Incorporating Social Assessment and Public Involvement Processes Into Ecosystem-Based Resource Management: Applications to the East Side Ecosystem Management Project

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EXECUTIVE SUMMARY

This report was prepared under contract with the USDA-Forest Service, as part of the broader East Side Ecosystem Management Project that focuses on resource management planning for areas within the Columbia Basin. The report provides assistance to natural resource managers attempting to grapple with the need to more effectively integrate social considerations into the newly evolving approaches to natural resource management that have come to be known as "ecosystem management." It has been widely recognized that the transition toward ecosystem-based management is being driven in part by a need to more effectively consider complex economic, social, cultural and political issues that are closely linked to natural resource conditions and changes. However, relatively little has been done to address in a concrete manner the ways in which social considerations might most effectively be incorporated into ecosystem-based management. As a result, agency planners and decision-makers involved in the East Side project and other similar large-scale ecosystem management efforts are ill-equipped to determine how to best proceed with the kinds of social assessment efforts and public involvement processes that need to become integral parts of ecosystem-based management. It is our hope that the ideas and recommendations set forth in this report will contribute to more effective implementation of ecosystem-based management practices that are based on sound social science assessments as well as sound natural science assessments.

The report begins with a discussion that sets the context for understanding how and why social considerations are of central importance in efforts to pursue ecosystem-based management in the Columbia Basin. Key "vectors of change" that bear directly on the increased complexity of natural resource management in the region include the following:

- Patterns of demographic change, including both in-migration and population redistribution, that have contributed to increased concentration of the regional population in urban areas.

- Major technological and economic shifts that have increasingly linked even the smallest and most remote rural communities of the region into an increasingly complex global economy in which local changes are driven by social, economic, and political forces extending far beyond local and regional boundaries.

- Increased regional economic diversification and a trend toward substitution of capital for labor in natural resource extractive and processing industries. Although the impacts of these trends have in many cases been overstated, in combination they have contributed to the tendency for traditional extractive industries to become relatively less significant sources of employment and economic activity in many parts of the region.

- Major shifts in public attitudes about and values regarding natural resource use and management at the national and regional levels, accompanied by the rise of environmentalism and the increased impact

of interest group politics on natural resource management and policies.

- An increasingly complex set of demands and problems associated with natural resource management, and increasing levels of conflict over alternative management practices.

The report discusses the application of social assessment procedures in the context of ecosystem-based management. We assert that social assessment needs to be an integral part of ecosystem-based management, because humans play fundamentally important roles in ecological processes and because the increased levels of polarization and conflict over resource management require increased understanding of the ways in which people are linked to and value various kinds of resources and places. The discussion includes a review of current approaches to social impact assessment, consideration of unique challenges that confront social assessment in the context of ecosystem-based management, and an overview of issues and procedures that merit consideration when implementing social assessment efforts. Major points that emerge in this discussion include the following:

- Existing conceptual and methodological foundations in the field of social impact assessment focus attention on geographically-defined local communities, and have been applied primarily to evaluations of social effects associated with single, large-scale resource development projects. Existing approaches tend to pay little attention to the potential for social effects involving constituencies and stakeholders that are not identified with local communities. Also, existing approaches may inadequately address the effects of long-term shifts in management direction as opposed to the shorter-term consequences of a single, localized resource development activity.

- Social impact assessment has focused considerable attention on the ways that project effects are unequally distributed across various social groups within impacted areas. However there have been only limited efforts to extend social assessments to include a focus on non-geographic "communities of interest" that are linked by common values and perspectives regarding resource use and management.

- Most social assessment efforts have involved an *ex ante* approach that focuses on projecting social effects prior to project implementation, rather than on monitoring and assessing social changes that can occur over a longer time period after a project or policy has been implemented. Because of the inherent complexity of ecosystems, both natural and social effects of ecosystem-based management will be extremely difficult to predict, resulting in a need for assessment practices that that incorporate more continual, longitudinal data collection and evaluation.

- Questions about the scales at which social assessment should be undertaken become increasingly complex in the context of ecosystem-based resource management. Although some scientists have argued that natural science analyses should be focused at the level of the ecological province or other similarly large-scale units, such levels may not be appropriate for addressing social concerns. A multi-level analytic approach involving multiple scales of social organization ranging from the individual to the family, various social groups, local area communities, and larger-scale units of social organization is proposed.

- Implementing social assessment as a part of ecosystem-based management requires a multiple-methods approach that will ensure consideration of implications for locality-based constituencies, other regional stakeholders, and also constituencies that include persons and organizations located outside of the region. Suggested methodologies that are discussed include analyses of available data, key informant interviews, focus groups and other group-based techniques, and innovative public involvement strategies.

The final section of the report turns to a discussion of how innovative public participation processes can contribute both to the broader social assessment effort and to the effectiveness of efforts to implement ecosystem-based management. Several major points emerge from this discussion:

- Traditional public involvement processes are well-established in resource management agency cultures, are well-understood by both agency personnel and the public, and present few structural obstacles to participation.

- Conventional approaches to public involvement and participation in resource management decision-making contribute in many cases to input of limited quality. This is due to the lack of opportunities for dialogue among various interests, and a tendency to elicit extreme behaviors by some participants.

- Traditional public involvement often contributes to public dissatisfaction with the decision-making process, in part because there is seldom clear evidence whether or to what extent public input has affected decisions. Such dissatisfaction in turn can exacerbate rather than mitigate the conflicts that often emerge over resource management issues.

- In the context of ecosystem-based management, there is a need for

alternative public involvement procedures that focus attention on learning, recurrent interaction among participants, and increased opportunities for working through complex problems and for identifying alternatives for problem resolution.

- Learning-centered public participation approaches involve a process of negotiation over conflicts that are inherent in resource management. Successful negotiation requires that all parties, including both agency representatives and other stakeholders, develop a shared understanding of complex issues and of the needs, values, and concerns of other participants.

- Learning-based approaches that can help to improve public participation include Transactive Planning methods and Collaborative Learning techniques. Both approaches involve smaller-group processes that focus on recurrent interaction and in-depth dialogue among participants.

- Transactive planning emphasizes two-way communication, mutual learning, and the transformation of the systems of planning, decision-making and management to better address divergent interests and needs.

- Collaborative Learning draws upon soft systems methodology (SSM) and alternative dispute resolution (ADR) principles, and focuses on mechanisms that promote opportunities for working through complex issues in which there are significant value differences and high levels of conflict potential. Application of Collaborative Learning methods generally involves situations in which there are significant value differences and conflicts that require mediation through the involvement of an impartial third-party participant.

The report concludes with the observation that social assessment and public involvement processes can provide a vehicle through which more effective public discussions over land management policy can be conducted. However, because the issues involved are highly complex, efforts to implement social assessment and public involvement as components of ecosystem-based management must be multifaceted and innovative if they are to contribute to decision processes and outcomes that are more sustainable for both human and ecological communities.

CHAPTER 1
INTRODUCTION

As one looks at a map of the Columbia River basin, the immediately striking aspects are the sheer size, the topography, and the physical variation. An equally important, but more subtle feature is the high proportion of federal land ownership. The states from which the Columbia draws its water are a subset of western states known as the public lands states, whose proportion of public lands ranges from less than 30% (Washington) to as 90% (Nevada). In a country founded on private property rights, explaining why there is so much public land in the west requires both historical and institutional perspectives. As writers such as Stegner, Doig, Wilkinson, Abbey, and Maclean have explained, people's lives in these states are shaped by the lands around them, and hence interwoven with the governmental policies that guide land management.

Different eras in public land management have been driven by different sets of values in terms of what public ownership might provide. To the founders of the Forest Service, it was an increased measure of scientific management that might maintain the integrity of forest-based human communities and sustained yields of natural resources. In the decades after World War II, it was to provide multiple uses for a rapidly growing, increasingly affluent and mobile society. In recent years, a new set of values has been gaining ascendancy, one concerned more with maintaining ecological functions and species distributions within some notion of a natural range.

This paper explores the linkages between people in the western states and land management policy decisions in a very selective way. Rather than explain what those links are, have been, or are likely to be in the future, this effort attempts to provide the reader with a framework one can use to identify and understand those linkages for oneself. Robert Louis Stevenson's essay, El Dorado, is instructive in this regard, reminding us that the real value in any quest is not the prize, but the journey. If one wants to understand the social values, norms, and groups in the Columbia River basin in order to craft public policy that incorporates them, one cannot delegate or contract that task away. The decision-makers who are designing and implementing policy must have a rich, complex understanding of the people for whom they work, and on whose behalf they are managing the land. It is therefore the process of coming to the understanding of the social linkages that allows one the depth of understanding needed to be able to mix social concerns in with the biological, physical, financial and political factors that define a land manager's decision space.

Our goal--providing a theoretical framework that can guide the incorporation of social knowledge into land management planning--is pursued through three separate discussions. First, we set the social context for public land management by reviewing several major social trends from the last three decades--vectors of change, if you will--that explain how the policy conflicts over land in the Columbia River basin represent social forces and debates that go far beyond these acres and issues. Next, we introduce the general methodology of social assessment as a set of organizing frameworks and techniques that one might use to add structure and rigor to ones' thinking about social function and structure. It also lays the foundation for social impact assessment, which refers more specifically to predicting the impacts of a specific project. Finally, recognizing that agency public involvement processes are an important window into, and out of,

policy processes, we review the effectiveness of public involvement as it tends to be structured. We argue for a new generation of techniques with a more explicit emphasis on learning, to help agency personnel and the public work through the complexity of public land management based on ecosystem principles.

CHAPTER 2
VECTORS OF CHANGE AFFECTING SOCIAL CONDITIONS AND RESOURCE MANAGEMENT IN THE COLUMBIA BASIN

I. INTRODUCTION

The changes in land management being contemplated for the Columbia Basin are closely linked to patterns and trends that are national and indeed international in scope. Debates about the management of public lands in the U.S. have reached nearly unprecedented levels of polarization and controversy. Many of these debates have focused on the ecological conditions currently found on such lands and the effects that this or that set of management actions has had on the lands and the associated ecosystems (Yaffee, 1994). A recently persistent theme has been the impact of management on habitat fragmentation and the call for an alternative approach to land management :

> The need for an ecosystem-based approach to the conservation of biological diversity. . . is increasingly recognized in scientific, policy and management circles. Ultimately, a species by species approach must be replaced by an ecosystem-based strategy that considers all aspects of biological diversity, including key processes and unknown biotic components (Franklin, 1994: 21).

Without discounting the importance of ecological conditions generally or habitat conditions specifically, a key assumption of this report is that social, not bio-physical circumstances are behind much of the current controversy over public lands. Further, it is assumed that any solutions to land management problems, if they are to be successfully carried out, will need to take account of dynamic social conditions in the Columbia basin and beyond. Any approach that focuses on bio-physical dynamics to the exclusion of social dynamics , we suggest, is likely to fail. Stated another way, biologists and others have contended that new ecosystem-based approaches must be developed to deal with changed conditions and new ecological knowledge; we find ourselves in agreement with a number of other authors who suggest that these new approaches must also take account of changed social conditions and new social knowledge (Gordon, 1993; Overbay, 1992).

II. SOME HISTORICAL PERSPECTIVE

The present era is, of course, hardly the first in which pressures for change have been exerted vis-a-vis public lands. For example, given the current size of the national wilderness preservation system, it lends perspective to review how spirited the debates were within and outside the resource professions and agencies beginning in the 1930's concerning proposals for any meaningful wilderness designations at all (Gilligan, 1953). The end of World War II began another period which confronted public land management with renewed exogenous pressure for change. The post-war economic and population booms followed by the development of the interstate highway system placed unprecedented demands on public lands for both commodity and recreation uses (Dana and Fairfax 1980; Wilkenson 1992). These pressures (in addition to concerns over potential jurisdictional control between the several federal land agencies with

outdoor recreation responsibilities) led managers and policy makers to ultimately legislate what became known as multiple use management of federal forests and rangelands (Hagenstein, 1992).

As the last third of the century has progressed, it has become increasingly apparent that public land management in the U.S. is undergoing yet another period of dramatic transition. The experience of more than two decades of increasingly divisive and seemingly unresolvable controversies over lands is but one indication that public land management has entered a new era. We suggest that these controversies are only the most visible manifestations of the interaction of a number of "vectors of change" whose origins and consequences reach far beyond wildlands, but which are fundamentally altering the "rules of the game" for the management of public lands and forests. This section posits a conceptual framework for understanding these changes with a particular emphasis on how they have led to political and social fragmentation among stakeholders concerned with public lands. In later sections we will outline managerial approaches both in terms of social assessment and creating opportunities for collaborative learning among stakeholder groups and land managers that we suggest are needed to respond to this fragmentation.

III. VECTORS OF CHANGE

Of the vast array of factors that one can identify as contributing to the pressure for change in public land management in the region and the nation, three are particularly relevant to the implementation of ecosystem-based land management: the nation's changing social composition, the rise of environmentalism as an influence on social and political institutions and the coming of the information age-induced changes in the world economy.

Immigration, Regional Migration and Urbanization: The Country and Region's Evolving Social Composition

The changing social composition of the Columbia Basin is best understood by briefly examining demographic trends and comparing them to trends at the national level. (The reader should note that demographic analysis for the Basin is being conducted by McGinnis and Christenson (1994) and that our purpose here is to merely highlight a portion of the trends that they examine in far greater detail.) Between 1960 and 1990, population increased in the U.S. from 179.3 million to 248.7 million. Population growth during this period at the national level was due in part to an increase in net immigration (particularly during the 1970 to 1980 period) which augmented increases due to births. The West has experienced the highest growth rate (88.2 percent) among the four census regions of the U.S. since 1960. The growth rate was down slightly during the 1980's, but the West nevertheless grew at a rate more than twice that of the nation. During the same period of time, the states comprising the Interior Basin grew along with the entire West but at somewhat slower rates than the region as a whole. The exception to this was the 1970 to 1980 period during which the aforementioned subregions *outpaced* the West as a whole in growth rates (McGinnis and Christenson, 1994).

Metropolitan areas (defined as an area with a large population nucleus at least 50,000 people together with adjacent communities that have a high degree of social and economic integration with the nucleus) reached 77.5% of the United States residential total. The nation's 248 metropolitan areas had a total of 192.7 million residents according to the 1990 census; this is an increase since 1980 of nearly 20 million, or 11.6 %. This increase in population, due primarily to migration and immigration has contributed to urban expansion into adjoining, formerly rural places (Bradley, 1984; Glasgow, 1991). This phenomena is often referred to as "urban sprawl." The U.S. Census Bureau predicts that by the early 21st century, if not before, metropolitan suburban areas are likely to account for more than half of the United States population. Currently, the West has an overwhelmingly large metropolitan population, contributing to 84.6% of its total population. This reflects the sparse settlement of much of the non-metropolitan and rural territories in the western states (U.S. Dept. of Commerce 1991b). Another trend which bears mention is the recent dramatic increase of migration of urbanites to many rural places in the West (Marston, 1994). Such urban to rural migrants have tended to bring with them urban values and world views, thus rendering the notion of urban/rural cultural differences and preferences less clear and meaningful than it once was (Lee, 1991).

It should be noted however, that the trend toward urbanization is not nearly so pronounced in the Columbia Basin as is the case for the West in general, with only 31% of the area's population residing in metropolitan areas as of the 1990 census (McGinnis and Christenson, 1994). Although growth rates have been higher in the last two decades in the region's metropolitan areas, the Basin is not nearly so metropolitan as the West as a whole nor does it seem likely to become so in the near future. Thus, it appears that although the Basin is subject to many of the pressures of change that are being felt throughout the West, the rate of rapid and dramatic urbanization being experienced for example, west of the Cascades is not one of them.

The Information Age and the Changed World Economy

The changes that affect natural resource management on public lands include some specific economic shifts that are both profound in nature and global in scope. Perhaps primary among these changes is the increasing difficulty people have understanding their place in the global economy and the complex set of cause-and-effect relationships that surround their economic activities at both the local and global scale. At the anecdotal level, there is certainly evidence that people involved in primary production (who are typically rural) perceive a high degree of ignorance among urban (and recently ex-urban) people regarding the role of primary production in supporting a modern urban economy. A recurring theme among traditional rural people is "Where do people think their 'X' comes from?", with each industry replacing "X" with their product. Whether fish sticks, toilet paper, hamburger, or milk is at issue, primary producers often feel that urban populations support environmental causes in large part because they have forgotten where their food, energy, and many of their material goods originate.

It is possible to go beyond the anecdotal level, however, by recognizing that what the people involved in extractive industries are sensing is not a superficial ignorance among their urban counterparts, but rather a fundamental shift in the structure of the world economy. Three

such changes are particularly important: 1) the primary products economy has come "uncoupled" from the industrial economy, 2) production in the industrial economy has become "uncoupled" from employment, and 3) economic systems of interdependence have become much more difficult to understand than was the case in the past. Thus we observe that it is no longer true, for example, that toilet paper always requires logging which requires jobs for loggers, at least in the same proportions as in the past. On the one hand, the toilet paper may have been produced from recycled materials; on the other, even if it was produced more or less directly from logs, the labor inputs may very well have been a much smaller factor in the production than was the case a generation earlier. It is also increasingly difficult to explain in simple terms to the consumer, voter, and producer how their consumption is related to production that is in turn, affected by public policy.

A very coherent discussion of these economic changes is presented in Drucker (1986, 1994), who describes the uncoupling as the weakening of once-direct and predictable linkages. The role of agriculture in the American economy is a good example. When much of the Progressive Era and New Deal agricultural policy was established in the early part of the century, farmers were almost one-third of the population, their income was one-fourth of the GNP, and they were major consumers of equipment that in turn supported the manufacturing industry. As agriculture went, so went the economy, to a very large extent. Now, with agriculture's shares of the population and of the GNP less than 5%, the linkage between agricultural production and economic health is both weaker and more difficult to see.

Drucker also views the assumption that constant industrial production leads to constant industrial employment to be increasingly inappropriate. The prevalent trend in industrialized countries over the last three decades has been for increasing industrial production and decreasing industrial employment. The major input that has been substituted for labor is knowledge, either through more automated production processes or the development of less labor intensive technologies.

Finally, the world economy has become more difficult to understand as it has grown more intricate and internationalized. There are more processing, financing, transporting, marketing, and waste disposing links in the modern industrialized economy. As such, the primary producers' view that they are central to economic activity is increasingly regarded as naive. Primary production is just one link among many equals, each one being necessary to efficient economic function. Moreover, a complete understanding of one's role as an economic agent requires an international perspective. Capital and information now routinely flow instantaneously around the globe, and producers must increasingly transcend national boundaries as they consider potential markets and competitors.

The most direct relevance of these changes to natural resource management is that employment in the industries (typically in rural communities) linked to natural resource commodity production is not as significant in terms of overall economic activity as was the case in the past, and that the political support appears to be waning for programs that promote employment in primary production activities (Wilkinson 1992). In fact, Drucker suggests "Another implication of the 'uncoupling' of manufacturing production for manufacturing

employment is, however, that the choice between an industrial policy that favors industrial production and one that favors industrial employment is going to be the singularly contentious political issue for the rest of this century" (1986: 780).

In the wake of the spotted owl/old growth forest controversy in the western Pacific Northwest, the issue of the substitution of capital for labor in traditional natural resource industries (particularly forest products) in the West has been the subject of much of the kind of controversy that Drucker predicted. Many of those on the side of increased environmental regulation and protection of lands and resources argue that capital substitution and related economic trends are resulting in employment losses that render job losses due to constrictions of raw material supply in effect, irrelevant because such jobs would have disappeared anyway. The other side argues that restrictions on the supply of commodity resources from public lands are the real cause of such job losses and that environmental restrictions are, in effect, an assault on the livelihoods and way of life of many people in rural areas. Further they argue that the suggested replacement of primary production employment with service related jobs such as those in tourism, amounts to the substitution of family wage for minimum wage jobs.

