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T.M. Beckley, P.C. Boxall, L.K. Just, and A.M. Wellstead

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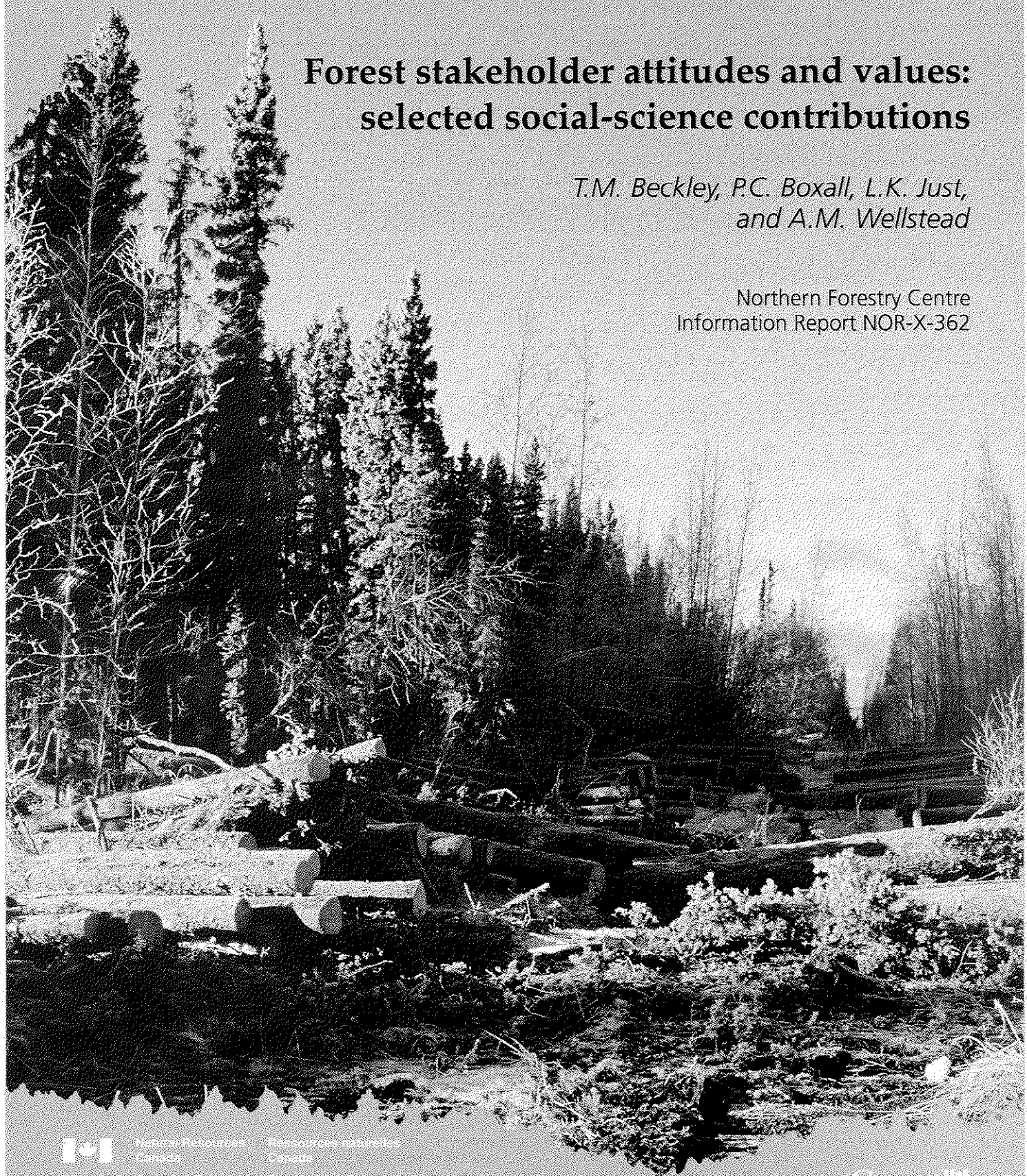

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FOREST STAKEHOLDER ATTITUDES AND VALUES: SELECTED SOCIAL-SCIENCE CONTRIBUTIONS

T.M. Beckley, P.C. Boxall, L.K. Just,[1] *and A.M. Wellstead*

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ABSTRACT

Resource managers are increasingly required to consider the views, perspectives, attitudes, values and policy preferences of the public in their decisions about natural resource allocation and use. The public comprises a multitude of stakeholder groups. This review is intended to introduce resource managers to some of the key social science literature on stakeholder attitudes and values. Social science researchers employ several methodological tools through which the general public, or specific publics, may express their views, perspectives, policy preferences, and values. Specific methods used by political scientists (policy community/policy network approach, and public choice theory), sociologists (questionnaires, surveys, semi-structured interviews, discourse analysis, and participant observation), and economists (input–output analysis, travel cost models, and contingent valuation and choice experiments) are reviewed in this document. We also discuss how social science research might be conceptualized as a form of public participation in natural resource management.

RÉSUMÉ

Les gestionnaires des ressources doivent de plus en plus tenir compte des opinions, des points de vue, des attitudes, des valeurs et des préférences en matière de politique du grand public lorsqu'ils prennent des décisions à l'égard de l'affectation et de l'utilisation des ressources naturelles. Le grand public se compose d'une multitude de groupes d'intervenants. Le présent document a pour but de présenter aux gestionnaires des ressources quelques-uns des principaux écrits en sciences sociales concernant les attitudes et les valeurs des intervenants. Les chercheurs en sciences sociales ont recours à divers outils méthodologiques grâce auxquels le grand public ou certains segments du public peuvent faire connaître leurs opinions, leurs points de vue, leurs préférences en matière de politique et leurs valeurs. Ce document examine certaines des méthodes utilisées par les politicologues (approche de communauté/réseau politique et théorie des choix politiques), les sociologues (questionnaires, enquêtes, entrevues semi-structurées, analyse du discours et observation-participation) et les économistes (méthode input-output, modèles des coûts de déplacement, étude des préférences exprimées et expériences de choix). Les auteurs examinent aussi comment il est possible de représenter la recherche en sciences sociales comme une forme de participation du public à la gestion des ressources naturelles.

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The exclusion of certain manufactured products does not necessarily imply disapproval nor does the mention of other products necessarily imply endorsement by Natural Resources Canada.

INTRODUCTION

Forest management and policy in Canada are currently in transition from a regime that places a high value on timber considerations to a management regime that recognizes all values associated with the forest.[1] Society is demanding that a broad range of human values be considered in forest and natural resource management. There is also increased pressure from many quarters to increase the range of ecological values included in forest management. Both the scientific and lay communities are interested in holistic management regimes that account for and address all components of ecosystems.

In this new social climate, forest managers have been given two important mandates. 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 that focuses on the long-term integrity and sustainability of natural systems. Integrating these two mandates into a practical and meaningful program will most likely be the greatest challenge to the forest managers of the next decade.

In order to fulfill the first mandate, forest managers need to identify the full set of relevant stakeholders, their interests, and their actual and potential roles in influencing planning and management decisions. Even more important is the need for forest managers to be aware of the complex social, political, and economic relationships among stakeholder groups. This is arduous because of difficult access to relevant information. While there is a moderate literature on stakeholders and stakeholder values, it is scattered among many diverse scholarly journals, books, and other publications both within and outside of the social sciences literature. These sources are not well-known to the forestry community, and consequently very little of this material has been used to inform policy development or forest management. Accordingly, this report highlights some past relevant research on stakeholders and stakeholder values, and provides a discussion of future research needs and directions.

In order to fulfill the second mandate—the creation of an ecosystem-based management regime that is inclusive of human participants—foresters need to know how different forest management regimes influence stakeholder values and attitudes. There are several central questions in this regard. Which groups and individuals win and which lose when a choice is made between two or more management strategies? Does ecosystem management represent a paradigm within which more win-win scenarios can be developed? Social science can contribute to resolving these questions.

This report stems from a Manitoba Model Forest project intended to review various methods and approaches to determine stakeholder values as well as a means to incorporating these values into resource management planning and practice. The authors of the current study believe that the findings of the model forest study are of broad interest because they provide some insight into social-science aspects of forest management. Such an approach, along with the discussion of human values highlighted in the current study, challenge the positive conclusions reached by some regarding the degree of public participation in forestry policy and planning in Canada. A broader knowledge of social science theories and literature might serve to improve future public involvement in this area.

The current section of this report defines the stakeholder concept and puts this concept in the perspective of Canada's forests, particularly those forests on public or crown land. This concept is then reviewed in the context of stakeholder involvement in management and policy making. A number of mechanisms of stakeholder involvement are discussed. A companion publication that annotates the citations herein is available (Beckley et al. 1999).

