestry policy that runs counter to pro-environment opinions risks becoming a public problem, damaging the profession's credibility..." (p. 342). He concludes that: "[Foresters] need to demonstrate to the public that forestry is consistent with public sentiment for environmental protection..." (p. 342).

The real issue, as Stankey (1980) suggests, is that some mix of preservation and development is necessary. He points out that: "By considering such questions and issues at a broader scale than we do at present, the opportunity for negotiating compromises between competitive interests would be greatly enhanced" (p. 22).

Integrated resource planning has been the approach taken to preservation versus development conflicts in the past; however, an effective resolution to this problem has remained elusive. The thesis has shown that considerable confusion exists in forest planning with some using the term "integrated resource use" and others using the term "multiple use." At issue is whether preservation is included or excluded from either planning approach. Wilson (1982) and Clawson (1977) have argued that either approach includes preservation. Consequently, there is a need for a re-definition of integrated resource planning to include the preservation land designation.

Policy Recommendations for Integrated Resource Planning

There are four critical recommendations regarding integrated resource planning as it is applied to forest management in B.C. These recommendations are:

1. Integrated resource planning needs to be clarified to include preservation (for reasons previously discussed).

2. The Ministry of Forests mandate should be expanded to include wilderness allocation and management.

There are two strong reasons for this recommendation to be acted upon. First, the Ministry now administers 95% of the forests in the province and therefore could play a key role in wilderness preservation. But more importantly, by taking positive steps towards the preservation of important wilderness areas, the Ministry could restore a great deal of public confidence in it. This restoration of confidence would result from the public perception of a more 'balanced' agency in which economic goals are tempered with environmental goals. Wilderness preservation is perceived as a valid and desirable goal along with environmentally sensitive resource development. The Ministry needs to demonstrate its competence in managing the forests for both goals.

3. A comprehensive program needs to be initiated to identify key areas for preservation.

This program needs to satisfy two basic criteria. One, it should be a fair and open process in which all sides of the preservation and development issue are heard. Two, the emphasis needs to be on cooperation and all areas of the province open to consideration. Otherwise, there is a danger that only areas "unwanted" or "left-over" may be considered. Such an emphasis would not facilitate an effective resolution. Since all areas of the province would be open to consideration, attention should also be directed towards the development of a provincial wilderness system integrating all forms of wilderness protection. A useful model could be the American National Wilderness Preservation System.

4. To operationalize the development of a wilderness allocation process, a strategy needs to be adopted to coordinate all the ministries related to resource development and preservation.

The problem is that of overriding jurisdictions or mandates: for example, the Ministry of Energy, Mines and Petroleum Resources overriding the Ministry of Forests on issues involving mineral potential. Consequently, all resource agencies must be involved and committed to cooperatively working together.

Limitations of the Study

There are a number of aspects within this thesis which could affect the results. Principally, these aspects include

selection of the case studies, selection of the sample, definition of subgroups or construction of interview schedule, specifically question wording.

Selection of Case Studies

Although pragmatics were a major consideration in the case study selection, a careful review of a number of other case study evaluations, i.e., Graystokes, Spruce Lakes and Tsitika-Shoen, assured a high degree of similarity. The criteria were preservation versus development as a control issues, attempts at the development of an integrated resource plan, and allegations of divergent values. While other case studies involving preservation versus development conflicts may exhibit some variations, significant changes in conclusions would not be expected.

Selection of Sample

The results indicated that planning participants are generally young, well-educated and reasonably well-paid and therefore may not be considered as representative of the 'general public'" Of these characteristics, education exhibited the least variation throughout the sample. A possible reason could be that certain segments of the public, lacking in higher education, are intimidated by the planning process. There is a problem beyond the scope of the study.

Definition of Subgroups

The abnormally high value scores of the local community representatives pose some interesting questions which also go beyond the scope of this thesis. Their scores were moderated when the participants were sorted according to preferred option. Hence, it is unlikely that the conclusions are prejudiced by this group.

Question Wording

During the pre-test, every effort was made to ensure that the questions were easily understood and free of bias. Perhaps only questions which failed to give an accurate assessment were the scale items regarding support for the status quo. However, improvement of these items to more accurately reflect perceptions of the status quo as the 'system' as opposed to technological innovation would have likely enhanced the differences between preservations and developers.

Directions for Future Research

This study has shown that most of those who participated in the Meares Island and the Valhalla planning processes are generally oriented towards the New Environmental Paradigm (NEP) as opposed to the old Dominant Social Paradigm (DSP). It has also been shown that those who support preservation are the most strongly NEP oriented,

while those who oppose preservation are the least NEP oriented. A major conclusion was that a significant difference in values between these two competing groups exists and is part of the basis for their conflict. However, further research is necessary to test these findings against larger, more representative samples of the public, preservationists and developers. Specifically, research needs to assess the extent of penetration of the environmental message in B.C. Henning (1971) has argued that: "Essentially, the wilderness classifications and controversies call for value decisions involving wilderness per se as opposed to development and utilitarian use to meet common recreational and economic demands. A certain amount of this value conflict will be the determination of how much the ecological message has really been received..." (p. 74).

An additional, and perhaps more difficult, area for future research is in the normative development of a new socio-ecological management philosophy. Evernden (1984) argues: "The tools of resource management require an assumption of the existence of resources. But resources are simply human categories, indices of utility to industrial society. They say nothing at all of experiential value or intrinsic worth. Furthermore, the predominance of 'resourcism' tempts us to try to translate any sensed value into resource terms and thus to save by subterfuge what could not be protected by argument" (p. 10). This view

challenges the very foundations of resource management and demands an approach in socio-ecological management in line with the emerging New Environmental Paradigm.

A reliable instrument to assess values is critical to both research directions. The DSP and NEP scales, as developed by Dunlap and Van Liere (1978, 1984), show promising results but further refinement is necessary. This thesis revealed one area needing refinement is the support for status quo dimension. Another area identified in this research is the distinction between quality of life and standard of living. As it is now, these are grouped together within the DSP scale. Further research is also needed to confirm or relate the findings of Geller and Lasley (1985) regarding the NEP scale.