It is important to point out that there is some truth and some hyperbole on both sides of this argument. While there has undoubtedly been substitution of capital for labor in most if not all resource related industries, recent work by Greber (see FEMAT,1993, Chapter VI) and Conway and Wells (1993) suggest that much of the recent media coverage of these trends has overstated them. Greber's analysis concludes for example, that in the western Pacific Northwest, wood products employment per unit of output increased during the 1970s, decreased in the early 1980s and began to increase once again in the late 1980s. Greber forecasts stable to increasing labor per unit of output during the 1990s. Conway and Wells report that in Oregon, lumber wood products employment fluctuated between 70,000 and 80,000 jobs from 1945 to 1980, with the recession and restructuring in the early 80's dropping employment to 55,000, with an increase to 70,000 by 1988. Employment has dropped sharply since 1988, coinciding with harvest restrictions related to the spotted owl/old growth controversy.

Additionally, the capital substitution for labor argument does not typically consider the difference between the effects of *removing* the availability of a given volume of a commodity resource upon which groups have come to depend, as compared with not making that resource available in the first place. Further, the argument generally does not take into account differential impacts of labor substitution versus resource restriction on various groups *within* industries. For example, in wood products, there are both differences in impacts on types of companies (those which own land and those that do not) and types of workers (loggers versus mill workers) (Carroll, in press).

On the other hand, it is also undoubtedly true that resource extraction no longer dominates entire regional economies such as that of the Columbia Basin. As a result, the absolute number of individuals displaced by relatively sudden decisions to restrict raw material flow from public lands is likely to be a relatively small proportion of workers in any given overall region (see McGinnis and Christenson, 1994) .

The Rise of Environmentalism and Interest Group Politics

The increased urbanization of American society was accompanied by a significant shift of perceptions and values fueled by increased concern about the effects of human activities on the environment. Although such concern has been present in many quarters of society, the emergence of environmentalism as an institutional force is largely an urban-based phenomenon (Hays 1987:70).

There were both general and specific issues that fueled the growth of the environmental movement. At a general social level, the 1960's and early 1970's in the U.S. were witness to a series of events that (in retrospect) appear to have marked a significant increase in widespread public mistrust of government and large institutions generally (Wilson,1991). These events included the Bay of Pigs, the Vietnam war, and Watergate. The terms "big government" and "big business" became powerful pejoratives, and among the most prominent issues raised were contentions that large government organizations, often in cooperation with large industries, were engaging in practices that were damaging the biosphere. The specific concerns which motivated this movement related to increases in water and air pollution which became increasingly evident in the 1960's by means of media attention to dramatic events including the Santa Barbara oil spill and the construction of the Alaska Pipeline. The first Earth Day, 1970, served as a watershed for the public expression of environmental concerns and demands for cleanup (Milbrath 1985). It should be pointed out, however, that the public dissatisfaction with and attempts to limit the power of "big government" appears to be neither short lived *nor* confined to the U.S.:

> As this is written, people all over much of the world are challenging the authority of large central government. How much of this is occurring because it is believed that such governments are inefficient or ineffective, and how much is because of a desire for individual autonomy is unclear (Castle, 1993:288).

In light of this anti-government trend, and its role in the rise of environmentalism, it is perhaps ironic that in recent years, a significant portion of the environmental movement became both professionalized and *a part* of government. Thus that portion of the movement (which might be referred to as *institutionalized* or *mainstream* environmentalism) is no longer either insurgent or fringe. As an example of this transformation, it is interesting to note that in 1990, the total membership for 13 major environmental groups had reached 3.1 million with combined budgets of $217 million (Dunlap and Mertig, 1991). Thus it is clear that mainstream environmentalism has taken its place alongside industry and other major lobbying groups as an influential set of actors on the political landscape.

It is difficult to overstate the significance of environmentalism in the U.S. political landscape both in terms of its political/institutional influence and its groundbreaking role as a model for the new interest group politics. In an influential article on this subject, Buttel (1992) suggests that social and political change in the foreseeable future should be viewed within the context of political dynamics in which the fundamental tension is between corporate interests on the one hand and a set of "new social movements" (NSMs) on the other. He suggests further that NSMs are perhaps "destined to be the historical bearer of transformative social forces equivalent to that of the working class during the first two-thirds or so of the twentieth century" (Buttel,

1992: 12). Moreover, Buttel shares with others (Oloffson 1988) the conclusion that green/ecological values will most likely be the "political center of gravity" of the NSMs, and environmentalism may well be its major political manifestation. In that light, environmentalism is an instrument in a larger and more fundamental cultural process, and may therefore be crafted to meet those goals.

It is clear that the emergence of environmentalism as a major political force in decision making has resulted in a more complex environment for public land management throughout the U.S. with the Columbia Basin being no exception. National, regional and local level environmental organizations and activists have challenged public land management practices throughout the region with below-cost timber sales, forest health and the reasons for the poor condition of many salmon runs being among the more prominent issues of contention.

One significant dimension of the complexity in land management brought about by the emergence of environmental issues and concerns has been the dramatic increase in process and documentation requirements for decision-making. Many of these requirements are a result of the passage and subsequent judicial interpretations of NEPA. The core notion of "NEPA process" is to document the environmental impacts of a proposed action and to rigorously compare the impacts of alternatives to the proposal. The rationale for developing these requirements appears to have been twofold: to require decision makers themselves to consider in a very specific manner the environmental effects of actions, and secondly to ensure that the decisions are available for public review through the documentation process.

These process requirements have led to a dynamic which might be described as "the politics of expertise." Professional land managers have traditionally tended to view themselves as sole possessors of the scientific knowledge needed for proper land management decisions (Behan, 1966; Wondolleck, 1988). Environmentalists not only challenged this view, but they utilized process requirements as the primary means for challenging decisions and actions. They have contended in administrative appeals and lawsuits that federal land managers failed to properly comply with the laws that pertain to public decisions (notably NEPA, the Administrative Procedures Act of 1946 (APA), and the Endangered Species Act of 1973 (ESA)).

More recently, as biologists and other professionals with more environmental values and agendas have gained ascendency in the federal agencies, they too have found themselves confronted with political opposition. Their arguments and the arguments of their environmental allies outside the agencies tend to echo those of their more traditional predecessors and peers in the agencies: "Science knows best--keep politics out of decision making". In an interesting turn-about, the federal inter-agency team that assembled the President's Forest Plan in response to the spotted owl controversy in the western Pacific Northwest, was sued by a *forest industry* group on process grounds. The suit alleged that the team violated the terms of the Federal Advisory Commitee Act by being selective about who was allowed to attend meetings and have access to documents as part of the decision-making process (Thomas, 1994).

The net effect of these dynamics has been that process has often served as a surrogate for substance in many of the battles over public lands and science as a surrogate for values. This has

led to the complaints by agencies and interests on both sides that land management has become "too political." A more detached assessment suggests that public land decisions are *inherently* political, but that the struggles in recent decades have resulted in a reduction in the political power and decision making autonomy that were vested as a legacy of the Progressive Era in both public land agencies and the traditional resource professions.

CHAPTER 3
SOCIAL ASSESSMENT: APPLICATIONS TO ECOSYSTEM-BASED MANAGEMENT

I. INTRODUCTION

This section presents an overview of social assessment and its applicability to ecosystem-based management. The section starts by discussing several ways that social assessment can enhance efforts to design and implement improved land and resource management policies and practices. Next, the focus and scope of established social assessment procedures are examined, with attention directed to major conceptual frameworks, types of variables, and data needs that have emerged in the field of social impact assessment. In particular, specific attention is directed to some important limitations associated with conventional social assessment procedures, which often are restricted in terms of the types of data that are drawn upon, the array of social phenomena addressed, and the time frames that are considered. In addition, the discussion examines some of the unique complexities and challenges associated with efforts to adequately incorporate social assessment into the framework of ecosystem-based management in the interior Columbia Basin. This part of the discussion focuses on issues of matching the analytic scales of ecosystem units and units of social organization, and of identifying appropriate units of analysis for addressing social contexts and consequences. Finally, the discussion considers how social assessment efforts may be structured to capture issues and concerns relevant to various kinds of locality-based, regional, and other types of constituencies and stakeholders. A brief review of some of the major types of issues and concerns likely to emerge among various constituencies is followed by discussions of alternative strategies for collecting the data needed to support social assessments that are compatible with the demands of ecosystem-based management.

II. WHY SOCIAL ASSESSMENT IS IMPORTANT AND USEFUL

If pursued effectively, social assessment can provide information to managers and policy makers which will be a key link in the development of ecosystem-based land management. As we have noted above, various kinds of interrelated social changes are among the core driving forces behind the shift to ecosystem-based land management. Moreover, it is social rather than biological factors that are most often at the core of conflicts over alternative resource management direction and that contribute most directly to gridlock over policy implementation. It is therefore critical that the social antecedents, and particularly the social consequences, of shifts in land management policies and practices be carefully considered as such changes are planned and implemented.

Managers and scientists from many different disciplines are emphasizing the need to integrate social considerations into land management decision-making. For example in a review essay on ecosystem management in a recent edition of Conservation Biology, Grumbine (1994: 31) lists "Humans Embedded in Nature" and "Values" as two of the dominant themes of ecosystem management. He said, "people cannot be separated from nature. Humans are fundamental influences on ecological patterns and processes and are in turn, affected by them". In discussing ecosystem management in parks and wilderness areas, Agee and Johnson (1988) strike

a similar theme, pointing out that the very term "natural" as it is applied to ecosystem processes is a human construct:

> The word natural remains difficult to define because it incorporates value judgements that cannot be scientifically resolved. If natural process management is assumed to mean evolution free from human interference, implementation of natural process management ... will be difficult to accomplish. Disturbance patterns did not stop at park and wilderness boundaries in primeval times; such boundaries were nonexistent. Disturbances such as lightning fires that once entered these areas from adjacent lands may not now, because of different land uses... Some previous disturbances had a human origin (Indian fires) and are not present now (10).

Unfortunately, our social science accomplishments lag far behind our need for knowledge in understanding and documenting human/nature interactions. Social data regarding the stakeholders likely to be affected by changes in land management will be critical to the development of socially responsive and politically acceptable ecosystem-based management decisions. Credible social data requires sound scholarship and appropriate methodologies for data collection and analysis.

One of the important contributions of social assessment to ecosystem-based management is better understanding of the linkages of various scales of social/political organization to ecosystem scales. For example, resource managers are discovering that arbitrary boundaries such as those that define particular national forests may not make sense from the perspective of how a particular ecosystem functions and therefore should be managed. Similarly, social scientists may discover that particular levels of social/political organization which may have long been assumed to be the appropriate level to gather information about human values toward and attachment to the land may be equally inappropriate in a changed social world. For example, the long assumed dichotomy between "national" and "local" interest relative to federal lands may prove to be overly simplistic in the era of ecosystem-based management (Kemmis, 1990). Another example is the current proposal that lands be managed at the level of the ecological province. While this approach has received considerable attention from natural scientists, social scientists have yet to determine whether the concerns and values of stakeholder groups are most effectively captured by public involvement at the province level, or whether other levels (perhaps several) are more appropriate sociopolitical scales for understanding the human consequences of resource management practices and alternatives.

One of the major causes of social/political conflict over public lands in the U.S. has been the assumption, long held by resource managers, that if a management approach meets current technical/professional standards, public acceptance will more or less automatically follow (Behan, 1966; Wondelleck, 1988). Many authors have referred to this view as the "technical rationality" of the resource professions (Hays, 1959). One of the apparent concerns accompanying the current shift in land management paradigms is that one supposedly "technically correct" approach will replace another, with no real opportunity for meaningful discussions, debates and genuine learning between scientists and resource managers and the public. One important function of social assessment is to help managers understand how their actions and proposed actions do or do

not match the values, expectations, and preferences of various affected constituencies. (As we will note below, the current document will also move beyond conventional social assessment and describe approaches for bringing various stakeholders who disagree *with each other* together with managers and scientists in an attempt to build mutual learning and discover common ground.) Such analysis can be very important in heading off "surprises" (for managers and the public) which often result in conflict, inappropriate decision-making and gridlock.

Another aspect of the transition to ecosystem-based land management that social assessment can and should address is the inherent socially redistributive nature of such changes. Any policy change of the type and magnitude associated with implementing ecosystem-based land management will change "the rules of the game" for various stakeholders. Under such changed "rules" some groups and individuals will very likely gain while others will lose. An example of this is provided by the impact of the spotted owl controversy on various actors in the forest products industry in western Washington and Oregon. Under conditions of dramatic reductions in federal forest harvest, smaller non-landowning operations which were heavily dependent on federal timber have in many cases been hurt, while large, vertically integrated firms with extensive private land bases have benefitted as the value of their holdings increased. Another example of redistributive impacts would be the encouragement, discouragement or prohibition of particular outdoor recreation activities in particular settings which are valued by some groups and perhaps not by others.

Although many of the redistributive effects of such changes are unintentional, they often affect how a new policy is ultimately accepted. It is therefore important that such impacts be anticipated and documented. In fact, it does not seem an exaggeration to predict that success in the implementation of ecosystem-based management will hinge in large part on both how the social impacts play out and on the perception of how fairly such impacts are distributed and/or mitigated. It should be noted that there is substantial literature to suggest that the acceptability of outcomes such as those discussed here is highly influenced by whether the allocation *process* is considered to be fair (see Lind and Tyler, 1988). Social assessment can be used to anticipate distributive effects of land decisions and to gather information concerning perceptions of outcome and procedural fairness in such decision making. If properly structured, it can also help to break down barriers to communication and build enhanced relationships between agencies and affected publics. The pursuit of social assessment provides decision-makers with an improved understanding of the social and cultural landscape and almost inevitably creates new opportunities for interaction between agency personnel and individuals who represent affected communities and interests. The result is both enhanced awareness of social concerns that are likely to arise in response to shifting land management practices and reduced barriers to bringing potentially affected parties into the public involvement process.

III. EXISTING FOUNDATIONS: THE FOCUS AND SCOPE OF SOCIAL ASSESSMENT

The History and Evolution of Social Impact Assessment

The conceptual and empirical foundations of the social impact assessment (SIA) field can serve as a starting point for assessing the social consequences of implementing ecosystem-based management strategies. SIA emerged in the early 1970s as a branch of applied social science directed at attempts to understand the social consequences of proposed development projects and resource management actions (see Burdge, 1994). In many ways SIA has evolved out of long-standing social science research traditions focusing on the social, economic, political, and/or cultural consequences of technological interventions and policy actions (for example, see Cottrell, 1951; Ogburn, 1922; Summers et al., 1976; also see Field and Burch, 1988). However, SIA emerged as a distinct field of applied social science only during the past two decades, largely as a consequence of requirements for environmental impact assessment set forth in the National Environmental Policy Act of 1969 (NEPA) and subsequent regulations established by the Council on Environmental Quality (CEQ).

A number of authors have defined the scope and focus of SIA. In many instances, these definitions suggest a focus on the consequences of large-scale technological changes associated with major industrial developments or projects. For example, an early definition set forth by C.P. Wolf (1975: 259) argues that the task of SIA is one of "...estimating and appraising the condition of a society organized and changed by large-scale applications of high technology." Similarly, Freudenburg (1986: 452) suggests that SIA "tends to focus on the consequences of technological developments --- usually developments that lead to alterations in the biophysical environment." Although some more recent definitions have broadened the focus of SIA to include the consequences of non-technological actions involving implementation of policy directives and management decisions (see Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 1993), the vast majority of SIA research and literature remains focused on the consequences of major industrial and technological interventions. Much of the post-NEPA empirical work in SIA has addressed the effects of large-scale natural resource projects such as water resource developments (Andrews et al., 1973; Burdge and Johnson, 1973; Finsterbusch, 1980), mining and energy resource developments (Gold, 1985; Krannich and Cramer, 1993; Murdock and Leistritz, 1979; Weber and Howell, 1982), and major hazardous waste facilities (Dunlap et al. 1993; Slovic et al., 1991; Krannich and Albrecht, 1994).

Major Approaches to Social Assessment

<u>Units of Analysis</u>

Most approaches to SIA focus attention on local communities in or near to the project area as appropriate units of analysis for assessing impacts on socioeconomic and sociocultural conditions. This emphasis can be largely attributed to several influences. First, there is a long-established

sociological tradition linking social and economic well-being to opportunity structures, infrastructure conditions, and social/cultural contexts of territorially-defined local communities (see Wilkinson, 1991; Hawley, 1950). Second, much of the empirical research in SIA has focused on various forms of social disruption that have been observed in situations where large-scale resource development projects in or near rural community settings generated population increases that overwhelmed community facilities and services, dramatically altered established social structures, and contributed to widespread social disorder (see Freudenburg, 1986; Krannich and Cramer, 1993; Murdock, Leistritz and Hamm, 1986).

The tendency to focus almost exclusively on social impacts in the context of localized, geographically-defined communities has strongly influenced the development of conceptual and methodological frameworks for conducting SIA. For example, in one of the best-known and most comprehensive discussions of social assessment procedures, Branch and her associates argue that "linkages between community resources, social organization, and well-being and the important role communities play as administrative and participatory units make it essential that social assessments use an analytic framework that effectively focuses attention on the community..." (Branch et al., 1984: 26). The analytic framework developed by these authors centers on a "social organization model" that addresses the interrelationships between a proposed resource development activity and various *community resource conditions* (facilities and services, fiscal resources, employment and income conditions, labor force characteristics, leadership resources, etc.), *community social organization* (diversity of values and interests, social interaction patterns, distribution of power and resources, cooperation and social integration, etc.), and *dimensions of social well-being* (access to resources, behavioral responses, perceived well-being). A key attribute of this framework is its emphasis on linkages between social well-being consequences and the capacity of local community institutions and structures to adapt to and accommodate project-induced changes.

In a similar vein, Little and Krannich (1989) suggest that, because "the local community represents the arena in which individuals experience...components of the broader society most directly", efforts to assess social and cultural impacts are "most appropriately focused on nearby communities." Drawing primarily on a social systems framework, these authors emphasize the need to address *local values* that "orient and shape the actions, attitudes, beliefs, and perceptions of persons residing in the area" (Little and Krannich, 1989: 27). Linked to local values are *community social structures* (economic activities and local facilities and services, political institutions, and formal and non-formal social institutions and organizations), *community activities and processes* (including social control, social participation, and processes of social control and social support), and *social well-being* conditions (including residents' satisfaction with community economic and social conditions and opportunities, other subjective dimensions of well-being, and indicators of various social problem rates).

Although much SIA work has emphasized geographically-defined communities as at least the starting point for addressing social effects, SIA researchers have also repeatedly noted the need to address distributional issues -- e.g., the ways that effects may be unequally distributed across various population segments and groups (see Freudenburg, 1986; Freudenburg and Keating, 1985). For example, Dietz (1984) has observed that, because "few, if any, resource

management decisions produce costs and benefits that are identical for all citizens.... disaggregating the impact assessment by location, income, occupation, and ethnicity will identify any groups who are disproportionately affected by a policy" (1984: 1622). Flynn (1985) has also addressed the need to consider distributional issues, noting that impact assessments need to take into account the differentiation of project impacts across what he refers to as "categorical" groups (defined by common sociodemographic characteristics) and "functional" groups (defined by structured patterns of interaction and social behavior). Of particular concern in assessing distributional issues is the need to take into account the interests (both material and cultural) of groups that are relatively less powerful and therefore more vulnerable to some forms of social and economic change.