[1] For example, see the Province of Manitoba (1994) document entitled *Applying Manitoba's forest policies*, in which public participation is formally described in terms of "all relevant factors" and "all relevant values".

Why a Stakeholder Approach Is Important

A stakeholder approach recognizes that different groups and individuals hold different interests in forest management and policy. There are certain problems, however, with how the stakeholder concept is commonly interpreted. The term stakeholder is often mistakenly equated with user, which implies that nonusers or passive users are not legitimate stakeholders; however, the full spectrum of stakeholders includes both active and passive users of natural resources.

A more important issue is how to balance the different levels of competing interests. Another misconception is the assumption that individuals possess only one dominant interest or perspective on natural resource management. Consider, a logger who is an avid hunter, an all-terrain vehicle user, and who has Aboriginal status. This individual derives multiple benefits from the forest and thus is a stakeholder several times over. The conflict that can arise over different policy preferences or values held regarding forests might not only be articulated among individual stakeholders, but might also be internalized within individual stakeholders. The individual in the above example may experience internal conflict over his preferences for forest management and policy because of the multiple interests or stakes he has in the forest.

The Changing Social Landscape for Forest Management and Policy

The social landscape within which forest managers operate today differs dramatically from that which existed a decade ago. Corporate (private) and government (public) forest management practices are coming under increased public scrutiny. A traditional forest management paradigm has been in practice in Canada for generations. This traditional paradigm has professional foresters at the apex of the decision-making hierarchy. Within the traditional paradigm, decisions are sometimes made with only minimal public involvement (particularly on crown land); however, often no public involvement is required (primarily on private land). This paradigm, as well as provincial regulations, university curricula, and other institutions that support it, has emphasized industrial (fiber) uses of the majority of forest land.

Although the traditional paradigm has slowly evolved over the course of the last century, the fundamental tenets of that paradigm—that professional foresters are best equipped to make management decisions, and that fiber uses of forests are paramount—were not challenged until recently. In the last quarter-century, environmental concerns have increased. People have become more aware of the potential for humans to influence global ecological change, and many citizens have questioned the appropriateness of the traditional paradigm for natural resource management.

Public concern over natural resource management has led to a demand for better and more comprehensive public involvement in natural resource policy and management decision making. At the federal level for example, the main goal of Canadian Council of Forest Ministers (1992) ". . . is to maintain and enhance the long-term health of our forest ecosystems, for the benefit of all living things both nationally and globally, while providing environmental, economic, social and cultural opportunities for the benefits of present and future generations."[2] The accord itself is evidence that a multi-stakeholder approach is slowly replacing the traditional forest management paradigm. Among the signatories of the accord are government, industry, Aboriginal and environmental leaders, forest sector unions, and professional forestry associations.

The impact of the accord led to development of two other important initiatives that seek to incorporate public views and values into resource management and decision making. The Final Report of the National Forest Round Table on Sustainable Development (1993)[3] calls for increased and better quality public involvement and the recognition of Aboriginal rights with respect to forest resources. It emphasizes the "distinctive needs of forest and

[2] A copy of the Canada Forest Accord was included in the following publication: Forestry Canada. 1993. The state of Canada's forests, 1993: third report to Parliament. Minister of Supply and Service, Ottawa, Ontario.

[3] National Forest Round Table on Sustainable Development. (1993). Final report.

communities and cultures" and stresses that in a multi-stakeholder framework, conflict resolution will be important. The same document suggests that public land use, allocation, and tenure policies need to be reviewed on an ongoing basis so that adjustments can be made in response to changes in societal values. The Canadian Council of Forest Ministers also called for increased public participation in forest-management policy development in 1992.[4]

These initiatives are indicative of a new forest management paradigm that accepts meaningful public involvement as imperative rather than optional. Direct public involvement in natural resource management is, however, expensive and time consuming. Although it is favored over other approaches as the most legitimate, it is hardly the most cost-effective. An inexpensive alternative that might replace or complement participatory approaches are social science tools that analyze public and stakeholder attitudes and values. Key attitudes and values can be identified without face-to-face consultation. (Some of these methods are reviewed in this report.)

Theoretical Dimensions of Stakeholder Participation in a Natural Resource Context

Forest stakeholders are those individuals, groups, organizations, businesses, and corporations with interests in a land base and its associated natural resources within a defined geographical area. Stakeholders vary from specific industrial, commercial, or recreational interests to wide-ranging economic, social and political interests. The interests at stake might not always be obvious, even to those who hold them. Further, determining which stakeholders have a legitimate role in decision-making is one of the challenges in stakeholder analysis (Lawrence and Cook 1982). Those responsible for natural resource management face the additional challenge of determining the relative weight of stakeholder interests and influences.

There are several perspectives on stakeholder functions. They can be viewed as a means for the development or preservation of resource; conversely, the social welfare of stakeholders can be viewed as the ends for which resources are managed. The stakeholder, depending on the perspective taken or on the situation, can therefore be defined as a partner (e.g., an active participant or agent of resource management) or as a client (a person or group for whom resources are managed). The perspective adopted depends largely on the exact nature of a given stakeholder's interest (Evan and Freeman 1993). For example, the function of a shareholder in a business venture is vastly different from that of a recreationist using crown lands for chosen activities.

A problem that frequently arises, given this diversity of interpretations of stakeholder status, is that some stakeholders are unable to recognize or understand the perspectives of other stakeholders. Each stakeholder group weighs the importance of the resource in question according to its own criteria. Furthermore, some stakeholders want to be active participants in the process, while others simply wish to be clients of responsible resource management agents. This leaves resource managers in the difficult position of balancing the direct interests of active users who seek decision-making partnerships, with the diffuse interests of more passive stakeholders who do not have the time or inclination to become directly involved in resource decision making.

To determine the needs of a stakeholder, that stakeholder's relationship with the resource in question must first be identified. The Canadian government uses multi-stakeholder input processes, or round tables, to develop policy based on comprehensive information. Round tables serve to complement elected bodies as policy decision instruments, though round tables are unlikely to replace such bodies as the final decision makers. These processes bring together, as equal partners, selected representatives from government and non-government organizations, business, labor, Aboriginal groups, and others.

An evaluation by Doering (1995) concludes that at this early stage of round-table processes, the role of stakeholders in government decision making is modest. Round tables usually involve a limited number of groups. These groups are invited to contribute by the sponsor of the round table process. While round tables are not a perfect tool for stakeholder involvement, they often represent an

[4] Canadian Council of Forest Ministers. 1992. Sustainable forests: a Canadian commitment. National Forest Strategy, Canadian Council of Forest Ministers, Hull, Quebec.

improvement over the previous *status quo*. Stakeholder input is still essential in developing effective policy and round tables can expose decision makers to new perspectives. Even poorly articulated stakeholder interests can influence policy implementation and resource management through the round-table process (Gale and Miller 1985; Wurther 1991).

Perceptions of stakeholder interests are as important as stakeholders' formal articulations of their stated interests. Elected officials act on what they think their constituents will favor. Similarly, appointed government resource managers make decisions based on their perceptions of stakeholder interests. Conflict can result when stakeholders' interests differ significantly from what resource managers assume them to be (Vining and Ebreo 1991). Kellert and Brown (1985) note that recognizing that stakeholders' positions are diverse and subject to change over time is essential to proper analysis.

A common problem of stakeholder identification stems from the fact that all citizens (at the federal or provincial level) are legitimate stakeholders of crown lands. This is based on the principle that crown land is public land and should therefore be managed in the public interest. The notion of a public interest in forest management masks a multitude of competing or conflicting interests. The notion of a public interest also downplays the point made earlier, that stakeholders vary dramatically in their degrees of interest or stake. Social science can contribute to stakeholder identification in a variety of ways: by helping to define stakeholder categories, by documenting stakeholders' articulations of the nature of their interests, by documenting the degrees of stakeholders' concerns and interests regarding forest management, and by attempting to create a common metric whereby interests of a very different nature (from spiritual to financial) might be compared. Greater and better knowledge of forest stakeholder attitudes, values, and interests will lead to more informed decision making by forest managers and policy makers. At the very least, this line of research will help managers and policy makers to know, in advance of decision taken, who will be in favor of a given decision, and who will be against it—and why.