Summary

The purpose of this thesis is to facilitate a clearer understanding of the dynamics underlying preservation versus development conflicts. The thesis focused on integrated resource planning as it has been applied to forest land use conflicts in B.C. Of special interest was whether integrated resource planning could be modified to improve its effectiveness in resolving preservation versus development conflicts. This thesis concludes that considerable disagreement exists as to whether integrated resource planning should or should not include preservation as a land

designation. As it is currently applied in B.C., integrated resource planning frequently excludes preservation and accepts some level of resource development as a given. Consequently, to the preservationists involved, the planning process, including other participants, is seen as biased. However, as was shown, not only is there a fairly significant degree of support for preservation, but also the participants, on the whole, are generally environmentally sympathetic. This leads to the conclusion that the planning participants are constrained by the working rules of the integrated resource planning process.

The thesis has also demonstrated that fundamental differences in values underlie the conflict between those who want preservation and those who want development. The differences are non-material values, environmental regulation, and harmony with nature versus material values, laissez-faire government, and man over nature. These differing values form the core of two divergent belief systems, leaving little common ground for trade-offs. Therefore, it is concluded that the search for a mutually acceptable solution, in which some reasonable level of responsible development is a given, is likely to be fruitless. As a result, integrated resource planning will continue to fail to effectively resolve specific conflicts involving preservation and development. However, it is further concluded that integrated resource planning could be

improved as a means of resolving this type of conflict if a fundamental shift in resource management philosophy and environmental values occurs amongst the decision-makers. For they alone have the power to remove the major obstacle to improved planning. Specifically, integrated resource planning must include an open and fair appraisal of the preservation option. This thesis has suggested that there are strong reasons for doing so.

A P P E N D I C E S

APPENDIX 1

Interview Schedule

SECTION I

1. Over the past few years the Ministry of Forests has been attempting to achieve what it terms "integrated resource planning."

   What does this term mean to you?

2. In your opinion, what are some of the key areas of concern regarding forestry in British Columbia?

3. Many of the integrated resource planning processes such as South Moresby, Meares Island and the Valhallas can be described as having high degrees of conflict in them.

   What do you think are some of the reasons for this conflict?

4. The Ministry of Forests has a fairly broad mandate which covers a spectrum of forest land uses: recreation, wildlife, fisheries.

   Do you feel that wilderness allocation and management should be included into that mandate?

   Why do you/do you not feel that wilderness allocation and management should be included in the Ministry's mandate?

5. To assist in the achievement of integrated resource plans, a public participation program was developed and implemented "to create a favourable climate for resolution of the competitive pressures and problems that increasingly face forest resource management."

   Do you feel that the program has been successful in achieving this goal?

   Why do you/do you not feel that the program has been successful?

6. Many land use conflicts are generated by differences in beliefs and values as to what ought to be the best use of a piece of land and the environment in general.

   What kinds of values do you think are (were) in conflict?

7. Do you feel that a public participation program should be an integral component of integrated resource planning?

   Why do you/do you not feel that a public participation program should be an integral component of the planning process.

8. What goals do you think a public participation program should achieve?

9. Thinking about your involvement in the Meares/Valhallas planning process, what goals did you hope to achieve?

   What goals do you feel you achieved?

10. Would you say that as a result of the public participation process that you now have a better understanding of the values held by others involved in the planning process.

    If so, how do you think that this better understanding of values might assist you in future similar situations?

SECTION II

1. Regulation of business by government usually does more harm than good.

2. Economic growth improves the quality of life of all citizens in British Columbia.

3.* We are approaching the limit of the number of people the earth can support.

4. We should know if something new will work before taking a chance on it.

5. Most problems can be solved by applying more and better technology.

6.* The balance of nature is very delicate and easily upset.

7. Property owners have an inherent right to use their land as they see fit.

8.* British Columbians are going to have to learn to do without many of the things they have taken for granted in the past.

9.* The profits of big business and industry should be controlled by government.

10. Property owners have the right to abuse their land even if it becomes unfit for use by future generations.

11. Humans have the right to modify the natural environment to suit their needs.

12.* To maintain a healthy economy we will have to develop a "steady-state" economy where industrial growth is controlled.

13. Scientists can solve any problem we might face if they are given enough time and money.

14.* British Columbians are going to have to drastically reduce their level of consumption over the next few years.

15. There is too much concern with restricting growth in B.C.'s economy and not enough with encouraging it.

16. Mankind was created to rule over the rest of nature.

17. Governmental regulation and planning always lead to bureaucracy, inefficiency and stagnation.

18. If you start trying to change things very much, you usually make them worse.

19.* The earth is like a spaceship with only limited room and resources.

20.* There are limits to growth beyond with our industrialized society cannot expand.

21. The provincial government has too much power over citizens and local government.

22.* It is often necessary to restrict the rights of individuals for the good of society.

23. British Columbians can expect that their quality of life will be better in the future.

24.* When humans interfere with nature, it often produces disastrous consequences.

25.* Humans must live in harmony with nature in order to survive.

26. The positive benefits of economic growth far outweigh any negative consequences.

27.* There should be more government regulation of business.

28. It is better to stick by what we have than try new things we don't really know about.

29. Plants and animals exist primarily to be used by humans.

30. Among the fundamental rights in this province is the use of one's property without outside interference.

31. Through science and technology we can continue to raise our standard of living.

32. The standard of living for the average British Columbian will continue to improve for the foreseeable future.

33. The provincial government should not interfere with the free enterprise system.

34.* We cannot keep counting on science and technology to solve mankind's problems.

35. Humans need not adapt to the natural environment because they can remake it to suit their needs.

36. Governmental planning inevitably results in the loss of essential liberties and freedoms.

37.* In order to solve some of our society's problems, it will be necessary to place restrictions on individuals' behaviour.

38.* Mankind is severely abusing the environment.

39.* Just because something is run by the government doesn't mean it will be inefficient and wasteful.

40.* Government restrictions on the use of private property are necessary in order to insure that the land will not be permanently harmed.