In considering distributional issues, it is also important to consider that the composition and functioning of some types of groups may not necessarily coincide with geographic community boundaries. For example, there are formally organized groups as well as more loosely-defined aggregations of people who share particular interests, concerns, or preferences about resource conditions, uses, and management. Such "communities of interest" are often not coincident with the boundaries of particular locales or regions, and they are often not as directly dependent on natural resources as is the case for the local communities in closest proximity to a particular resource area. Nevertheless, in a number of important ways these communities of interest also have standing with respect to the management of particular natural resource settings. Thus, membership in a variety of non-territorial groups may be thought of as an additional overlay in dissaggregating social effects.

In short, the focus on distributional issues highlights the need to recognize that "SIA is not a zero-sum game" (Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 1993: 28). It is important to identify which groups will be winners and which will be losers as a result of policy actions and development events.

Major Impact Dimensions

The tendency for SIA to emphasize the impacts of large-scale technological developments is somewhat at odds with the kind of focus that is most likely to be required in the context of ecosystem-based management, because the latter is more likely to involve the elimination, reduction or restructuring of certain long-standing economic activities. For example, major reductions in timber harvest may occur in areas that have traditionally been dependent on logging, and alternative activities such as the harvesting of non-timber forest products may be encouraged. In some areas, the shift to ecosystem-based management may involve new activities such as forest and stream restoration projects. Although some new economic activities may emerge in the wake of this transformation, they are unlikely to involve new large-scale development projects such as those which have been the focus of most SIA work.

The focus of previous SIA on major development projects has had considerable influence on the types of variables that have most often been identified as appropriate social impact indicators. As noted previously, much of the SIA literature has focused on various forms of "social disruption" associated with major social and economic transformations and dislocations

resulting from large-scale resource development projects (see England and Albrecht, 1984; Krannich et al., 1989; Murdock, Leistritz and Hamm, 1986; Weber and Howell, 1982; Wilkinson et al., 1982). In assessing the consequences of such projects, attention is often focused on so-called "socioeconomic" changes such as shifts in employment levels and occupational structures, demographic impacts involving population growth and changes in population composition, and shifts in levels of demand for public services and community infrastructure (see Branch et al., 1984; Murdock, Leistritz and Hamm, 1986).

More specifically social impact dimensions that have been the focus of inquiry include various "disruption" indicators such as increased crime and delinquency, substance abuse, marital dissolution, mental health problems, fear of crime, reduced social integration, declines in community satisfaction and community attachment, and increased social conflict (for example, see Brown, Geertsen and Krannich, 1989; Burdge, 1990; Krannich and Cramer, 1993; Krannich and Greider, 1984; Krannich et al., 1989; Little, 1977; Freudenburg, 1986). Although these types of social effects have been associated most often in the literature with rapid growth situations, there is substantial reason to anticipate that similar types of adverse effects could emerge as a result of major economic transformations and associated social dislocations that could accompany large-scale reductions in resource extraction and processing industries. For example, major declines in employment and economic activity associated with the forest products industries have been associated with family disturbances, substance abuse, and other indicators of social disarray (see FEMAT, 1993).

There is widespread agreement that the "bottom line" in assessing social impacts involves possible effects on the well-being and quality of life experienced by affected individuals, groups and populations (see Little and Krannich, 1989: 28; also see Branch et al., 1984). However, despite recognition that well-being is a multidimensional concept, there has nevertheless been a tendency to focus on a relatively limited array of easily-measured social well-being indicators, such as employment and income levels, crime rates, divorce rates, and so forth. In recent years a number of SIA researchers have argued that it is important to move beyond this "social indicators" approach in order to address the full range of well-being dimensions. To an increasing extent, SIA analyses have expanded to address the implications of resource developments and policies on the attitudes, perceptions, beliefs, values, preferences, and lifeways of potentially affected people (see Albrecht and Thompson, 1988; Greider and Little, 1988; Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 1993).

In particular, there is growing recognition of the need to understand how affected individuals, groups, and populations respond to resource development, management, and reallocation actions based on socially-constructed, subjective interpretations of and meanings attached to resource conditions and uses and their relationships to established social structures and lifeways (see Greider and Little, 1988; Greider and Garkovich, 1994). Developing a better understanding of the symbolic1 dimensions of environments is critically important in understanding: (1) the potential implications of actual or proposed environmental change, (2) the clashes that often occur between groups over resource management, and (3) why those clashes can become so rancorous (Carroll, in press).

Related to this is the idea that individuals and groups develop a unique "sense of place"

that corresponds both to the physical features of particular environmental settings and the socially constructed meanings of those landscapes (see Brandenburg, 1994; Eyles, 1985; Kemmis, 1990). As Greider and Garkovich (1994: 2) have observed:

> Our understanding of nature and of human relationships with the environment are really cultural expressions used to define who we were, who we are, and who we hope to be at this place and in this space. Landscapes are the reflection of these cultural identities, which are about us, rather than the natural environment. When attempting to identify and understand the potential human consequences of changes in the natural environment, it is imperative that these consequences are understood from the many cultural definitions that create landscapes.

The meanings attached to particular landscapes and environments stem from multiple types of human relationships with land and land uses. For example, persons connected to a place by living in the area and harvesting or extracting some product are often intricately attached to both the land and the economic activities that they pursue there, and both will be closely linked to their identities and lifeways (Carroll, in press; Gold, 1985). Others living in or near a particular place whose economic well-being is less directly linked to extraction may for somewhat different reasons also develop deep feelings about the environmental context and express strong attachment to place and/or commitments to the maintenance of particular ecological conditions as key contributors to individual and collective well-being (see Brandenburg, 1994; Kemmis, 1990; Wilkinson, 1991). Mitchell et al. (1993) have identified important symbolic meanings associated with particular recreation places among "place-attached visitors", who may be either local area residents or non-locals for whom particular recreation activities are less important than the meaning of the place. In contrast, non-local persons whose familiarity with a place is based on intermittent visits or whose exposure to the place has occurred only indirectly via media coverage may nevertheless associate strong symbolic meanings with the place, although that attachment may be less central to their identities and lifeways.

Although these types of attachments and relationships to the land are in many cases more difficult to delineate and measure than is the case with other types of social indicators, they are crucial elements in a comprehensive social assessment effort. Considering how subjective orientations and symbolic meanings about environmental settings develop and how they differ across social groups is an important first step in identifying and understanding the ways that multiple stakeholders may be differentially affected by resource management actions.

Social Assessment Data Needs

A broad array of social dimensions need to be considered in evaluating the consequences of resource management policies, development activities, and land management practices. Unfortunately, many social assessments conducted as part of NEPA-required environmental impact statements have been of limited utility, due in part to constraints on the types and amounts of data that have been available. Time and budget constraints have often restricted the opportunity to collect original data focused specifically on the social groups likely to be affected

by a proposed development or management action. As a result, analyses are often based primarily on existing data extracted from Census reports and other available sources. Inevitably such an approach restricts the adequacy of an assessment due to limitations in the array of social processes and conditions for which data are available, inconsistencies between the desired scale for the assessment and the units of analysis represented in available data, insufficient data that are pertinent to particular social and stakeholder groups, and lack of access to data pertaining to subjective dimensions of well-being or the symbolic meanings of particular social and resource contexts. The next section of this chapter addresses alternative methods for collecting a broader range of data needed to adequately pursue social assessment in the context of ecosystem-based management.

The adequacy of social assessments is also limited by the emphasis placed on "ex ante" analyses that attempt to project future social change on the basis of data collected at a single point in time prior to project implementation (Geisler, 1993; also Finsterbusch, 1985; Little and Krannich, 1989; Meidinger and Schnaiberg, 1980). As noted by Little and Robbins (1984), there are major problems with attempting to develop longitudinal inferences based on cross-sectional data. The absence of an "ongoing, process-oriented assessment approach" (Geisler, 1993: 329) imposes severe limitations on the ability to identify or understand social consequences.

These considerations indicate a need for social assessment approaches that move beyond the typical but incomplete analyses that can be derived from readily available, cross-sectional data. Instead, assessments that more adequately address the complexity of social effects and their distribution across diverse social contexts and scales must rely on multifaceted, multi-method data collection and analysis procedures. This implies a need for data bases that incorporate both quantitative measures of social conditions and trends as well as qualitative procedures that can provide managers and decision-makers with an enhanced understanding of how resource development and management actions are perceived by those affected and how such actions may interact with social structures and the shared meanings, interpretations, and understandings that influence the responses of individuals, groups, and communities. Also implied is the need for a longitudinal, iterative approach to social assessment that would provide for multiple data collection efforts over an extended time frame. The result would be a substantially enhanced understanding of social change processes and the long-term consequences of management actions that impinge upon complex and dynamic social systems.

IV. LIMITATIONS AND CONSTRAINTS: SOCIAL ASSESSMENT IN THE CONTEXT OF ECOSYSTEM MANAGEMENT

Under the best of circumstances, assessing the social effects of proposed management actions or development activities is a difficult and often imprecise exercise. As noted earlier, most social impact work has been limited to "ex ante" approaches that attempt to project future social conditions based on limited data collected well in advance of actual project implementation (see Geisler, 1993; Little and Krannich, 1989). Because of the inherent complexity of social systems and the potential for unanticipated events to cause major economic, political and social transformations, predicting only baseline social conditions over even a limited time horizon can

present major difficulties. The task of projecting social conditions becomes even more difficult when the potential changes induced by a development project or management action must be taken into account (see Freudenburg, 1986).

In the past, most social assessment efforts have focused on projecting the consequences of fairly specific and concrete projects or actions that involve activity in a relatively restricted location; i.e., water impoundments, oil fields, power plants, etc. As was discussed above, most of the conceptual frameworks developed to guide SIA practice reflect a strong emphasis on identifying the effects of single, large-scale, technologically advanced development projects. Moreover, the emphasis that has emerged in analyzing the effects of such projects has been to adopt a territorially-limited assessment approach that focuses on patterns of social change and adaptation in localized community settings.

In many ways the project-specific, localized approach that has typified the development and practice of SIA represents a considerably less complex analysis problem than is likely to be confronted when attempting to examine the effects of implementing ecosystem-based resource management. As Geisler (1993: 329) has noted, "ecosystems are surprisingly dynamic and erratic", and "human efforts to manage complex ecosystems are fraught with difficulties and folly." In moving to an ecosystem-based management approach, the task of social assessment becomes more difficult due to the inherent complexities of ecosystems and the need to consider social effects that correspond to management practices extended over larger-scale landscapes, rather than individual localized projects. The emergence of the ecosystem management paradigm in the USDA-Forest Service and other natural resource management agencies has generated increased pressures for analyses of management actions that take into account territorially large and ecologically diverse landscapes, with a commensurate increase in the scope of both natural system and social system issues that must be addressed.

Ecosystem-based management requires considering interrelated resource conditions across an expanded geographic scale, as opposed to the more typical localized project focus. The larger scale of an ecosystem-based management approach will in many instances involve multiple types of public and private land ownership and use patterns. As a result the array of impacted social groups and the specific types of potentially significant impacts will tend to expand greatly over those from a single project location involving only federally-controlled lands. The expanded scale of ecosystem-based analysis will in many instances require social assessment efforts extending well beyond the more typical focus on just one or two localized community settings. Rather, social assessment procedures will need to consider both local and non-local constituencies and interests, and carefully address how impacts are disaggregated at both local and nonlocal levels of analysis.

The shift to ecosystem-based management will also likely require social assessment procedures that effectively address a longer time horizon than has typically been the case with past SIA efforts. As Geisler (1993) has noted, there is a high probability of unanticipated future changes in both the condition of particular ecosystems and in such social conditions as federal policies, the size and distribution of potentially-affected human populations, land ownership patterns, cumulative development patterns, and human value orientations toward resource

management. These and other uncertainties about future conditions make it necessary to implement an assessment approach combining "the advantages of anticipatory research with those of in-stream and post-project analysis" (Geisler, 1993: 332; also see Freudenburg and Gramling, 1992). Ecosystem-based management actions will likely have important short-term social consequences for some local and non-local social groups and stakeholder interests. However, the long-term time perspective inherent in efforts to alter ecosystems makes it equally important to consider longer-term social effects that will be very difficult to anticipate in advance. The pursuit of social assessment in the context of ecosystem management will therefore need to include monitoring efforts and repeated assessment activities that track the social consequences of evolving ecological conditions and resource use patterns.

V. PURSUING SOCIAL ASSESSMENT IN THE EAST SIDE CONTEXT

Social and Economic Traditions and Transitions in the East Side Analysis Area

As was discussed in the opening sections of this paper, the social, economic, and cultural context of the interior Columbia Basin has changed substantially and become increasingly complex in recent decades. Historically the dominant development forces in this large sub-region have been linked to a diverse range of resource-based activities. Many areas have evolved economically and socially around the development of major logging activities and other forest products industries. Many other areas have been influenced primarily by mining developments, livestock grazing, and both irrigated and non-irrigated agriculture. These traditional extractive activities have declined overall but nevertheless remain significant throughout the subregion, and continue to dominate the social and economic contexts of many localized areas within it.

At the same time, there have been significant shifts in the social, economic, and cultural landscape. The population has become increasingly concentrated in a number of rapidly-growing urban locations. The subregion has experienced significant economic diversification and related shifts in social and cultural conditions. Some nonmetropolitan and rural areas remain highly dependent on traditional resource use patterns. At the same time, many other areas that were once closely linked to resource extraction activities have become more diversified as they experienced other types of commercial and industrial development. These include, for example, areas such as Sun Valley, Idaho where development has been based on proximity to high-amenity natural resource settings that attract growth and economic activity associated with recreational opportunities, tourism, and high-income residential development. Some areas have experienced substantial levels of growth as a result of non-traditional migration patterns involving the movement of new populations searching for non-urban lifestyles into high-amenity environmental areas, small-town settings in agricultural regions, and other rural places. Still other areas have become centers for diverse forms of industrial and commercial development not directly linked to natural resource extraction or processing.

In short, the East Side analysis area is highly diverse. The complex array of social and economic settings that has evolved in the area creates significant challenges to understanding the social effects of implementing ecosystem-based natural resource management practices in the

region. A broad range of community contexts and highly divergent forms and levels of reliance on resource utilization contribute to great variability in the social meanings attached to particular environmental settings and the vulnerability of particular groups to various kinds of resource use, management, and manipulation. As a result, efforts to develop a useful approach to social assessment must incorporate a multi-level approach that will effectively link the implementation of ecosystem management actions to effects that are likely to emerge at various levels of social organization.

Joining Social Assessment with Ecosystem Assessment

Matching Social-Political Scales and Ecosystem Scales

As we have noted above, most social assessment related to natural resource decision-making has focused on specific local areas. Any assessments that have been attempted at larger scales have typically involved the analysis of fairly general kinds of secondary (primarily demographic) data gleaned from U.S. Census reports and other comparable sources, rather than relying on the wider variety of methodological approaches that are feasible at the local level. Nonetheless, because ecosystem-based management involves planning for and implementing land management on larger scales, social assessment practitioners need to grapple with questions of different (in many cases, larger) scales of social organization and social impacts as well.

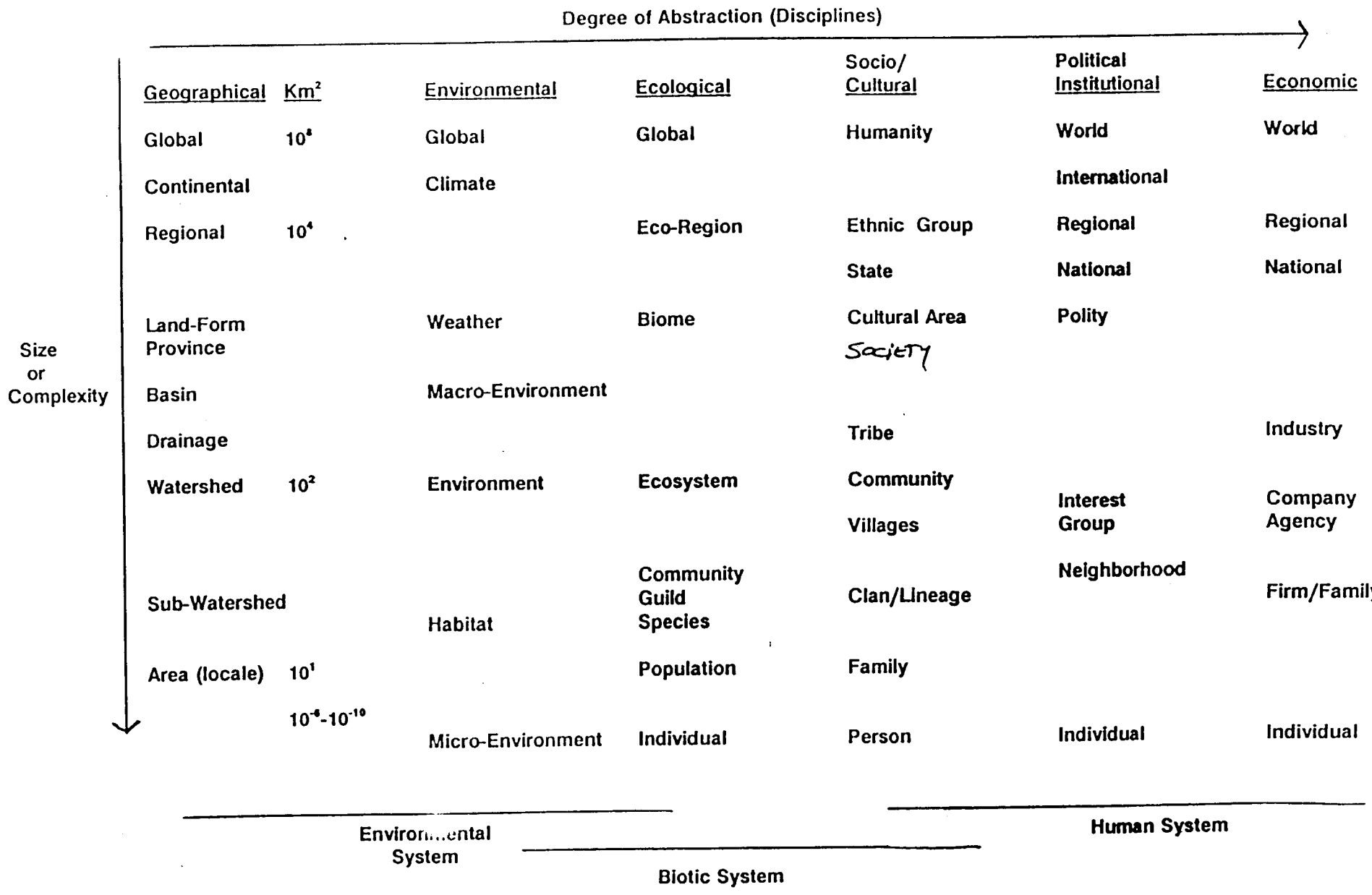
The choice of scale for a particular social assessment effort should hinge almost entirely on the kinds of issues to be examined. Just as ecological analysis can be focused on levels ranging from plant cells to biomes and larger, so too social analysis could conceivably range from the level of the individual to that of the nation-state. This issue has been made explicit in recent work conducted as part of the Sustainable Forestry project conducted by researchers at Oregon State University. As indicated in Figure 1, levels of

FIGURE 1

scale that may be appropriate across a variety of disciplines can extend from extremely small and localized land areas to regional, continental, and even global units. The levels and associated kinds of issues that can emerge in addressing sociocultural issues can include at least the following:

The individual: Specific individuals in particular employs, locations or roles can be affected in very direct ways by natural resource decision-making. Readily identifiable effects at the individual level include a variety of stress-related disturbances, related psychological functioning problems, and maladaptive behavioral responses. These may result from sudden or long term unemployment or from forced relocation of homes or workplaces. Individual impacts are often thought of in economic or physical and mental health terms but, as we will describe in more detail below, individuals' self-identities and their sense of their place in the world can also be affected by such decision-making. For example, a millworker whose job is eliminated as a result of mill closure may experience significant loss of income, possible relocation from a local community setting that provides important social ties and attachments, and difficulties in

Figure 1. Scales Important to Agriculture and Forestry (from Sustainable Forestry Project, Oregon State University)



marketing his/her occupational skills in another setting. Such circumstances frequently contribute to despair, depression, and a variety of social and psychological disturbances (Lee, Carroll and Warren, 1991).