Conflict Between Stakeholders Over Participation in Forest Decision Making

The diverse group that comprises forest stakeholders represents different human uses of forests and of land-based resources. The group includes the direct players in forest management and policy: industry, government, and nongovernmental environmental organizations. There are others, such as hunters, trappers, entrepreneurs who produce nonindustrial forest products, Aboriginal peoples, and passive users of forests who also are part of the stakeholder group. Over time, some these stakeholders have been formally organized as special-interest groups. Industry is represented by forest products associations, whereas recreational users and environmentalists are represented by nongovernmental organizations that can be local, regional, national, or international in scope. Aboriginal peoples are represented, in some instances, by their own bands, and in others by coalitions of bands, regional tribal councils, or national Aboriginal groups or associations. Local communities are represented in a variety of ways, through clubs, chambers of commerce, and local elected officials. These organized stakeholder groups compete with one another in their attempts to shape and influence forest and other natural resource policy.

Government presents itself as, and is thought by many to be, the legitimate mediator of these competing interests with respect to forest management on public land; however, some levels of government, or some branches of government, can be considered stakeholders themselves. In recent years it has not been uncommon for provincial governments to be active promoters of resource development, while at the same time holding responsibility for the management and stewardship of those same resources (Pratt and Urquart 1994). As well, local governments, to the extent they represent local interests and not the broader public's interest in natural resource policy development, can also be considered a stakeholder group.

Competition and conflict among these groups has increased in recent decades. The increase is partly due to North Americans' demand for a much more diverse stream of benefits from the forest than was provided in the past. For much of the last 200 years, the social needs of public and private forests in the western world were predominantly utilitarian and their immediate social value was well-expressed in market prices. As these countries became urbanized, romantic and symbolic forest values increased, particularly as forest land and wilderness became scarcer. Today, the social and economic values derived from forest recreation, landscapes, nongame wildlife, and the very existence of wild or semiwild forest ecosystems are of

increased importance. These forest values are gradually becoming articulated in policy debates, and subsequently codified in policy and management proscriptions (Kennedy 1985).

Utilitarian social values are often in conflict with current romantic or symbolic forest values, thus foresters are increasingly placed in the role of conflict managers. In what they do and do not do, foresters can mitigate or exacerbate social conflict over forest use (Kennedy 1985). Yet, conflict is a normal, even desirable, process in society and often serves as a catalyst of much-needed change (Pendizich 1993). Therefore, in a resource-policy context, conflict itself is not the problem; the problem often lies in how the conflict is managed.

Most contemporary forest lands are managed for multiple purposes, even though one use might predominate. When these multiple uses are contradictory (that is, when use by one interest group is perceived to be counter to the interest of another), conflict among stakeholders can arise. These conflicts can result from different interpretations of factual information or of different sets of facts, from differences in underlying social values, or from imbalances in perceptions of who bears the costs and who receives the benefits from a given policy. Conflicts can go unresolved because existing institutional structures fail to address the real roots of the dispute. When these conflicts go unresolved, benefits are often lost and social, political, and managerial costs can be high (Abubakar and Lord 1992).

One empirical study on conflict over timber production and watershed management found that the bases of conflict can lie in fundamental value differences, with attention focused inappropriately and unproductively on factual issues (Abubakar and Lord 1992). A more-effective strategy for resolving conflict in many instances can involve identifying the underlying sources of conflict and focusing efforts (research, consensus-building exercises, innovative management practices, etc.) to those sources rather than through gathering of additional factual information that will be viewed differently given the divergent stakeholders values involved.

Cormick (1992) also addressed the issue of whether environmental conflict produces more equitable public participation in resource decision making. Cormick concluded that environmental disputes might not lead to community empowerment, and could actually dis-empower poor or minority communities. When there is a debate over the public good, some attempt is made by policy makers to define the public good. The debate is then framed without the input of politically marginalized segments of society.

One tool currently used by provincial governments in the prairie provinces to minimize environmental disputes is the environmental impact assessment (EIA). One study, based on two controversial cases concerning the approval of pulp mills in Manitoba and Alberta, takes the position that although the EIA has moved from the margin to the center of political debate, it internalizes rather than overcomes the conflict between economic development and environmental preservation (Novek 1995). Novek claims that governments, in the contradictory position of development promoters and environmental regulators, have used the EIA process both as a means of political legitimization and a way to diffuse social and political conflict by attempting to frame them as technical issues. This has raised questions about the role of economic power, scientific expertise, and public participation in the EIA process. Novek believes that EIAs can be very useful for the resolution of technical issues; however, they rarely adequately address the underlying stakeholder value conflicts over proposed developments. The same participants come forward when the next megaproject is proposed and again, significant public funds are expended in treating the symptoms rather than the causes of environmental conflict.

Contrary to common perceptions about disputes over forest use and management, conflict often exists within broad categories of stakeholders. Among industrial forest users, conflict can arise between different types of tenure holders (e.g., Forest Management Agreement licensees and timber quota holders). Some research has been done on conflict between various recreational users of forest or land resources. Watson et al. (1993) discussed the sources of conflict between hikers and horse-users in several national parks in the U.S. They found that such conflicts can require separate use policies for specific trails in order to reach resolution.

Actual and Potential Public Involvement in the Rational Policy-making Model

New paradigms in natural resources management place great emphasis on incorporating the diversity of views and values into natural resource decision making and policy. In order to incorporate public and stakeholder views and values, methods are needed to assess those views and values. These mechanisms can be direct (meetings, workshops, and focus groups, for example) or indirect (such as surveys, content analyses, participant and nonparticipant, and other social science research tools). Past efforts at including public involvement, even though they were often direct, were widely recognized to be inadequate given the social and political climate regarding forest policy.

In the old paradigm of forest and natural resource management, public-comment periods are established as part of most planning exercises. The public is invited to comment on draft management plans through open houses, at public meetings, or by mail. This generally occurs between the policy formation and policy formalization phases of the rational policy-making model (Fig. 1).[5] In the traditional forest management paradigm, the public is not substantively involved in any other stages in the rational policy-making model.

In new forest and natural resource management paradigms, public involvement usually has a greater priority. The potential exists to include the public in several phases of the policy process, from problem identification to policy evaluation (Fig. 2). Different stages in the policy process can lend themselves to direct or indirect assessment of public attitudes and values. Given the high priority of this issue, a combined approach that includes both direct methods and supplemental indirect methods would probably produce the best results.

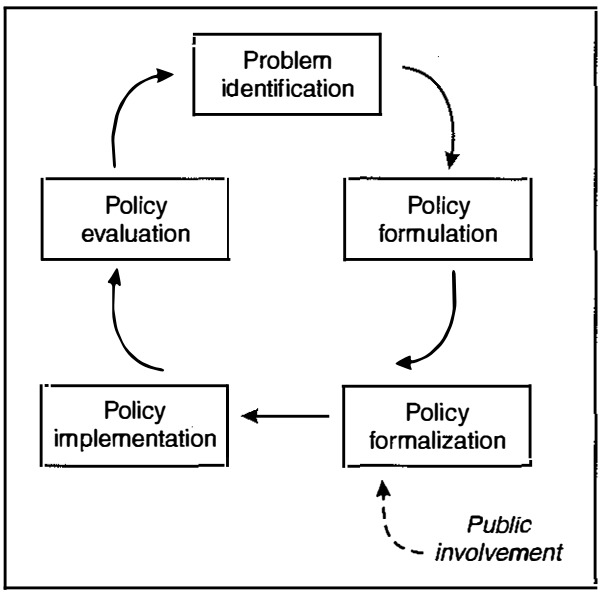

Figure 1. Location of traditional efforts to involve the public in the rational policy-making model. Adapted from Brooks (1993).

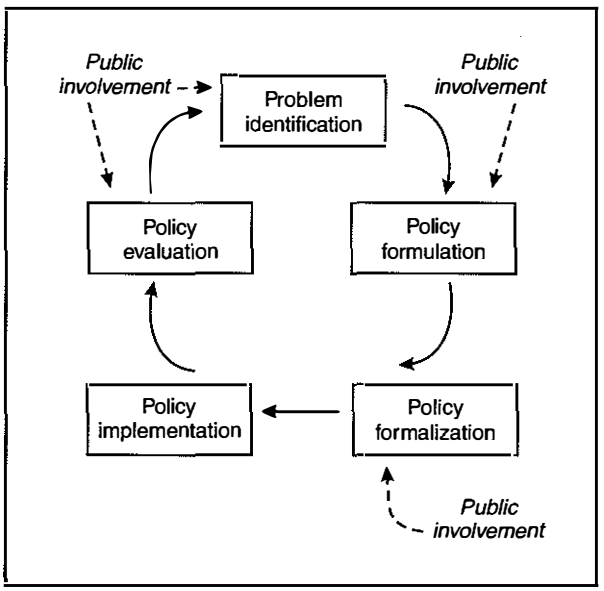

Figure 2. Potential opportunities for public involvement in the rational policy-making model. Adapted from Brooks (1993).

