A Socio-Economic Research Program

for

Foothills Model Forest

by

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Introduction to the socio-economic program:

Sustainability and integrated resource management (IRM) are cornerstones of Canada's Model Forest program (Fig. 1). Sustainability has also been given high priority by the Canadian Council of Forest Ministers,[1] the National Round Table on the Environment and the Economy,[2] the Canadian Forest Service[3], and the Foothills Forest (Fig. 1). IRM is an especially prominent feature in the activities of the Foothills Forest. While the concepts of sustainability and IRM have been championed by government, industry, environmental groups, and local resource users in Canada and throughout the world, there is little agreement as to what they mean. This is particularly true of the human or socioeconomic elements of these concepts. Before any of the goals of the model forests program can be met, sustainability and IRM must be clarified in terms that include measurable socioeconomic concepts. The proposed socioeconomic research program will clarify what sustainability means to various groups of stakeholders, and will attempt to utilize socioeconomic variables and concepts in the Foothills DSS to inform IRM. Three methods are proposed below that assist in defining groups' and/or individuals' conceptions of sustainability as well their implications in practical terms with respect to local natural resource management.

Linking social science methods, data, and analyses to biophysical research is challenging. The sustainability of natural resources, and thesustainability of human systems that utilize and depend upon those natural resources, are key areas where the social and physical sciences overlap. The physical properties of natural resources (and associated commodities) within the Foothills Model Forest are important in considerations of both ecological and socio-economic sustainability. Trees are a renewable resource in human time frames, while coal, and oil and gas are not. That does not mean that energy resources cannot be managed sustainably, particularly in a mixed-sector resource development strategy. Tourism is often viewed as a non-destructive or non-invasive form of natural resource use, but there is ample evidence to suggest significant negative impacts at the landscape level can occur through recreational use (e.g. through fire suppression policies, effects of human user-density on wildlife, trail degradation, golf course construction, etc.). The Foothills Forest is currently examining many of the biophysical aspects of the natural resources contained within its boundaries. To date, little has been initiated on the socioeconomic aspects of the natural resources. The program outlined in this DOP and the others that follow will help to address this deficiency.

Broadening the range of human values considered in forest and resource management is one of the most important mandates now before natural resource managers and policy makers. There is also

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[1] CCFM. 1992. *Sustainable Forests: A Canadian Commitment.* Hull, Quebec. National Forest Strategy.

[2] Thompson, Steve, and Allison Webb. 1994. *Final Report: Forest Round Table on Sustainable Development.* Ottawa, Ontario. National Round Table on the Environment and Economy.

[3] There is currently an ongoing partnership between the CCFM and the Secretariat within the Forest Service to create Canadian Criteria and Indicators for Sustainable Forest Management.

increasing pressure to expand the range of ecological values included in resource management. **Figure 1. The goals and objectives of the National Model Forest Program and Foothills Model Forest.** Note that italics have been added by the authors and serve to illustrate socioeconomic linkages or to highlight new and innovative management concepts as opposed to traditional ones.

	Canada's Model Forest Program Objectives:
A.	To accelerate the implementation of IRM towards the goal of sustainable development in the practice of forestry which *balances social and environmental values* with the tradition of *timber value.*
B.	To develop and apply *new and innovative concepts and techniques* in the management of forests.
C.	To create *state of the art databases...* gathering information on *local communities* and their needs, and compiling statistics on *non-timber values* related to *culture, aesthetics, and recreation.*
D.	To develop ways to forecast the future state of the forest under *different management regimes.*
E.	To incorporate an on-going decision-making process which *involves public consultation* and involvement.
F.	To develop partnerships so that conflict is channelled into *concensus building* discussion with the common goal of *integrating a diversity of social, environmental and economic values.*
	Foothills Model Forest's Goals and Objectives:
G.	To achieve sustainable development and *integrated forest resource management* through conservation and *cooperation.*
H.	Through partnerships and stakeholder discussions, *identify and prepare a prioritized list of issues, uses and values* to be maintained and improved, and *use the input to develop IRM strategies.*
I.	Using concensus multi-stakeholder process monitor and *evaluate feasible technology*, and implement adaptive management for improvements.
J.	Employ the *best available, economically feasible technology*, and adopt processes and to develop *coordinated objectives.*
K.	Identify a *comprehensive list of environemntal, economic, social, cultural and spiritual values* and balance sustainable benefits to society wuth the stewardship responsibility of conservation.
L.	Base IRM on the principle of *accurate, thorough resource information* and management.
M.	*Develop and coordinate a process to evaluate alternatives, resolve disputes, develop concensus objectives*, organize partner action plans based on management objectives, and monitor and evaluate activities.
N.	Expand research initiatives towards an *interdisciplinary* management regime representing many disciplines and expertise.

Both the scientific and lay communities are interested in holistic, sustainable management regimes that account for and address all components of ecosystems.

In this new social climate natural resource managers have been charged with two important tasks. The first is to create an inclusive planning process that reflects the broad range of stakeholder values. The second is to create an ecosystem-based management regime, with a focus on the long-term integrity and sustainability of natural systems. The model forests across Canada must take the lead in integrating these two mandates into a practical and meaningful program. Indeed, the goals of this model forest program (Fig. 1) suggest this intent. This proposal represents a blueprint for defining stakeholders conception of sustainability and assessing the broad range of stakeholder values that exist within the Foothills Model Forest and within the Province of Alberta.

When discussing stakeholder values, an important distinction must be made between held and assigned values.[4] Held values refer to the moral constructs and ethical beliefs that serve as the foundation of our total value structure. These held values vary across cultures, generations, genders, and possibly stakeholder groups. They are normative, culturally derived, and in a constant state of evolution (for both individuals and groups). They may be assessed through quantitative or qualitative social science methods. Assigned values refer to the relative worth of things (goods, services or experiences) expressed in some common currency. Where they exist, price mechanisms reveal assigned values (through persons' willingness to pay for goods, services, or experiences). When price mechanisms are unavailable, social scientists use non-market valuation techniques to elicit assigned values regarding either willingness to pay, or willingness to accept.[5] This work will focus on both held and assigned values of stakeholders and the general public.

While the notion of "the public interest" still holds sway in some quarters, it is becoming increasingly difficult to manage natural resources in the public interest. There are currently many "publics" clamouring for a seat at the decision-making table. Furthermore most of the extractive resource industries in Canada utilize publicly owned land in which citizens in all parts of provinces have a stake. Given the uniqueness of the Foothills region, its ecological integrity may even be an issue of national concern. Of course, the social, economic, and ecological consequences of natural resource management and policy disproportionately affect local stakeholders.

Achieving consensus among diverse publics, and meeting IRM goals requires considerable knowledge of the human dimensions of natural resource use in the Model Forest region. The first step toward consensus is discovering where dissent exists. Furthermore, differences in the level and degrees of interests between different stakeholders must recognized and addressed in resource management and policy. As resource managers are only too aware, human values change. Practices

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[4] see Brown, T.C. 1984. The concept of value in resource allocation. *Land Economics* 60:1-15.

[5] Willingness to pay refers to what one will pay to obtain rights or access to a thing (resource). Willingness to accept refers to what one will accept in compensation for change in a resource that one already has some access too.

that were acceptable to the public twenty years ago are not acceptable today. The advent of new technologies require ongoing efforts to gauge public opinion and stakeholder concerns with natural resource management.

There is a vast range and considerable diversity among the actual and potential stakeholders of Foothills Model Forest region. Until recently, industrial users of natural resources -- with millions of dollars invested and producing jobs, income and generating wealth -- suggested that they were making the highest and best use of the land base and therefore had the most legitimate claim to influence land use policy and management. For decades, that position went unchallenged. Today however, First Nations and other Aboriginal Peoples are making a case that their legitimate interests in natural resource management have been ignored. As well, recreational users, both resident and non-resident, have suggested that they need more of a voice in natural resource management. In fact every resident of the province of Alberta is a legitimate stakeholder of provincial crown land. Industrial natural resource users are now recognizing these other interests and are responding to public pressure to open up the process of decision-making.