* reverse-scored

SECTION III

Standard socio-demographic questions:

1. Age
2. Male/female
3. Place of residence
4. Income
5. Education

CODING

Issue:

1. Valhallas 2. Meares 3. Both

Role:

2. Resource Managers/Planners
3. Local Community Representatives
4. Preservationists
5. Developers
6. Others

Age:

1. 25-35 2. 36-45 3. 46-55 4. 56-65
5. 66+

Sex:

0 Male 1. Female

Gross Family Income:

1. less than $7,500
2. $7,500 - $10,000
3. $10,000 - $14,999
4. $15,000 - $19,999
5. $20,000 - $24,999
6. $25,000 - $29,999
7. $30,000 - $34,999
8. $35,000 - $39,999
9. $40,000 - $44,999
10. More than $45,000

Education:

1. No schooling
2. Elementary
3. Junior High School
4. Senior High School
5. Post-Secondary (either technical or university)

Results of Content Analysis - Matrix

										C/	$/	U/	M/																		P/					
R#	Cp	Wp	Rd	Sb	Cv	Su	Lf	Pf	Fm	Bi	Be	Sq	$	T	L	Wa	Wa	Yc	Nc	Yp	Np	I	V	A	Ss	Cp	Ed	P	Mu	Ed	Yu	Nu	Yw	Nw	Wp	Mu	Mu	G	Vs	Cs
1	✓	✓	✓		✓	✓			✓		✓		✓				✓		✓	✓			✓				✓	✓				✓	✓		✓			2	137	1
2	✓		✓	✓		✓	✓							✓	✓	✓			✓		✓	✓					✓		✓		✓		✓				✓	2	135	2
3	✓	✓	✓		✓				✓					✓	✓	✓			✓	✓				✓	✓				✓		✓		✓				✓	2	141	2
4	✓		✓	✓		✓	✓					✓	✓	✓		✓			✓	✓						✓			✓		✓			✓			✓	3	93	2
5	✓		✓	✓		✓	✓		✓				✓		✓	✓			✓	✓		✓			✓	✓			✓		✓		✓				✓	5	120	2
6		✓	✓		✓				✓	✓	✓	✓	✓	✓	✓		✓		✓	✓			✓	✓				✓			✓		✓		✓			4	167	2
7		✓	✓		✓				✓	✓		✓	✓		✓		✓		✓	✓		✓	✓	✓				✓			✓		✓		✓			4	155	2
8		✓	✓		✓				✓	✓	✓	✓	✓	✓	✓		✓	✓		✓			✓	✓			✓	✓				✓	✓		✓			4		2
9	✓								✓					✓	✓	✓			✓	✓						✓		✓			✓		✓		✓			4	134	2
10	✓	✓							✓				✓			✓		✓		✓						✓			✓		✓		✓			✓		3	140	2
11		✓	✓		✓			✓	✓			✓	✓		✓		✓		✓		✓							✓			✓		✓		✓			4	143	2
12	✓		✓	✓		✓	✓	✓				✓		✓			✓		✓	✓		✓				✓		✓		✓						✓		2	145	1
13	✓		✓	✓		✓	✓	✓	✓				✓		✓	✓			✓	✓		✓				✓		✓		✓		✓			✓		2	115	1
14		✓	✓		✓			✓	✓	✓	✓	✓	✓		✓		✓		✓	✓			✓	✓				✓				✓	✓		✓			4		1
15	✓		✓		✓				✓		✓		✓	✓		✓			✓		✓						✓		✓		✓		✓		✓			3	157	1
16	✓		✓	✓		✓			✓			✓	✓	✓		✓				✓			✓			✓		✓		✓		✓			✓		6	118	1
17			✓	✓		✓			✓			✓		✓		✓			✓	✓			✓			✓		✓		✓						✓		3	127	1
18			✓	✓		✓			✓			✓	✓	✓		✓			✓	✓			✓			✓		✓		✓						✓		6	123	1
19									✓			✓		✓		✓			✓	✓		✓							✓						✓		3		1
20	✓		✓	✓					✓	✓	✓	✓	✓	✓	✓		✓		✓	✓							✓	✓			✓		✓		✓			3	169	1
21	✓	✓	✓		✓				✓	✓	✓	✓		✓			✓		✓	✓		✓	✓						✓	✓		✓		✓			3	158	1
22	✓		✓	✓					✓		✓	✓		✓			✓		✓	✓			✓	✓			✓			✓	✓		✓			✓		3	164	1
23	✓								✓				✓			✓		✓		✓		✓					✓			✓	✓		✓				✓	3	133	1
24			✓		✓				✓			✓							✓								✓			✓	✓							3	127	1
25			✓		✓				✓	✓	✓	✓	✓	✓	✓				✓	✓							✓				✓		✓			✓		3	159	1
26	✓					✓			✓			✓		✓			✓			✓		✓			✓				✓		✓		✓			✓		5	148	1