[5] For further discussion of the rational policy-making model, *see* Brooks, S. 1993. Public policy in Canada. McClelland and Stewart, Toronto, Ontario.

As previously stated, there is a growing awareness of the political necessity of including citizens in public-resource planning and management activities. The most technically sound sustainable resource policy will not likely succeed or be long-lived without public and stakeholder support.

Criticisms of current North American public participation mechanisms were put forth by Cortner and Shannon (1993), who claimed that positive changes can occur only if public participation is embedded within its political context. If the public is viewed only as a set of interest-holding individuals whose preferences are shaped outside the planning process, then public participation is merely a means to gather data for an information base. On the other hand, the public can be understood as a dynamic group of individuals who can learn about themselves and about one another, and whose preferences can be shaped through the planning discussions. Agency managers, individuals, and interest-group participants can see each other as people with diverse and perhaps unexpected views. Through such experiences, shared interests can be discovered. To date, resource managers and policy makers have focused on educating the public on technical issues of resource management while ignoring the potential for shared learning regarding other stakeholder interests, perspectives, and ultimate policy goals.

In the United States, there now exists a legal requirement to involve the public in the management of federal land. Gericke and Sullivan (1994) reported that the *National Forest Management Act* requires the Forest Service to give individuals and organizations access to the planning process. Due to the greater-than-anticipated level of dissatisfaction with land management plans, however, the role of public participation in the planning process has been questioned. Gericke and Sullivan stated that the conflict resulting from disagreement among individuals, interest groups, and the U.S. Forest Service about proposed management actions or decision-making processes is related to fundamental beliefs about what actions are appropriate on public lands.

The above discussion addresses governmental efforts at public involvement. In Canada, industrial stakeholders are the *de facto* managers of vast expanses of commercial forest land. They find themselves in a similar situation to government in regard to relationships with other stakeholders. The public's increasing scrutiny of industry management in recent years is seemingly due to a general decline in public confidence in industry's willingness or capability to manage resources sustainably. Thus, there are calls from competing stakeholders for their inclusion in the management of public crown lands leased to industry. Higgelke and Duinker (1993) asserted that in order to achieve participation in forest-management planning in Canada, a range of public involvement techniques should be used in both public and private contexts. Broad support from within forest-products companies is required to make public involvement programs work well and to maintain their credibility for the public. Companies must effectively portray a willingness to listen, to change (take corrective action when necessary), and to admit mistakes. A clear demonstration that public involvement can lead to tangible policy or management changes is vital to convincing the public that its input was valued and that its involvement was worthwhile. Even further conflict can result if industry or governments solicit greater public input but fail to incorporate recommendations from such processes into policy and practice.

Mechanisms and Processes of Public and Stakeholder Involvement

Various mechanisms have been proposed to encourage public participation in the resource-planning process. The most common, though often least-effective, mechanism is the public meeting. Gundry and Heberlein (1984) reported that opinions obtained at public meetings appear to broadly represent those of the relevant public only if the meetings are well-publicized, if they are held so that all parties have easy and equal access, and if all participants at the meeting are actually consulted about their opinions. Public hearings, opinion polls, workshops, and quasi-experiments[6] are other mechanisms commonly employed to obtain public input.

[6] The term quasi-experiment was coined by Campbell and Stanley (1966) and cited by Heberlein (1976). Heberlein writes, "Only rarely does a social experiment meet all the criteria of a true experimental design; hence, Campbell and Stanley (1966) have labeled such approximations as quasi-experiments".

Of these four techniques, the workshop and the quasi-experiment hold the most promise (Heberlein 1976). A workshop in which the public can participate with the planners and decision makers is useful only when it is augmented with techniques to ensure that representative groups will be included in the meetings. Nonetheless, mailed questionnaires and information books can substitute for a workshop. By setting up experimental situations or taking advantage of natural variations, by observing the behavior of individuals, and by measuring their reactions, managers can obtain public input that is based on actual experience rather than on hypothetical situations. Through experimental design, managers can act to ensure representativeness even if the relevant populations are spatially distant. None of these techniques is without flaws, nor do they take the burden of decision making from the manager. A combination of these techniques that allows each to counter the flaws of the other might be far superior to present attempts at public involvement (Heberlein 1976; Knopp and Caldbeck 1985; Johnson et. al. 1993; Rocheleau 1994).

The public hearing often fulfills functions unrelated to the incorporation of the public needs into the decision-making process. Its effectiveness can also be limited by problems of representation. Interest groups tend to be overrepresented, and a number of social-psychological factors act to prevent many people with legitimate interests from attending or participating in public hearings. Although public-opinion polls solicit input from a representative public, they are costly and sometimes difficult to conduct; furthermore, when responses are based on low levels of information, they are often unstable and ephemeral (Heberlein 1976).

Social impact assessment (SIA) and planning are essentially sociopolitical processes that, within the constraints of the law and government administration, should facilitate bargaining and negotiation among interest groups. Strategic-perspectives analysis has been designed as a flexible procedure that can be used to conduct both participatory and political applications of SIA. In a progression from position-analysis techniques, the method uses strategic-planning principles to elicit the vision, objectives, and strategies of each party. Facilitators in this process help stakeholders articulate their interests within the planning process (Dale and Lane 1994).

Another strategy available to natural resource industries is surveying their internal public (company employees) through a variety of mechanisms. As this internal public likely represents local community concerns, recreationists' concerns, and sometimes Aboriginal concerns, this group might be a good starting place for companies to assess a possible public view of their performance. The internal public can also serve as an important review body for company policies and programs, and a test audience for planned public presentations (Higgelke and Duinker 1993). It is important to note that internal publics should only be considered a starting point for gathering public input. Surveys of internal populations can help with issue identification, but given contemporary and historical power structures in resource-dependent communities, internal publics can be reticent to voice dissent regarding the *status quo* (Beckley 1996).

Alternative Mechanisms for Public Involvement and Dispute Resolution

There are several new models currently being developed and practiced throughout Canada that attempt to redress past imbalances in the relative weights that stakeholders have had in shaping and directing forest policy and management. Community forestry and comanagement are two such models that emphasize local participation. Comanagement usually involves a committee of local representatives that consults with either provincial managers or industrial lease holders over specific areas of concern. Most comanagement agreements are related to a single species of wildlife or to other finite issues (Haugh 1994). Few agreements have attempted to address the broad range of forest uses and values. One experiment in forest comanagement has met with only limited success. This is partly due to the fact that comanagement partners (industry and local Aboriginal communities) did not have legal authority to manage the full spectrum of forest values (Beckley and Korber 1996).

The community forestry model represents a further step toward local control of natural resources. In this model, the community actually owns or holds the lease for some portion of its surrounding forest land. Regardless of whether this land is managed for single or multiple uses, the primary beneficiaries of the management strategy adopted are community members. Although this model addresses the past exclusion of local interests, it raises equity issues with regard to nonlocal stakeholders (e.g., urban recreationists or passive users) when crown land is involved (Duinker et al. 1994).

Alternative dispute resolution through mediation, consensus, or other means has received substantial attention in the United States following the *Administrative Dispute Resolution Act* of 1990 (Floyd et al. 1996). This act encourages land managers in U.S. federal agencies to use alternative mechanisms. This often means turning to alternative forms of public involvement for dispute resolution. At least one author has suggested that this new approach has yet to move far beyond the stage of encouraging rhetoric (Yaffee 1994). Floyd et al. (1996) examined 12 cases of forest resource management disputes in the United States and provided a quantitative analysis that identified variables in dispute resolution associated with successful mediation exercises.

Conflict resolution, consensus, and mediation are the subjects of an annotated bibliography commissioned by the Manitoba Model Forest (Smith 1994). Readers are referred to that document for a more thorough review of these subjects. A few additional items have been identified that relate specifically to conflict resolution in forestry contexts. Bostedt and Mattsson (1996) discussed differences between two types of institutions commonly associated with conflict resolution. Drawing conclusions from cases in Sweden and the United States, Bostedt and Mattsson compared adversarial institutions to cooperative institutions and suggested that natural conditions and stakeholder positions and values must be considered when choosing the most-appropriate institution for conflict resolution.

Eberle et al. (1992) reviewed 15 initiatives that involved some element of conflict resolution. The geographical focus was on the Pacific Northwest and Alaska, but also included one case from Alberta. The cases ranged from actual agreement (a timber/fish/wildlife agreement in Washington State) to ongoing dialogues (forest-environment round table in Alberta) to research initiatives in forest-conflict resolution (Consortium for Social Values, USDA Forest Service in Washington).