Key questions with respect to stakeholder interests and values include; how much weight should be ascribed to these various interests? What are the major differences in the values and attitudes of stakeholder groups? What is the best way to determine these values and attitudes? What are the major differences between stakeholder management and policy preferences? How should forest policy makers manage conflict between stakeholders? What decision-making framework should be used when consensus between stakeholders cannot be achieved? The proposed research will address many of these issues.

It is up to politicians and policy makers to determine the relative weights ascribed to different stakeholders interests. Social science research can contribute to the process by clarifying what those interests are, and how critical they are to individuals' overall well-being.

This proposal outlines four types of socio-economic research. The first (A.1), and the one which will be addressed specifically in the remainder of this detailed operating plan, entails an assessment of current methods and strategies employed by government and industry to incorporate "public" and/or stakeholder's values into resource management and decision making. Three components (B.1, B.2, B.3) employ different means toward the same end, gathering public input and delineating stakeholder values. The fourth (B.4) component entails the development of economic models. Several components of this socio-economic program will be delivered in a format suitable for inclusion in the Foothills Model Forest DSS. These are outlined in Figure 2 in the heavily outlined boxes. Other components, shown in the heavily outlined circles in Figure 2, may inform the development and use of the DSS, but are not specifically designed to create data or models for use in the DSS.

The objectives of the overall socio-economic program are listed in Figure 3. These objectives are linked in a series of 5 projects outlined in detail in further Detailed Operating Plans below. While these projects and specific activities have been designed to "stand alone" as activities to understand various stakeholder groups, they can also be linked to each other to provide more comprehensive

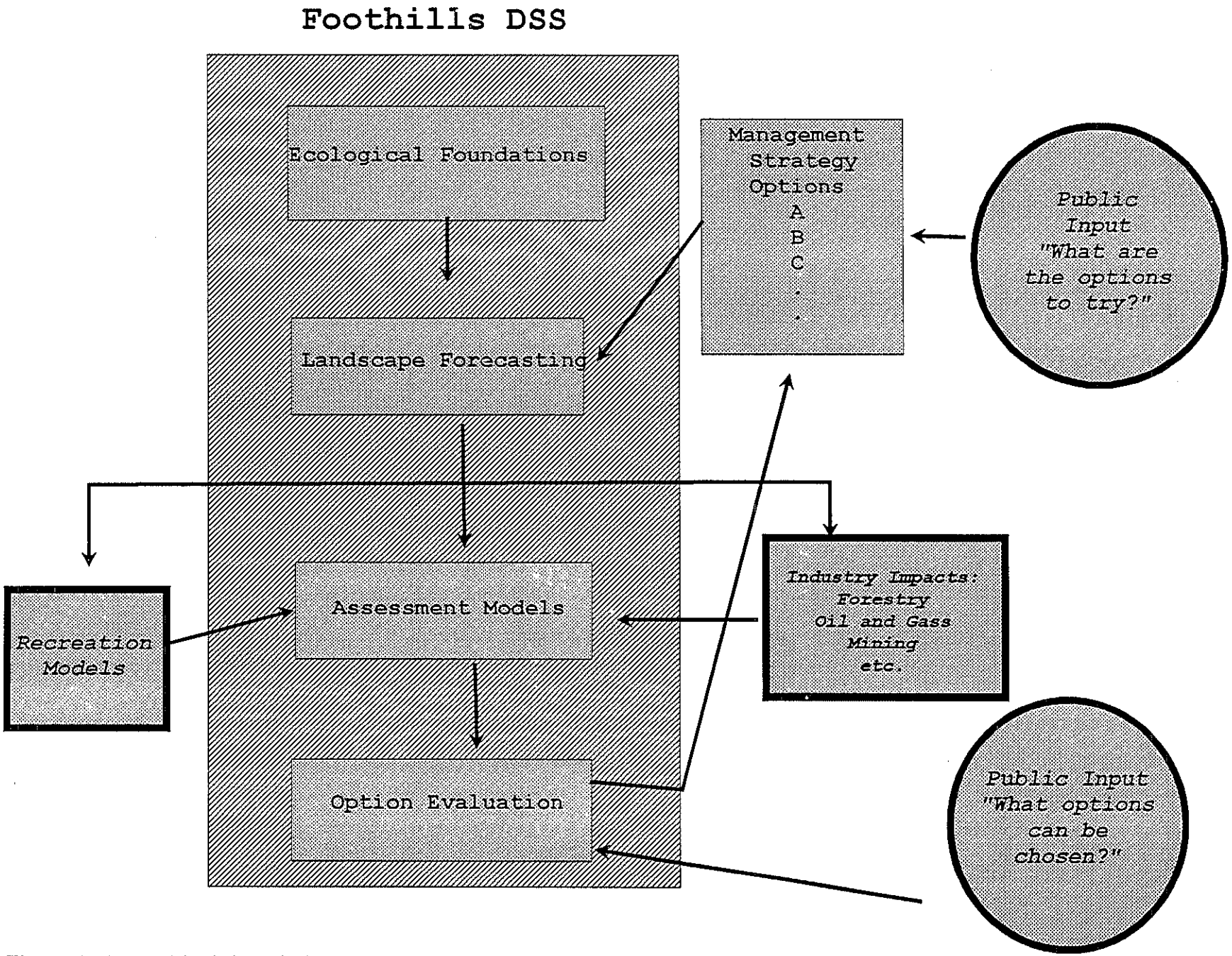

Figure 2. A graphical description of the linkages between some socioeconomic components in the research plan and the Foothills DSS.

pictures of socioeconomic concerns in the Model Forest area, and perhaps of resource management concerns anywhere in the province.

Figure 3: Overall objectives of the socio-economic program for the Foothills Model Forest

- To identify and define some of the stakeholders of the Foothills Model Forest.

- To clarify stakeholders' theoretical and practical definitions of sustainability and IRM.

- To reveal the held and assigned values of stakeholders, especially with respect to natural resource use.

- To compare value differences between some groups (local-non-local, industry-environmental groups, motorized-non-motorized recreationsists, etc.).

- To develop social and economic models for incorporation into the Foothills DSS.

- To assess and develop various methods for obtaining public input in forest management.

Figure 4 shows how these various elements can be linked to public input processes and to the Foothills Model Forest DSS. The intention is to study the linkages outlined in Figure 4 in detail in later phases of the research, and compare the results from the more structured research processes to those of what we refer to as "the traditional approach" to public involvement. This phase forms the first project in the socioeconomic program, and is outlined in detail below.

Table 1 is a review of the overall budget for the Foothills Socio-Economic Reserach Program.

Table 1. Foothills Model Forest Socio-Economic Research Program Budget Summary for 1995-1997 from all sources.