The family: Families and family functioning can also be affected by resource decision-making. The fragmentation of families can result from unemployment of one or more members, the need for member(s) to travel longer distances to find work, the inability of a family-operated farm, ranch, or business to continue operation, etc. Impacts on families can range from relatively short-term stress on the one hand to family disintegration on the other. While in most instances it would be difficult (and perhaps foolish) for a sociologist to predict the impact of a particular decision on specific families, it is possible to examine and in some cases predict patterns of effects across particular kinds of families in affected areas and regions. For example, resource management changes that remove livestock grazing from certain public lands could force some ranching families to lose the ability to derive their livings from ranch operations. The results of this can include disruption of established kinship units that often link multiple households and generations into functional social and economic entities.

Social groups: Social groups of a variety of kinds can be affected by resource decision-making. Occupational groups can be broadly affected, as can specific cultural, ethnic or religious groups for whom particular sites and activities hold special significance. Segments of the population as well as more structured social groups that share common interests such as participation in particular outdoor recreation activities can also feel the impacts of land management decisions. Impacts can also emerge among groups with less direct ties to the land, such as church groups whose membership might swell or dwindle in response to migration patterns induced by altered resource development conditions. The range of groups affected by resource decisions in particular locations and the magnitude of impacts will, of course, vary a great deal from place to place and issue to issue.

Local territorial communities: Local towns, villages and settlements are more than simple aggregations of individuals and families. They provide the setting in which people experience a majority of the social ties, interactions, and organizational affiliations that constitute the fabric of day-to-day life. Such settings also are where many other needs involving access to facilities, services, and infrastructure are met. For example, a local school district's ability to meet state mandates for educational programs may be constrained by increased school enrollments due to population growth associated with increased levels of resource development. Alternatively, revenue declines resulting from reduced resource-related economic activities can force a loss of local schools and other public services, contributing in turn to an erosion of community autonomy, reduced opportunity for localized social interaction in school-related activities, and ultimately a decline in community attachment, involvement, and capacity for collective action (see Tilly, 1973, Wilkinson, 1991).

Larger scale effects: The impacts of resource decision-making can also be seen among social units that extend into much larger geographic areas such as counties, multi-county areas, states, etc. These effects can in some instances be identified as involving organized social groups, such as members of backcountry hiking associations. They may also involve unique cultural

groups, such as regional Native American populations. In addition, certain ethnic, lifestyle, or user groups that are not linked by organizational affiliation may also share common vulnerabilities to certain land management changes. For example, shifts in fire management policy resulting in reduced efforts to protect private property and structures may have significant impacts on the risks and costs experienced by residents of the urban-forest interface.

Focusing social assessment efforts in a way that will reveal the relevance of these and other levels or scales can contribute directly to improved public involvement processes. It is important to recognize that individuals and groups tend to think about, use and value landscapes at particular levels. Thus any attempt to solicit public involvement about management decisions should be sensitive to the question of social scale. The local Ranger District, for example, is a level at which many forest users have been able to think about and provide input for management decision-making. It is likely that a more useful starting point for understanding many social and cultural issues that relate to land management is a relatively localized level, such as that of smaller watersheds. This would allow a more direct focus on specific landscapes and "places" that people use and with which they identify. However, extending beyond this starting point is often necessary, because there are some groups and constituencies that think and operate at the forest or even regional level. Managers and policy makers need to be aware that the level at which they open up planning efforts to public involvement will bear directly on the nature and scope of input received. For example, the current trend in federal land management planning is to focus on the province level. While this appears to make sense from an ecological perspective, it remains to be seen whether the broad range of agency constituency groups can or will provide meaningful input at such a large scale. It may therefore be important to structure public involvement and the broader social assessment process at other (particularly more localized) levels of resolution.

Like looking through a microscope or telescope, different kinds of impacts can be detected depending on the level of resolution that an analysis provides. Clearly, social assessment efforts must be pursued within the limits of agency time, budget, and personnel constraints. These may preclude highly detailed, in-depth data collection and analysis addressing the full range of social, economic, and cultural conditions involving all identifiable levels of social organization within the Columbia Basin. One useful strategy would be to adopt a multi-level, multi-phased approach that would start with a limited baseline effort designed to provide resource managers with a reconnaissance-level understanding of social conditions in areas designated for revised management practices. This would help to establish the extent to which more detailed social assessment efforts may need to be conducted. Once adequately established, a fairly general information base derived from both quantitative and qualitative data on social conditions in various communities and other units of analysis could be maintained with periodic updates. This would allow land managers and scientists to maintain some ongoing feeling for the social "pulse" of potentially affected populations and groups. It would also provide a foundation from which more intensive and detailed assessments could be developed when specific land management proposals and/or actions generate the potential for significant social effects.

Understanding Locality-Based Constituencies and Stakeholders

<u>Emerging Issues and Concerns</u>

Significant changes in land management at virtually any ecological scale are likely to have their most immediate and direct effect on local interests in the vicinity of the lands in question. This tends to be true no matter where the locus of decision-making for the lands rests. Shifts in access to or opportunities derived from natural resources and lands are highly salient to persons who live near to and experience such lands on a regular basis and whose life chances and lifeways are often highly dependent on how such resources are managed. Management decisions which preclude or restrict certain uses or types of access are also more likely to have materially consequential effects on some local populations whose economic activities, community conditions, and social structures are closely tied to the affected landscapes. Thus difficulties can arise (at least from a local perspective) when the local effects of decisions made at higher levels appear to be ignored or poorly understood by the decision-maker.

Among the local impacts that are most likely to emerge in response to implementing ecosystem-based management in the Columbia Basin are those related to employment in traditional resource industries such as logging, mining, ranching and farming. Although as we have noted, employment is shifting (mostly downward) in these industries due to exogenous economic factors, additional restrictions on resource extraction are likely to have independent and generally negative impacts on certain kinds of traditional resource-based employment in some localities. These employment effects may be partially offset by government mandated or funded activities designed to restore or protect ecosystems. However, recent analysis of similar issues in Western Washington and Oregon suggests that net employment effects on the work force of traditional resource industries are likely to be negative (FEMAT, 1993). Moreover, in some cases such alternative economic activities may be incongruent with the social meanings associated with resource use and the lifeways of some cultural groups (see Carroll, in press).

The social composition of many rural communities in the study area has been changing due to selective in and out-migration. People whose livelihoods have been linked to resource extraction and who have been economically displaced have in some cases left particular local areas. Others, it should be noted, have not left, despite often substantial deterioration of their economic circumstances and a variety of associated difficulties (Alt et al., 1994). On the other hand, as noted previously many rural areas have experienced substantial inmigration of formerly urban/suburban people who have moved to rural areas in search of amenity values and particular kinds of lifestyles. All of these trends may be exacerbated in some local areas by the kinds of changes in land management envisioned. Reductions in extractive employment are likely in some cases to increase out-migration. The impact on local in-migration of "non-traditional" populations is more difficult to predict and may depend on a number of intervening factors including existing natural amenities, the non-natural resource related job market and other conditions more idiosyncratic to particular local areas.

These kinds of population changes have contributed to social conflicts over natural resources and the environment which involve local people (see Blahna, 1990). At least three broad kinds of local conflict can be observed. One well documented type of conflict is that between "traditional" local people and non-local environmental interests (Carroll, in press). Another is resource/environmental conflicts between traditional locals and local environmentalists, many (but certainly not all) of whom may be relatively recent in-migrants to rural areas (Brown, in

press). Third, conflicts may emerge between local communities that are part of the same land management region, but have different views and values about how the land should be managed. For example, conflict can emerge between one place with strong extractive traditions and another whose economic fortunes and social identities are more closely tied to amenity values.

Local areas are also often a context in which concerns emerge about changes in, restrictions on, or prohibitions of how local groups can use land for non-extractive purposes. One example of this would be the imposition of restrictions on recreational activities such as camping and horse packing in riparian areas. Another might be the closure of recreational fishing seasons in streams harboring vulnerable populations of anadromous fish.

Yet another set of issues that emerge at the local scale revolve around the fact that resource extraction activities have typically directly and indirectly supported the development and maintenance of local schools, roads and other physical infrastructure. The loss or reduction of such support creates significant challenges for local government and taxpayers, and can contribute to local problems of service shortfalls, reduced capacity to meet local needs, and declining social well-being (see FEMAT, 1993).

Identifying Stakeholders and Social Groups

Rural stakeholders are among the more obvious population segments requiring detailed consideration in assessing the social consequences of implementing ecosystem-based management. Rural communities in the Columbia basin are far more socially and culturally diverse than many common stereotypes would imply (Brandenburg, 1994). The longest standing rural stakeholders in the region are of course, Native Americans. Native people have often historically found themselves at odds with Anglo-American resource development and management, but also find themselves at odds with the dominant culture's environmental restrictions as well, particularly those that restrict traditional activities such as fishing or access to and use of culturally significant sites.

Other rural stakeholders include those who might be referred to as traditional rurals whose livelihoods and traditions have been linked to resource harvest, extraction and production. Another distinct stakeholder group includes "back to the land" types who typically migrated to rural areas in the late 1960s and 1970s in search of a non-traditional, low consuming, yet agrarian lifestyle. Rural areas have also seen a more recent influx of in-migrants seeking to escape urban problems who typically value both natural amenities and urban-style services and consumption opportunities (Marston, 1994). A portion of the latter group are seasonal residents who generally make their living in non-rural settings.

Other types of local stakeholder groups (many of which cut across the categories outlined above) include local commercial/business interests, local recreation interests and localized environmental/amenity advocates. In addition, there are potentially affected populations that are not readily identified as "stakeholders", in part because they may not themselves be cognizant of the fact that they are at risk of being impacted by shifting resource management practices. These could include, for example, elderly residents, women heads of households, long-term unemployed

and underemployed persons, and others who are relatively weak economic competitors and who often are particularly vulnerable to changes that result in reduced material opportunities and services (see Summers et al., 1976).

Methodological Options and Recommendations

Available data. There are various methods by which information concerning the local social impacts of changes in land/resource management can be gathered from existing data sources. These include community level demographic and social indicators analyses based on data that measure such social phenomena as population size and composition, marriage and divorce rates, crime rates, school enrollments, energy consumption rates, etc. Such data are readily available from a variety of sources, including in particular reports issued by the U.S. Census Bureau and by various state-level information and planning offices.

When properly incorporated into a study design that establishes both current conditions and longer-term trends, such indicators can help analysts understand the nature and extent of at least some structural changes occurring at the local level. However, there are often serious limitations associated with analyses based solely on such data. One common problem is that many social indicators are not measured or reported at the level of local communities, but rather are reported only for larger administrative units such as counties. Also, data measured for geographically and politically defined units such as cities or counties may not coincide with the units of social organization that are of greatest interest, such as small rural villages or neighborhoods, or particular occupational groups. Because many types of available data are collected infrequently (e.g., every 10 years for U.S. Census data), they also often do not provide adequate measurement of current social conditions. Finally and perhaps most importantly, the types of social indicators generally derived from available data sources seldom address issues of critical importance to social assessment, such as local value orientations, lifeways, and meanings.

Another source of available data which should not be ignored is locally available documents, including the community histories that are commonly available from local historical societies or community libraries. Data on local conditions and development trends such as crime reports, housing starts, and so forth can often be obtained from local planning offices, police departments, and administrative offices. Content analyses of local community newspapers can also prove useful in filling in knowledge concerning relevant contextual and historical information, including key issues affecting an area, important public events, and the involvement of various groups in local issues and controversies. It might be useful to know, for example, about repeated employment shifts caused by the expansion and contraction of a key local industry. This provides a way of placing local reactions to recent or anticipated employment shifts in context.

Key informant interviews. Another useful methodology involves personal interviews with especially knowledgeable and/or insightful local people concerning local conditions, trends, and particular issues of interest. Potential interviewees are generally selected by means of chain referrals derived from contacts with other knowledgeable local observers. Depending on the issues involved, these interviews often start with readily-identified local elected officials, local organizational and business leaders, locally-assigned agency personnel, small town newspaper

editors, clergy, and many others who occupy either formal or informal leadership positions. Although such persons are often knowledgeable about a broad range of community issues, in conducting key informant interviews it is important for the researcher to attend to the full range of socioeconomic groups and factions in communities. Key informant interviews should therefore involve a sufficiently wide spectrum of people such that no single strata or faction's perspective can dominate the analysis. This requires purposive sampling procedures that actively seek out persons who can represent the perspectives of all stakeholder groups.

Although key informant interviews seldom provide access to quantitative data, they can be invaluable in helping the analyst understand the implications and meanings of social conditions and changes that might not be evident from other data sources. Key informant interviews can reveal the human stories behind local structural attributes, and can also help in defining and characterizing important groups and stakeholder interests. They can allow the analyst to come to grips with local history, views about land management practices, and values related to the particular issues at hand. The kinds of questions put to key informants vary with the particular issues, but generally focus on understanding local perspectives, values, processes, and history.

Because key informant interviews can provide a relatively cost-effective and efficient approach to developing a reconnaissance-level understanding of local social conditions, they often form the foundation for "rapid appraisal" social assessment efforts. However, such interviews can also be usefully pursued at a higher level of effort when circumstances warrant detailed analysis. One important caution regarding this methodology has to do with data validity and reliability concerns which are inherent when local individuals are asked to provide information about broader community conditions as opposed to only their own attitudes, beliefs, and values. It is therefore generally important to solicit similar information from multiple informants in order to determine the factual accuracy of the data derived from such interviews (see Krannich and Humphrey, 1986).

Sample surveys. Small scale, paper-and-pencil surveys or telephone interviews can also yield valuable information in the local social assessment process. If based on representative probability-based sampling procedures, surveys can generate statistically precise information about local population characteristics, behavior patterns, and the distribution of particular kinds of knowledge, beliefs or values in a particular local setting. The data derived from surveys can include both quantitative measures of social conditions and indicators as well as more qualitative information derived from open-ended or unstructured questionnaire items. Also, properly conducted surveys insure that information is collected from all sectors of the local population; if the sample is sufficiently large and appropriately drawn, this permits analyses that address specifically the responses of potentially vulnerable minority populations (for a general review of survey methods, see Dillman, 1978).

Although surveys can be carried out quickly and at relatively low cost, they can generate misleading data if conducted haphazardly. In particular, it is important to avoid problems of sampling error and measurement bias. In addition, it is important to note that survey methods generally do not provide access to the depth of understanding that can be developed from more intensive and direct interactions with local residents. For that reason, survey data are often most

useful when analyzed in conjunction with other types of data that provide more qualitative insights into the social fabric of communities and groups that are the focus of social assessment efforts.

Group-based techniques. A number of data collection strategies involve methods that rely on local residents' participation in various types of group activities. For example, focus group methodologies involve drawing together a limited number of persons who are familiar with and/or concerned about a particular issue (see Krueger, 1988; Stewart and Shamdasani, 1990). Other group-based techniques such as delphi procedures, nominal group exercises, and so forth can also be useful for uncovering local perspectives on social conditions, resource management concerns, and potential impacts of alternative management practices.

The strength of focus groups and other group methods is that the interplay among participants often stimulates a more in-depth exploration of the targeted issues than will ordinarily emerge out of interviews with individuals. Such techniques also provide a highly efficient means of gaining at least the preliminary level of understanding needed to determine the direction to be taken by further assessment efforts. The weakness of the group-based techniques, which is shared with key informant interviews, is that the perspectives gathered are only as broadly distributed as the distribution of group members. Because focus groups and other similar group techniques are difficult to structure with more than 12-15 participants, it is often necessary to conduct several different group meetings in order to include an adequate cross-section of local views and interests.

Other techniques. Locally based public involvement processes (such as public meetings) and advisory panels can also provide valuable information about local socioeconomic conditions, issues, and concerns. As with the key informant interviews and the various group-based techniques, such processes can provide rich qualitative insights, but can also fail to represent the full range of potentially-affected social groups and interests. Although federal land management agencies are mandated to incorporate public participation activities into their decision-making processes, such activities have often been of only limited usefulness to either the broader social assessment effort or to decision-makers attempting to balance public values and concerns against other management considerations. The strengths and weaknesses of selected public involvement processes are addressed in considerable detail in Chapter 4 of this report.

Understanding Other Regional Constituencies and Stakeholders

While it is almost inevitable that social assessments will need to focus attention on localized constituencies and stakeholders, it is also often important to extend assessment to include relevant regional constituencies and stakeholders. A need to carry out detailed social assessments at the regional scale can emerge for several reasons, whether the scales of ecosystems that are being managed are relatively small (e.g., a particular small watershed area) or relatively large (e.g., a large drainage area or an ecological province).

Even in the case of management actions involving relatively small ecosystem scales, social assessments must often extend to incorporate a regional scale. This is particularly true when the area in question has special significance or sensitivity with respect to economic activities, recreational use, or symbolic importance. For example, management actions that affect a heavily used recreational river corridor such as Rock Creek in western Montana are likely to elicit social responses and consequences extending well beyond just local area communities and groups. Such an area attracts considerable non-local use and interest, and is of symbolic importance to regional individuals and organized groups with specific interests in fisheries resources and river ecosystems. In addition, any management actions that might cause a deterioration of recreational opportunities in such a setting could cause displacement effects resulting in the relocation of recreation use to other similar settings in the region, with a potential for off-site consequences such as increased user crowding or resource damage at those other regional locations. Similarly, management actions undertaken at the scale of a relatively small watershed could result in environmental changes such as increased stream siltation that may have important ecological and social effects in areas located at some distance from the local area.

The need to extend social assessments to a regional scale is more readily apparent when the scale of the ecosystem in question is relatively large. Under conditions where management actions will involve a relatively large-scale area such as the Greater Yellowstone Ecosystem or the Snake River drainage, the array of possible social effects will inevitably encompass multiple communities and groups extending across a relatively large geographic region.

<u>Emerging Issues and Concerns</u>

Social assessment issues that emerge at the regional scale often become more complex than those linked to relatively localized constituencies, because they tend to involve a broader and more diverse array of interests, uses, and social values. For example, within the context of the interior Columbia Basin extending social assessments to consider regional constituencies and stakeholders will inevitably bring into the equation a need to examine the dynamics of urban-rural linkages as these relate to the land and land management practices and priorities. In an earlier era a producer-consumer relationship generally characterized the relationship between rural area land uses and resource management activities and the needs and interests of urban area populations and institutions (see Cronon, 1991). However, in the modern era new forms of resource use and interests associated with resource amenity values, increased resource preservation interests, and the spatial expansion of the rural-urban interface have joined urban area reliance on resource production from rural areas as major influences on the direction and emphasis of natural resource

management in rural hinterland areas.

