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The Rational Planning Model in forest Planning: Planning in the Light of Ambivalence

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EWP Working Paper Number Two Abstract:

Since its inception in the late nineteenth century, United States forest planning has been inextricably linked to a specific planning structure, that of the rational model. The current debates concerning not only the value of forest ecological sustainability, but ways to characterize, measure, and monitor it call some of the premises of the rational model into question. This report examine these tensions through a discussion of the foundations of the rational model, its application to forest planning, and the conflicts that have arisen due to the public demand that evaluative criteria not entirely amenable to the rational model be incorporated into forest plans. Recommendations for planning regulations devised by the 1999 Committee of Scientists Report (some of which were adopted as final planning rules in November 2000) are used as a lens to examine the possibility that planning may proceed despite the uncertainties associated with our knowledge of ecological processes.

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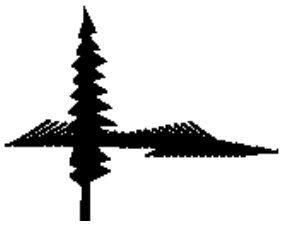

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Introduction

Human beings are future oriented animals. We find ourselves in the midst of the world, and we strive to change it. Whether we are the private possessors of an intuitive, personal dissatisfaction and seek to change only ourselves, or we publicly speak an explicit desire to change our common surroundings to better achieve our shared desires, we make plans to change the present in order to arrive at a more satisfactory future. Plans are necessarily decisions, and decisions once acted upon, have consequences. Because human faculties are limited, we are unable to see all the consequences of our decisions and actions as their repercussions stream out into the future. And because we are future oriented, we are concerned with consequences. How then, to ameliorate the unforeseen consequences of our plans, decisions and actions? This question I believe, frames the singular essence of the many problems that the profession of planning struggles with. This paper will examine the dominant method of coping with this question, the method that is called the rational planning model. Specifically, it will address how this model has been applied to federal forestry planning.

This examination is presented in three parts. The first section offers a description and general overview of the rational planning model and a discussion of the criticisms that its approach has stimulated. The second section discusses the model's application to forestry planning as codified in the National Forest Management Act and the administrative rules that direct their implementation. Consequences of the application of the model to forestry issues are discussed in the context of the events that led to the shutdown of logging on federal lands in the Pacific Northwest. This section also introduces the 1999 Committee of Scientists Report that recommended changes in the planning rules for the National Forests. Versions of these recommendations were adopted in November 2000 as final governing rules. The third section introduces the concept of 'planning for ambivalence' and examines some of the Committee's recommendations in light of the uncertainties inherent in making forestry plans. The question of whether the rational model can withstand ambivalence is addressed in the context of adaptive management, or plan making as experimental action.

The Rational Planning Model

Overview

Prior to understanding the rational model, I first want to examine what it is that planners have come to identify as rational. John Friedmann describes three concepts of rationality that have informed planning: (1) Market rationality, which he describes as being grounded in a metaphysics of possessive individualism and which predicates the individual as existing prior to society. Society then becomes the mechanism that enables individuals to pursue their private interests. This *prior-to* status gives market rationally a quasi-natural character, and ranks it as being beyond human intention, thereby making its assumptions unavoidably compelling. From this perspective, reason is the means toward the maximization of private satisfactions. (2) Social rationality makes the opposite assumption, that the social group grants the individual her identity through membership in the group. Reason becomes the tool of the collective interest and functions as the avenue toward communal satisfactions. (3) The third form

of rationality is a hybrid of the preceding two and seeks some middle ground between them. Friedmann identifies it with the realization on the part of capital that some state sponsored restraint was necessary to curtail the excesses of market rationality and provide for the public good. Friedmann calls this type of rationality social or modern planning. It is explicitly concerned with social outcomes (Friedmann 1987 pp. 19-22)

In this description rationality is not something which grants us an objective view of the world. Rational mechanisms, such as the logical inferences embedded in the grammar of our languages imply that this is the case, but the distinctions that Friedmann makes allows us to see rationality as a mode of social discourse that creates it own self-fulfilling processes according to the uses to which it is put. Modern social planning, as a mediator between market and social rationality, exists in the tension between different criteria of what is fundamentally rational.

Yet we seldom think of rationality as having anything other than its own criteria of logical processes to support itself. Rather we think that rationality, or the process of being rational is equal to the act of knowledge, or knowing that we know something is true. In this sense, rationally derived knowledge is given a special status as the source of certainty and truth. Other types of knowledge - intuitive, imaginative, or emotional are given a lesser status and set in opposition to the idea that rational knowledge is the sole repository of truth (Darke 1985).