Funding Sources

Program Component	Foothills	In-Kind	Green Plan	Total
A.1 - Public Input	6000	20,000		**26,000**
B.1 - General Survey	49,000	60,000	10,000	**119,000**
B.2 - Social/Culture	23,000	17,500		**40,500**
B.3 - Recreation	60,000	130,000	20,000	**210,000**
B.4 - Economics	80,000	35,000		**115,000**
Total	**218,000**	**262,500**	**30,000**	***510,500***

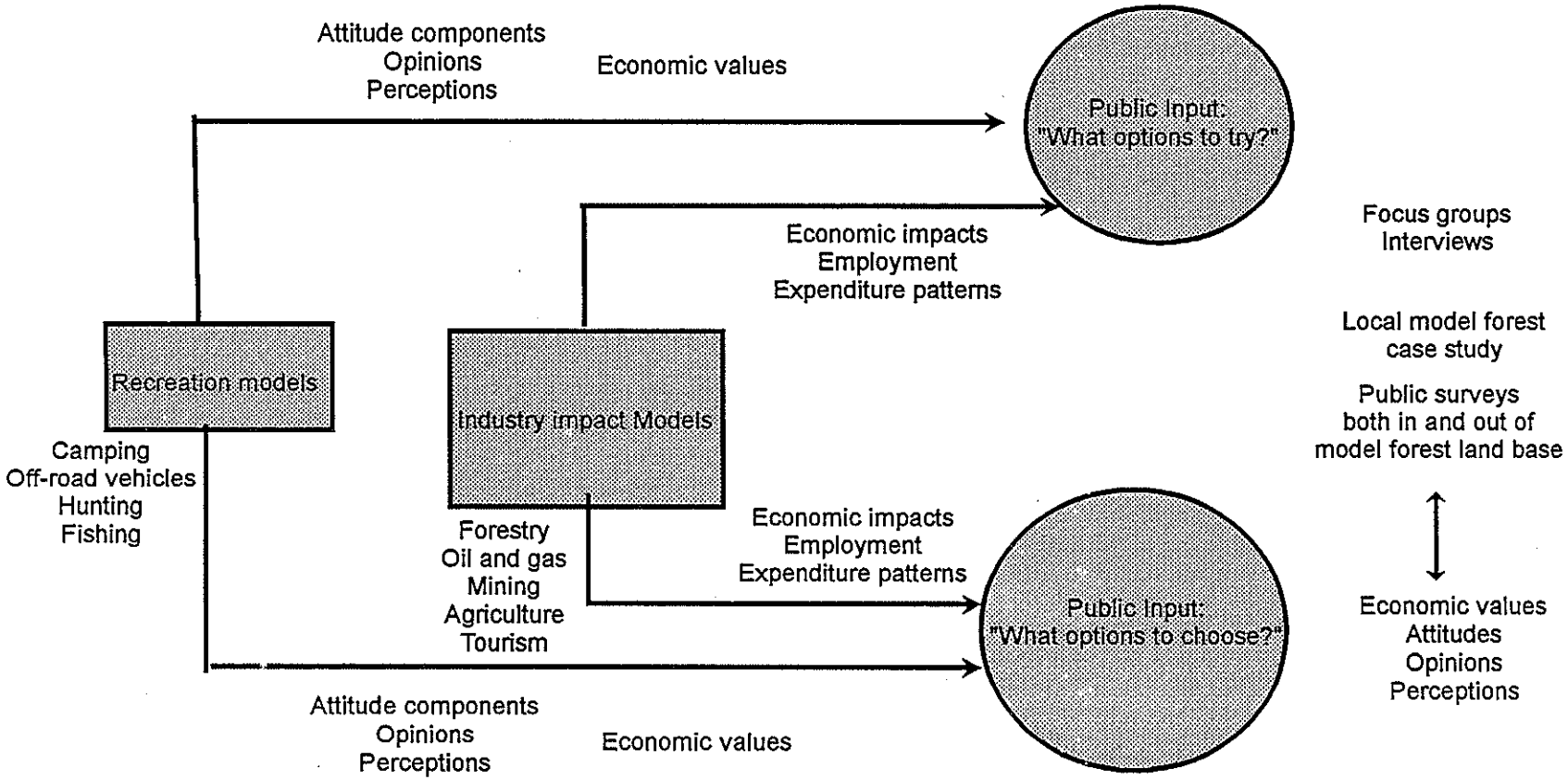

Figure 4. An overview of the methods, components and their linkages in the Socioeconomic Research Program in the Foothills Model Forest.

Project Title: A.1 - Overview and the Comparative Analysis of Public Input Mechanisms Project

Project Account Code:

Prepared by: Tom Beckley and Peter Boxall **Date Prepared:** 23 May 1995

Responsible Working Group Coordinators: Rick Blackwood and Don Laishley

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Introduction to the comparative analysis of public input mechanisms:

The intent of this program component is to examine existing processes for assessing local and provincial stakeholder[6] values with respect to natural resource use, and to look at how those values are incorporated in natural resource management and policy. For the past several decades, resource managers have garnered public input through local round tables of known stakeholders and through public meetings, and open houses. While these methods have come under criticism in recent years, they are not without some merit. One of the overall goals of this project is to assess the efficacy of these "traditional methods" of obtaining public input. Some current public involvement exercises currently employed are legal prerequisites to resource development (such as Weldwood's five year operating plans and Cardinal River Coal's Cheviot Mine Project). Other public opinion and public involvement exercises are voluntary efforts by industry intended to provide industry managers with an understanding of how their management practices are viewed by the general public (such as Weldwood's Forest Resource Advisory Group, the Foothills Partnership Program, industry sponsored focus groups, etc). Both mandatory and voluntary mechanisms for gathering public input will be analyzed in this project.

Social science methods for assessing attitudes and values toward natural resource use employed in components B.1, B.2, and B.3 will provide a rich, multi-dimensional quantitative and qualitative data set. These assessments of public and stakehholder attitudes and values will be compared to the attitudes and values expressed through traditional public input mechanisms. We will then be able to determine if the attitudes and values expressed through public meetings, round tables, industry sponsored focus groups, and partnership meetings reflect the attitudes and values expressed through social science methods such as mail surveys, face-to-face surveys, Forest Social Science Group sponsored focus groups, etc. There may be groups whose voices are not heard through the existing institutional mechanisms, but whose attitudes and values could be incorporated into future resource management and planning.

Purpose:

To document existing efforts by provincial, federal, and local natural resource stewards, and private industry to gather information on public and stakeholder attitudes and values. To assess how that

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[6] Local stakeholders may include, but are not limited to industrial users (forest products mill workers and owners, secondary processors that rely on wood from the region, loggers, truckers, and indirect beneficiaries of industrial forest use, oil patch workers and executives, suppliers and subsidiary industry, and mining workers and executives, suppliers and subsidiary industry), recreational users and the tourist industry (hunters, anglers, guides, outfitters, motel and resort owners, canoeists, birdwatchers, hikers, and other non-consumptive users), area residents (all residents of communities and unorganized territories within or adjacent to the Model Forest), subsistence users (primarily First Nations and Metis who continue to use the forest for significant proportions of their diet, for medicine, material culture, etc), and all other Alberta citizens and perhaps even future Alberta citizens.

information is used (e.g. incorporated into management and policy). To compare existing mechanisms for gathering public input to social science methods for measuring attitudes and values.

Goals and Objectives:

The goal of this specific project is to conduct a comparative analysis of traditional mechanisms to gauge public opinion and involvement ongoing in the model forest with the more structured and rigorous social science methods from the other 4 projects in the socioeconomic research program. The objective is to design and/or inform a more comprehensive method to incorporate public concerns in resource management decisions.

End Results:

This project will address or contribute to Federal Model Forest objectives A, B, C, E, and F (from Figure 1). It will also address or contribute to Foothills Model Forest Objectives H, I, K, M, and N (from Figure 1).

Study Location:

This research effort will be directed from the Northern Forestry Centre in Edmonton. However, considerable field work will be conducted within the Foothills Forest. Researchers will also attempt to attend meetings held outside the Foothills Forest that relate to natural resources within the Foothill Forest.

Methodology:

Three methods will be employed to gather information on public involvement efforts of government and industry. These include non-participant observation, face-to-face interviews, and analysis of secondary documents.

Researchers will attend a vast array of public meetings and other fora for assessing public attitudes related to natural resource use. These will include Cheviot Mine EIS meetings, Foothills Open Houses and Partnership Meetings, Weldwood's Forest Resource Advisory Group meetings, public meetings held in association with Weldwood's five year operating plan, Alberta provincial government meetings, and others. Field researchers will document the numbers and composition of attendees, what views are expressed, and how resource managers and stewards respond to public concerns.