There is at least one theoretical article on a dispute-resolution mechanism that has yet to be tried empirically. Brown et al. (1996) suggested that values juries, analogous in many respects to citizen juries in criminal trials, could be used to adjudicate disputes or to make decisions on the disposition of natural resources. The juries would be charged to render decisions in the best interests of society. The authors saw utility in values juries in two scenarios: deciding among management or development options, and deciding levels of compensation in cases involving environmental damages.

Floyd et al. (1996) criticized the existing literature on conflict resolution and alternative dispute resolution for its normative biases, and for its tendency to report case studies uncritically, without any systematic, quantitative analysis of variables that lead to success or failure. The paper's analytical framework helps determine whether mediators are effective, how group size influences the effectiveness of decisions, and how the length of time involved influences participants' views of success. Further research of this type is necessary. Success in conflict resolution involving forestry disputes must be measured in two ways: first, by the durability of outcomes of such processes; and secondly, by the subjective assessments of participants in the process (e.g., whether participants were satisfied with outcomes). Over time, the durability of decisions will be determined, but social science, qualitative case studies, and quantitative analyses will help determine key ingredients for successful conflict resolution in forestry.

Lawrence and Daniels (1996) is an annotated bibliography on public involvement in natural resource decision making. The report reviewed the goals of public involvement and also included a normative discussion of the principles of public involvement.

STAKEHOLDER ATTITUDES AND VALUES

The Importance of Attitudes and Values in a Stakeholder Approach

Before stakeholder attitudes and values can be incorporated into resource allocation and management decisions, some assessment of those attitudes and values must be made; however, systematic assessments of stakeholder values are rarely done in Canada. This is troublesome because many resource-allocation decisions involve publicly owned land, in which every citizen potentially has a stake in the outcome. While direct methods of

measuring stakeholder values remain useful, the use of indirect measures of large samples of specific stakeholder interest groups and the general population will ensure that interest groups do not dominate the process and impose their personal values on the outcome. Indirect methods can serve as a check on direct methods, to ensure that the views of the majority of the population, and not just vocal, organized groups, are also heard and considered.

Assessing values of large samples of stakeholders also enables managers, researchers, and decision makers to examine values on temporal and spatial scales, and permits the specific comparison of different stakeholder groups on an equal footing. Assessments of attitudes and social science valuation methods are important complements to structured forms of public involvement in resource management contexts.

Concepts of value, however, are diffuse. Because most resource managers are trained in the physical and biological sciences, they have not been exposed to the many concepts of value and attitude. They may, therefore, distrust the methods used to measure values and might not have training and expertise in understanding the use of these values in resource-allocation decisions. This section outlines the theoretical background of the concepts of value represented in the current literature in this important field.

The Concepts of Held and Assigned Values

Various social-science disciplines are concerned with values. Although sociologists, political scientists, psychologists, and economists all speak of value as a humanly produced concept originating from preferences, morals, and ideals, the exact nature of a value is an unresolved issue.

Regardless of specific value concepts, an important distinction exists between what Brown (1984) called held and assigned values. The lack of clarity among narrow, disciplinary uses of the term value often results in the failure to acknowledge this basic difference. Held values are modes of conduct, beliefs, morals, qualities, and states considered to be desirable by individuals and groups. Assigned values, on the other hand, are derived from held values; they are worth ascribed or assigned to given goods or services. Whereas held values are abstract because they are closely associated with human beliefs and norms, assigned values are more concrete in that they are theoretically measurable in some common currency. Assigned values are associated with economic systems (Brown and Manfredo 1987) and some are clearly expressed through market mechanisms. Assigned values not related to markets can still be measured through noneconomic social-science research tools.

Human values can exist as social systems that are shared and mutually developed by a group of people. According to Rokeach (1973), a value system of an individual is that person's organized set of held values. These value systems exist in conjunction with established social values. The preference of one value over another, however, differs from individual to individual; there is, therefore, the potential for different held and assigned values between and within stakeholder groups.

Held social values can be further divided into the two categories of instrumental or terminal values (Rokeach 1973). Instrumental values are those means through which a person lives, while terminal values are the ends one seeks in life. Examples of instrumental values include honesty, fairness, and kindness. Examples of terminal values are freedom, equality, world peace, and friendship. Rokeach (1973) further subdivided instrumental values into moral values (honesty, kindness) and competence value (logic, rationality), and terminal values into personal values (happiness, freedom) and social values (equality, sense of community).

While it is widely believed that values inform attitudes which, in turn, direct behavior, there exists a great amount of research to dispute this claim (Cooper and Croyle 1984; Chaiken and Stangor 1987; Tesser and Shaffer 1990). In fact, the nature of the relationship among values, attitudes, and behavior has not been satisfactorily clarified. Respondents often report values and attitudes consistent with their self-reports of behavior; however, discrepancies between respondents' self-reported attitudes and their actual behavior has been repeatedly recorded by observers. This indicates that a variety of contextual social factors equal to or of greater influence than personal attitudes account for behavior. Sivacek and Crano (1982) suggested that holding vested interests in a situation is one potential predictor of attitude-behavior consistency among people in that situation. Other potentially influential factors on behavior include the perceived attitudes of others, the different interpretations of a situation, social trends, cognitive dissonance, and

numerous nonrational psychosocial factors (Tesser and Shaffer 1990).

Social Values and Attitudes Toward Natural Resource and Environmental Issues

There is substantial evidence that western societies are currently in a period of rapid and significant change in terms of their forest values. Some researchers have asserted that managing forests in ways that are responsive to diverse and changing forest values is the main challenge faced by public forest managers (Bengston 1994). Still, there is some conceptual confusion in much of the academic literature on the subject of the relationship among values, attitudes, interests, and ethics to forest and natural resource management. It is seldom clear if held or assigned values are being implied, or which should be given greater weight in policy decisions. According to Brown (1984), a forest can have both specific (educational, food, commercial) and unspecific (general, overall) assigned values. Brown also noted that a primary source of confusion between held and assigned values results from "the fact that held values, the labels we use to describe concepts of the preferable, are objects in the comprehensive sense of the term used here. When one states that one held value . . . is superior to another . . . , one is assigning value to held values" (Brown 1984). An example of this phenomenon is the Rokeach Values Survey, in which respondents are asked to rank lists of both terminal and instrumental values based on their order of personal importance (most to least).

Dunlap and Van Liere (1978) were among the first to document large-scale changes in held values toward the environment. Until approximately the early 1960s, the dominant social paradigm (DSP), which was anti-ecological and technological, emphasized progress, development, and the exploitation of the environment for human economic gain. In spite of the predominance of an anthropocentric DSP, new social ideas have emerged in recent decades that challenge it. The new environmental paradigm is characterized by supportive attitudes toward concepts such as limits to growth, achieving a steady state economy, sustainability, preserving the balance of nature, and the necessity of rejecting the notion that nature exists for human exploitation. While there has been a noticeable shift in held values toward the environment, the pace of environmental reforms suggests there could be a significant lag between held value change and subsequent modification of assigned values.

Another important area in relation to natural resource issues is the difference between personal and social values. According to Brown (1984), all individuals fall somewhere along a self-society continuum. The value one assigns to a natural area or park will depend upon whether one is representing oneself, and his/her family, community, or entire society. Assigned values reflect the welfare of the resource owners, but do not always lead to welfare maximization for that owner. A variety of other human factors often interfere and result in less than optimal assignment of value (Brown 1984).

There is much debate on how particular socioeconomic factors influence the formation of values and attitudes on environment and natural resource issues. For example, it is widely assumed that personal values are related to environmentalism, and it has been hypothesized that individuals motivated by Maslow's higher-order values are especially likely to engage in proenvironmental behavior. Dunlap et al. (1983) tested this hypothesis by examining the values of a sample of recyclers. Compared to a national sample, the recyclers were found to emphasize higher-order values such as aesthetics and self-actualization, and to de-emphasize lower-order values such as safety and security. While the differences are reduced somewhat when the recyclers are compared to a matched subsample with similar demographic characteristics, the basic pattern of differences remains.

Jackson (1989) reported on a study in Alberta to investigate the extent to which views on preservation and development of resources for recreation and other purposes reflected more deep-seated attitudes and values toward the environment. The study also assessed the degree (if any) of elitist bias in preservationist perspectives. Survey data were collected on views toward development, preservation, recreation, environmental and natural resource related issues. Urban respondents tended to express preservationist attitudes and responded unfavorably to pro-development statements. This group also favored controlled development and the use of public land for recreation and other nonindustrial purposes. Study data showed an association between favorable attitudes toward specific resource preservation and more general environmental preservation. Socioeconomic status had little effect on the relationships found in this study. This finding contradicted earlier work that

suggested that environmental and resource preservation attitudes are predominant among the middle class and upper-middle class elites (Harry et al. 1969).