This privileging of rational knowledge over other forms has its origins in the scientific and philosophic revolutions of the 16th and 17th centuries, and in the social revolutions of the Enlightenment which gave public form to these scientific worldviews. What essentially was overturned in this shift to the modern sensibility was the ancient concept of meaning.

What made the rise of modern science and the modern sensibility possible was the shattering of the millennium old concordance between religion and philosophy concerning the final ends to which humanity and nature were alike destined. The roots of western civilization, Greek philosophy and revealed religion, were in agreement regarding the fundamental status of final causality as an integral dimension of the true and the real. The world of nature, whose *telos*, or ends, reason was able to grasp, was amenable to the purposes of a benevolent and reasonable creator. The common teleological status of humanity and nature, their shared notion of purpose, was the link that made religion a science and science a religion. Baruch Spinoza (1632-1677) speaks for the modern sensibility when he pronounces the end of this agreement in the appendix to Part I of his Ethics (published posthumously in 1677): "Nature has no fixed goal and all final causes are but figments of the human imagination" (Spinoza 1992 p. 59). This pronouncement was a public realization that the complementary *telo*s of nature and humanity that had formerly granted value and meaning to the vicissitudes of life was breaking down. Now, if knowledge or science were to advance, then it would have no use for purposes or goals. Knowledge, understood as scientifically verifiable truth predicated on empirical evidence and quantifiable data, no longer had any need to ponder the whys and wherefores of life because the questions no longer existed. Questions of value and meaning were eliminated from what came to be considered true knowledge (Cohen 1995).

The profession of modern practical planning is not overly concerned with these issues, nor should it be. My purpose in this opening section is to identify what it is that planners have come to identify as rational and so come to an understanding of what the rational model as

a *planning model* implies. As heirs of this legacy, we act under the Enlightenment assumption that the world is objectively knowable through the instruments of empirical science. This knowledge of the truth of the world that emerges from scientific inquiries is validated by becoming the basis for our technical mastery over nature. A second assumption is that the world of human affairs is as amenable to this verifiable methodology as are the natural sciences. The emphasis on technical mastery further elevates verifiable empirical knowledge to the status of true knowledge as being the action of manipulation. In contrast, other types of knowledge are seen as merely personal and appreciative. Emotional, intuitive and imaginative knowledge as appreciative knowledge are still valid ways of knowing the world, but are reduced to the purely private sphere (Friedmann 1987 p.41-42).

The three types of rationality that Friedman describes as structuring modern planning are basically united on their reliance upon the methodology of empirical scientific investigation (Klosterman 1978; Alexander 1984; Formaini 1990). Robert A. Beauregard has described all three forms of Friedmann's rationality in what he calls the modernist project of planning as follows:

> The initial thrusts of the modernist project of planning were to diminish the excesses of industrial capitalism while mediating the intramural frictions among capitalists that had resulted in a city inefficiently organized for production and reproduction…In the modernist planning project, reality that can be controlled and perfected is assumed. The world is viewed as malleable because its internal logic can be uncovered and subsequently manipulated…The modernist project is derived from beliefs about knowledge and society and is inextricably linked to the rise of capitalism, the formation of the middle class, the emergence of a scientific mode of legitimation, the concept of an orderly and spatially integrated city that meets the needs of society, and the fostering of the interventionist state. Technical rationality is viewed as a valid and superior means of making public decisions, and information gathered scientifically is regarded as enlightening, captivating and convincing…Such beliefs repeat and mimic beliefs about enlightenment which are associated with the rise of capitalist democracies and with the modernist quest for control and liberation (Beauregard, 1989 p. 384 & 386).