Face-to-face interviews with resource managers and stewards that comprise the major data gathering exercise for component B.2 will overlap significantly with this program component. Executives from Weldwood, Cardinal River Coals, Gregg River Coal, Obed Mountain Coal Ltd., and the oil and gas interests in the region will be interviewed with regard to what types of public involvement efforts are legally required of them. As well, they will be questioned as to how the fulfill those requirements, and if and how they exceed or surpass them. They will be questioned regarding their opinions on the effectiveness of various mechanisms for assessing public attitudes. A similar line of questioning will

be posed to provincial agents responsible for natural resource management and oversight.

Finally, existing documents in the public domain on past attempts to include public input in to the planning and policy process will be reviewed. With cooperation from industry, we also hope to analyze results from privately commissioned studies of public attitudes and values in the region or province.

Linkages to Other Foothills Forest Activities:

As mentioned above, this activity will be closely linked to three other components of the socio-economic program, particularly component B.2 (Socio-cultural community case study). Results from components B.2, B.1 (General population survey), and B.3 (socio-economic models of recreation) will be used to make direct comparisons with data gathered for this component. More specifically, each of these components utilize different means for assessing public and stakeholder values and attitudes. The results of these various methods will be compared to determine if current means of gathering such information are accurate and adequate. If the research team determines that they are not, recommendations will be made on how to utilize social science methods to measure public attitudes and values on an ongoing basis, in a cost-effective manner.

This component also has significant linkages and implications for Foothills own public involvement efforts, information dissemination, and partnership structure.

The results will also help to inform the DSS. It will reveal what management options are socially acceptable and politically possible.

WORK PLAN - A.1 Overview and the Comparative Analysis of Public Input Mechanisms Project

Table 2.
Work to be completed by March 31, 1996

Task	Required Time Frame	% completed
Non-participant observation at public meetings	April 95 - March 96	50
Interviews with public and private natural resource managers	April 95 - March 96	80
Collection of documents that describe past public involvement processes	April 95 - March 96	80

Table 3. Work to be completed by March 31, 1997

Task	Required Time Frame	% completed
Non-participant observation at public meetings	April 96 - March 97	50
Interviews with public and private natural resource managers	April 96 - March 97	20
Collection of documents that describe past public involvement processes	April 96 - March 97	20

Table 4. Summary of major task elements for entire project and milestone dates

Task	94/95	95/96	96/97
Non-participant observation at public meetings			March 97
Interviews with public and private natural resource managers			November 96
Collection of documents that describe past public involvement processes			November 96
Progress Report to Foothills Model Forest		March 96	
Analysis of data - comparisons to results from components B.1, B.2, B.3			February 97
Final Report			March 97

Table 5: Project Budget by source (P=Pending, C = confirmed)

Source	P/C	94/95	95/96	96/97	total
Foothills Model Forest	P			$3000	$3000
Foothills Model Forest	C		$3000		$3000
In-Kind Support AB, SK, NWT PAIF (Beckley)	C		$5000	$15,000	$20,000
Total					$26,000

Table 6. Detailed budget expenditures, 1995-96

Item	Jan-Apr 1995	May-Aug 1995	Sept-Dec 1995	Jan-Apr 1996	Total
Travel	0	1000	0	2000	3000

Table 7. Detailed budget expenditures, 1995-96

Item	May-Aug 1996	Sept-Dec 1996	Jan-Apr 1997	Total
Travel	1000	0	2000	3000

Table 8. 5 year budget for Foothills Forest Direct Funding

Cost Centre	Account Code	94/95	95/96	96/97	Total
Travel		0	$3000	$3000	$6000

Table 9. Monthly cash flow for Foothills direct funding for 1995/96

Month	total
April	0
May	0
June	$3000
July	0
August	0
September	0
October	0
November	0
December	0
January	0
February	0
March	0

Project Title: B. 1 - Attitudes and Values General Population Survey(s)

Project Account Code:

Prepared By: Peter Boxall and Tom Beckley **Date Prepared**: 25 May 1995

Responsible Working Group Coordinators: Rick Blackwood and Don Laishley

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Introduction

This project component of the socioeconomic program involves the measurement of the general public's values and attitudes toward natural resource management. Both held and assigned values will be measured. The research will focus on the "wider" public, that is those individuals that may not reside in the Foothills Forest, and/or those that do not recreate or work in the forest. This component will provide a comparative analysis of the local (Hinton and other communities in the model forest) and non-local (Lethbridge, Calgary, Edmonton etc.) residents.

The impetus for this component rises from the fact that much of the industrial use of land in the Foothills Forest involves public land which is managed in trust for all Albertans. There are many perceptions of the attitudes, feelings, and beliefs that some rural and urban Albertans have towards

industrial public land use, many of which are untested and unfounded. We propose to empirically test many of these assumptions through a series of studies which are linked to the Recreation Component and Socio-cultural local case study of the Socioeconomic Research Program. The research will involve a preliminary phase which will entail the development of quantitative attitudinal scales, knowledge scales, and questions on trade-offs between various uses of the land in the Foothill Forest Region. This developmental phase will involve focus groups, on-site interviews, and the administration of survey instruments to samples of the general public and special interest groups. From this research, final survey instruments will be developed which will be administered to randomly selected individuals or households from the Foothills Forest and the general Alberta population.

The primary elements to be examined involve public input into the following:

i) Does the Alberta public understand forest management in the wider context?
ii) What is the range of forest management options acceptable to local and non-local constituents? What is the acceptable range of other resource management alternatives?
iii) If presented with potential combinations of forest outputs are they able to make informed choices?
iv) What are the specific concerns of the general public regarding the management of forests and other exhaustible natural resources in general, and in the Foothills Forest specifically?
v) What are their conceptions of sustainable resource development and sustainable communities? What are the origins of these concepts (e.g. from what sources have people heard about and/or learned of them)?

Purpose:

To develop an understanding of the attitudes and values that Albertans hold toward the industrial use of public land in the Foothills Forest. The emphasis in this component is a comparative analysis of the knowledge, attitudes and values of local and non-local residents, as well as examination of feasible combinations of land use activities.

Goal and Objectives:

The overall goal is to better understand the public's feelings towards industrial use of public land in the Foothills Model Forest Region. This will be the focus of Phase I. Phase II will utilize this understanding to develop survey instruments which incorporate broad public concerns in resource management. These goal will be served by the following specific objectives:

1. To develop measurement scales and instruments to gather public input in a structured process

2. To develop levels of knowledge and understanding of resource management activities and potential

on public land

3. To characterize the current levels of knowledge, and the attitudes and values of the Alberta public toward forest, oil and gas, coal and non-extractive use (tourism) of the regions natural resources

4. To compare these findings for residents in the model forest with those from other parts of Alberta.

5. To distill the findings for use in the model forest D.S.S., particularly in terms of public input into the types of resource management scenarios Foothills Forest should pursue, what resulting options would be feasible, and broad input (particularly from the perspective of Albertans who do not live, work or visit the area) into final selection of the appropriate management strategy.

End Results:

This project addresses or contributes to Federal Model Forest Objectives A, B, C, D, E, and F (from Figure 1). It also addresses or contributes to Foothills Model Fores Objectives G, H, K, L, and N (from Figure 1).

Study Location:

Geographically, the focus of this research is the Foothills Model Forest, though this element of the overall socioeconomic project will address the concerns of Albertans who live outside the area. Survey instruments will be administered, by mail, throughout the entire province. Research activity will be directed from the Northern Forestry Centre in Edmonton, and may involve contracted service for sampling from outside the Model Forest region.

Methodology:

A number of different social science methodologies will be utilized in this project. These include: structured interviews, focus groups, workshops, and on-site and mail-back questionnaires. A major concern in this project will be the aspect of sampling - especially, "who to sample", "how many", and "where". These questions will be answered with preliminary research and as well will be informed by other elements of the overall socioeconomic research program.