In many instances, urban area populations and organizations have come to prioritize the management of national forests and other similar land areas as resource "amenity pools", contributing to increased tensions between what are perceived as urban area preferences and pressures for restricted resource development and more localized rural area interests in the preservation of economic activities, community structures, and lifeways that evolved in a context of traditional resource utilization patterns (Buttel, 1992). While it is important to note that there are also rural population groups that prioritize resource preservation and amenity protection over extraction and harvest, these competing resource use pressures and preferences often give rise to increased social conflict between what are typically identified as "urban" and "rural" interests within a region. Management actions that appear to favor one or the other of these interests contribute in turn to dissatisfaction among individuals and groups that perceive threats to their well-being.

Another set of issues that can emerge when analysis is extended to the regional scale involves the possible displacement of formerly localized resource uses into other areas encompassing a broader socioeconomic region. For example, resource management actions in one area that cause local logging operations and mills to substantially extend their working range for acquisition of timber sales and log supplies can cause increased regional competition, inflated prices, and possible employment losses and business failures at the regional level. Such displacement effects can also occur in the case of recreation activities and uses. If a particular recreation resource becomes less heavily used due to access restrictions or environmental deterioration, a transferal of such use to other areas in the region can cause an alteration of recreation opportunities and experiences elsewhere, as well as shifts in the relative economic opportunities associated with recreation and tourism-based business activities in various locations. Associated with these kinds of shifts in the regional distribution of economic activities and resource amenity conditions are shifts in the distribution of development pressures and associated patterns of economic-demographic growth and decline. Such changes in turn can alter the opportunity structures and levels of well-being experienced by particular social groups.

The issues and concerns that emerge when social assessment is extended to a regional scale overlap in some ways with those that emerge among localized constituencies and stakeholders. Many of the concerns expressed by particular stakeholders such as industry and occupational groups pertain to the provision of economic opportunities and the effects of management actions on either the expansion or contraction of various economic sectors. Related to this are concerns about the availability of fiscal resources derived from various kinds of resource-related economic activities to support public-sector programs that emanate from non-local institutions such as regional and state agencies.

Also, as was suggested previously, interests pertaining to aesthetic values and recreation opportunities or such noncommercial land uses as berry picking or firewood cutting that may be associated with particular places and settings can often elicit regional response. In many such situations the use of particular areas by nonlocals is characterized by repeated and intensive interaction with the land and a high degree of personal experience and meanings associated with

particular resource settings. Also likely to emerge are concerns related to the effects of resource management on cultural traditions that often involve not only localized constituencies but also distinctive cultural groups such as Native American populations that are often dispersed across numerous locations within a region and whose traditional uses of and symbolic attachments to resources involve diverse land areas.

Identifying Stakeholders and Social Groups

When analysis is extended to the regional scale, it is often the case that institutionalized structures are present that represent and express the interests of major regional stakeholders and interest groups. As a result, stakeholders often "self-identify" very quickly when potential shifts in resource management are announced. For example, most ecosystem management alternatives that have the potential to affect commercial activities linked directly to affected land areas will elicit relatively quick response from industry and other organizations that represent traditional extractive interests. Management actions that may alter commercial access to timber supplies are likely to meet with response from industry organizations such as regional representatives of the National Forest Products Association and various non-industry interest groups such as People for a Great Northwest or the Oregon Lands Council.

Similarly, possible management actions that involve some potentially significant alteration of aesthetic values, the viability of particular plant and animal populations or species, or opportunities to pursue various forms of wildland recreation will bring forth responses from a potentially broad range of environmental advocacy groups. These would include, for example, involvement of both broad-based environmental organizations such as the Sierra Club or the Wilderness Society and organizations such as Trout Unlimited, Rocky Mountain Elk Foundation, or Backcountry Horsemen's Association that reflect more specialized interests and user groups.

Other regional stakeholder interests that will often be identifiable through responses initiated by institutionalized organizations include a variety of nonlocal government entities (e.g., regional Councils of Governments, state agencies with economic development or resource management mandates, etc.). Native American tribal councils are another example of formal organizations that are representative of certain regional stakeholder interests.

While these types of institutionalized structures channel many regional stakeholder interests, it is also important to recognize that some stakeholders may not be represented well or at all by such organizations. For example, there tend to be few institutionalized structures representing the interests of people such as firewood gatherers or those involved in some segments of the special forest products industry such as mushroom, beargrass and moss gatherers, berry pickers, etc. Similarly, many recreation interests such as casual anglers, mountain bikers, and so forth are not directly represented by regional institutions and organizations. For these reasons, stakeholder identification cannot rely strictly on an approach that requires interested parties and groups to self-identify and set forth their concerns and management preferences. Rather, it is necessary to implement assessment procedures that will delineate those non-institutional regional stakeholders that may be significantly affected by ecosystem-based management activities.

Methodological Options and Recommendations

A multi-method approach is necessary to develop an adequate understanding of the distribution of social effects across regional constituencies and stakeholders. Because practical limitations associated with budget and time constraints will likely preclude extremely in-depth analyses that address all dimensions of social organization at a regional level, it will most often be necessary to begin with procedures that can effectively screen out issues, concerns, and potential areas of vulnerability that merit focused attention. More intensive assessment efforts can then be directed toward a more limited range of issues, interests, and social groups.

Available data. As with locality-based assessments, a useful starting point for examining social effects at a regional scale involves the use of available data such as Census reports. Such data can be used to develop a regional socioeconomic profile that can contribute to a reconnaissance-level understanding of the social context and of how a regional population is divided across major occupational categories, socioeconomic status levels, racial and ethnic groups, age groups, residential locations, and so forth. Such data can also provide a longitudinal perspective on regional socioeconomic changes and trends that may help to illuminate factors that contribute to the vulnerability of some populations to shifting resource conditions. For example, evidence of deepening poverty among certain occupational communities such as limited-resource farmers and ranchers may indicate that such population segments are especially vulnerable to management shifts that might reduce farm productivity or that would require adoption of farming practices that require increased investment.

Public involvement processes. Another source of at least preliminary information about institutionalized stakeholders and their concerns as well as about highly-motivated noninstitutionalized stakeholders can be derived from input obtained from conventional public involvement activities normally conducted as part of issue scoping activities associated with the NEPA process. In instances where a regional assessment scale is appropriate, public meetings and workshops should be scheduled at a number of regional locations to increase the opportunities for various types of stakeholders to participate and identify their concerns. Implementation of certain non-traditional public involvement strategies that encourage broader-based participation and that solicit more active participation and dialogue between potentially affected parties can be particularly useful, as is discussed at length in Chapter 4.

Other strategies. When initial scoping reveals a need for focused social assessment efforts that extend to a regional level, a number of more intensive data collection procedures are needed. Among the more promising are regional key informant interviews and focus groups. Both of these procedures should be structured in such a manner as to insure that they involve a broad array of interests and stakeholders, as well as persons who may not represent any particular stakeholder group but who are highly familiar with and knowledgeable about the socioeconomic context of the region and/or particular areas within it.

Expert panel workshops that draw together a number of carefully selected individuals with high levels of expertise and knowledge about social groups, issues, and concerns in the analysis region can also provide an excellent mechanism for developing social assessment data. For

example, persons such as county extension agents who are knowledgeable about area agricultural conditions and practices and who are often also intimately familiar with the values and lifeways of area farmers and ranchers can provide rich insight into the particular circumstances and vulnerabilities of that population segment. Regional public opinion polls as well as more targeted surveys addressing particular user groups and stakeholders (e.g., licensed anglers or hunters, grazing permittees, commercial outfitters, mill operators, etc.) can also help to delineate social effects that may emerge at a regional scale. As was noted earlier, carefully conducted sample surveys can provide both qualitative and quantitative indicators of social conditions that are statistically representative of much larger populations. Surveys can be extremely time and cost efficient when the analyst is confronted with a need to collect data that pertain to large populations extending over vast geographic areas, and are useful mechanisms for developing detailed insights into the relationships of numerous groups and constituencies to the land and how it may be managed.

Beyond the Region: Understanding National and Other Constituencies

Emerging Issues and Concerns

For the most part, levels of social scale that extend beyond the region are exogenous to the social systems that need to be understood in assessing the effects of land-based resource management actions. This is not to say that more general questions about resource management direction and emphasis do not attract the attention of individuals and groups at the scale of national (and in some cases even international) social institutions, organizations, and stakeholders. Issues pertaining to the conditions and uses of certain highly valued and meaningful ecosystem areas also often generate social response at the national level.

However, in many instances the debates about resource use and management that extend to engage national-level constituencies and interests revolve around paradigmatic and philosophical differences that are linked only indirectly to conditions and uses associated with specific land areas. Such differences are at the center of national-level debates over natural resource policy, and it is at the policy formation level that the perspectives of national constituencies and interests are most frequently engaged. At the point of implementation involving specific on-the-ground management actions associated with particular places, it is important that social assessment efforts focus attention primarily on the local and regional human populations that will be most immediately and significantly impacted by alteration of resource conditions and uses.

What this implies is that one can go too far in focusing social assessment on the concerns and issues that pertain to non-geographic "communities of interest." A number of well-organized and highly mobilized regional and national interest groups frequently emerge as stakeholders in response to any number of resource management actions and proposals. Although the perspectives and concerns of such groups merit careful consideration, the simple fact that they are capable of mobilizing response to an issue does not necessarily imply that they should become a focal point in the social assessment effort. Indeed, it is often the case that effects of on-the-ground

management actions will be of greater salience to, and experienced with greater intensity among, less vocal and in some cases relatively non-mobilized groups and communities. To illustrate, a resource management action that results in the elimination of large numbers of jobs in a resource-dependent rural community is likely to have immediate and profound consequences for the well-being of both displaced employees and other local community residents. If that same management action helps to protect the spawning habitat of a native fish species it is likely to be viewed favorably by some organized groups representing sportsmen, wildlife interest groups, and other constituencies that favor environmental protection, but the intensity of effects experienced by members and supporters of such non-local groups is clearly lower.

Therefore, in most instances it is neither practical nor useful to carry out detailed social assessments at the national level. The exceptions to this will generally be limited to situations in which the specific places or areas involved have clear significance to constituencies and stakeholders that extend beyond the regional level; e.g., when there are place-specific meanings, attachments, or vulnerabilities that link the well-being of identifiable non-local and non-regional constituencies to those areas and their management. Examples might include areas such as Yellowstone National Park that attract high levels of use and that represent important spiritual, aesthetic, and environmental values at a national and even international level, or areas such of great historical and cultural significance such as the Gettysburg National Military Park in Pennsylvania or the Little Bighorn Battlefield National Monument in Montana. Other examples might include management of designated wilderness areas or other unique natural areas that have high existence value even to people who in many instances may have little if any direct experience with the landscapes in question.

Understanding Stakeholders and Social Groups

To an even greater extent than is the case with assessments conducted at a regional scale, national-level stakeholders and interest group will tend to self-identify through the active involvement and response of institutionalized organizations. For example, such national-level organizations as the National Cattlemen's Association, the National Forest Products Association, the Natural Resources Defense Council, Sierra Club, Wilderness Society, and innumerable other formal organizations routinely become engaged in land management debates that involve highly significant issues and/or land areas.

Methodological Options and Recommendations

Because national-level involvement of institutionalized interests generally emerges in situations where there are significant extra-local and extra-regional concerns about actions resulting from implementation of ecosystem management practices in various locations and sites, there is limited need to devise or implement national-scale efforts to identify stakeholders and constituencies. However, in those cases where national-level interests and concerns do emerge over specific implementation activities or alternatives, it is important to develop methodological procedures that will provide for an enhanced understanding of the specific issues and meanings that such groups associated with a particular setting, and how they may be effected by various management actions. In many cases this will best be accomplished through efforts to structure more effective

public involvement strategies. Alternative public involvement mechanisms that can enhance efforts to learn about the consequences of management actions are discussed in detail in the next section of this report.

CHAPTER 4
ECOSYSTEM-BASED MANAGEMENT, SOCIAL ASSESSMENT, AND LEARNING-CENTERED PUBLIC PARTICIPATION

I. INTRODUCTION

This section addresses public participation in agency decision-making, recognizing that public participation and social assessment are closely allied activities that can operate synergistically to improve the implementability of land management decisions. The section goes through several steps to explain how public participation has evolved and how it can be linked to social assessment. First, a brief overview of our definition of public participation is provided, followed by two reasons why public involvement is commonly undertaken. Second, both the advantages and disadvantages of traditional public participation are discussed, and research findings are reviewed to determine the net effect of public participation activities on agency function and external relationships. Third, the opportunity to enhance public participation is described by recognizing 1) that it is a form of negotiation to which the environmental dispute resolution literature has much to offer and 2) the technical and social complexity of ecosystem-based management strategies create a need for an enhanced learning emphasis in public participation activities. The importance of learning in public deliberation and principles behind learning-based public participation are presented. Following our discussion of learning, we outline two collaborative decision-making frameworks that offer considerable learning opportunity. We conclude by returning to our consideration of social assessment as both providing benefit to, and benefitting from, learning-based public participation.

II. TRADITIONAL PUBLIC PARTICIPATION

Public participation (also referred to as public involvement) has been a part of public land management through this century. Effective ecosystem-based management and social assessment requires appropriate public participation methods.

Describing Traditional Public Participation

The definition of public participation used in this project is predecisional communication between an agency responsible for a decision and the public. This view excludes two forms of communication that might be interesting to examine, but that are beyond the scope of this effort, namely agency-to-agency communication such as consultation pursuant to Sec. 7 of the Endangered Species Act or agency-to-public communication that does not occur in the context of a specific decision process. Both of those activities are important for their own reasons, but the contexts within which they occur, the power relationships, and the relative salience of different issues are all sufficiently different to warrant separate discussions.

The most basic format for the public participation activities conducted by natural resource management agencies involves three specific activities: notification, issue surfacing, and comment on draft decisions. Notification is the use of various venues and media to communicate to the

public that an agency decision process is beginning, and what might be known at that point about the basic structure of the decision process (issues, purpose, constraints, schedule etc.). Notification activities commonly include newsletters, direct mailings to interested individuals, and publication in the Federal Register. Issue surfacing, also referred to as scoping, is the canvassing of interested members of the public to determine what their interests, goals, and concerns might be, vis-a-vis the project. Typical issue surfacing involves workshops, field trips, soliciting letters, and one-on-one communication. Comment on draft decisions takes different forms, but the most common activities are public meetings/hearings and comment letters from the public.

Public participation activities throughout the United States seem to be largely patterned after a NEPA-compliance model (National Environmental Policy Act of 1969). NEPA is perhaps the most sweeping environmental law related to decision processes, since it applies to all federal decisions. It has also spawned a number of "Baby-NEPAs", state laws that require state agencies to conduct activities that are largely patterned after NEPA. Even in state and local decision situations that do not require specific NEPA-like compliance, agency decision processes often follow the basic NEPA model because it is the paradigm with which most natural resource professionals and advocates are familiar.

It is important to recognize that despite its dominant role, NEPA is not the only legislative source of decision process/public participation mandates. At least four other federal laws deserve mention in this regard. The Administrative Procedures Act of 1946 (APA) addresses agency rulemaking procedures and judicial review of agency decisions. It allows the courts to set aside "arbitrary and capricious" decisions. The Federal Advisory Committee Act of 1973 (FACA) requires open meetings and regulates the use of standing advisory committees. FACA has recently become an issue because a federal court ruled that a Presidentially commissioned planning process for federal forest lands in the Pacific Northwest violated FACA. The National Forest Management Act 1976 (NFMA) requires comprehensive planning processes for the National Forests, and calls for public participation in their management. Finally, the Federal Land Management and Policy Act of 1976 provides management direction for the Bureau of Land Management, and requires public participation, coordination with other local, state, and federal planning efforts, and authorizes advisory councils, conforming to FACA requirements.

The net result of these laws is that there may be no other area of the federal government that has a more explicit mandate for public participation than the natural resource management agencies. The need for a citizenry involved in government land management process has long been recognized. Gifford Pinchot, the first Chief of the USDA Forest Service, noted that:

> It is more trouble to consult the public than to ignore them, but that is what you are hired for...Public support of acts affecting public rights is absolutely required (McCoy et al., 1994).

As one reviews agency public participation activities by land management agencies throughout the country, one encounters situations where people have taken Pinchot's admonition to heart, and have moved well beyond the basic model of notification/scoping/review. One finds examples where agency employees are using more innovative, almost entrepeneurial, approaches

to designing forums and forming relationships.

Even though the importance of effective involvement has long been acknowledged by some, there has also been an undertone that the natural resource professionals knew what was best, and that any public disagreement was attributable to ignorance (Behan, 1966). If one adopts this stance, public involvement is therefore intended to inform and educate the public so that they will recognize why an agency's proposal is the right thing to do. In fact these two attitudes regarding public participation--that it is an integral part of public lands administration or that it is done to placate and educate--can be found in various settings. Witness, for example, the different ways in which public affairs staff officers, who typically are directly responsible for public participation activities, are utilized on different administrative units. On some National Forests or BLM Districts, PAOs are intimately involved in decision processes so that their input is brought to bear early in decision processes. The line officers on these units seem to have taken Pinchot's admonition to heart. Elsewhere, however, the PAOs are consulted after the decision direction has already been established, and the expectation is that the PAO is there to sell the project to the public, and minimize any disruptive controversy that might interfere with the project's timely implementation. These latter units appear to be behaving in a manner more consistent with Behan's description of omnipotent foresters.

Evaluating Traditional Public Participation

With this brief background into what public participation typically consists of, as well as the variation in it, attention can now turn to a less-than-exhaustive evaluation of public participation effects. There are two sources of data for this evaluation: personal experience and a review of existing research findings. The authors have considerable combined experience in natural resource public involvement processes, having served in various roles with different agencies on projects throughout the country. This provides a rich set of experiential evidence that is useful, but cannot safely be generalized to other situations. There is also a large, but diffuse literature on public participation that provides more generalizable findings. However, providing an exhaustive review of those findings exceeds the scope of this project, and a more selective approach must suffice.

<u>Advantages to Traditional Public Participation</u>

There appear to be four major advantages to the typical ways in which public participation is undertaken by land management agencies: 1) it is well-integrated into agency function, 2) it is well known by the public, 3) there are few barriers to participation, and 4) it establishes clear standing to sue. In short, it is a well-known process, and the various parties both in and out of agencies know what is expected of them.

The importance of public participation processes that are well-integrated into agency function and culture should not be underestimated. The land management agencies are geographically dispersed over large areas, and it is an organizational challenge to achieve comparable processes throughout them. Only well-established techniques, such as the existing public participation process, have an infrastructure of training courses, experienced personnel who

can mentor junior colleagues, and past projects to serve as models. Furthermore, the agencies have been doing public participation in this format long enough that it needs not add much additional time to decision processes. Since it is common knowledge that scoping and comments on a draft decision will need to occur, time for those activities are built into the project schedule and they can occur in a timely and efficient manner.

Because agencies have been using a notification/scoping/comment on the draft model of public participation for almost 25 years, the public expects public participation to follow that format. Even people who may be involving themselves in agency decision processes for the first time have some general expectations that hearings and comment letters may be involved. There is also a very experienced cadre of natural resource advocates who have arguably as much experience in these forums as do agency personnel; they know exactly what is expected of them and how to behave in order to further their particular goals.

Traditional public participation has few structural barriers to participation--most people can get involved if they are motivated to do so. Public meetings and comment letters are both readily accessible venues. According to one analyst, these activities are "cheap and easy to use. Anyone who can speak or write can participate since the legal procedures are relatively simple" (Masselli, 1988: 13). While there are always logistical challenges with public meetings (it is possible to choose meeting times and locations, either wittingly or unwittingly, that exclude significant portions of the interested public), once members of the public are able to attend a meeting, they have as much standing as anyone else. One does not need to hire a lawyer nor prepare an expensive brief or testimony; one need only speak for the record. By the same token, it only takes a stamped postcard to write a comment letter. Letters are therefore received from a broad range: from children and the elderly, from the highly educated experts and the barely literate, from highly-organized interest groups trying to "load the ballot box" and individuals speaking directly from their deeply-held personal values.