Beauregard's modernist project of planning is essentially the rational planning model in its ideological framework. Friedmann identifies the rational planning model as the operative mode of inquiry in what he calls the policy analysis strand of conservative forms of societal guidance planning (Friedmann 1987 p. 76). In a standard policy analysis textbook, the methods of this model are presented as the Classical Rational Problem Solving Process (Patton & Sawicki 1993). Elsewhere it is called the Rational Comprehensive Method (Harper & Stein 1995; Weaver, Jessop & Das 1985). It has been identified as the ruling or normal paradigm that governs the practice of modern planning (Alexander 1984; Hemmens 1980). Although it has a myriad of names, it has a singular approach to problem solving. This approach demands the systematic evaluation of alternative means toward a preferred goal. Once a goal has been

selected, the prevailing assumption is that there are only certain correct ways of achieving it. The number of basic steps in the process vary as to its description by different writers but they can be summed up as follows:

1. Verifying, defining & detailing the problem (problem definition, goal definition, information gathering)

2. Establishing evaluative criteria (measurements to determine success and failure of alternatives)

3. Identifying alternatives to achieve goals

4. Evaluating alternative policies

5. Implementing the preferred alternative

6. Monitoring and evaluating outcomes and results

What one must keep in mind in evaluating this common sense approach to problem solving and plan making are the assumptions that underpin it. It is in the exportation of the model into the social world of practice that the assumptions prove problematic.

Critiques of the Rational Model

The vision of reality that Beauregard calls the internal logic of the world that can be manipulated by planners or scientists is a reality that presumes a certain theory of how perception works. In this vision of reality, our minds are mirrors of the world and the symbols that we use to communicate correspond to the reality that they name. Rational thought consists of the manipulation of abstract symbols and these symbols get their meaning via a correspondence with the world *objectively construed*, that is, independent of whatever understanding an entity beings to it. From this perspective, we are able to achieve that disembodied bird's eye view essential to solving problems *on this basis*.

The problems with this approach is that the most of the problems that planning struggles with cannot be solved on this basis because they do not exist in the isolated world of the laboratory. They are often the 'wicked problems' that do not lend themselves to solutions by technical means (Rittel & Webber 1973). In a 1984 paper entitled *After Rationality, What?* Ernest Alexander cites an encyclopedic array of attacks on the rational planning model. These criticisms are based on both philosophic and practical considerations. They range from descriptions of the impossibility of satisfying the demands of exhaustive alternative evaluations and complete information requirements, to research that indicates that actual decision making processes in organizations follow a more incremental as opposed to comprehensive approach. The actual political context of planning situations calls into question the singular role of planner as rational technician at the expense of other roles such as advisor, mediator, or administrator.

Similarly, the organizations where planning takes place can not be considered isolated from the social context that helps construct understanding (Sarewitz 1996; Formani 1990; Jasanoff 1990). The nature of supposedly value-free evaluative criteria has been shown to be dependent on the choices that the scientist or researcher brings to their formation and cannot be understood in isolation from the field of beliefs in which they originate. Scientific claims to empirical underpinning of quantifiable knowledge rely upon a certain pragmatic understanding about what is more efficacious as a device for working a manageable structure into the flux of experience (Quine 1953).

In the context of these criticisms Friedmann's analysis of the necessity of planners to understand his three kinds of rationality appears to be vindicated. What one considers rational is dependent upon the perspective that one is operating in. Market and social rationality, along with social planning are all rational within the confines of their assumptions. Establishing these assumption is a process that is purely political, that is, open to debate.

The Rational Model as Applied to Forest Planning

In a recent book James C. Scott explores how the simplification of knowledge is necessary for understanding and acting in a world of complex interrelated realities. He describes the invention of modern forestry practices in 18th century Prussia and Saxony as an example of how the abstractions of analysis and calculation, when imposed upon a natural system can have both incredible success and unforeseen failures.

The Prussian forester that Scott describes is working from within the focused perspective of forest as a revenue production instrument. With this goal in mind, data collection led to the model of a standardized tree to calculate the volume of salable wood. This standardized tree became the future vision of what the forest could be, and the process of transforming the natural forest into a uniform group of standardized trees promised the forester a more rational, orderly and aesthetically pleasing system to manage. Scott notes that "the forest itself would not even have to be seen; it could be 'read' accurately from the tables and maps in the foresters office" (Scott, 1998 p. 15).

The consequences from this approach led to both successes and failures. Productivity increased for the first harvest rotation, but the second-generation plantings showed substantial regression in the loss of timber volume. Ecological processes that had been considered subordinate to the goal of producing timber volume were found to have effects that were essential to the achievement of the forester's goal. This is the main point of Scott's illustration: the simplification or sharpening of focus that bracketed out elements of the forest system that did not explicitly pertain to the goal of maximizing the single element of the forest as instrumental or economic value ultimately prevented that value from being realized (Scott, 1998 pp. 11-22). Scott uses this story as a metaphorical introduction to his review of how this process works on a large scale for state sponsored programs. For my purposes, it serves as a literal example and introduction to the consequences of applying the rational planning model to U.S. Forestry practices.