We are anticipating a sample of between one and two thousand for one or more than one survey. We plan to over sample residents from the Foothills Region in order that comparisons may be made between local and provincial attitudes and values toward natural resources. Random sampling within of specific, targeted stakeholder groups may also occur.

The surveys will include contingent valuation questions and choice experiments that will reveal the assigned values of respondents. Individuals will be asked to choose from a list of policy and management options. As well, held values regarding natural resource use will be revealed through Likert scale ratings of general statements concerning forest management and resource utilization.

Linkages to Other Foothills Forest Activities:

Information from face-to-face interviews in program component B.2 will be utilized in the development of survey questions for the general population survey. The survey results that relate to expressed held and assigned values will be compared to data generated in components A.1, B.2, and B.3. There will also be some overlap in the types of questions asked of recreational users and hunters from program component B.4.

Information generated by this component will also help to inform the Foothills Forest DSS and public involvement and information components of the Foothills Forest.

WORK PLAN - B.1 Attitudes and Values General Population Survey(s)

Table 1. Work to be completed by March 31, 1996

Task	Required Time Frame	% completed
Development of resource knowledge scales	Apr 95 - Mar 96	50
Development of resource attitudes and values scales	Apr 95 - Mar 96	100
Literature review	May 95 - Mar 96	100
Conduct focus groups	Oct 95 - Feb 96	50
Interview resource managers/stewards regarding stakeholder input and involvement	Apr 95 - Mar 96	100
Identification of relevant sample segments	Apr 95 - Mar 96	100
Identification of relevant environmental/landscape issues	Apr 95 - Mar 96	100
Develop and pre-test survey instruments	Apr 95 - Mar 96	75
Build sampling strategy	Apr 95 - Mar 96	75

Table 2. Work to be completed by March 31, 1997

Task	Required Time Frame	% completed
Development of resource knowledge scales	Apr 96 - June 96	100
Build sampling strategy	Apr 96 - June 96	100
Develop and pre-test survey instruments	Apr 96 - June 96	100
Implement survey	Apr 96 - Nov 96	100
Data entry	Oct 96 - Dec 96	100
Data analysis	Jan 97 - Mar 97	100
Final Report	Sep 97	100

Table 3. Summary Table of Major Task Elements for entire project and milestone dates

Task	94/95	95/96	96/97
Background to survey development			
a) Literature review		March 96	
b) survey resource managers/stewards		March 96	
c) focus groups			March 97
d) attitudes and values scale		March 96	
Sampling frame		June 96	
Implement survey		November 96	
Analysis of survey results			March 97
Final report			September 97

Table 4: Project Budget by source (P=Pending, C = confirmed)

Source	P/C	94/95	95/96	96/97	total
Foothills Forest	C		25,500		25,500
Foothills Forest	P			23,500	23,500
In-Kind support a) Canadian Forest Service (Boxall) b) Alberta PAIF (McFarlane) c) AB, SK, NWT PAIF's (Beckley)	C		 10,000 10,000 10,000	 10,000 10,000 10,000	 60,000
Green Plan	C		10,000		10,000
Total			65,500	53,500	119,000

Table 5. Detailed budget expenditures, 1995-96

Item	Jan-Apr 1995	May-Aug 1995	Sept-Dec 1995	Jan-Apr 1996	Total
Personnel Contracts - IMS & Other		7150	7150	7200	21,500
Equipment/Expenses		1500	1500	1000	4000
Grand Total					25,500

Table 6. Detailed budget expenditures, 1996-97

Item	May-Aug 1996	Sept-Dec 1996	Jan-Apr 1997	Total
Personnel Contracts - Research Assistant	3300	3300	3400	10,000
Contract - IMS	3166	3167	3167	9,500
Travel/Accommodations	1000			1000
Equipment	1500	1000	500	3000
Grand Total				23,500

Table 7. Five year budget for Foothills Forest Direct Funding

Cost Centre	Account Code	94/95	95/96	96/97	Total
Total			25,500	23,500	59,000

Table 8. Monthly cash flow for Foothills direct funding for 1995/96

Month	total
April	0
May	0
June	25,500
July	0
August	0
September	0
October	0
November	0
December	0
January	0
February	0
March	0

Project Title: B.2 - Socio-cultural community case study **Project Account Code:**

Prepared by: Tom Beckley **Date Prepared:** 23 May 1995

Responsible Working Group Coordinator: Rick Blackwood and Don Laishley

Activity Contact: Tom Beckley

Activity Team Members:

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Introduction

This project will provide some social, cultural, and historical context for other components of the socio-economic program, as well as produce a final report on the values and views of various stakeholder groups within the Foothills Model Forest. This component of the socio-economic program will address held values toward natural resources. It will also describe local conceptions and interpretations of the concept of sustainability in global and local contexts. The study will assess the degree to which consensus exists on conceptions of sustainable resource development and sustainable communities between various stakeholder groups in the Foothills Model Forest.

This work will also attempt to document some of the forces that have shaped the values and attitudes held by residents of the Foothills region. Historical examinations of the role of the energy and forestry sector will demonstrate how these industries have shaped the life and culture of communities within the Model Forest. The final report will summarize such background, secondary and historical information on community life in Hinton, Cadomin, Robb, Entrance, Brule, and other communities within the Foothills Forest.

Purpose

To assess the held values of natural resource stakeholders within the Foothills Model Forest area. Detailed interviews will provide highly contextual information about how individuals have come to hold the values they express and historical community profiles will reveal insights regarding more broadly held, community values.

Goals and Objectives

The overall goal of this program component is to understand local persons perspectives on natural resource use and development. This information will be incorporated into questions on the General Population Survey, and will inform the analysis of existing public input procedures. As well, the in-depth interviewing involved in this component may prove to be a useful tool for resource managers for gathering future public input. Specific objectives include the following.

1. To collect public attitudes and expressions of values from local citizens. These may be in regard to natural resources, or other values.

2. To gain a better understanding of the history of the community, particularly with respect to natural resource development and associated social, cultural, and demographic trends.

3. To characterize, through analysis of qualitative data, the current levels of knowledge, and the attitudes and values of the residents of the Foothills Model Forest toward natural resource use in the region.

4. To test willingness and unwillingness to express attitudes and opinions in a variety of group settings (focus groups).

5. To inform the model forest D.S.S. with respect to management options that may be acceptable and unacceptable to the local public.

End Results

This component addresses or contributes to Federal Model Forest Objectives A, B, C, E, and F (from Figure 1). It will also address or contribute to Foothills Model Forest Objectives H, I, K, L, M, and N (from Figure 1).

Study Location

This research will, for the most part, be confined to the boundaries of the Foothills Model Forest. Resource managers whose jurisdiction includes a larger region and who live outside the area may be interviewed. A summer student will work out of Edmonton collecting background data, historical information and analyzing census results. The focus of the research, and the bulk of the field work

will take place within the model forest, especially Hinton.

Methodology

Through qualitative participant and non-participant observation and face-to-face surveys, we will gather detailed information on the held values, policy preference and stakeholder conceptions of sustainability of representatives of local stakeholder groups. We will also ask people about where they receive their knowledge about forest ecology and forest management and have them self-rate the depth of their knowledge on forestry issues. The qualitative interviews and background research will also reveal the social, cultural, political, and economic context in which resource management decisions are made. Qualitative methods are particularly suited to assessing held values. Repeated contacts with respondents in multiple fora are more likely to reveal persons' moral and ethical beliefs than a mail survey. Representatives from at least seven different stakeholder groups will be interviewed. These will include the following 1)forest industry -- both wage and salaried workers from Weldwood and contractors, 2) recreational users -- consumptive and non-consumptive, 3) oil, gas and coal industry -- wage and salaried workers, 4) small business -- including tourism related businesses, 5) subsistence/non-industrial forest -- trappers, subsistence hunters, non-traditional forest products businesses, 6) environmental education and advocacy groups, and 7) miscellaneous individuals such as teachers, social workers, clergy, students, unemployed persons, etc.