Jones and Dunlap (1992), however, did find differences in environmental attitudes in the U.S. when controlling for variables such as age, occupation, education, political orientation, and geographical location. Analysis of survey data revealed that younger adults, the well-educated, political liberals, Democrats, those raised and currently living in urban areas, and those employed outside of primary industries were found to be consistently more supportive of environmental protection than were their respective opposites. These attitudes have been relatively consistent within these social strata for the last two decades.

Cultural factors are also noted as being a primary source of value difference, particularly in the Canadian Aboriginal and Euro-Canadian populations. According to Booth (1994), the historical valuation of nature by Aboriginal peoples went beyond a strictly materialist form of instrumentalism. Booth asserts that North American Native peoples treated the natural world with a respectful attitude and as a consequence, might have exercised restraint in their use of nature's resources. There is much debate, however, on the accuracy of ethnographic interpretations of Native culture. The claim that nature was viewed by Aboriginal peoples as valuable in itself, an idea which is a product of a rather modern form of abstract ethical reasoning, might be going too far. Recent research has delved further into the issue of the possible value differences that exist between Aboriginal and nonaboriginal forest users and the potential for nonmarket valuation techniques to reveal such value differences (Adamowicz et al. 1998).

There is a need for more research in these areas. Bengston (1994) outlined some of the more pertinent questions that this research should attempt to answer. For example, what is the nature of forest values? That is, can all forest values be reduced to a single dimension, as assumed in utilitarian-based traditional forestry and economics, or are these values multidimensional and incommensurate? What specific values are involved? What is the structure of forest values? That is, how are they related to each other in value systems? How and why have forest values changed over time? And finally, what do changing forest values imply for ecosystem management approaches? These are all relevant questions for future social science research.

Methods of Assessment of Attitudes and Values

Debate exists in the social sciences regarding the quantitative and qualitative approaches to assessing values. An advantage of quantitative methods is that they provide a metric by which values can be assessed temporally or spatially. In economics, these values are determined by behavior and the metric used to assess values is usually monetary. In social psychology, values are considered reflections of attitudes, which are assessed by scoring or ranking the importance of various statements that are presented to individuals. In this section of the report, articles relevant to the theory, measurement, and application of these approaches to stakeholder valuation are assessed. The topic of the various methods and measurement scales of social and economic values is so diverse that it requires a report on its own. Furthermore, describing the debate over the validity and reliability of using qualitative or quantitative methods is beyond the scope of this review. This section will only provide a brief introduction to some of the common measurement techniques and some review of applications.

Economic Methods of Value Assessment

Economists believe it is important to use quantitatively measured values to incorporate stakeholders' perspectives into resource-allocation decisions. Economic analyses often involve trade-offs that focus on the gains (benefits) or losses (costs) associated with various alternatives. This comparison of benefits and costs, a key concept in economic analysis, illustrates the necessity of a measurement metric for valuation. The concept of economic efficiency is at the core of this trade-off analysis. The efficiency concept involves the question of whether the benefits are greater than the costs, and if so, by how much. Note that this is a distinctly economic concept involving explicit measurement of values using a common metric (money). Consider the decision to alter or displace a natural wilderness area in favor of timber extraction. What does society gain and what does it lose? The greater the net benefits to society of the decision, the more economically efficient the resource-allocation decision. Thus, the choice in resource allocation that renders the greater net benefits

should be a key input[7] into the allocation decision. A complete set of resource-use values must, however, be known in order to quantify the benefits and costs. Part of the costs of the decision is the net benefits foregone from displaced uses.

Economic theory uses behavior as an underpinning to value goods and services provided by forests or other natural resources. Economic models operate on the assumption that individuals make best use of available opportunities and resources and that they respond rationally and predictably to changes in the conditions they face. These changes can involve prices, wages, financial endowments, and modifications of the natural environment.

Economic methods play a role in a number of dimensions to the stakeholder valuation problem. The first role is the traditional economic dimension, which involves those goods and services provided by forests that are traded in regional, national, or international markets. The metric used in these methods to derive value is the prices of the products, which are determined through transactions between buyers and sellers. The prices of these products, which are determined by the principles of supply and demand, are used to assess the value of the product. In this approach, the producers, buyers and sellers of the products are considered stakeholders. In Canada, this traditional economic dimension has dominated the analysis and the consideration of the allocation of forest resources. The economic treatment of stakeholder values has largely considered those individuals directly involved in the production of forest products.

An important subdiscipline of traditional economic analysis is regional economics. In this application, the interactions among various levels of a regional economy are examined in various methods, the most popular being input-output (I–O) analysis. This method involves a detailed examination of the expenditures made by various industries and households that are linked within a defined region. The analysis focuses on the series of economic effects that are generated by the expenditures; effects that can occur well beyond the location of the point of sale. Jacquemot et al. (1986) provided an example of this type of analysis and the following excerpt provides an overview of the method.

> [I]n the buying of a light truck by a hunter, a direct effect of the consumer's spending will be to trigger the production of an additional truck. This will not only involve the car and truck manufacturer but also different industries providing steel, aluminium, rubber and textiles, as well as service industries like transportation. These latter effects are referred to as indirect effects and do not end with the purchase of steel, rubber, etc. Rather a long chain of production ensues since each of the products purchased will require, in turn, input from other sectors of the economy (Jacquemot et al. 1986).

The input required for I–O models involves the amount, source, and destination of expenditures, as well as some detailed mathematical models that use this information to reveal the complex relationships among an economy's components. The output generated from the analysis includes gross domestic product (GDP), wages and salaries, government and corporate incomes, and employment. The analysis provides information and data on these in terms of direct, indirect, and induced effects, which measures the extent of the down-the-line expenditure impacts.

There is a very large literature describing this analysis and both its pitfalls and its usefulness (e.g., Loomis 1993). This type of economic analysis is called impact analysis, and it involves stakeholders from a very traditional economic point of view. This view involves jobs, incomes, and profits, and generally has driven much of the previous examination of stakeholder values in Canada. An example of this type of work in the Manitoba model forest is Cowan and Rounds (1995).

Another current area of interest for economists is economic valuation of goods and services (or amenities) that are not traded in markets. This burgeoning field, which is called nonmarket valuation, will play an expanding role in stakeholder values. Interest in this area is growing because expansion of the traditional extractive industries, through both resource or commodity utilization and pollution, has diminished certain environmental amenities. In the past, environmental amenities have been valued at zero or near zero due to the absence of market prices. Nonmarket valuation methods have

[7] Note here that efficiency is an input to the decision, not necessarily a driver or sole reason for a decision.

been developed to estimate surrogate market prices of these amenities so that the economic value of market and nonmarket goods and services can be compared using a common metric. Nonmarket valuation methods generally fall into one of two categories: indirect or direct methods.

Indirect nonmarket valuation methods

Nobel laureate Paul Samuelson was one of the first to suggest that by merely observing individuals choosing among various bundles of goods, a theory of behavior can be devised about consumers: consumers maximize utility based on some principles of rationality. The concept entails consumers revealing their preferences for goods and services. This idea led researchers to develop a set of approaches to examine nonmarket goods (goods that do not have observed prices associated with them), in which observed choices of these goods involved the indirect expenditure of valuable assets such as time and money. Thus, the valuation of the nonmarket good or service has associated with it some market purchase. This linkage is called the assumption of weak complementarity, because it allows the isolation of the demand for the nonmarket good through complementary market purchases. Methods that use this complementary linkage are called revealed preference methods, and these are typically used to examine recreational values. The most popular of these is the travel cost model (TCM), where the nonmarket good (recreation value) is assumed to be complementary to expenditures on travel (travel costs). The TCM uses visits to a set of recreation sites as choices and travel costs (both time and expenses) as the complementary market purchases. The general theory of these methods is described by Freeman (1993), and the explicit details of the travel-cost method are described in McConnell (1985), Smith (1987), and Fletcher et al. (1990).

All the above methods are relevant to forest recreation stakeholder valuation. Trips to the forests are made at the costs of traveling to the forest, but the actual recreational activity in the forest might be free (e.g., backcountry camping in Nopiming Provincial Park in Manitoba). The travel-cost approach should not only be used to value such recreational activities, however; it can also be used to value changes in the conditions of the forest surrounding such activities. Englin and Mendelsohn (1991) described a TCM approach that used a hedonic framework to value forest ecosystems for hiking in the Pacific Northwest. Boxall et al. (1996a) and Englin et al. (1996) used discrete-choice TCMs to examine the value of forest ecosystems and land management features for backcountry recreation in a Manitoba forest. Boxall et al. (1998, 1999) used the same method to estimate the value of Aboriginal rock paintings in the same forest.