Historical Overview

The Creative Act of 1891 authorized the President to withdraw forested lands from the public domain and create forest reserves. Regulations for the use of these lands did not take effect until 1897 when Congress passed the Organic Administration Act, which stated that forest lands were to provide "a continuous supply of timber [for the] use and necessities of the nation" (Elliot J. 1984). The German scientific forestry model that viewed the forest as a single economic commodity that Scott illustrates was by this time the standard model worldwide and was the paradigm for U.S. forestry as forestry for timber production (Scott 1998, p. 19). The Sustained Yield Forest Management Act of 1944 was the first national legislative action regarding specific forestry practices. This legislation linked community stability to industry stability and consequently interpreted sustained yield or harvest practices as assuring a stable economic base to timber communities. This species of rational planning illustrates the attempt to combine market rationality with social rationality by mandating some provision for the public good. The Sustained Yield Act linked timber production to particular social outcomes, i.e. the economic well being of timber dependent communities in terms of job opportunities. As market pressures increased after World War II, federal timber became a highly sought after commodity in the post-war industrial boom as industry reliance on federal timber accelerated (Bucholz 1993). This increased demand consequently served three purposes well, increased revenues to the government, to private industry and to timber communities. This time period can be seen as analogous to the short run benefits that the forest as industrial commodity offered to the original German planners. Remember, salable wood volume increased dramatically for the first generation of the new industrial forest.

As market demands outpaced planning efforts, the Forest Service attempted to alleviate eventual problems by developing land use plans. The content of these plans were developed locally under regional guidance and was not tied to any national planning or budgeting process (Wilkerson and Anderson 1987).

Congress recognized public concern regarding problems of competing forest uses by codifying in the Multiple–Use-Sustained-Yield-Act of 1960 (MUSYA), additional purposes other than timber production for managing national forests. In effect, this was the first official attempt to enlarge the focus from the forest as commodity to the forest as including less measurable attributes. This Act required the agency to give "due consideration" to various resources when managing forest lands but at the same time it was lacking substantive standards to guide decision making (Applegate 1978, p. 149).

Logging on national forests increased from 2.5 billion board feet in 1946 to 12 billion board feet annually by the mid sixties (Forest Ecosystem Management Team 1993 p. II-48). Consequently, public pressure for timber regulation arose again as an issue when both Congress and the public became increasingly concerned over the practice of clear cutting. Clear cutting was scientifically validated as a tool to achieve both maximum harvest volume and ease of replanting. As a practice, it was specifically tied to the vision of the forest as present and future commodity. The public concern was indicative that other values were competing for room in the rational vision of the forest. In 1970, Professor Arnold Bolle issued a report at the request of

Senator Metcalf of Montana that was highly critical of the Forest Service's emphasis on timber production in the Bitterroot National Forest at the expense of its multiple use mandate. A year earlier, the National Environmental Policy Act (NEPA) was enacted which required the federal government to "identify and develop methods and procedures…which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations" (Sec. 102 [42 USC § 4332]). NEPA called for an integrated approach to agency decisions and required environmental impact statements on particular proposed agency actions (Porteous 1996). The Act also helped to facilitate public challenges to ecologically unsound management practices. NEPA paved the way for the Forest and Rangeland Renewal Resources Planning Act (RPA) of 1974 which mandated a *comprehensive* planning process for national forests and grazing lands on a nationwide basis. Shortly after RPA's passage, litigation involving the Monongahela National Forest in West Virginia led the Fourth Circuit Court to determine that the Organic Act prohibited clear cutting in national forests (Izaak Walton League of America v. Butz, 4th Circuit, 1975). Congress responded to that decision by enacting the National Forest Management Act (NFMA) in 1976 (Wilkinson and Anderson 1987 p. 155).

The National Forest Management Act

NFMA was the result of the public debate that was reestablishing the assumptions that govern the rationality of forest planning and in doing so was enlarging the vision of the forest and that vision's focus on the forest as revenue instrument. It was the effort of modern social planning to straddle the market and social rationally that Friedman described. NFMA centralizes focus on policy and program direction and amends portions of RPA. Its substantive provisions include maintaining biological diversity, preserving land productivity, determining suitable lands for timber harvest, and imposing limits on even aged management (Sedjo 1983; Weis 1997). As a policy tool, NFMA mandated that programs and actions be formed with national objectives using locally derived data as opposed to the prior planning that was done locally and not comprehensively tied to a national vision or standard other than the forest as commodity. This procedural approach provides the framework for national forest planning by requiring the development of forest plans for all units of the National Forest System.