Focus groups will be held with a select group of interview respondents. Homogenous focus groups will be held (with members of the same or similar stakeholder groups) and heterogenous focus groups will be held (with member of diverse stakeholder groups). The purpose is to see if group composition inhibits frank discussions of values, or encourages more ardent and radical expressions of held values toward natural resource.

The research assistant hired to do the field work for this project will also be engaged in a period of participant and non-participant observation. Non-participant observation will entail attending the public meetings of local governing bodies, social groups, service clubs, etc. Participant observation will entail informal interaction with local people. In a community the size of Hinton, outsiders are easily identified. When residents find out they are the subject of a sociological study, some are suspicious, but many want to voice their opinions. The researcher's role as a participant observer is to subject any and every interaction to scrutiny as a social scientist. A detailed journal of the period in residence is a useful tool for recording observations made during the period of field work.

Secondary data that also contribute to an understanding of various dimensions of local stakeholder values will also be collected. There is widespread consensus that 1) values about natural resources and natural resource extraction are changing, and/or 2) persons who previously did not voice their values are now demanding to be heard. Historical accounts of work in the mills, mines and forests, and archival data and descriptive accounts of past human interaction with the land and the natural resources contained therein may serve as a bench mark for measuring changes in values. Authorship of such material may also reveal which groups' values were considered in past forest management and policy.

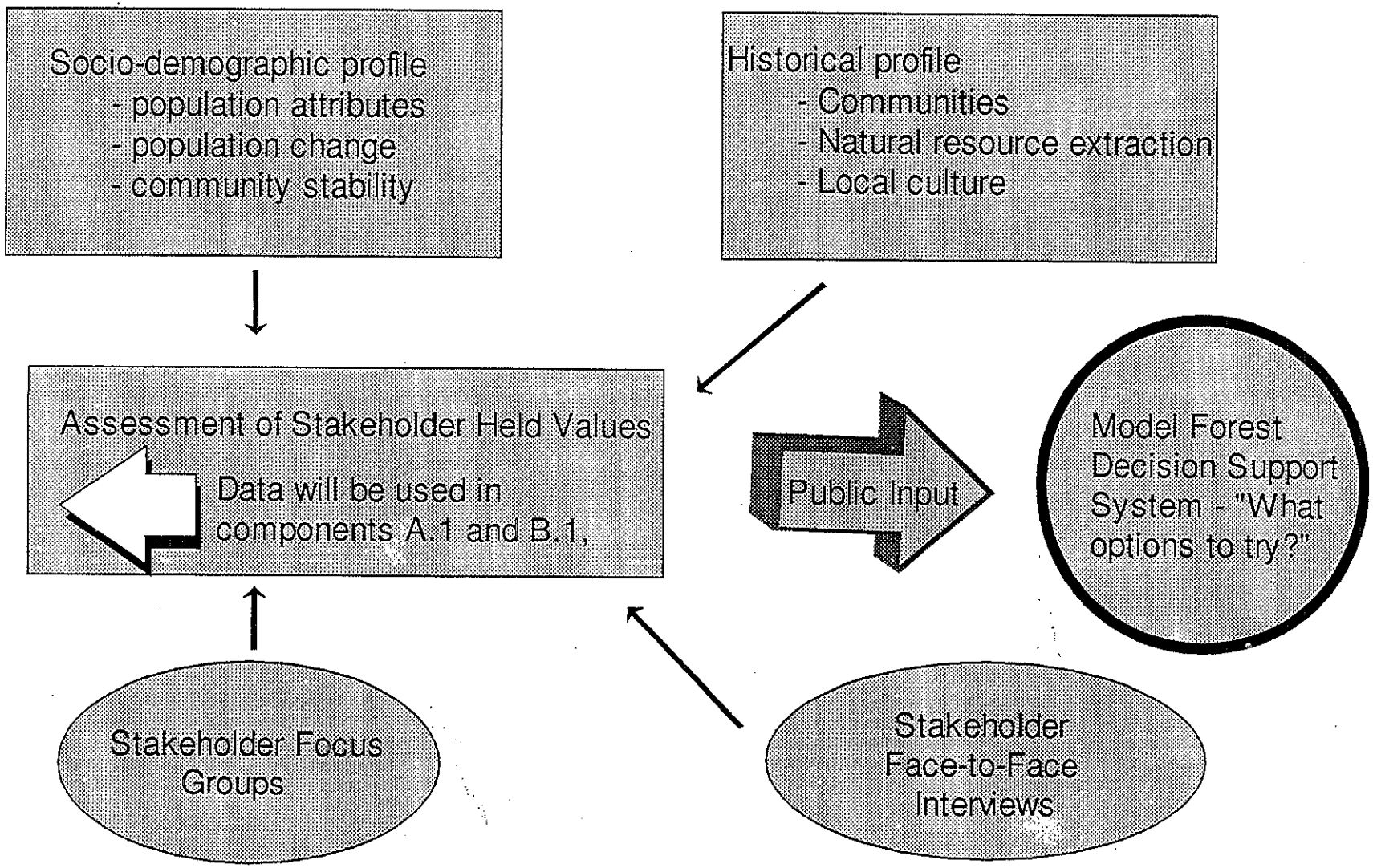

Figure 5: Data elements and outputs of socio-cultural community case study (B.2)

Figure 5 illustrates the data elements that will comprise this project. Primary data elements are designated with an oval, secondary data elements are designated as rectangles. Figure 5 also illustrates the expected outputs of this project. Those outputs will provide indirect input into the DSS and direct input into various other socio-economic components.

Links to other Foothills Forest Activities

This project component is linked to most of the other socio-economic program components. It is most closely linked with the General Population Survey (B.1). Information on held values gathered in this component will be used to help create survey instruments, and to create reasonable scenarios for changes in resource use for inclusion in choice experiments. Much of the demographic, historical, and cultural community profile will overlap with the economic profile of the region (B.4). The primary field researcher for this component will also be responsible for collecting data for the assessment of public involvement (A.1). While data from this component will be used to test the usefulness of existing public input processes, it is also new public input data in its own right and could be used to inform the model forest D.S.S.

WORK PLAN - B.2- socio-cultural community case study

Table 1. Work to be completed by March 31, 1996

Task	Required Time Frame	% completed
Determination of sample for face to face interview	April - Nov 95	100
Conduct interviews	April - Dec 95	100
Transcribe interviews	May - Feb 96	100
Collect historical and secondary material	March 95 - Feb 96	100
Progress Report to Foothills MF	November 95	100
Analysis of data	Jan 96 - Mar 96	100
Final Report	July 96	0

Table 2. Work to be completed by March 31, 1997

Task	Required Time Frame	% completed
Final Report	Apr 96 - July 96	100

Table 3. Summary of major task elements for entire project and milestone dates

Task	94/95	95/96	96/97
Sampling completed		Nov 30	
Conduct interviews		Dec 31	
Transcribe interviews		Feb 28	
Collect historical and secondary material		Feb 28	
Analysis of qualitative and secondary data		Mar 31	
Final Report			Jul 31

Table 4: Project Budget by source (P=Pending, C = confirmed)

Source	P/C	94/95	95/96	96/97	total
Foothills Forest	C	15,000	8000		23,000
In-Kind Support AB, SK, NWT PAIF (Beckley)	C		7500	10,000	17,500
Total					40,500

Table 5. Detailed budget expenditures

Item	Jan-Apr 1995	May-Aug 1995	Sept-Dec 1995	Jan-Apr 1995	Total
Personnel Contract - Evan Bedford	0	4000	6000	1000	11,000
CFS summer student (1/2 time)	0	3500	0	0	3500
Travel/Accommodations	0	1000	3000	500	4500
Equipment Transcriber/Dictaphone	0	350	0	0	350
Laptop computer/software	0	3500	0	0	3500
Tapes/Copying/Misc.	0	150	0	0	150
Grand Total					23,000