Finally, much agency public participation behavior has been tested in court or is a direct response to legal considerations. One associated legal consideration is that in order to have standing to sue, a group must have eliminated administrative redress. Groups can partially fulfill that obligation in the existing public participation environment by merely submitting a comment letter. That provides a straightforward route into administrative appeals or judicial review.

Disadvantages to Traditional Public Participation

If the advantages to common public participant practices stem from easy access and predictability, the disadvantages concentrate on the impact of that access. It is immaterial that a process is convenient if being involved has no effect. There are several aspects of traditional public involvement that raise doubts in participants' minds as to the likely impact of their comments. There are also research findings indicating that their doubts may in fact have merit.

In terms of a NEPA model of decision-making and public participation, perhaps the major public input is the comment to the draft decision. This point appears too late for the public input to have any significant influence for two reasons. First, the draft decision document is a complete

and daunting project description that appears "draft" in name only. Often they are written in a tone that explains why the preferred alternative is better than any of the others, and it is hard for people to grasp the extent to which the agency might be willing to choose a different alternative in the final decision, or significantly alter the preferred alternative. Second, draft environmental documents invariably contain a single preferred alternative, not multiple preferred alternatives. This may add to the appearance that the decision is a fait accompli. Strictly speaking to NEPA compliance, the regulations developed by the Council on Environmental Quality require that a preferred alternative be revealed in a draft document, should that alternative exist, but it also allows for multiple alternatives to be presented.

Research substantiates the sense that most public involvement has few positive impacts. Surveys of participants indicate that substantial portions of participants feel that their input had little or no impact (Lyden, Twight, and Tuchmann, 1990; USDA Forest Service, 1990), are dissatisfied or mistrustful (Dixon, 1993), that they value interactive participation methods that involve two way communication and shared decision-making over formal public hearings or letter writing (Force and Williams, 1989), that public meetings may become venting sessions motivated out of generalized resentment and mistrust of public officials (Twight, 1977), and that they do little to dispel stereotyped perceptions of disagreement with agency positions (Twight and Paterson, 1979).

A review of the Roadless Area Review and Evaluation decisions (RARE II) showed that public sentiment did not consistently have a statistically significant impact on agency decisions to allocate lands into either wilderness, nonwilderness, or further study designations, and that the best explanations for the decisions were "political factors and organizational parochialism" (Mohai, 1987: 545).

Another aspect of traditional NEPA-type public participation is that the participants cannot tell how their input changes the agency decision. After the comment period on the draft document ends, the agency retreats into its internal deliberations, and only some weeks or months later does the final decision and supporting documentation emerge. The public has no way to know what decision would have emerged without their input, nor do they have any insight into how seriously (or perfunctorily) their comments were received. In situations not characterized by considerable trust and goodwill, a likely conclusion by the public is that their comments did not make any difference.

The relatively formal nature of communication during public involvement processes also tends to affect the quality of the information that the agency receives. In order to comment at a hearing-type meeting, a participant must speak for the record, which is often equivalent to making a short speech into a microphone before a relatively large assembly. Given the proportion of people in whom such public speaking produces anxiety, it is likely that the quality and quantity of the comments is reduced by such a formal protocol, and that only the most motivated people will overcome their fears and address the group. As a result, the comments tend to be more extreme than they might be in a setting where dialogue is more natural.

There may also be substantial attitudinal barriers to participation in public involvement processes, even if the structural barriers are low. Some portions of a population may feel

sufficiently alienated, frustrated, intimidated, or under-powered that they do not enter the process at all.

Finally, the game theoretic incentives embedded in traditional public participation increase the likelihood of extreme behaviors. Agency decision-making resembles conventional arbitration with the deciding official acting as an arbitrator, and different public groups making their cases before the arbitrator in an effort to affect the decision. Theoretical research into the incentives created in conventional arbitration formats shows clearly that the incentives for the participants is to state extreme demands and use volatile rhetoric, because the assumption is that the decision-maker/arbitrator will somehow split the difference between the different groups. In order to move the decision in their desired ways, each group must be more forceful and compelling than the others. The old maxim of "the squeaky wheel getting the grease" is applicable to these incentives; the group that squeaks the loudest gets the influence on the outcome.

On balance, reviewing both the bulk of experiental data and the research into public participation supports the conclusion that the disadvantages of traditional processes appear to outweigh their advantages, at least as the processes are typically undertaken. There has been more measured dissatisfaction with public participation than satisfaction (Hendee et al.,1974; Blahna and Yonts-Shepard, 1989; Dixon, 1993; Twight, 1977, Twight and Paterson, 1979; Force and Williams, 1989). It does not appear that on balance, the public participation activities of land management agencies are contributing to any successes they may be enjoying; it is in fact more likely that they are part of the agencies' current difficulties.

As the land management agencies of the interior Columbia River basin embrace and implement a new management approach, they need to utilize social assessment and public participation activities consistent with that approach. Ecosystem-based management emphasizes a continual rather than static planning endeavor. In that same vein, Geisler (1993) recommends that social impact assessment work be process-oriented, occurring throughout the life of a given project. Public participation processes must be similarly adaptive and durable. Ecosystem-based management calls for a new generation of public participation approaches, with structures and tasks that emphasize learning and interaction.

III. TOWARD LEARNING-CENTERED PUBLIC PARTICIPATION

Ecosytem-based management must be quality science and quality public policy. Since ESBM is based on emerging disciplines such as landscape ecology and conservation biology, we still have some learning to do. The complexity of land management over such grand scales means that even when we become accomplished ecosystem-based managers, learning will remain an integral part of the process. This section examines the importance of learning in public policy formation, and in ecosystem-based management in particular.

One caveat about this learning emphasis is warranted. As stated above, a common phrase among natural resource professionals is that "if the public only knew, they would agree with us; how can they be taught that what we are doing is right?" Such a statement certainly has a

learning emphasis, but is based on a presumption that the agency/professional worldview is somehow "right" and that the only participants that need to learn are the public. The learning philosophy in this paper rejects that perspective, particularly the notion that the benefits from learning would only accrue outside the agencies.

Learning and Public Policy

Learning is an inherent feature of public policy decision-making. "Both the process and the substance of policy decisions," Reich observes, "generate social learning about public values and set the stage for future public choices" (1988: 143). Social learning and decision-making may occur within a larger planning context. As Friedmann notes, social learning:

> begins and ends with action, that is, purposeful activity. It is a complex, time-dependent process that involves, in addition to the action itself (which breaks into the stream of ongoing events to change reality), political strategy and tactics (which tell us how to overcome resistance), theories of reality (which tell us what the world is like), and the values that inspire and direct the action. Together, these four elements constitute a form of social practice . . . practice and learning are construed as correlative processes, so that one process necessarily implies the other. In this scheme, decisions appear as a fleeting moment in the course of an ongoing practice. <u>They are embedded in a learning process</u> that flows from the attempt to change reality through practice. (1987: 181-182, emphasis added)

A complex public policy situation is inevitably controversial, because many parties with fundamentally different values perceive a stake in that situation. The complexity and controversy often produce gridlock, but they also render the situation ripe for learning. Problem definition and solution generation comprise meaningful social learning processes and constituencies sort out their own and other parties' values, orientation, and priorities: "Because constituents may cling rigidly to one way of viewing the solution, the work of defining and solving problems must provoke learning. The act of sorting out their values and points of view on a complex issue, of debating the merits of various competing frames for the problem, is itself part of the adjustment process by which constituents achieve solutions" (Heifetz and Sinder, 1988: 189).

Public deliberation should include focusing attention on a problematic situation, setting norms to describe and assess that situation, and to generate shared understandings about "the boundaries of the possible in public policy" (Majone, 1988: 164). Learning is critical to each of these tasks. Too often, though, government agencies so control public deliberation process as to thwart learning. As Reich explains, "the failure of conventional techniques of policy making to permit civic discovery may suggest that there are no shared values to be discovered in the first place. And this message -- that the 'public interest' is no more than an accommodation or aggregation of individual interests -- may have a corrosive effect on civic life" (1988: 146-147).

Reich's comments can be applied to traditional public participation as well. While public participation activities have typically gathered and disseminated information, they have not been designed to promote social learning and civic discovery among diverse groups. Public

deliberation is more than public information; public participation should be more as well.

For Reich, civic discovery is the opportunity for communities to debate their future. It is constructive public deliberation; where "opinions can be revised, premises altered, and common interests discovered" (1988: 144). Civic discovery can generate a variety of desired outcomes. Reich explains that when public deliberations emphasize fairness and learning:

> The problem and its solutions may be redefined . . .
> Voluntary actions may be generated . . .
> Preferences may be legitimized . . .
> Individual preferences may be influenced by considerations of what is good for society . . .
> Deeper conflicts may be discovered . . . (1988: 145-146)

Public Deliberation and Communication

Within the context of ecosystem-based management, constructive public deliberation and civic discovery are key elements of "civic science" (Lee, 1993). In confronting the inevitable tensions between science and politics in order to manage ecosystems well, natural resource professionals must be both "idealistic about science and pragmatic about politics" (1993: 161). In ecosystem-based management, science and politics are forever wedded; "ecosystem-scale science requires political support to be done" (Lee, 1993: 165). Political support hinges, in part, in involving the public in meaningful ways. Effective public participation, though, is more than simply citizen discourse" or "good communication." It depends on communication competence, that is, parties communicating appropriately and effectively (Lustig and Koester, 1993). But public participation efforts also need to be structured to emphasize learning and opportunities to work through different viewpoints. Public involvement approaches that are philosophically consistent with ecosystem-based management will emphasize learning, competence communication, and constructive public deliberation that respects both scientific/technical and local knowledge.

Learning and Ecosystem-based Management

Ecosystem-based management (ESBM) strives to effectively integrate both the science and politics of natural resource management. This is not easy to do, given temporal differences in scientific and policy systems. Ecosystem complexity prolongs the data-gathering process, which, in turn, often complicates and confounds the policy decision-making process (Stanfield, 1988). Still, ecosystem-based management must not compromise its commitment to incorporating the best scientific information available.

One of the principal bases of ESBM is the use of the best available science and technology. With the best science, though, comes uncertainty. Science cannot provide absolute, enduring answers to natural resource management questions that are fundamentally ambiguous. The management of land does not lend itself easily to controlled experiments, and the results of investigations conducted on complex ecosystems are rarely unequivocal (Stanfield, 1988). Within a framework of ESBM, such ambiguity should provide promise rather than pessimism. As

Lee notes, "experiments often bring surprises, but if resource management is recognized to be inherently uncertain, the surprises become opportunities to learn rather than failure to predict" (1993: 56). Both the natural science and the social science of ESBM provide numerous opportunities to learn. Just as natural science experiments are typically continual as landscapes change, social assessments and the public involvement activities they include should be on-going as communities and social systems change.

Learning is a critical element of ecosystem-based management. As we have noted earlier, land management situations are complex. No one party, including any agency, organization, or discipline, holds the key to understanding a particular natural resource management situation. For any one party to assume that it "knows best," "understands fully," or "has all the answers" is presumptuous and inconsistent with the systems emphases inherent in ESBM. In order for ecosystem management policies to be made and carried out effectively, parties must be open to learning from one another and acknowledge that learning is on-going. Such learning is interactive, emphasizing activities that encourage knowledge from a variety of sources and perspectives. New public participation models and philosophies will need to be part of ESBM because traditional public involvement practices have typically overlooked the importance of interactive learning. Quite often, traditional public involvement attempts to "inform and educate," presuming that the expert decision-maker simply needs to "impart knowledge" to a passive, receptive public (Wondolleck, 1988). At worst, it is not particularly concerned about the degree to which the public understands the decisions and policies made.

IV. KEY LEARNING ASSUMPTIONS

Interactive learning should be a primary concern of social assessment efforts, particularly the public involvement component of social assessment. A fundamental understanding of how people learn is important to designing good public involvement and social assessment efforts. This understanding begins with some assumptions about learning.

Learning is more likely in active rather than passive situations. Throughout this century, leading learning theorists have noted the importance of learning as a process. Dewey, Lewin, and Piaget, have offered different learning models, but all emphasize the importance of concrete experience as part of generalizing about the future. Learning methods that are disconnected from experience, each theorist would likely argue, would not be genuine learning. When people are given opportunities to "do" - to participate in tasks, to speak from their experiences, to be "players," they are more likely to learn than when in relatively inactive or passive situations. Public "deliberation" tasks, such as planning, problem-solving, analytical and information sharing discussions, debates, and collaborative dialogues foster learning and understanding better than public "address" activities, such as speeches, hearings, videos, and the like. Research on cooperative learning in classroom settings has demonstrated that people who are relatively passive perform worse on learning and comprehension tasks than those who are active (O'Donnell and Dansereau, 1992). Active (and interactive) learning requires instructors and managers to change from primary presenters or speakers to resource people, facilitators of learning processes, and coordinators of interaction (Sharan and Shachar, 1994). Active learning respects local

knowledge by emphasizing opportunities for people to draw upon their experience and expertise, and learn from one another.

Based on the work of Dewey, Lewin, Piaget and others, Kolb (1984) has developed a theory of learning that is directly applicable to ecosystem-based management and public involvement. Kolb defines learning as "the process whereby knowledge is created through the transformation of experience" (1984: 38). Learning is a process of adaptation. Knowledge is a transformative process. It is continuously created and recreated, rather that something fixed to be transmitted or acquired. Learning and experience change each other in subjective ways (Kolb, 1984: 38). Ecosystem-based management, too, is transformative and continuous. Public involvement and social assessment in ecosystem-based management should be so as well.

People come to know in different ways. According to Kolb (1984), the learning process involves transactions among four adaptive modes: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE). These modes combine to form learning dialectics. The abstract/concrete dialectic consists of two opposite "prehensions;" comprehension (conceptual interpretation and symbolic representation) and apprehension (felt qualities of immediate experience). The active/reflective dialectic is made up of two contrasting "transformations"; intention (figurative representation of experience) and extension (active external manipulation of the external world). These modes and dialectics combine to form four different forms of knowledge: divergent, assimilative, convergent, and accommodative. In explaining his model, Kolb remarks that

> the central idea here is that learning, and therefore knowing, requires both a grasp or figurative representation of experience [prehension] and some transformation of that representation. Either the figurative grasp or operative transformation alone is not sufficient. The simple perception of experience is not sufficient for learning; something must be done with it. Similarly, transformation alone cannot represent learning, for there must be something transformed, some state or experience that is being acted upon. (1984: 42)

The ways of knowing Kolb describes combine in different arrangements, such that learning "at any given moment in time may be governed by one or all of these processes interacting simultaneously" (1984: 61). Distinct forms of knowledge and thought implies that "the learning process is not identical for all human beings . . . structures that govern learning allow for the emergence of unique individual adaptive processes that tend to emphasize some adaptive orientations over others" (Kolb, 1984: 62).

Learning styles vary. The work of Kolb and other learning theorists indicate that there is no "right" or "wrong" way of learning. Rather, there are different levels of learning and learning styles. Although learning and cognition are complex areas, research indicates that within any theoretical dimension of cognitive operation, various subtypes are discernable. For example, some people prefer order and structure while others prefer a degree of ambiguity (Vannoy, 1965). Cognitive functioning varies among people as a feature of the cognitive domain, that is, the relevant content area (Kolb, 1984). Cultural experience is also a factor in cognitive functioning.

For example, different cultural groups may prefer different ways of thinking and patterns of reasoning (Pribram, 1949; Glenn et al., 1977; Walker, 1990).

In order for learning to be a constructive part of public involvement in social assessment work specifically and agency projects overall, public participation activities need to be varied to account for different preferred learning styles. A traditional public hearing, to the extent that it promotes any learning, may appeal somewhat to abstract conceptualizers but will likely do little for people who need more concrete experience or action.

Active learning groups can engage conflict and controversy. Over seventy years ago, Dewey observed that

> conflict is the gadfly of thought. It stirs us to observation and memory. It instigates invention. It shocks us out of sheep-like passivity, and sets us at noting and contriving . . . conflict is the 'sine qua non' of reflection and ingenuity. (Dewey, 1922; cited in Johnson and Johnson, 1994: 67)

Group members can learn well from conflict situations when controversies are clarified, different values are respected, and constructive disagreements are accepted. Conflicts can promote learning when they include both cooperative and competitive elements (Deutsch, 1973). Individualistic learning is more likely to encourage, as we note below, fixed pie biases and zero-sum thinking. Cooperative group learning encourages people to work through conflicts and controversies, learning about points of agreement and disagreement.

Systems thinking fosters learning. "Ecosystem" as an concept integrates key features of "ecology" with central properties of a "system." Thinking about ecosystems, then, includes thinking about interrelated parts, holism, and emergent properties. In other words, understanding ecosystems requires systems thinking.

A system can be thought of as "a set of parts that behave in a way that an observer has chosen to view as coordinated to accomplish one or more goals" (Wilson and Morren, 1990: 69). Similarly, a system can be considered as "a perceived whole whose elements 'hang together' because they continually affect each other over time and operate toward a common purpose" (Senge et al., 1994: 90). Both these definitions emphasize a system as something one perceives or constructs cognitively. Consequently, thinking about something as a system "is a way of imposing meaning on and shaping inquiry about experience" (Wilson and Morren, 1990: 69).

Systems thinking includes those tasks, methods, tools, and principles oriented toward understanding the interrelatedness of forces and elements, and viewing them as part of a common process (Senge et al., 1994). Thinking about systems forces and processes can be thought of as "systems dynamics." Thinking about system elements or components refers to "system structures." Systems thinking concerns both the dynamic and structural features. Systems occur on various levels. For example, an organization as a system includes events, behaviors, and informal channels, as well as the components of a traditional organizational chart. Systems consist of many sub-systems, each of which is understandable as a system. These features and the

connections between them change continually.

Understanding complex situations, such as natural resource management problems, is enhanced by systems thinking. Via systems thinking tasks, we can take "snapshots" of the situation and look at interrelated features. Assembling the snapshots improves comprehension. We better understand the "big picture" by seeing its many features and connections. Thinking systemically helps us discover where to start to make progress via change, and what progress in one area of the system may mean for other areas.

V. LEARNING-CENTERED PUBLIC PARTICIPATION AND NEGOTIATION

Ecosystem-based management will benefit from learning-centered approaches to public participation. But natural resource management problems are more than simply "learning situations." They include conflicts. The many parties involved in a particular natural resource problem situation bring different and often incompatible values, agendas, and strategies. Natural resource situations are complex, not only as ecological systems, but also as conflictual social systems. Consequently, when thinking about how public participation venues might be constructed, two views seem insightful for natural resource agencies vis-a-vis ecosystem management. First, public participation can be regarded as a form of ritualized negotiation to which lessons from the dispute resolution literature can be applied. Second, public participation can be improved by increasing its learning component.

Public Participation as Negotiation

It may not appear at first glance that public participation is negotiation, particularly if one tends to view negotiation as limited to offer/counter-offer convergence; i.e., haggling over the price of a car. A broader definition of negotiation is joint decision-making among parties with interdependent, yet incompatible interests (Pruitt and Carnavale, 1993), which more clearly shows that public participation is a form of negotiation. Fortunately for the natural resource management agencies there is a substantial literature that deals with disputing behavior/negotiation in general (e.g., Walton and McKersie, 1965; Rubin and Brown, 1975; Raiffa, 1982; Pruitt and Carnevale, 1993) and environmental disputes more specifically (e.g, Bingham, 1986; Carpenter and Kennedy, 1988; Crowfoot and Wondelleck, 1990; Ozawa, 1991). Understanding the motivations, cognitions, and constraints that shape participant behavior, and the ways in which procedural choices affect both behavior and satisfaction, are all part of developing public participation programs that contribute to agency function as richly as possible. While there are always challenges in bringing generalized theoretical notions of disputing behavior into field settings, and there are some important differences between ESBM on public lands and the settings where environmental dispute resolution is typically applied successfully, there are nevertheless useful insights in these fields that can be brought to bear on agency public participation activities.