27	✓	✓	✓	✓					✓			✓	✓	✓	✓	✓		✓		✓		✓	✓				✓		✓			✓				✓		2	119	1
28	✓	✓							✓					✓	✓	✓				✓						✓				✓	✓		✓					2	136	1
29	✓									✓		✓	✓				✓			✓					✓		✓			✓	✓						2	148	1
30		✓							✓		✓	✓	✓				✓			✓			✓	✓						✓	✓		✓		✓			3		1
31	✓		✓		✓				✓	✓			✓	✓	✓		✓		✓	✓		✓	✓				✓			✓			✓		✓			2	137	1
32	✓		✓	✓		✓						✓	✓				✓		✓	✓								✓								✓	2		1
33	✓	✓	✓	✓					✓	✓		✓	✓		✓		✓		✓	✓			✓							✓	✓		✓			✓		2	126	1
34	✓		✓	✓		✓	✓			✓		✓	✓	✓	✓		✓		✓	✓		✓						✓			✓		✓			✓	5	108	2
35			✓	✓		✓						✓	✓	✓			✓					✓				✓	✓		✓			✓	✓				✓	2	100	1
36	✓	✓	✓		✓				✓	✓	✓	✓	✓		✓	✓			✓	✓		✓	✓						✓	✓		✓		✓			2	152	1
37	✓	✓				✓							✓			✓	✓		✓	✓		✓				✓			✓	✓					✓		2	133	1
38	✓									✓					✓		✓			✓	✓				✓							✓				✓		2	137	3
39	✓								✓				✓		✓	✓		✓		✓							✓						✓		✓			2	150	1
40	✓								✓			✓		✓			✓		✓	✓		✓	✓						✓		✓	✓				✓		2	127	1
41	✓								✓	✓	✓	✓			✓		✓			✓		✓				✓		✓		✓								2	143	1
42	✓	✓							✓	✓		✓	✓		✓	✓		✓		✓			✓					✓	✓				✓					2	141	2
43	✓	✓				✓			✓	✓	✓	✓	✓	✓				✓			✓		✓			✓			✓		✓	✓					✓	2	127	3
44	✓					✓			✓	✓				✓			✓				✓	✓			✓				✓	✓							6	120	2
45	✓	✓	✓		✓				✓	✓	✓	✓	✓	✓		✓			✓	✓			✓			✓	✓		✓		✓		✓			✓		2	137	2
46	✓	✓	✓	✓					✓				✓			✓			✓	✓		✓							✓	✓		✓		✓			2	138	2
47		✓					✓		✓				✓			✓			✓	✓							✓		✓	✓		✓		✓			2	123	3
48			✓		✓				✓	✓	✓	✓	✓				✓		✓				✓			✓	✓			✓		✓		✓			2	140	3
49	✓	✓				✓	✓		✓				✓		✓	✓		✓		✓	✓	✓				✓	✓		✓	✓		✓			✓			2	134	1
50	✓								✓			✓	✓					✓	✓	✓						✓	✓		✓		✓						2	130	1
51		✓	✓						✓			✓	✓			✓			✓	✓						✓	✓			✓	✓		✓				2	138	1
52	✓		✓	✓		✓	✓						✓	✓			✓		✓	✓						✓		✓				✓				✓	5		1
53	✓		✓	✓		✓	✓						✓	✓			✓		✓	✓						✓		✓			✓	✓				✓	5	126	2
TOT	39	22	32	18	14	18	10	4	44	18	15	34	37	28	24	25	25	8	38	44	5	27	23	7	3	20	22	10	21	20	37	10	38	3	17	17	11			
%	74	42	60	34	26	34	19	8	83	34	28	64	70	53	45	47	47	15	72	83	9	51	43	13	6	38	42	19	40	38	70	19	72	6	32	32	21			

APPENDIX 2

Key

R#	Respondent number
Cp	Compromise
Wp	Wilderness preservation
Rd	Resource development
Sb	Sincere belief
Cv	Cynical view
Su	Single use
Lf	Loss of forest land
Pf	Preservation of forest land
Fm	Forest management
Bi	Bias by industry
Be	Bias by economics
C/Sq	Change versus status quo
$/$	Materialistic values versus non-materialistic values
U/T	Us versus them
M/L	Man-land beliefs
Wa	Wilderness allocation
Wa	Against wilderness allocation
Yc	Yes - reduces conflict
Nc	No - does not reduce conflict
Yp	Yes - participation
Np	No - participation
I	Information
V	Value identification
A	Accountability
Ss	Self-satisfaction
Cp	Compromise
Ed	Education
P	Preservation
Mu	Multiple use
Ed	Education
Yu	Yes - increases understanding
Nu	No - does not increase understanding
Yw	Yes - wilderness
Nw	No - wilderness
Wp	Preservation
P/Mu	Preservation/multiple use
Mu	Multiple use
G	Group
Vs	Value score
Cs	Case study

Responses to Value Scale Sorted by Group

	Item #																																							
R#	1	27	17	21	33	36	39	9	4	18	28	30	7	40	10	5	13	34	31	22	37	14	8	32	23	2	26	15	3	6	11	16	24	29	12	25	19	35	20	38	Total
10012	4	3	5	3	3	4	4	2	4	4	4	3	3	4	4	2	2	4	3	4	4	3	3	4	2	3	4	3	3	2	4	4	3	3	4	4	4	4	4	2	137
20022	3	3	4	4	3	2	4	1	5	4	5	4	2	3	4	4	4	4	4	2	4	4	4	4	4	4	4	4	2	4	2	2	2	4	2	2	4	2	4	4	135
20032	4	3	3	3	4	4	4	4	2	4	2	4	4	4	5	2	1	2	2	4	4	4	4	2	2	4	4	4	5	5	3	2	4	2	4	5	5	4	5	4	141
10122	4	3	4	4	4	4	4	2	4	4	5	4	4	4	5	2	3	4	2	4	4	2	4	4	3	2	4	2	2	5	2	5	4	5	3	5	4	5	2	4	145
10132	2	2	3	2	2	4	3	2	3	4	4	2	2	2	4	3	3	3	3	3	2	2	2	2	3	2	4	3	4	2	3	4	2	4	3	4	4	3	4	2	115
10272	2	2	4	4	4	4	4	4	4	4	4	2	4	4	4	2	4	2	2	4	2	2	2	2	2	2	2	2	4	2	2	4	2	2	2	4	4	4	3	2	119
10282	2	2	2	2	3	2	3	2	4	4	4	4	4	3	3	2	4	4	2	4	4	4	4	4	4	2	4	3	4	4	4	4	4	4	4	3	4	4	4	4	136
10292	4	2	4	4	5	5	4	4	4	4	4	2	2	5	5	3	4	4	4	5	5	4	4	2	2	1	4	2	5	2	2	3	3	2	5	5	4	5	5	5	148
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10322																																									
10332	2	2	4	2	2	4	4	2	2	4	2	2	2	4	4	4	4	4	3	3	3	3	4	3	2	2	5	2	2	4	2	4	4	4	2	4	4	4	4	4	126
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20462	4	3	4	3	4	4	4	2	4	4	4	4	4	4	2	4	4	4	2	4	4	4	2	2	2	2	4	2	4	4	2	4	4	4	2	4	4	4	4	4	138
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10502	2	2	2	1	1	4	4	2	4	4	4	5	4	4	4	2	3	2	2	4	4	2	4	4	2	2	2	2	5	5	4	5	4	2	4	4	5	4	4	2	130
10512	4	3	4	3	3	4	4	2	5	4	4	2	4	4	5	4	4	4	2	4	5	3	3	3	2	2	3	4	3	4	2	3	3	4	2	4	4	4	4	3	138
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10173	3	3	2	4	3	2	3	2	4	3	4	2	3	3	4	4	4	3	2	3	4	4	4	2	3	1	3	2	3	5	3	2	4	4	2	4	4	4	4	4	127