Table 6. Five year budget for Foothills Forest Direct Funding

Cost Centre	Account Code	94/95	95/96	96/97	Total
Contract Evan Bedford			11,000		11,000
CFS summer student			3,500		3,500
Other			8,500		8,500
Total			23,000		23,000

Table 7. Monthly cash flow for Foothills direct funding for 1995/96

Month	total
April	2400
May	2000
June	4000
July	5500
August	1000
September	1000
October	1000
November	1000
December	2500
January	2000
February	600
March	0

Project Title: B.3 - Socioeconomic Models of Recreation **Project Account Code:**

Prepared by: Peter Boxall, Bonnie McFarlane and Dieter Kuhnke

Date Prepared: May 25, 1995

Responsible Working Group Coordinator: Rick Blackwood and Don Laishley

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Introduction:

The Foothills Model Forest has an abundance of scenery, timber, mineral resources, fish and wildlife, and recreational opportunities. Demands for renewable and nonrenewable resources in the area create the potential for conflict among various stakeholder groups. Broadening the range of stakeholders and human values considered in natural resource management has become essential to successful management and is one of the greatest challenges to managers.

Recreationists represent major stakeholders in the Foothills Model Forest. However, very little is known about them. Information useful for recreation planning such as user numbers (eg., the number of occupied camping sites) has been collected in the past but does not provide information necessary for understanding their values. Understanding recreationists values in relation to natural resource management is an essential component in understanding and integrating stakeholder concerns in integrated resource management values and to forming successful and accepted resource management plans.

Purpose:

This component of the socioeconomic research project will examine recreation use in the Foothills Forest. The project will examine use patterns and economic and noneconomic (held and assigned) values of selected recreation user groups.

Goals and Objectives:

The primary goal of this component is to assess held and assigned values of groups of recreationists which are stakeholders in the Foothills Model Forest.

The following objectives will address this goal:

1. Assess the economic value of recreation in the forest.
2. Examine the attitudes of recreationists toward natural resource management.
3. Provide an overview of recreational activity in the area and socioeconomic profiles of recreation groups.
4. Develop a computer recreation model for the Foothills Forest DSS.

End Results:

This project addresses or contribute to Federal Model Forest Objectives A, B, C, D, and F (from Figure 1). It also addresses or contributes to Foothills Model Forest Objectives G, H, K, L, and N (from Figure 1).

Study Location:

Various recreational sites throughout the Foothills Forest will be used for collecting data. For example, Forest Recreation Area Campgrounds, William A. Switzer Provincial Park, and Blue Lake Adventure Centre.

Methodology:

The general outline of the research program is depicted in Figure 6. It involves a preparatory phase which involves understanding baseline recreation use in the area. Following this phase (which will utilize some of the social science methods outlined in Fig. 6), the development and administration of attitude and knowledge scales and recreation behaviour models will begin. The methods in use here involve multivariate techniques to define clusters of attitudinal groups, and travel cost models and choice experiments. These outputs will be used to assess held values, economic values and project acceptance by various recreation groups of natural resource management decisions (Fig. 6). Some of these aspects can be incorporated into the Foothills DSS. This is described in more detail below.

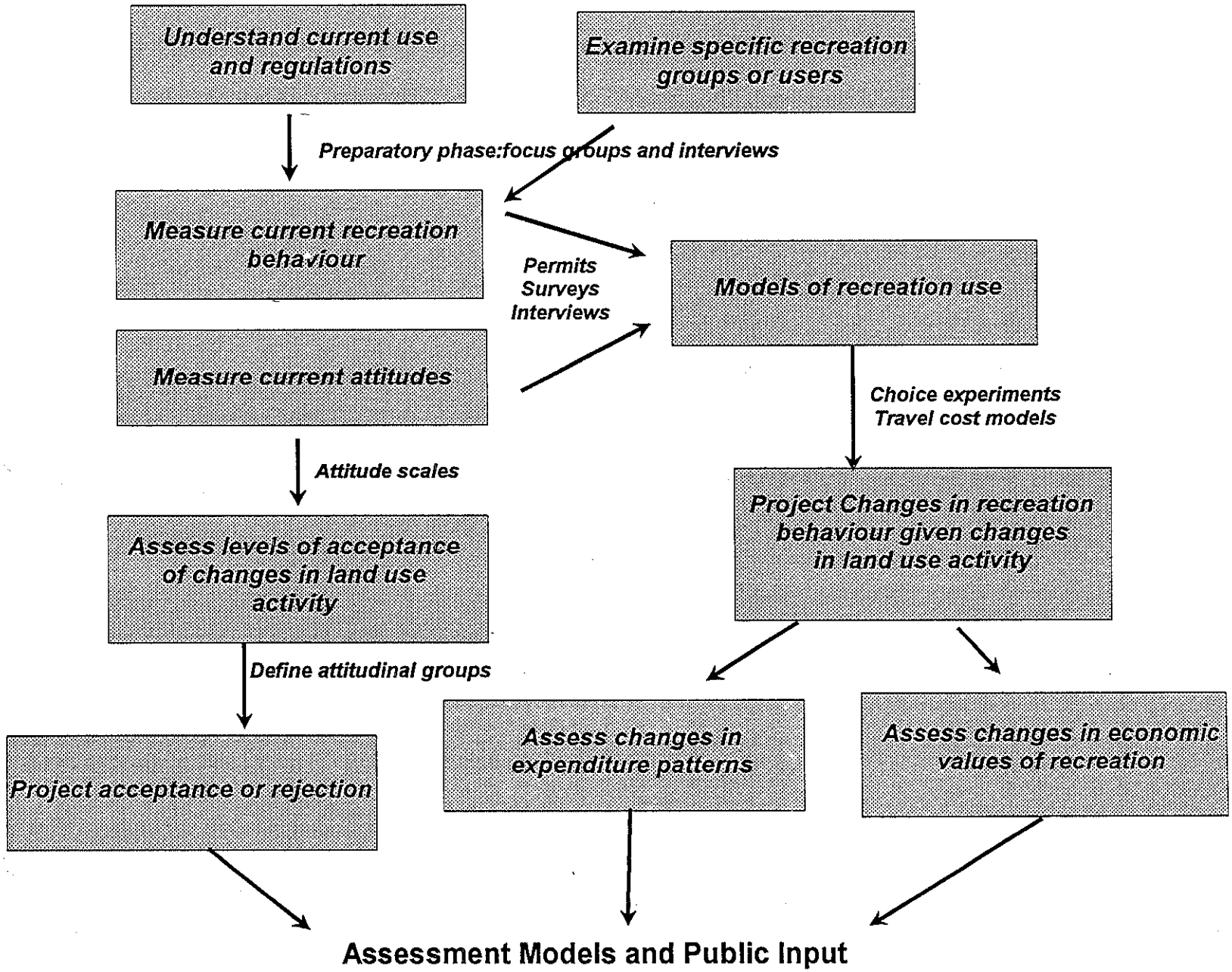

Figure 6. The research elements, activities, and their linkages in the Socioeconomic Models of Recreation Project

Assessment models can be constructed for a variety of activities that occur in the Foothills Forest. The Forest Social Science Research Group has done pilot research on methods (travel cost models and choice experiments) that result in models that examine how forest users respond to changes in the forest. These changes can be summarized in a DSS framework which should be relevant to the overall Foothills Forest management DSS. Although a number of activities should be investigated directly in a complete analysis of forest industry impacts, due to time and budgetary constraints we propose to examine two recreational activities (hunting and camping) in a DSS framework using these methods and off highway vehicle use, cross country skiing and fishing in a simpler analytical framework.