One insight from this literature is that negotiation is a tremendously complex task; hence our focus on learning. In a conflict-oriented natural resources situation, one must learn about:

- The technical, legal, and financial issues at hand
- Procedural issues
- Develop perceptions of other participants
- One's own goals, and those of others
- Personalities/communication styles
- One's own set of options
- Relative benefits of different strategies

Even in the simplest two party negotiation with unambiguous issues, the process of developing a clear strategy, accurately communicating to the other party, and then accurately processing their response is a daunting cognitive challenge. The other party must simultaneously be doing the same tasks. If one looks at the research on social cognition, which studies the ways in which we perceive and understand others, there are many sources of bias in even the simplest negotiation. On balance, therefore, it is easier to figure out why negotiations fail to reach their potential rather than explain why they do.

Furthermore, natural resource public policy disputes are profoundly more complex that the simple two-party/unambiguous issues situation that is the focus of much of the negotiation research. The substantive issues involved are a complex web of biological, physical, political, financial and social factors, a web that is doubly perplexing when one adopts an ecosystem perspective or involves mixed-ownership lands. There may be dozens of interested groups and individuals, and different people may be active players at different times. The different interest-based coalitions do not all share the same views, so there may be considerable jockeying for position among the participants. Last, but certainly not least, there are clearly prescribed legal requirements related to process that constrain the agency's flexibility to a considerable extent. If there is reason for error in simple negotiation, there is similarly reason for bewilderment in public natural resource situations.

It is therefore important that public participation activities help the participants actively learn as much as possible about the important issues at hand, rather than implicitly assume that they know as much about the situation as they might need, and that all of their perceptions are accurate. This active learning focus offers a considerable opportunity for new ideas to emerge in terms of both process (how we might to together to make this decision)--and outcome (what are the choices before us and what are their relative strengths).

Our earlier caveat--that agency personnel have as much learning to do as other participants--is important at this point, particularly when one realizes that land management is not merely applied science, it is a complex public policy debate as well. There is no reason to assume that agency personnel are more adept in public policy negotiation than are other people. The cognitive psychology research into negotiation shows that there is s a set of systematic errors in negotiation behavior, referred to as biases, which reduce negotiator performance (Bazerman, 1990; Bazerman and Neale, 1992; Thompson, 1990; Thompson and Hastie, 1990). Since these biases exist in the population at large, as well as among experienced negotiators, and since there have never been efforts to train these biases out of agency personnel, the logical conclusion is that agency personnel are subject to these psychological phenomena at roughly the same frequency as

the publics with whom they are trying to interact.

There is a set of these cognitive biases that might collectively be referred to as "oversimplification errors". These biases arise in our thinking when the complexity of a situation forces us to simplify our mental models of the situation in order to make the decision process manageable. This catch-all term, oversimplification errors, is not an established part of the literature, but one might think about it as including the primary attribution bias, availability heuristics such as presumed associations, misperceptions of chance and insensitivity to base rates, conjunctive and disjunctive event fallacies, and the confirmation trap (for an explanation of these biases, see Bazerman, 1990).

The notion of oversimplification errors can be extended into negotiation behavior. The best illustration is the fixed pie bias, which refers to behaviors that arise in situations where there are potential mutual gains, but also competitive tradeoffs. This situation, while common, is complicated because the participants must decide how much information to divulge in order to achieve the mutual gain, but not so much information that the other participant can take advantage of it. Research has shown that most people significantly underestimate the opportunity for mutual gain, focusing instead on the competitive aspects of the situation (Neale and Bazerman, 1985; Thompson, 1991). This oversimplification amounts to viewing the situation as a fixed pie that must be divided between the participants. In fact, the fixed pie bias is so common and so powerful that it appears that if the word "negotiation" is mentioned among Americans (one cannot generalize boldly between cultures on these biases), the first reaction is to assume that it is a competitive win-lose, me-versus-you situation.

There appears to be a natural resources policy analogue to the fixed pie bias, although there has been no systematic research to demonstrate it. It might be referred to as the "single devil syndrome"; that is, even though the situation at hand may involve a large number of natural systems, and many land management practices and groups may have a hand in the situation, some people will describe the situation by putting all of the blame on one event, group, or practice. This is clearly a simplification behavior, whether or not it is a bias depends on the extent to which it prevents participants from seeing the opportunity for mutual gains solutions, which tend to emerge only when participants understand the interactions in the situation. The potential bias that single devil thinking creates is therefore related to the complexity of the situation: as complexity rises, the potential opportunities lost due to single devil thinking increases.

A clear example of the single devil syndrome arose in a watershed-level planning symposium several years ago. The drainage in question had been extensively modified by a number of practices: mining, roading, timber harvesting, grazing, water withdrawals for farming, residential and municipal consumption, etc. As a result, anadromous fish populations (ocean-going salmon and trout) were becoming perilously low. Nevertheless, if you asked one of the symposium participants to explain the problem, more often than not the response was a single factor. The causes that one heard were quite varied: poaching, drift-net fishing, water use, etc. But rarely would the factor be one that forced the individual to change their own behavior (someone else is to blame), and seldom was the situation described in terms of the complex interaction between human impacts, habitat effectiveness, and population dynamics of the fish. A

major facilitation emphasis should therefore center on learning; trying to augment the participants' single-devil cognitive structure of the situation with a multi-causal systems view. This should help to insure that any recommendations that might be developed are grounded in a rich picture of that situation.

There may be no more direct way to make public participation efforts sensitive to the complexity of natural resource situations than to emphasize learning. Such efforts would provide parties with opportunities to better understand the situation, to draw upon their experiences and contribute local knowledge, to discover areas of agreement and disagreement, to negotiate, and to develop tangible improvements. That being said, how might it be done? Many public policy frameworks have been developed that make progress on these goals. We would like to outline two that have been applied to public lands situations: Transactive Planning and Collaborative Learning.

VI. LEARNING AND PUBLIC PARTICIPATION I: TRANSACTIVE PLANNING

A number of years ago the management plan for Montana's Bob Marshall Wilderness Area was due for revision. The planning team did not want to do "planning as usual." For many individuals and stakeholder groups, the Bob Marshall Wilderness represented a special place. But these groups also held very different views about how the Bob Marshall Wilderness should have been managed. The planning team, seeking an alternative to traditional public involvement methods, wanted to include stakeholders in the planning process in an innovative way. The team looked for a process that could help stakeholders and the Forest Service work together constructively. A group was formed - the Bob Marshall Wilderness Complex Limits of Acceptable Change Task Force (Moore, 1994). It employed Transactive Planning.

In his most recent work, John Friedmann, the developer of Transactive Planning, writes that "centering projects in localities and regions requires mutual learning, patient listening, and a tolerance for contrary views." Effective planning needs direct community involvement and thinking "of the project as involving a process of social learning, with frequent assessments of what has been accomplished and what has gone wrong, and a willingness to make appropriate adjustments in the course of the implementation process itself" (1992: 160). These elements lie at the heart of Transactive Planning.

Friedmann designed Transactive Planning to provide "a way to join scientific and technical intelligence with personal knowledge at the critical points for social intervention" (1973: 190). It is a far more client-driven process than traditional expert-driven planning had been, placing more value on the informal knowledge of the citizenry, particularly at the problem definition stage. Transactive planning "integrates processes of mutual learning with an organized capacity and willingness to act" (1973: 195). It's goals include fostering innovation and "changing knowledge into action through an unbroken sequence of interpersonal relations" (1973, p. 171). Transactive Planning incorporates aspects of traditional planning, including typical planning stages such as describing the present situation, analyzing that situation, devising an appropriate planning strategy, assessing feasibility, and so on. Transactive Planning differs from traditional planning,

though, in its emphasis on communication, mutual learning, and transformation.

Two Levels of Communication

Traditional planning approaches, Friedmann contends, fail to communicate effectively with the people whom planners are supposed to serve. Although planners and clients may exchange messages, relevant meanings are not communicated well. The answer, Friedmann believes, "is not simply a matter of translating the abstract and highly symbolic language of the planner into the simpler and more experience-related vocabulary of the client." Rather, "the real solution involves a restructuring of the basic relationship between the planner and client" (1973: 172).

In Transactive Planning two levels of communication are essential. First, there is subject-matter-related communication. This is communication concerned with the issues of the planning situation. The second and more critical level Friedmann calls "dialogue," which refers to the interpersonal components of the planning process that determine if the participants feel respected and build trust on one another; i.e., open, authentic communication. "Dialogue requires interpersonal skills," Friedmann clarifies, " such as the art of listening, the ability to trust others and make oneself vulnerable to them, a willingness to suspend rank and material power, and a responsiveness to others' needs" (1987: 187).

Mutual Learning

Transactive planning, Friedmann points out, "is carried out on the ground swell of dialogue" (1973: 182). Genuine dialogue helps people learn quickly from complex, new situations. Planners are successful professionally to the extent that they can draw upon their analytical skills and are "rapid learners". They therefore are very good at dealing with scientific and technical knowledge.

Planners, though, have not dealt well with local or client knowledge, that is, knowledge drawn from experience. Consistent with this essay's discussion of learning-based public participation, Friedmann emphasizes that

> in mutual learning, planner and client each learn from the other--the planner from the client's personal knowledge, the client from the planner's technical expertise. In this process, the knowledge of both undergoes a major change. A common image of the situation evolves through dialogue; a new understanding of the possibilities for change is discovered (1973: 185).

Planners, for example, must learn to share control where possible, to yield as well as persuade. Clients must respect the knowledge of planners, and work with planners to negotiate common meanings. Such learning occurs through dialogue.

Transformation

Friedmann recognizes that Transactive Planning and the change it directs occur within a system.

Any system obeys its own laws of internal change. He observes that "to change a process means to act upon the sources that generate the lawful behavior of the system." Both planner and client, Freidmann notes, "must respect the laws of transformation and be mindful of their limited abilities to control the flow of events" (1973: 186).

Learning and respect are essential to transforming a system. Learning cannot be imposed; parties need to respect the processes and styles by which people learn. Parties involved in mutual learning will not succeed by destroying or discrediting the world views of others. According to Friedmann, in any given problem situation, planners contribute concepts, theories, analyses, processed knowledge, and new procedures. Clients contribute an intimate knowledge of context, realistic alternatives, norms, priorities, feasibility judgments, and operational details (1973: 187).

Implementing Transactive Planning: **Issues to Consider**

Transactive Planning, Friedmann contends, "humanizes the acquisition and uses of scientific and technical knowledge" (1973: 190). Its strength comes from its presumptions of equality and the values of participatory democracy. Transactive Planning incorporates the features of cooperative learning: authenticity, shared knowledge, community involvement, dual responsibility, and positive interdependence (Johnson and Johnson, 1994). It promotes the "transfer of knowledge" between planner and client; between manager and constituent. "This transfer of knowledge," Friedmann notes, "facilitated by an environment that favors dialogue, requires that mutual learning extend in a web of interpersonal transactions, downwards to individual working groups and upwards to higher-level assemblies" (1973: 200).

Transactive Planning contributed to the success of the Bob Marshall Wilderness planning effort and its ideas may prove useful in a number of public participation situations. Rather than providing specific techniques, Transactive Planning emphasizes a planning orientation of mutual learning through dialogue. In considering Transactive Planning as the basis for public participation in a given situation, natural resource managers may want to evaluate the following:

1. The number of parties. Transactive Planning may work best when the number of parties is small. Dialogue implies one-on-one interaction, which may not be feasible if many agency representatives and stakeholders want to participate. Friedmann's discussion presumes a "planner-client" relationship, equivalent to a relationship between the USDA Forest Service and a single stakeholder, such as a forest products company. But ecosystem-based management situations likely include a number of agencies and a large variety of stakeholders. Promoting mutual learning simply via dialogue and conventional planning steps seems difficult when numerous parties are involved. Many parties means many interests, many agendas, and the likelihood of coalitions.

2. Decision space. Transactive Planning may be most appropriate in situations with significant decision space, that is, the potential to share decision-making. Transactive Planning relies on group interaction to make good planning decisions. In planning, “group processes are difficult to manage, and the tendency to concentrate information, knowledge, and decision-making in a small leadership elite is very common, especially as decision time is always pressing

and in short supply" (Friedmann, 1987: 305). Planners, Friedmann contends, "have a responsibility to resist this tendency and to ensure the widest possible participation of all members of the group during the entire process involving the four phases of social learning: vision, theory, strategy, and action" (1987: 305).

Some natural resource management situations include a lot of decision space--where parties can help craft the decision and the ways in which it will be implemented. But natural resource agencies by law retain decision authority and are accountable for the decisions they make. Consequently, many natural resource situations may contain quite limited decision space. The opportunities for mutual learning may be great, while the potential for joint decision-making may be small. Recent FACA interpretations support this view. How well Transactive Planning can serve these situations is questionable.

3. Issue Complexity. As we have noted throughout this paper, natural resource policy situations are rarely if ever single issue. They are likely to involve numerous issues that interrelated in significant ways. Ecosystem-based management of a watershed, for example, strives to integrate physical, biological, social, cultural, political, and economic concerns. Transactive Planning seems directed to situations where issues are limited in scope and relatively easy to identify. In following the stages of conventional planning, it relies on linear, cause-effect thinking. Ecosystem-based management situations call for systemic thinking and understanding. Transactive planning, with its "problem-solution" orientation and its learning activities of open discussion, role playing, self-criticism, collective memory (Friedmann, 1987), does not encourage systemic thinking and learning. Its applicability to complex ecosystem-based management situations may be limited unless its techniques are combined with systems learning approaches.

4. Conflict Dimensions. Transactive Planning appears relevant to situations where conflicts are relatively limited in scope, complexity, and intensity. Transactive Planning maintains a vague notion of conflict and does not actively encourage negotiation. Although Transactive Planning promotes the "acceptance" of conflict as a part of dialogue, it does not confront conflict in a significant way. Many natural resource situations are inherently and deeply conflictual, and with conflict comes strong incentives to compete. Each party has its own agenda, interests, and positions. Participation in a Transactive planning process will not eliminate those interests and positions, and does not specify how those interests and positions can provide the basis for meaningful, integrative change. Natural resource conflict situations typically include power imbalances, mistrust, and value differences. Transactive Planning does not indicate how it deals with these factors. Simply providing a forum for communication is not sufficient.

In public participation situations, parties will negotiate and persuade. They will attempt to influence the decision maker and engage in calculated, strategic behaviors to do so. There is nothing explicit in Transactive Planning that compels parties to abandon their strategic behaviors, even though its treatment of dialogue and learning implies this is desirable and may occur.

5. Cultural history. Public participation approaches should be responsive to a particular situation's "cultural history;" i.e., perceptions of previous management decisions, degree of trust (or mistrust), past relationships, and public knowledge. Transactive Planning seems to

operate best when the parties share a commitment to action and a willingness to try working together. When confronted by a large number of stakeholders, diverse world views, a volatile history, and antagonistic relationships, Transactive Planning may be insufficient to generate constructive change. Dialogue, as Friedmann characterizes it, will not likely occur if parties have little incentive for doing so and are skeptical about the process.

Still, Transactive Planning's use of dialogue and mutual learning may help involve disenfranchised cultural and community groups. If planners--or managers--engage clients/publics "where they're at," clients may feel comfortable participating in the planning process. Friedmann calls learning "a form of self-empowerment . . . the emphasis must always be on collective action." Transactive Planning regards community organizations as key players in the planning process. Citing Diego Palma, Friedmann observes that"community organizations are the place where people learn the real praxis of democracy, learn to defend one position and to listen to another, to decide together, to divide the work to be done, to set objectives" (1992: 78).

6. Time. With its emphasis on face-to-face interaction between planner and client, Transactive Planning takes time. Public participation efforts that include many stakeholders and possibly numerous agency personnel could demand a lot of time for direct interpersonal discussion. Significant time demands may limit the feasibility of Transactive Planning and could discourage the very community level participation the process seeks.

7. Organizational Situation. Any innovative approach to public participation may face resistance from involved or affected organizations. Transactive Planning needs support within the management organization, i.e., the natural resource agency that utilizes the approach. Friedmann notes that Transactive Planning, as an innovative method, transcends normative organizational structure, but he does not clarify how it engages such structure and confronts organizational resistance. Transactive Planning appears more as a theoretical idea than as a practical approach to meaningful change. Innovative approaches, such as Transactive Planning, have to arise within a structural reality that they seek to change. Transactive Planning may not succeed systems that seem to discourage innovation.

Transactive Planning seems most appropriate for public participation in relatively clear and simple management situations. As situations become increasingly messy or complex, Transactive Planning may not be pertinent. Still, elements of Transactive Planning, such as mutual learning and dialogue, can be incorporated into other public participation approaches.

Other methods, particularly those sensitive to conflict and systems complexity, may be relevant to public participation and ecosystem-based management. Traditional conflict management techniques may prove useful in some situations (Delli Priscoli, 1988; 1989). Interactive planning and soft systems methodology both highlight systems thinking and iterative change (Flood and Jackson, 1991). Soft systems methodology and conflict management provide a foundation for a public participation approach constructed to deal with ecosystem-based management situations: that approach is known as Collaborative Learning.

VII. LEARNING AND PUBLIC PARTICIPATION II: COLLABORATIVE LEARNING

Collaborative Learning (CL) is framework designed for natural resource policy decision- making situations and public involvement in policy discussions. It emphasizes activities that encourage systems thinking, joint learning, open communication, and a focus on appropriate change (Daniels and Walker, 1993).

Collaborative Learning is a hybrid of work in two areas:

- soft systems methodology (SSM)
- the alternative dispute resolution (ADR) fields of mediation and negotiation.

By incorporating features of SSM and ADR, Collaborative Learning promotes **working through** the issues and perspectives of a situation.

From SSM: Learning and Systems Thinking

The origins of Collaborative Learning are in "soft systems methodology" (SSM). Soft systems is an application of theoretical work in systems and experiential learning (Wilson and Morren, 1990). SSM stresses that learning and thinking systemically are critical to planning, making decisions about, and managing complex situations like natural resource controversies. Systems thinking and learning are areas that alternative dispute resolution methods, including mediation, typically disregard or consider peripheral to the settlement task (See Figure 1). As Flood and Jackson observe, SSM "is doubly systemic since it promotes a systemic learning process, orchestrating different appreciations of the situation, which is never-ending, and it also introduces systems models as part of that learning process. The systemic learning process aims to create a temporarily shared culture in which conflicts can be accommodated so that action can be taken" (1991: 177-178).

Figure 1. Collaborative Learning as a Hybrid

ELEMENTS	SSM	ADR
Promotes Learning	**High**	**Low**
Emphasizes Systems Thinking	**High**	**Low**
Deals with Value Differences	**Low**	**High**
Handles Strategic Behaviors	**Low**	**High**

From ADR: Values and Strategic Behaviors

While CL's emphasis on learning and systems thinking come from SSM, SSM does not deal well with value differences and strategic behaviors such as negotiation. The alternative dispute resolution (ADR) areas of mediation and negotiation do a better job of this, and serve as a second foundation for Collaborative Learning. Mediation, the intervention of an impartial third party into a dispute, deals well with significant value differences. "Value disputes," Moore observes, "are extremely difficult to resolve where there is no consensus on appropriate behavior or ultimate goals" (1988: 256). Yet mediators, via identification and reframing methods, can address value conflict. Specific techniques include (1) transforming value disputes into interest disputes, (2) identifying superordinate goals (both short and long term), and (3) avoidance (Moore, 1986: 178; see also Gray, 1988).