10193																																									
10203	4	3	4	1	5	5	4	4	4	4	5	5	5	5	5	5	5	5	2	5	5	3	4	4	4	1	5	3	5	5	4	5	3	5	4	5	5	5	5	4	169
10213	3	3	4	4	4	4	3	4	1	4	4	4	4	4	5	3	2	4	4	4	4	4	4	4	4	1	4	4	5	5	4	5	4	4	5	5	5	5	5	5	158
10223	4	4	3	1	3	5	2	4	4	2	4	5	5	5	5	5	5	4	5	5	5	3	3	5	4	5	4	4	5	5	5	5	4	5	4	2	2	5	4	5	164
10233	4	3	4	3	4	4	4	2	3	4	4	4	3	4	4	4	4	3	2	3	3	2	2	3	3	3	2	4	2	4	3	5	4	4	3	4	1	4	3	4	133
10243	3	2	3	2	2	3	2	2	2	4	3	4	2	4	3	3	2	4	2	4	4	4	4	4	4	2	4	2	2	5	2	2	4	4	2	5	4	5	4	4	127
10253	1	4	4	2	5	4	4	4	4	4	4	4	4	5	5	2	4	4	4	4	4	5	4	4	3	4	4	4	5	5	2	5	4	4	4	4	5	4	4	5	159
10303																																									
20064	3	4	4	2	4	2	4	4	2	2	2	5	5	5	5	4	5	4	4	4	4	5	5	4	5	5	5	5	5	5	4	5	4	5	3	4	5	5	5	5	167
20074	4	3	4	3	5	4	4	3	3	5	3	5	3	2	4	4	4	5	2	4	4	4	4	3	3	5	5	4	5	1	4	5	3	5	4	4	4	5	5	4	155
20084																																									
20094	3	2	5	1	3	2	3	3	2	2	4	4	4	2	5	4	5	2	3	1	3	3	3	3	3	3	4	2	2	5	5	5	4	4	4	5	3	5	3	5	134
20114	4	4	2	1	4	4	4	3	3	5	4	3	4	4	4	4	4	2	2	1	2	5	4	4	2	4	5	2	4	5	4	5	2	4	2	5	5	5	4	4	143
10144																																									
20055	2	2	2	2	1	2	3	4	4	3	4	2	4	4	4	3	3	4	2	4	4	4	4	3	4	1	2	2	2	4	2	1	4	2	4	4	4	4	4	4	120
10265	3	2	4	3	3	4	4	1	5	4	5	5	4	4	5	4	5	4	4	4	5	4	5	4	4	2	5	2	2	5	2	4	4	4	1	4	4	5	3	2	148
20345	2	2	2	2	2	2	2	2	4	4	4	5	2	2	2	4	2	2	2	2	2	4	5	4	3	2	3	2	3	2	2	4	2	2	2	3	4	2	4	2	108
10525																																									
20535	3	1	4	1	4	4	2	1	5	5	5	2	5	2	5	4	5	4	4	5	4	3	1	4	1	1	3	1	5	1	1	3	1	3	1	5	5	5	5	2	126
10166	4	3	4	3	3	4	4	4	4	4	4	4	4	4	4	3	2	2	1	4	4	2	4	2	2	2	2	4	2	2	1	2	2	2	4	2	2	2	4	2	118
10186	3	3	2	4	3	2	3	2	3	3	4	2	2	3	2	3	4	3	2	3	4	4	2	2	3	4	3	2	4	4	3	2	4	4	2	4	4	4	4	4	123
10446	4	2	3	2	4	3	4	4	4	4	4	2	2	2	3	4	2	2	2	4	4	2	4	4	2	4	4	1	2	4	2	2	2	3	2	2	4	3	4	4	120

APPENDIX 3a

Calculations for Significant Difference between Preservationists and Developers (by item)

27. There should be more government regulation of business.

H_0 There is no significant difference in the values between preservationists and developers regarding government regulation.

H_1 There is a significant difference in the values between preservationists and developers regarding government regulation.

$\alpha = 0.05$ $\quad n_1 = 4 \quad n_2 = 4$

P	D
4 (7.5)	2 (3.5)
4 (7.5)	2 (3.5)
3 (6.0)	2 (3.5)
2 (3.5)	1 (1.0)
(24.5)	(11.5)

$$U_1 = n_1 n_2 + \tfrac{1}{2} n_1(n_1 + 1) - R_1$$

or

$$U_2 = n_1 n_2 + \tfrac{1}{2} n_2(n_2 + 1) - R_2$$

$$U = 16 + 10 - 24.5 = 1.5$$

Calculated U = 1.5 or a probability of .043

$.043 < .05$, $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between preservationists and developers regarding government regulation.

4. We should know if something new will work before taking a chance on it.

H_0 There is no significant difference in the values between preservationists and developers regarding support for the status quo.

H_1 There is a significant difference in the values between preservationists and developers regarding support for the status quo.

$\alpha = 0.05$ $\quad n_1 = 4 \quad n_2 = 4$

P	D
3 (3.5)	5 (7.5)
3 (3.5)	5 (7.5)
2 (1.5)	4 (5.5)
2 (1.5)	4 (5.5)
(10.0)	(26.0)

$$U_1 = n_1 n_2 + \tfrac{1}{2} n_1(n_1 + 1) - R_1$$

or

$$U = 26 - 26 = 0$$

Calculated U = 0 or a probability of .014

$.014 < .05$ $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between preservationists and developers regarding status quo.

2. Economic growth improves the quality of life for all citizens in British Columbia.

H_0 There is no significant difference in the values between preservationists and developers regarding economic growth.

H_1 There is a significant difference in the values between preservationists and developers regarding economic growth.

$\alpha = 0.05$ $n_1 = 4$ $n_2 = 4$

P	D
5 (7.5)	2 (3.5)
5 (7.5)	2 (3.5)
4 (6.0)	1 (1.5)
3 (5.0)	1 (1.5)
(26.0)	(10.0)

$$U_1 = n_1 n_2 + \tfrac{1}{2} n_1(n_1 + 1) - R_1$$

or

$$U = 26 - 26 = 0$$

Calculated U = 0 or a probability of .014

$.014 < .05$, $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between preservationists and developers regarding economic growth.

11. Humans have the right to modify the natural environment to suit their needs.

H_0 There is no significant difference in the values between preservationists and developers regarding modification of the natural environment.