Direct methods

Assigned economic value is frequently measured by simply asking stakeholders about their willingness to pay (WTP) or willingness to accept compensation (WAC) for environmental amenities. Survey instruments and bidding games are popular methods for collecting WTP data and are used in the contingent valuation method (CVM) (Mitchell and Carson 1989). The CVM is used extensively in the U.S. to assess the value of damages caused by oil spills or other pollution events. The method is controversial and a blue ribbon panel with two Nobel laureates in economic sciences was at one point established to examine the validity of this method. The panel found that the CVM was considered valid when applied with a particular set of methods (Arrow et al. 1993). A comprehensive bibliography of CVM studies can be found in Carson et al. (1994).

The CVM is particularly useful in examining passive or nonuse values. These values involve stakeholders who might never see or visit the forest, but achieve some value by knowing that it exists (existence value) (Brookshire et al. 1987), that they are leaving it as a legacy for future generations (bequest value), and that they are preserving the option to visit it in the future (option price and value) (Bishop 1987). There are many applications of the CVM to examine passive-use values in the U.S., but only a few applications have been undertaken in Canada. One relevant Canadian study by Adamowicz et al. (1998) examined the values associated with the existence of woodland caribou through two valuation frameworks. From a random survey of residents in Edmonton, Alberta, the results suggested that the respondents were not willing to see the caribou herd diminished in one particular area of Alberta, and were perhaps willing to pay positive amounts of money to see the caribou preserved.

The alternative method that Adamowicz et al. (1995) used is called choice experiments. This method is similar to the CVM in that it requires individuals to state their preferences for environmental qualities. Choice experiments differ from the CVM in that environmental attributes are varied in an experimental design that requires respondents to make repeated choices between bundles of

attributes. This stated-preference method is usually the domain of human-decision research, marketing, and transportation research; the use of choice experiments in economic analysis was pioneered by Adamowicz et al. (1998). For that study, the authors used a designed choice experiment and a parallel revealed preference (or TCM) study to assess the effects of water resource developments on recreational fishing values. They used both methods in a joint analysis in which both the stated preference and revealed preference data sets were found to be generated by similar preference structures once, error-variance differences were incorporated. This joint analysis suggested that the hypothetical technique and the actual behavior method produced similar representations of choice behavior.

Since that study, Boxall, Adamowicz, Swait, Williams and Louviere (1996) and Adamowicz et al. (1997) have published further examples of the use of choice experiments in environmental economic analysis. Both papers studied recreational big-game hunters. The study by Boxall and colleagues used the CVM and choice experiments in a combined modeling process. Adamowicz et al. (1997) used the combined choice experiment and revealed-preference data to assess the difference between perceptions and objective measures of environmental quality variables in hunting site choice.

The use of the CVM as a valid expression of nonmarket economic values is being expanded into cultural and spiritual dimensions. For example, an interdisciplinary team of economists and sociologists from the University of Alberta have addressed hypotheses on differences in satiation, substitutability, and individual and group sovereignty that are related to resource decision-making in a Canadian Aboriginal context (Adamowicz et al. 1994). Further empirical work by this same group of authors is testing those hypotheses. There have also been attempts to integrate valuation theories and certain methods of economics and psychology. Peterson and Sorg (1987) presented a series of papers by researchers that address the similarities and differences between the disciplines on this issue of integration. With few exceptions, nonetheless, dialogue between the two disciplines is in its infancy.

Some compendia of economic valuation studies and other issues

A set of papers and reports is available that outlines the large database of published nonmarket valuation studies. The first, by Sorg and Loomis (1984), provides estimates of amenity values and corrects most of them for various biases caused by the methods used. It is important to note that nonmarket valuation methods, whether direct or indirect, are the subject of much debate, because these methods are currently being revised to keep up with recent developments in survey methodologies, theory, and econometric methods. Walsh et al. (1988) updates the Sorg and Loomis work. Both Sorg and Loomis (1984) and Walsh et al. (1988) provide value estimates by different categories of recreational users. It is important to note, however, that virtually all of the studies reported in these two works are U.S.-based. Adamowicz (1992) attempted to provide an overview of Canadian studies and collected data on Canada's forests, but there are very few of these studies. In fact, much of Adamowicz (1992) provides an overview of theory and methods pertinent to nonmarket valuation in forest management.

A final set of papers illustrates the application of economic concepts in a broad stakeholder context. One of the frameworks in which this happens is integrated-resource management. Pearse and Holmes (1993) suggested that the problem is "one of maximizing the net present value of goods and services provided by a forest given a set of production constraints. The constrained optimisation problem recognizes the importance of noneconomic criteria such as legal mandates for environmental protection and forest wide timber harvest flow constraints." Loomis (1993) provided some examples of the use of values and examined some economic and noneconomic dimensions of integrated resource management. Finally, Luckert (1992, 1993) and Pearse (1988, 1994) discussed property rights for forest resources, which can be broadly considered a stakeholder concept. Pearse, who suggested that public land and resources should be moved more into the domain of private ownership, argued that stakeholder interests could be more extant under different institutions of property and tenure. On the other hand, Luckert suggested that while some goods and services can be amenable to private control, many others are not. For example, he stated that stakeholders who value wilderness, might not benefit from a change in property rights. Because some goods and services provided by publicly owned resources (like forests) are under-provided, they should remain under public property right regimes, he concluded.

Sociological Methods of Value Assessment

Social (held) values and attitudes are measured by a variety of methods. The most common

techniques, which generate quantitative data, include instruments such as questionnaires (mail, telephone, or face-to-face) and social surveys that contain Likert or other attitudinal scales. Examples of such instruments include the NEP scale, the Rokeach Values Survey, median and simple mean scales, standardized values scales, scale values based on Thurstone's Law of Categorical Judgement, and regression-based values scales (for more-detailed discussions on these measurement tools, *see* Maloney et. al. 1975; Van Liere and Dunlap 1981; Albrecht et. al. 1982; Schroeder 1984; Brown and Daniel 1990; Brown et. al. 1990; Noe and Snow 1990; and Kamakura and Mazzon 1991).

Several examples exist of quantitative surveys of stakeholders at various levels of analysis. One recent study compared the value orientations and associated forest policy preferences of the American public to the public of Oregon, a state widely recognized as forest-dependent (Steel et al. 1994). Fortmann and Kusel (1990) surveyed and compared environmental attitudes related to forestry of long-standing and new residents of rural California. The same study compared attitudes of the general public to those of residents defined by the U.S. Forest Service as active and interested stakeholders.

Another group that could be more thoroughly surveyed are forest managers. Very little work of this nature has been done for registered professional foresters in Canada. From an academic perspective, the values of this group are the most critical to understand. Foresters are responsible for implementing policy and often have considerable latitude in the interpretation of policies. It is important to ask how their attitudes and values differ from those of the general public and how their professional training shapes these values. Cramer et al. (1993) surveyed U.S. Forest Service workers to determine their value orientations and policy preferences. In the attitudes and values of U.S. Forest Service employees, they found significant differences that corresponded to age and relative location in the chain of command. The authors then discussed the implications of those differences on future land-management decisions and the impacts they could have on resource-dependent communities.

There has recently been an increase in the use of qualitative methods (such as open-ended and semi-structured interviews, discourse analysis, and participant observation) to identify values and attitudes (Jackson 1987; Crabtree and Miller 1992). These techniques, in combination with accepted quantitative social surveys and scales, might provide contextually relevant data and assist in overcoming the inconsistencies often found between the self-reports of respondents and their actual, observed behaviors (Layder 1993).

Qualitative work has not been used extensively to gauge attitudes and values of forest stakeholders. Even less work has been done to use that information in a natural resource policy context; however, the potential of this qualitative work is great. Qualitative data can be a rich source of information regarding the degree of division or cohesion within and between stakeholder groups or local resource-dependent communities (*see* Beckley and Sprenger 1995, for example). As well, such data can provide interesting insights regarding local perspectives on outside forces (governments, markets, big business) that affect not only local access to and benefit from resources, but general issues related to quality of life. Content analysis of qualitative survey data from narrowly defined stakeholder groups can shed light on their views of other stakeholders. Dunk (1994) conducted 45 open-ended interviews with loggers in northwestern Ontario to obtain information on their views on environmental issues and their opinions of environmentalists. Dunk found that loggers had a moderate level of environmental concern, yet they had a very poor image of environmentalists or environmentalism. They associated environmentalism with southern Ontario middle-class values and perspectives, which they viewed as antithetical to their way of life and their understanding of nature.