Hunting Component

Previous research in the Foothills Forest area involved an examination of a method called choice experiments. This method was applied to a sample of moose hunters who hunted in the model forest region in 1992. A DSS was successfully constructed which examined predicted changes in values and use patterns following changes in various characteristics of the habitat and landscape relating to forest industry operations. Further use of choice experiments have been successfully applied in Saskatchewan on moose hunters and wildlife viewers. We propose to utilize this process in a broader framework on hunting in general. We realize that hunting may not be the dominant use of the Foothills Forest, but given the construction of habitat models for some game species it is natural to link the biophysical analysis with a socioeconomic analysis. We propose to examine hunting in general, focusing on big game species. The assessment models will include variables such as access, congestion, and a variety of other quality features such as watchable wildlife and some forest industry landscape impacts. These characteristics will be more complicated than those initially used in the Alberta Moose Hunting study.

A sample of hunters will be drawn from provincial government license records and a questionnaire will be administered that collects information necessary to construct the choice model and other data to be used in other project elements (ie., traditional economics modules). The output will be a statistical model and DSS which predicts changes in use patterns and changes in economic or assigned values following changes in the forest landscape. A consultant will be hired (Intelligent Marketing Systems) to assist in the study design and the construction of the DSS. This company specializes in marketing applications using DSSs and has a proven track record with the Forest Social Science Group.

General Recreation Component

Economic values of forest resources will be investigated using travel cost models (TCM), contingent valuation, and choice experiments. Travel cost models for the Alberta Forest Service Recreation Area campgrounds and Switzer Provincial Park will be used to estimate the economic importance of camping in the Foothills Model Forest. The study will build on similar research conducted in the Rocky Clearwater Forest during 1994. Phase one of the project will involve the re-design of the existing provincial camping fee permits so travel cost data is available in a machine readable format. Phase two will involve on-site interviews with campers to collect information on use patterns, trip characteristics, expenditures, camping expertise and names and addresses for the

third phase of data collection. The third phase will involve a mail questionnaire. The mail questionnaire will include the administration of an attitudes and values scale, collection of information required to construct a choice model, and other data such as seasonal recreation expenditures.

Other recreational user groups which may be studied are off highway vehicle users, cross country skiers, and fishermen. Samples of these groups will be obtained from on-site visits and mailing lists of recreational organizations which use the Foothills Forest and commercial lodges. Their attitudes toward natural resources, socioeconomic characteristics, market areas of recreational users, and types and locations of recreational activities in the Foothills Forest will be examined.

Computerized DSS models from this component of the study may be used to evaluate the impact of various resource management scenarios on recreation in the area by predicting changes in values and use patterns following changes in various landscape characteristics. Resource management preferences of the various recreation groups and resource characteristics important to a particular activity will be determined, and will assist managers in selecting potential management scenarios.

Project Status:

Camping permits for the Forest Recreation Areas and Switzer Provincial Park have been re-designed and a sticker with the information necessary to construct travel cost models have been added to the camping fee permits. Permits were in place for the May long weekend. The camping registration sheets at Switzer were also re-designed and in place for the May long weekend. Compiling lists of recreation organizations and contact names began in May. Examination of the previous seasons hunting data and possible attributes for inclusion in the choice model has begun.

Links to Other Foothills Forest Activities:

This component of the socioeconomic project relates to other components within the project. For example, information collected from the local case studies will assist in determining the attitude dimensions and forest management issues for development of natural resource attitudes and values. Development and testing of the scale will coincide and link with the general population survey project, one of the 5 components of the socioeconomic program.

Successful linkages with the Foothills DSS will require considerable consultation with the managers of the various biophysical modules. For example, the Wildlife Habitat Supply Models developed in other projects in the Foothills Model Forest will assist in defining attributes for inclusion in the hunting model.

The information generated from this component will provide information for inclusion in the Foothills DSS. For example, it will provide information on which forest characteristics are important to various recreational groups, evaluate the effect of various management scenarios on values and use patterns, and identify which recreational groups might be most effected by changes in forest

characteristics.

This component contributes to the Foothills Model Forest objectives by assisting in the identification and prioritization of issues, uses, social and economic values, providing input to develop IRM strategies, evaluate implemented strategies, and contributing to an interdisciplinary management regime.

WORK PLAN - B.3 Socioeconomic Models of Recreation

Hunting Component

Table 1. Tasks to be completed by March 1996

Review of current hunting activity in the model forest area and surrounding regions.	May 95 - Aug 95	80%
Collection and determination of forest and other environmental attributes that affect hunting activity	May 95 - Oct 95	75%
Develop contract for experimental designs and decision support system development	Oct 95	100%
Hold focus groups with resource management experts and samples of hunters	Oct 95 - Feb 96	100%
Develop survey and other data collection instruments	Dec 95 - Mar 96	40%

Table 2. Tasks to be completed by March 1997

Complete review of hunting and collection of attributes of model forest area and surrounding regions.	Apr 96 - Jul 96	100%
Complete focus groups and pre testing of survey instruments	Apr 96 - Oct 96	100%
Develop samples of hunters from provincial government databases	Sept 96 - Nov 96	100%

Administer survey instruments samples of hunters	Nov 96 - Jan 97	100%
Analysis of data and report writing	Jan 97 - Mar 96	100%
Presentation of results and decision support system(s)	Oct 97	100%

General Recreation Component

Table 3. Tasks to be completed by March 1996

Establishment of 1995 recreation and permit data collection instrument (stickers on existing permits)	Apr 95 - May 95	100%
Overview of recreation in the model forest region including development of mailing lists, identification of recreation groups and associations, and commercial lodges etc.	May 95 - Aug 95	80%
Redesign of existing camping permits and evaluation of machine readable forms and equipment	Jun 95 - Oct 95	100%
Conduct on-site interviews and constituent sample development	Jun 95 - Mar 96	40%
Development of attitudinal and expertise measurement scales	Mar 95 - Mar 96	75%
Testing of measurement scales and development of on-site and mail survey instruments	Jun 95 - Mar 96	100%
Data Collection re. 1995 recreation data	Oct 95	100%
Preliminary examination of winter recreation (e.g. snowmobiling) including choice of activities, information collection instruments etc.	Oct 95 - Mar 96	100%
Site visits, collection of recreation and environmental attribute data	May 95 - Oct 95	75%

Table 4. Tasks to be completed by March 1997

Final decision regarding camping permits and redesign	Apr 96	100%
Administration of on-site recreation surveys	May 96 - Dec 96	100%
Administration of mail surveys	Apr 96 - Mar 97	100%
Entry of survey data	Apr 96 - Mar 97	100%
Analysis of data	Apr 96 - Mar 97	100%
Preparation of report and presentation of results and decision support system(s)	Oct 97	100%

Table 5: Summary of major task elements for entire project and milestone dates.

Hunting		
Review of existing data and understand current situation		
Develop research protocol	Nov 96	
Data collection	Jan 97	
Analysis and report writing	Oct 97	
Decision Support System(s)	Oct 97	
Recreation		
1995 database completion	Oct 95	
Review of recreation and choice of user groups	Mar 96	
Develop research protocol	Apr 96	

Final data collection	Mar 97	
Analysis and report writing	Oct 97	
Decision Support System(s)	Oct 97	

Table 6. Project Budget by Source (P=pending, C=confirmed)

Source	P/C	95/96	96/97	Total
Foothills Forest	C	33,500		33,500
Foothills Forest	P		26,500	26,500
Green Plan (DSS)	C	20,000		20,000
Support in kind:				
Alberta PAIF (salaries - B. McFarlane	C	20,000		20,000
Alberta PAIF (salaries -B. McFarlane)	P		20,000	20,000
Canadian Forest Service (salaries - P. Boxall, D. Kuhnke)	C	45,000	45,000	90,000
TOTAL		118,500	91,500	210,000