H_1 There is a significant difference in the values between preservationists and developers regarding modification of the natural environment.

$\alpha = 0.05$ $\quad n_1 = 4 \quad n_2 = 4$

P	D
5 (8.0)	2 (3.0)
4 (6.0)	2 (3.0)
4 (6.0)	2 (3.0)
4 (6.0)	1 (1.0)
(26.0)	(10.0)

$$U_1 = n_1 n_2 + \tfrac{1}{2} n_1(n_1 + 1) - R_1$$

or

$$U = 26 - 26 = 0$$

Calculated U = 0 or a probability of .014

$.014 < .05$, $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between preservationists and developers regarding modification of the natural environment.

16. Mankind was created to rule over the rest of nature.

H_o There is no significant difference in the values between preservationists and developers regarding domination of nature.

H_1 There is a significant difference in the values between preservationists and developers regarding domination of nature.

$\alpha = 0.05$ $\quad n_1 = 4 \quad n_2 = 4$

P	D
5 (6.5)	4 (3.5)
5 (6.5)	4 (3.5)
5 (6.5)	3 (2.0)
5 (6.5)	1 (1.0)
(26.0)	(10.0)

$$U_1 = n_1 n_2 + \tfrac{1}{2} n_1(n_1 + 1) - R_1$$

or

$$U = 26 - 26 = 0$$

Calculated U = 0 or a probability of .014

$.014 < .05$, $\therefore$ H_o is rejected

Therefore there is a significant difference in values between preservationists and developers regarding domination of nature.

29. Plants and animals exist primarily to be used by humans.

H_o There is no significant difference in the values between preservationists and developers regarding use of nature.

H_1 There is a significant difference in the values between preservationists and developers regarding use of nature.

$\alpha = 0.05$ $n_1 = 4$ $n_2 = 4$

P	D
5 (7.5)	4 (5.0)
5 (7.5)	3 (3.0)
4 (5.0)	2 (1.5)
4 (5.0)	2 (1.5)
(25.0)	(11.0)

$$U_1 = n_1 n_2 + \tfrac{1}{2} n_1(n_1 + 1) - R_1$$

or

$$U = 26 - 25 = 1$$

Calculated U = 1 or a probability of .029

$.029 < .05$, $\therefore$ H_o is rejected

Therefore there is a significant difference in values between preservationists and developers regarding use of nature.

38. Mankind is severely abusing the environment.

H_0 There is no significant difference in the values between preservationists and developers regarding quality of the environment.

H_1 There is a significant difference in the values between preservationists and developers regarding quality of the environment.

$\alpha = 0.05$ $\quad n_1 = 4 \quad n_2 = 4$

P	D
5 (7.5)	4 (5.0)
5 (7.5)	2 (2.0)
4 (5.0)	2 (2.0)
4 (5.0)	2 (2.0)
(25.0)	(11.0)

$$U_1 = n_1 n_2 + \tfrac{1}{2} n_1(n_1 + 1) - R_1$$

or

$$U = 26 - 25 = 1$$

Calculated U = 1 or a probability of .029

$.029 < .05$, $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between preservationists and developers regarding quality of the environment.

APPENDIX 3b

Test for Significant Difference by Dimension between Preservationists (P) and Developers (D)

Laissez-faire Government

H_0 There is no significant difference in values regarding laissez-faire government between preservationists and developers.

H_1 There is a significant difference in values regarding laissez-faire government between preservationists and developers.

$\alpha = 0.05$ $n_1 = 4$ $n_2 = 4$

P		D
30	(8)	24 (5)
27	(7)	20 (3)
26	(6)	18 (2)
22	(4)	16 (1)
	(25)	

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 16 + 10 - 25$

$= 1$ or $p = .029$

$.029 < .05$ ∴ H_0 rejected.

There is a significant difference in values regarding laissez-faire government between preservationists and developers.

Economic Growth

H_o There is no significant difference in values regarding economic growth between preservationists and developers.

H_1 There is a significant difference in values regarding economic growth between preservationists and developers.

$\alpha = 0.05$ $n_1 = 4$ $n_2 = 4$

P		D	
15	(8)	9	(4.5)
14	(7)	7	(3.0)
11	(6)	5	(1.5)
9	(4.5)	5	(1.5)
	(25.5)		

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 16 + 10 - 25.5$

$= .5$ or $p = .029$ and $p = .014$

$.029$ or $.014 < .05$, $\therefore$ H_o rejected.

There is a significant difference in values regarding economic growth between preservationists and developers.

Man over Nature

H_0 There is no significant difference in values regarding man over nature between preservationists and developers.

H_1 There is a significant difference in values regarding man over nature between preservationists and developers.

$\alpha = 0.05$ $n_1 = 4$ $n_2 = 4$

P		D
19	(7)	15 (4)
19	(7)	12 (3)
19	(7)	10 (2)
18	(5)	9 (1)
	(26)	

$$U_1 = n_1 n_2 + \tfrac{1}{2} n_1(n_1 + 1) - R_1$$

$$U = 16 + 10 - 26 = 0$$

$$0 = p\ .014$$

$.014 < .05$, $\therefore$ H_0 rejected.

There is a significant difference in values regarding man over nature between preservationists and developers.

APPENDIX 3c

Test for Significant Difference between Preservationists (P) and Developers (D) (by scale)

H_0 There is no significant difference in the values held between preservationists and developers.

H_1 There is a significant difference in the values held between preservationists and developers.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P	D
167 (8)	148 (6)
155 (7)	126 (3)
143 (5)	120 (2)
134 (4)	108 (1)
24	

$U_1 = 26 - 24 = 2$ or .057

Calculated U = 2 or a probability of .057

$.057 > .05$, $\therefore$ H_0 is accepted

There is no significant difference in values held between preservationists and developers.

APPENDIX 3d

Tests for Significant Difference by Preferred Option: Preservation (P) or Multiple Use (Mu)

17. Governmental regulation and planning always lead to bureaucracy, inefficiency and stagnation.

H_0 There is no significant difference in the values between those favouring preservation and those favouring multiple use regarding government regulation.

H_1 There is a significant difference in the values between those favouring preservation and those favouring multiple use regarding government regulation.