Participant and nonparticipant observation are two qualitative tools that involve living at the research site and interacting with research subjects in formal and informal settings. There is probably no better way to assess the attitudes and values of a community (or subgroups within communities). In the context of stakeholder involvement in policy and management of natural resources, participant and nonparticipant observation is most effective in combination with other methods. While community case studies are relatively inexpensive, by definition they focus on narrow geographical areas. When natural resource issues are regional or provincial in scope, these studies are of limited usefulness. In more narrowly defined areas, however, such as Canada's model forests, they can be a useful method for assessing local attitudes and views regarding resource policies and management. While there are limits to the generalizability of case study research, this type of work can inform policy makers

and managers about some of the general beliefs, attitudes, perceptions, and misperceptions of various stakeholder groups. Ethnographic research on various types of forest users exists, including work on subsistence forest users (Brody 1982) and loggers and paper mill workers (Carroll 1989; Dunk 1994; Beckley 1996).

Qualitative research also contributes analyses of the policy process itself, and of the relative interests and power of stakeholders in the policy sphere (Sabatier and Jenkins-Smith 1993). Nonparticipant observation at public meetings can yield a wealth of information on the relationships among stakeholder groups as well as on the key individuals in the policy process. Meetings can be specific to resource-planning and development issues, or quite peripheral to natural resource management. Meetings of the local chamber of commerce, community development organizations, and local elected bodies reveal how policy makers view and interact with industry representatives, local activists, and other levels of government. These meetings are nearly always open to the public and thus are accessible to researchers.

Political Science Methods

The role of political science in understanding forest stakeholders has, until lately, been limited. Recently, however, there have been some noteworthy political science methodological contributions. Salazar and Alper (1996) and Kuentzel (1996) examined the role of stakeholders (including government agencies) as political participants. Both studies attempt to answer a long-standing question in political science: namely, the relationship between members of society and government.

Salazar and Alper concluded from their interviews of key stakeholder groups in British Columbia that the behavior of different stakeholders was explained by their normative identification with different models of politics. For example, the political perspectives held by Aboriginal peoples contained elements of both corporatist[8] and dependency[9] models, whereas government stakeholders presented forest politics in both pluralist[10] and corporatist terms. They analyzed the actions and positions of these groups in the development of British Columbia's Commission on Resources and the Environment (CORE) and the *Forest Practices Code.*

Kuentzel's analysis focused on the U.S. Forest Service. He challenged the claims made by the U.S. Forest Service that it serves as an unbiased mediator among competing interest groups to the right and the left. Kuentzel also referenced multiple theoretical perspectives in his analysis, ranging from conservative, consensus-based theory (pluralism) to radical conflict theories (neo-Marxism). Kuentzel concluded that the forest service is not an unbiased mediator, but rather a stakeholder and political player in its own right.

Two established schools of political science that hold promise in providing methodologies in understanding the role of forest-based stakeholders in the political process are the policy community/policy network approach and the public-choice theory. The policy community/policy network approach states that government-society relations vary from sector to sector. Its proponents deny that there is any advantage in working toward a general model of politics (Atkinson and Coleman 1992). In other words, the relationship between government and stakeholders is contingent on such factors as the nature of the issue, the resources available to the government and societal participants, and the ability of each to address the issue.

Within any given sector, there is a policy community consisting of both state and societal organizations and individuals. A small group of individuals usually constitute a "sub-government". They are responsible for making specific decisions on day-to-day policy decisions and usually comprise the minister and the most senior officials, and representatives from related government agencies and key institutional interest groups within the

[8] Corporatism refers to a formalized trilateral arrangement among government, business, and labor leaders. All three groups are treated equally in the policy process. Salazar and Alper substitute labor with Aboriginal interests.

[9] Dependency theory is a popular theoretical approach to the study of developing countries. Dependency theory argues that some areas of the world (Latin American, parts of Asia, and Africa) are permanently underdeveloped due to their disadvantaged position with core countries (in Europe and North America). Usually, dependent countries sell raw materials to the core countries, which in turn sell manufactured goods back to the developing countries.

[10] Pluralists argue that society is dominated by many competing interest groups. The government's role is that of an unbiased arbitrator who decides the appropriate policy directions that emerge from the bargaining among these organizations.

sector. The other group within a policy community is referred to as the "attentive public". Though not directly involved in policy making, this group nonetheless has a stake in what occurs in the sector. According to Pross (1992), this group is the source of criticism and change for the subgovernment.

On important policy issues, such as forest planning, tenure, and practices, the key societal and governmental participants (usually the subgovernment) coalesce to form policy networks. The type of policy created depends upon the type of relationship among the societal and governmental participants and the number of societal participants. Some networks are state-directed, while others are society-dominated networks.

There have been a number of Canadian forest case studies that apply the policy community approach (Grant 1990; Wilson 1990; Pross 1992; Howlett and Rayner 1994; Ross 1995). Howlett and Rayner argue that most provincial forestry networks are close-knit and closed, usually only involving the forest-products industry and senior provincial government officials. This type of network is known as a "captured-statist" network. In such a network, the forest industry is seen to be largely influential in determining the direction of public policy. Other forest stakeholder groups, such as Aboriginal peoples, recreationists, environmentalists, and communities, are seen by Howlett and Rayner to have been noticeably absent from the important decision-making networks. Instead, these groups are often viewed as the critical voice within the sector. Howlett and Rayner also argued that Canadian forest-management policy has been painstakingly slow in adopting new directions because of the absence of the attentive public in the network.

Public-choice theory has tackled the issue of public attentiveness in policy debates. This theory is reviewed by Miller (1997). Public-choice theorists, many of whom are economists, argue that political action is ultimately the result of rational, self-interested individuals. As a result, change can only be understood by documenting the preferences and choices of individuals or firms. The theory also attempts to explain lobby groups and political action in general by focusing on the costs and benefits of participation. Public choice, while not widely applied in forest-policy analysis, has been used to examine the behavior of voters, elected representatives, and appointed administrators.

One public-choice application in resource-management decisions is the desirability of values juries as an alternative to the economic valuation and various public input processes (i.e., hearings and stakeholder negotiations) involving public lands (Brown et al. 1996). In the case of complex economic valuation methods (e.g., contingent valuation) and public surveys, the general public is often unaware of the complexities involved in a resource-management dispute. Furthermore, public hearings tend to attract well-organized interest groups that can manipulate the process to promote their own agendas rather than considering the public's welfare. Brown et al. state that "most difficult resource management decisions involve conflicting held and symbolic values" that can only be settled by a jury (Brown et al. 1996). Like a juror in a court case, the values juror would be instructed to be "an agent of society". The authors argued that an individual will be able to put aside his/her narrow individual interests to focus on the overall public welfare. The authors suggested that there can be a congruency between the summation of individual preferences and the constituency represented.

CONCLUSIONS

This report focuses on social-science contributions to our understanding of stakeholders' attitudes and values regarding natural resources. There is growing recognition among traditional decision-makers that social science can help close the gap between managers' perceptions of stakeholder values and actual stakeholder values. Closing that gap could significantly reduce conflict over natural resource management.

Social-science contributions are varied. Some literature describes, assesses, or evaluates the efficacy of direct attempts to gauge stakeholder values (through public meetings, focus groups, public hearings, etc.). Other social-science work involves measurement of stakeholder values through a broad spectrum of social-science techniques. Some of these focus on individuals, others on groups (particularly special interest groups), and others on institutions.

Local contexts for natural resource management vary; thus, there is no single method that can be used to obtain a perfect assessment of a given region's stakeholders' values. Furthermore, values change in response to societal and environmental change, so even if a single method were adequate, that method would have to be periodically used to track trends and change in values. Most valuation methods address a subset of stakeholder values, and there is an active debate regarding how future social-science efforts should attack valuation questions. Some argue for applying social-science tools in an attempt to understand the full spectrum of social values toward natural resources, including ones that cannot currently be measured with proven or even experimental methods (such as spiritual values) (Bengston 1994). Others argue that research should focus on improving valuation methods for the subset of natural resource values that are reliably measurable. This implies recognizing that some dimensions of values might never be measurable in a quantitative manner that will allow for universal comparisons among value sets (Hetherington and Brown 1994).

The existing suite of methods and techniques for assessing stakeholder values have, unfortunately, been underused by natural resource managers and decision makers. Given that a growing proportion of natural resource management problems that explicitly involve the human dimension, the historic lack of interest in forest social science by policy makers and managers is perplexing. Forest social science is maturing, however, and necessity is forcing forest decision makers to take a closer look at what this cluster of academic disciplines has to offer.

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