Collaborative Learning deals with parties' strategic behaviors by incorporating methods designed to promote collaborative, integrative negotiation. CL encourages parties to identify and assess innovative approaches for settling their differences, including logrolling, bridging, non-specific compensation, etc. (Lewicki et al., 1994). CL facilitators, like mediators, often use transformative strategies that encourage parties to engage in role reversal, mirroring, and future orientation.

Collaborative Learning and Communication

Successful Collaborative Learning processes sustain quality discourse: constructive discussion of ideas, collaborative argument, and interaction. Communication competence encompasses these elements, providing a dimension of Collaborative Learning that goes beyond SSM and ADR. CL promotes productive dialogue that ideally permeates the entire CL experience. Dialogue in Collaborative Learning differs somewhat from Transactive Planning's approach. Transactive Planning emphasizes one-on-one interpersonal communication. In contrast, CL utilizes interaction in small and large groups of variable size. Regardless of the setting or group size, CL communication competence is fostered through the development and implementation of discourse and interaction guidelines (e.g., "ground rules" that value diversity), facilitation, and taking stock. Collaborative Learning encourages competent communication and quality discourse by

emphasizing conflict and negotiation competence (Walker, 1992), and a variety of interrelated communication "skill" areas; elements of a collaborative communication competence "system." These include: (1) listening skills; (2) questioning and clarification skills; (3) feedback skills; (4) modeling skills; (5) social cognition skills, such as re-framing; (6) dialogue skills; and (7) collaborative argument skills (Daniels and Walker, 1993).

Collaborative Learning: From Problem-Solution to Situation Improvement

Collaborative Learning encourages thinking "differently" about controversies and policy decision situations. Thinking differently involves reframing; literally changing the language and perceptions of natural resource conflicts. Collaborative Learning:

- Stresses improvement rather than solution
- Emphasizes situation rather than problem or conflict
- Focuses on concerns and interests rather than positions
- Targets progress rather than success
- Seeks desirable and feasible change rather than desired future condition
- Encourages systems thinking rather than linear thinking
- Recognizing that **considerable learning** -- about science, issues, and value differences -- will have to occur before implementable improvements are possible

Drawn from SSM, "situation improvement" is a critical component of Collaborative Learning (Checkland and Scholes, 1990; Wilson and Morren, 1990). Natural resource controversies are often discussed in terms of "conflict-resolution" or "problem-solution" (e.g., Crowfoot and Wondolleck, 1990). Doing so imposes a burden on parties in conflict. They may be immersed in a complex, intractable, and seemingly irresolvable conflict. A "conflict resolution" frame implies a "total solution" standard for success. Collaborative learning redefines the conflict or problem as a "situation." Rather than trying to find "the solution," parties are encouraged to develop improvements over the status quo situation. Results are measured as "progress" rather than by some absolute standard of "success".

Constructing improvements is a learning process. Parties are encourage to understand situations in terms of their complexity. This is fostered by CL activities that require systems thinking, rather than linear, single-issue perspectives. Based on their systemic learning, CL participants focus on concerns and interests related to the situation, instead of taking positions or making demands. Improvements are based on these concerns, and are ultimately debated to determine if they are both technically desirable and culturally feasible.

Collaborative Learning in Practice

Collaborative Learning encourages people to learn actively, to think systemically, and to gain knowledge from one another about a particular problem situation. The first stages of CL emphasize common understanding. Activities might include information exchange, imagining best

and worst possible futures, and visual representations of the situation, perhaps through the use of "situation/systems" maps. In middle stages, CL participants focus on concerns and interests regarding the specific situation, and how those concerns relate to other concerns. Out of these concerns, CL parties identify possible changes that could be made -- these are referred to as "situation improvements." In latter stages, the participants debate these improvements, addressing whether or not they represent desirable and feasible changes in the present situation.

Throughout the CL process, participants talk with and learn from one another in groups of various sizes. For example, a CL process may use a "2-4-8" approach to discussing situation improvements. After each CL participant has developed an improvement, she or he discusses that improvement with one other person. Those two join two others and talk about each person's improvements. Those four join four others and the process continues. Within these discussions, active listening, questioning, and argument are respected. People clarify and refine their improvements through dialogue. Consistent with the theme of "working through," Collaborative Learning emphasizes "talking with" rather than "talking at."

Results From Collaborative Learning Applications

Collaborative Learning has been employed in various settings, including public involvement situations involving as many as ninety people. Collaborative Learning has been applied in partial day, full-day, and multi-day meeting formats.

The results of these applications indicate that a Collaborative Learning framework can help parties make progress on a problem situation (e.g., Walker and Daniels, 1993). CL process evaluations indicate that:

- Participants understanding of the situation is broadened
- Concerns are expressed and discussed
- Improvements have been developed and implemented
- Strategic behaviors persist
- Relationships improve

Through CL activities, such as mapping, parties see the situation as a complex system of issues and relationships. Doing so broadens their understanding of the situation. CL promotes discussion of stakeholders' concerns. From these concerns, parties develop tangible improvements that reflect their understanding of the particular situation as a system.

CL provides a structured approach to discussing and improving a problematic situation, such as those inherent in ecosystem management. CL does not require any reallocation of decision authority, nor does it try to limit parties' strategic behaviors. Self-interest typically motivates people to participate in a CL process. Further, CL does not require consensus. Parties' agreement on an issue or broadening of self-interest to include the interests of others stem from parties' own choices, based on their understanding of the situation and willingness to work through issues with others.

Other Collaborative Learning Benefits

Collaborative Learning presumes that situations are dynamic, systemic, and changing. CL is a framework that can be adapted to a particular situation to generate:

- Dialogue between diverse communities: scientific, public, administrative.
- Integration of scientific and public knowledge about the problem situation.
- Increased rapport, respect, and trust among participants

Although CL does not require consensus, it also does not prohibit it. In situations where consensus decisions are desired, CL offers an appropriate framework. In providing a framework for learning and collaborative discussion, CL can offer a forum for marginalized voices to be heard. Collaborative Learning, like some consensus processes, is designed to provide any interested or affected party with an opportunity to participate in land management activities. Ozawa contends that

> consensus-based procedures can enhance the abilities of less resource-rich groups to influence public decisions in each phase of the decision making process . . . consensus-based methods, such as information sharing and collaborative analysis, can similarly enable resource-poor groups to reformulate the policy problem under consideration as such groups become more aware of their interests and more effective at promoting and protecting them" (1991: 96).

Collaborative Learning and similar innovative approaches are constructed to provide public participation opportunities on a "level playing field." CL has been developed to be responsive to diverse cultures and communities. Visualization tasks (e.g., mapping, rich pictures), variable group interaction (e.g., 2-4-8), systems work (e.g., mapping, matrix development), and communication guidelines are designed to respect the various ways in which people prefer to participate, learn, and share knowledge.

Still, nothing in CL or similar frameworks guarantees that disempowered peoples or communities will participate in public involvement activities. Agencies have to seek non-traditional ways to involve non-traditional parties. Some communities, for example, may not feel comfortable participating in any process if that process uses an unfamiliar language, does not respect certain traditions, takes place in a strange setting, and so on. Natural resource leaders need to be innovative in identifying mechanisms for communicating with marginalized groups.

Collaborative Learning and Ecosystem-Based Management

Collaborative Learning is both philosophically and practically compatible with the basic tenets of ecosystem-based management. First, ecosystem management's commitment to ecological analysis and methods is consistent with CL's emphasis on a "human activity system" view of situations. Second, CL needs the best science and technologies that ecosystem management features to be a part of CL's learning activities. CL provides a venue for scientific and technical knowledge to be part of the civic discourse. Third, the CL framework adapts well to public participation. CL

accommodates open participation, values local knowledge, and respects citizen interest and commitment. Fourth, CL provides the opportunity for the development of shared visions and goals upon which partnerships may be based. Collaborative Learning encourages a holistic, systemic view of a situation. It respects the complexity of a situation in a manner similar to ecosystem management.

What Collaborative Learning is Not

Collaborative Learning, while beneficial within an ecosystem management approach, is no panacea or "silver bullet." It is one of possibly many frameworks that can involve people in meaningful learning and discussion about ecosystem management situations. It does not stress or demand consensus. It does stress learning, understanding, and the development of improvements in the situation. CL does not foster the development of a group "mentality" or "recommendations." Rather, CL encourages parties to make progress on improving the situation as they work through issues, values, and concerns.

Collaborative Learning in the Broader Context

In terms of understanding the policy challenges posed by ecosystem-based management, this paper's discussion of Collaborative Learning should be viewed as illustrating the kinds of policy processes that ecosystem-based management is likely to require. Various forms of public policy formation that have a rich agency/citizenry dialogue at their core have been developed in recent years, dating back to at least Friedmann's Transactive Planning. The social and political forces that spawn these efforts are at least as likely to increase rather than abate.

The task of designing policy processes that can accommodate ecosystem-based management essentially requires matching the tool to the task. One must think very carefully about the fundamental attributes and challenges of ecosystem-based management, and then design systems that are compatible with those challenges, and robust in the face of the challenges. Doing less is analogous to trying to screw in a lightbulb with a hammer, or paint a room with a screwdriver.

Collaborative Learning is particularly applicable for ecosystem-based management because it has been designed specifically to address the policy challenges of mixed public lands. As a result, it has three features that make it well suited to ecosystem-based management: 1) it explicitly adopts a systems approach to the situation and works to improve the participants' systems understanding, 2) it is more modest in its expectations for progress than the more frequently used rational-comprehensive models which seek solutions, and 3) it expects and attempts to accommodate a wide range of worldviews about land management and the strategic behaviors that those worldviews are likely to generate in controversial situations.

It is our prediction that any situation in which ecosystem-based management makes progress will include at least these three characteristics: a systems approach, realistic goals, and high political acumen. Whether these attributes arise spontaneously or result from carefully thought-out method is immaterial. If a structured method is used, it is similarly irrelevant if it

goes by Collaborative Learning or any other name. Perhaps the only thing that matters, at the core, is that it make progress on the paradox of public deliberation; it must be able to generate technically sound decisions, while simultaneously allowing stakeholders rich and meaningful voice in the process. The scientific burdens of ecosystem-based land management, combined with the range of interests in the mixed public/private lands, appear to require nothing less.

CHAPTER 5
CONCLUSION

If the reader's hope for this paper was to find the five, seven, or even twenty secrets to enlightened social assessment and public involvement, then the paper has been disappointing. It certainly has contained no such list. But if the reader has persisted to this point, then it should be apparent why there can be no such list.

At best, what a practitioner can draw from this discussion are some theoretical foundations and methodological guidelines derived from social science traditions that allow informed choices on a case-by-case basis. Given the number of people who are interested in the public lands in general, and the interior Columbia Basin in particular, there is no single way to categorize, analyze, or involve them that does not have serious disadvantages. The individuals are too varied, the ways in which they relate to each other and to land too complex, the technical issues too complicated and uncertain to allow summary judgments about who will be affected by potential land use changes that at this point are largely conceptual.

There are some important ways in which this paper extends and contradicts some of the prevailing notions in social assessment, public involvement, and indeed land management policy formation. Taken together, they provide an argument for a form of land management that more closely links human and ecological communities, using policy formation processes as the vessel within which these new links are forged. In essence, social assessment and public involvement, taken together, provide a vehicle through which more effective public discussions over land management policy can be conducted. Improved discussions in turn may lead to decision processes and outcomes that are more sustainable for both human and ecological communities.

The messages in this paper that warrant explicit repetition are the following:

1) Use multiple definitions of community, of values, and of links to the land.

There is no one right way to categorize complex concepts; any single definition clarifies some things, while simultaneously ignoring or over-simplifying others. With the notion of community as an example, it is not a question of whether communities "of place" or "of interest" are the correct focus--both categories offer some important insights that the other misses. Quality social science depends on the ability to think about social concepts in whatever terms are appropriate to the situation, often using different typologies concurrently.

2) Use multiple methods of collecting and analyzing social data.

This conclusion flows as a corollary from #1, since multiple definitions beget multiple methods. Quantitative data from sources such as the Census or surveys is useful, but it cannot help analysts anticipate statements such as "My grandfather taught my father how to flyfish there; my father taught me to flyfish there; I want my daughter to learn there. You will dam it over my dead body." Nor does the type of insight derived from quantitative data help policy makers figure out how to incorporate such deeply-held values into decisions.

Allowing stakeholders to be involved directly in the public deliberation brings insights based on local knowledge and perspectives that agency personnel often do not have, and can thus be an important source of information. Why spend multi-thousands of dollars to find the winter range of a band of elk through radio telemetry if the ranchers/elk hunters who convene at the cafe each morning know exactly where they winter? Why conduct a high-intensity botanical survey for threatened and endangered species without also talking to local herbalists and shamans? Broadening the definition of policy-relevant information is part of the integrated social assessment/learning-based public participation framework ecosystem management appears to require.

3) Look for differential impacts within the groups one is studying.

No matter what organizational schemes one chooses to use, there will be differential impacts on subgroups within that scheme. It is important to tease them out, and even if data limitations prevent explicit quantification, their existence should be acknowledged. This is particularly the case when there are under-represented and marginalized segments in the group.

Even at a scale of analysis as small as the family, it is possible to find differential impacts. Suppose a father loses his job, but replaces it with a personally satisfying, but lower paying new career. In order to support the family, the mother must now work outside the home, something she did not do before and does not particularly value. Can one evaluate the social impact of the job loss on the family by focusing on the father? Surely not. Nor can one take some kind of average across them, and expect to adequately understand the impacts.

As one moves to larger scales, such as communities or regions, there will be groups that are doing relatively well, and can respond nimbly to external changes, and those with far fewer options. Women (particularly single heads of household), the elderly, ethnic minorities (native peoples among them), and people with low levels of formal education or low incomes all run the risk of bearing the brunt of the social costs of policy changes. Two factors create that increased risk. First, they do not have the resources and options that allow them to avoid the impacts. Second, they tend to be under-represented in policy processes and thus cannot speak forcefully for themselves in traditional, legalistic public participation processes. As such, they have a limited ability to affect the policy process to protect their interests.

If one wants ecosystem-based management in the Columbia River Basin to be sensitive to the needs of the under-represented and marginalized members of society, one cannot establish a decision process and assume that those groups will be able to represent themselves. It would be necessary to explicitly and thoughtfully seek and promote their input.

4) Conduct land management policy discussions at scales that are meaningful to the participants themselves.

This message, simple as it might seem, is an important link between social assessment, through public involvement, into policy formation. Social assessment can provide insights into

how people's lives are organized, and what issues are important to them. This allows public participation processes to be designed that correlate well with the social organizations in the area, and also allows policy processes to be designed that are compatible with that organization.

Policy processes that are designed without a grounding in the underlying patterns of social organization face trouble. They often seem abstract and arbitrarily drawn to the people who may be affected. As a result, the individuals or groups who should be involved, based on their own self-interest, may not be. This may be due to the fact that they do not see how the policy process can be accessed, because their group is not organized in a way that matches the policy process, or because they cannot see the importance of the outcomes from the process.

The province-level planning that has come from the FEMAT process for the spotted owl region illustrates the need for compatibility between policy processes and social organization. Public involvement specialists for the USDA Forest Service and the USDI Bureau of Land Management have struggled with the concept of how to involve the public at the provincial level, and have found it difficult. That difficulty may emerge from an incompatibility between social and biological scales; even though bio-physical properties may be readily conceptualized at the province level, the social patterns of relating to the land and of governance may not.

This line of reasoning raises serious doubt about using bio-regional planning as the primary foundation for the transition into ecosystem-based management. The use of scientific "Swat-teams" in developing strategies at the bio-regional level, which are then disaggregated into management guidelines at the local level, may be largely incompatible with the model of social assessment/learning-based public involvement/policy formation that this paper develops. Clearly bio-regional planning is important to understanding ecological processes that emerge at that level, but a more decentralized focus is also important because a number of social (as well as ecological) processes emerge at more localized scales.

Again, it is not a question of one scale being right and the other wrong. A dialectic between standards and guidelines set at the bio-regional level, and implementation strategies developed at the more localized project level, is probably the ideal mix. But if one concludes that rich public discussion about the future of the public lands should be part of the transition to ecosystem-based management in the Columbia River basin, that discussion should occur at the scales to which people connect to the land. For most people, their connections are more local than bio-regional.

5) Use public participation activities and social assessment to allow the agency and citizenry to learn their way to decisions.

Ecosystem management is too new to think that the ingredients for sound policy are just sitting on the shelf, waiting to be combined into some new recipe for social and ecological sustainability. By the same token, managing lands at the scale of the Columbia River basin is so complex a task that it is folly to believe that we will ever get it "right"; more likely we will need to view our management as on-going experiments that test our knowledge of the systems involved (Lee,

1993). This requires a continual testing and re-evaluation of one's core beliefs and assumptions; i.e., learning.

6) The learning of ecosystem management will occur as part of political negotiation.

While it might be tempting to view bio-regional planning efforts such as this Columbia River basin assessment or the recent west-side FEMAT process as applied science, they are fundamentally political in nature:

> A decision is political by its nature if it distributes benefits and costs to different segments of the public--regardless of whether or not it is made through the political process (Creighton, 1983).

Recognizing this, two observations are apparent. First, the notion of the "experts" being objective, and the "public" being driven by values is suspect. Only the most blindered scientists could be oblivious to the policy impact of the information they provide to assessments, or the ways in which they portray that data. This is equally true in the social and biological sciences. Second, the redistributions implied by a planning process at the bio-regional scale means that a politicized discussion over the outcome will occur, whether it is part of the planning process or not.

Using social assessment and public involvement to provide the planning process with a larger measure of civic debate blurs the objective expert/subjective public chasm:

> Very often planners refer to the "political" versus the "technical", or the "citizen" versus the "expert". Although the distinctions are useful, public involvement programs increase the gray area between these extremes. Talking about blending citizens and experts is easy; doing it is hard. (Delli Priscoli, 1983: 272).

> But public involvement in planning is more than simply increasing the quantity of participation. It builds on a currently neglected but classical democratic faith. That is, the experience of participation at all levels of social activity makes good citizens. Good citizens create a good body politic which supports good decisions. The dividing line between citizen and expert becomes amorphous, indeed less relevant. (Delli Priscoli, 1983: 278)

It would also bring the political debate into the planning process, so that each might inform the other. This would allow bio-regional planning to be the cornerstone of a policy dialogue that various scholars have given different names: civic science (Lee, 1993), social learning (Reich, 1985), and working through (Yankelovich, 1991). An objection to this perspective might be that natural resource decisions are already "too political", and that any further politicization of them would surely make a bad situation worse. Our response is that integrated social assessment/public involvement processes may allow us to get beyond the positional bargaining that dominates the natural resources policy debate of late and may bring core values--those lying beneath the surface of "scientific debates"--into the discussion.

It is not merely computers full of social indicator data, GIS maps, or species distributions

and habitat effectiveness trends that will determine the success or failure of ecosystem-based management. Rather, it will hinge on whether or not we are able to craft policy mechanisms within which we can mix that scientific information, assign it meaning, sort it out, and then chart a course for ourselves. The principles of social assessment help in designing such mechanisms, and learning-based public participation helps one manage the heat and smoke that such a mixture inevitably creates. However, the participants themselves--both in and out of agencies--are ultimately responsible for the outcome and are the judges of its adequacy.

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