$\alpha = 0.05$ $\quad n_1 = 14 \quad n_2 = 9$

P		Mu	
5 (22.5)	4 (14)	4 (14.0)	2 (3)
5 (22.5)	4 (14)	4 (14.0)	1 (1)
4 (14.0)	4 (14)	4 (14.0)	
4 (14.0)	4 (14)	4 (14.0)	
4 (14.0)	4 (14)	3 (5.5)	
4 (14.0)	4 (14)	3 (5.5)	
4 (14.0)	2 (3)	2 (3.0)	

$R_1 = 202$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 202 = 29$

Calculated U = 29 $<$ Critical U = 31 $\therefore$ H is rejected

Therefore there is a significant difference in values between those favouring preservation and those favouring multiple use regarding government regulation.

33. The provincial government should not interfere with the free enterprise system.

H_0 There is no significant difference in the values between those favouring preservation and those favouring multiple use regarding interference with the free enterprise system.

H_1 There is a significant difference in the values between those favouring preservation and those favouring multiple use regarding interference with the free enterprise system.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P		Mu	
5 (21.5)	4 (14)	4 (14)	1 (1.5)
5 (21.5)	4 (14)	4 (14)	1 (1.5)
5 (21.5)	4 (14)	4 (14)	
5 (21.5)	4 (14)	4 (14)	
4 (14.0)	3 (7)	3 (7)	
4 (14.0)	3 (7)	2 (4)	
4 (14.0)	2 (4)	2 (4)	

$R_1 = 202$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 202 = 29$

Critical U = 31

$29 < 31$ ∴ H_0 is rejected

Therefore there is a significant difference in values between those favouring preservation and those favouring multiple use regarding interference with the free enterprise system.

2. Economic growth improves the quality of life for all citizens of British Columbia.

H_0 There is no significant difference in the values between those favouring preservation and those favouring multiple use regarding economic growth.

H_1 There is a significant difference in the values between those favouring preservation and those favouring multiple use regarding economic growth.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P		Mu	
5 (22.0)	4 (17.0)	4 (17.0)	1 (3)
5 (22.0)	4 (12.0)	4 (17.0)	1 (3)
5 (22.0)	3 (11.0)	3 (11.0)	
4 (17.0)	3 (11.0)	2 (7.5)	
4 (17.0)	2 (7.5)	2 (7.5)	
4 (17.0)	1 (3.0)	2 (7.5)	
4 (17.0)	1 (3.0)	1 (3.0)	

$R_1 = 203.5$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 203.5 = 27.5$
Critical U = 31

$27.5 < 31$ ∴ H_0 is rejected

Therefore there is a significant difference in values between those favouring preservation and those favouring multiple use regarding economic growth.

26. The positive benefits of economic growth far outweigh any negative consequences.

H_o There is no significant difference in the values between those favouring preservation and those favouring multiple use regarding economic growth.

H_1 There is a significant difference in the values between those favouring preservation and those favouring multiple use regarding economic growth.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P		Mu	
5 (21.0)	4 (14.0)	4 (14.0)	2 (2)
5 (21.0)	4 (14.0)	4 (14.0)	2 (2)
5 (21.0)	4 (14.0)	3 (6.0)	
5 (21.0)	4 (14.0)	3 (6.0)	
5 (21.0)	4 (14.0)	3 (6.0)	
4 (14.0)	4 (14.0)	3 (6.0)	
4 (14.0)	3 (6.0)	2 (2.0)	

$R_1 = 223$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 223 = 8$

Critical U = 31

$8 < 31$, $\therefore$ H_o is rejected

Therefore there is a significant difference in values between those favouring preservation and those favouring multiple use regarding economic growth.

11. Humans have the right to modify the natural environment to suit their needs.

H_0 There is no significant difference in the values between those favouring preservation and those favouring multiple use regarding modification of the natural environment.

H_1 There is a significant difference in the values between those favouring preservation and those favouring multiple use regarding modification of the natural environment.

$\alpha = 0.05$ $\quad n_1 = 14$ $\quad n_2 = 9$

P		Mu	
5 (23.0)	3 (14)	3 (14)	1 (1.5)
4 (19.5)	3 (14)	3 (14)	1 (1.5)
4 (19.5)	3 (14)	2 (7)	
4 (19.5)	2 (7)	2 (7)	
4 (19.5)	2 (7)	2 (7)	
4 (19.5)	2 (7)	2 (7)	
4 (19.5)	2 (7)	2 (7)	

$R_1 = 210$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 210 = 21$

Critical U = 31

$21 < 31$, $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between those favouring preservation and those favouring multiple use regarding modification of the natural environment.

16. Mankind was created to rule over the rest of nature.

H_0 There is no significant difference in the values between those favouring preservation and those favouring multiple use regarding domination of nature.

H_1 There is a significant difference in the values between those favouring preservation and those favouring multiple use regarding domination of nature.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P		Mu	
5 (18.5)	5 (18.5)	5 (18.5)	2 (2.5)
5 (18.5)	5 (18.5)	4 (10.0)	1 (1.0)
5 (18.5)	4 (10.0)	4 (10.0)	
5 (18.5)	4 (10.0)	4 (10.0)	
5 (18.5)	4 (10.0)	3 (5.0)	
5 (18.5)	4 (10.0)	3 (5.0)	
5 (18.5)	3 (5.0)	2 (2.5)	

$R_1 = 211$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 211 = 20$

Critical U = 31

$20 < 31$, $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between those favouring preservation and those favouring multiple use regarding domination of nature.

29. Plants and animals exist primarily to be used by humans.

H_o There is no significant difference in the values between those favouring preservation and those favouring multiple use regarding use of nature.

H_1 There is a significant difference in the values between those favouring preservation and those favouring multiple use regarding use of nature.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P		Mu	
5 (21.5)	4 (14.0)	4 (14)	2 (3)
5 (21.5)	4 (14.0)	4 (14)	2 (3)
5 (21.5)	4 (14.0)	4 (14)	
5 (21.5)	4 (14.0)	3 (7)	
4 (14.0)	4 (14.0)	3 (7)	
4 (14.0)	3 (7.0)	2 (3)	
4 (14.0)	2 (3.0)	2 (3)	

$R_1 = 208$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 208 = 23$

Critical U = 31

$23 < 31$, $\therefore$ H_o is rejected

Therefore there is a significant difference in values between those favouring preservation and those favouring multiple use regarding use of nature.

35. Humans need not adapt to the natural environment because they can remake it to suit their needs.

H_0 There is no significant difference in the values between those favouring preservation and those favouring multiple use regarding modification of the environment.

H_1 There is a significant difference in the values between those favouring preservation and those favouring multiple use regarding modification of the environment.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P		Mu	
5 (19)	5 (19.0)	5 (19)	2 (2)
5 (19)	5 (19.0)	4 (10)	2 (2)
5 (19)	4 (10.0)	4 (10)	
5 (19)	4 (10.0)	4 (10)	
5 (19)	4 (10.0)	3 (5)	
5 (19)	4 (10.0)	3 (5)	
5 (19)	3 (5.0)	2 (2)	

$R_1 = 216$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 216 = 15$

Critical U = 31

$15 < 31$, $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between those favouring preservation and those favouring multiple use regarding modification of the environment.

38. Mankind is severely abusing the environment.

H_0 There is no significant difference in the values between those favouring preservation and those favouring multiple use regarding the quality of the environment.

H_1 There is a significant difference in the values between those favouring preservation and those favouring multiple use regarding the quality of the environment.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P		Mu	
5 (21.5)	4 (14.0)	4 (14.0)	2 (3)
5 (21.5)	4 (14.0)	4 (14.0)	2 (3)
5 (21.5)	4 (14.0)	4 (14.0)	
5 (21.5)	4 (14.0)	4 (14.0)	
4 (14.0)	4 (14.0)	3 (6.5)	
4 (14.0)	3 (6.5)	2 (3.0)	
4 (14.0)	2 (3.0)	2 (3.0)	

$R_1 = 207.5$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 207.5 = 23.5$
Critical U = 31

$23.5 < 31$, $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between those favouring preservation and those favouring multiple use regarding the quality of the environment.

APPENDIX 3e

Test for Significant Difference by Dimension between Those Favouring Preservation Option (P) and Those Favouring the Multiple Use Option (Mu)

Laissez-faire Government

H_0 There is no significant difference in values regarding laissez-faire government between those favouring the preservation option and those favouring the multiple use option.

H_1 There is a significant difference in values regarding laissez-faire government between those favouring the preservation option and those favouring the multiple use option.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P				Mu			
32	(22.5)	27	(13)	29	(18.5)	16	(2)
32	(22.5)	26	(11)	28	(15.5)	13	(1)
30	(20.5)	26	(11)	28	(15.5)		
30	(20.5)	26	(11)	24	(8.0)		
29	(18.5)	25	(9)	21	(6.0)		
28	(15.5)	22	(7)	20	(5.0)		
28	(15.5)	19	(4)	18	(3.0)		

$R_1 = (201.5)$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 126 + 105 - 201.5 = 29.5$

Critical U = 31

$29.5 < 31$, $\therefore$ H_0 is rejected.

There is a significant difference in values regarding laissez-faire government between those favouring the preservation option and those favouring the multiple use option.

Economic Growth

H_0 There is no significant difference in values regarding economic growth between those favouring the preservation option and those favouring the multiple use option.

H_1 There is a significant difference in values regarding economic growth between those favouring the preservation option and those favouring the multiple use option.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P				Mu		
15	(23.0)	11	(14.0)	12	(16.5)	5 (2)
14	(22.0)	10	(13.0)	12	(16.5)	5 (2)
13	(20.0)	9	(10.0)	9	(10.0)	
13	(20.0)	9	(10.0)	8	(6.5)	
13	(20.0)	9	(10.0)	7	(5.0)	
12	(16.5)	9	(10.0)	6	(4.0)	
12	(16.5)	8	(6.5)	18	(3.0)	

$R_1 = (211.5)$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 126 + 105 - 211.5 = 19.5$

Critical U = 31

$19.5 < 31$ $\therefore$ H_0 is rejected.

There is a significant difference in values regarding economic growth between those favouring the preservation option and those favouring the multiple use option.

Man over Nature

H_0 There is no significant difference in values regarding man over nature between those favouring the preservation option and those favouring the multiple use option.

H_1 There is a significant difference in values regarding man over nature between those favouring the preservation option and those favouring the multiple use option.

$\alpha = 0.05$ $n_1 = 14$ $n_2 = 9$

P				Mu			
19	(21.5)	17	(16.5)	16	(14.5)	9	(1.5)
19	(21.5)	16	(14.5)	13	(9.5)	9	(1.5)
19	(21.5)	15	(12.5)	12	(7.5)		
19	(21.5)	15	(12.5)	11	(5.5)		
18	(18.5)	14	(11.0)	11	(5.5)		
18	(18.5)	13	(9.5)	10	(3.5)		
17	(16.5)	12	(7.5)	10	(3.5)		

$R_1 = (222.5)$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 126 + 105 - 222.5 = 8.5$

Critical U = 31

$8.5 < 31$, $\therefore$ H_0 is rejected.

There is a significant difference in values regarding man over nature between those favouring the preservation option and those favouring the multiple use option.

APPENDIX 3f

Test for Significant Difference between Those Favouring Preservation and Those Favouring Multiple Use

H_0 There is no significant difference in the values between those favouring preservation (P) as a preferred option and those favouring multiple use (Mu).

H_1 There is a significant difference in the values between those favouring preservation (P) as a preferred option and those favouring multiple use (Mu).

$\alpha = 0.05$ $\quad n_1 = 14 \quad n_2 = 9$

P		Mu	
169 (23)	143 (16.0)	141 (15)	100 (2)
167 (22)	140 (14.0)	135 (10)	93 (1)
158 (21)	138 (13.0)	133 (8)	
157 (20)	137 (11.5)	127 (7)	
155 (19)	137 (11.5)	126 (6)	
152 (18)	134 (9.0)	120 (4)	
150 (17)	123 (5.0)	108 (3)	

$R_1 = 220$

$U_1 = n_1 n_2 + \frac{1}{2} n_1(n_1 + 1) - R_1$

$U = 231 - 220 = 11$

Critical U = @ .05 = 31

$11 < 31$, $\therefore$ H_0 is rejected

Therefore there is a significant difference in values between those favouring preservation (P) as a preferred option and those favouring multiple use (Mu).

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