The regulations that were in effect until November 2000 were proposed in the NFMA in 1979, and revised and approved in final form in 1982. They resulted in three subnational planning and decision-making levels, the region level which consists of a number of national forest units, the forest level consisting of each national forest, and the project level, which exists on a forest district level. Each planning level is considered a NEPA action because it makes decisions guiding the commitments of land, resources, and money and thus has an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) associated with it. NFMA specifically required that planning "form one integrated plan for each unit of the National Forest System" (NFMA 1976. 16 U.S.C. 1600 Sec. 6(f) 1).

Practices and Consequences under NFMA

The 1982 planning process has ten steps, to be followed in order, because they mirror the process requirements for developing an EIS. The initial steps identify public issues and management concerns, define planning criteria, and develop assessments of the current conditions specific to its level. This assessment is called the "analysis of the management situation," and it includes demand-and-supply conditions for resource commodities as well as their production potentials [16 U.S. C. 1604 Sec. 219.12 (e)]. To date, these analyses are production-oriented, calling for benchmark analysis of the minimum and maximum physical and biological production capabilities of significant goods and services, along with their associated costs and benefits. These analyses are monetary benchmarks that maximize present net value of commodity resources, estimate current production of these goods and services, and develop projections of demand (16 U.S. C. 1604 Sec. 219.12 1-5). Although the regulations require protection of soil and water resources as well as assurance that viable wildlife populations will persist across their usual range, these aspects are usually considered only after meeting timber-harvest targets in most plans (Committee of Scientists (COS) 1999 p. 93). Additionally, although RPA expected that "the new knowledge derived from coordinated public and private research programs will promote a sound technical and ecological base for effective management, use and protection of the Nation's renewable resources" [RPA Sec. 2(4)], the 1982 regulations reflect the vision of the forest as instrument of commodity production. Consequently, the information developed for and used in forest planning does not sufficiently address the ecological and sustainability issues of increasing concern to scientists and the public. The information also invariably leads to underestimated or downplayed environmental effects of commodity production in EIS analyses (COS 1999 pp. 91-95).

The political debates that were successful in enlarging the vision of the forest to include more than commodity values made their way into law, but the rationality that governs forest use is still tied to the simplified focus of market forces. The results of these contradictions, the simultaneous legal requirements for market rationality and its emphasis on the forest as revenue instrument, and social rationality and its public demand for more official recognition of other forms of knowing the forest eventually led to the judicially ordered bans that almost completely halted logging in the Northwest during the early 1990s.

The assumptions of the rational planning model are well suited to market rationally given its emphasis on quantifiable data. In this case, they were equally well suited as a means for social planning to achieve its goals of enlarging the vision of the forest. The successful legal challenges to the maximization of timber harvest at the expense of species habitat that led to the logging bans were based on measurable data that were aligned with what I consider to be the actual goals of social planning in this instance; that of elevating the as-of-yet scientifically unknown ecological processes and qualities to the same status as revenue production. This is the actual arena of this public debate.

Committee of Scientists Report and Proposed Forest Rule Changes

In December 1997, the U. S. Secretary of Agriculture convened the Committee of Scientists (COS), to take part in this debate. The Committee's charter empowered them to "make recommendations, provide technical advice and provide material for the Forest Service to

incorporate into the revised planning regulations" (COS 1999. p.13). Their final report was issued March 15, 1999. Public comment extended to June 2000. Proposed rules changes were published in August 2000. Final Rules were adopted and published in November 2000.

Although not all of the Committee's recommendations made it into the final rules, I want to briefly review them as an example of how differing rationalities compete with each other in the organization of social planning. The Committee did managed to bring the public concern with enlarging the vision of the forest to a further point in the *official* conversation. The effect of the COS Report was to elevate the as-of-yet scientifically unknown ecological processes and qualities noted earlier to a status equal to that of revenue production. The Committee did this through its use of the concept of sustainability (Mann & Plummer 1999). The COS Report considers sustainability as that whose definition has been evolving thorough the past one hundred years of federal forestry management. The Committee maintains that this evolution has passed through the application of sustaining commodity outputs to sustaining ecological systems. They state that they operate under the assumption that ecological sustainability is the foundation to all other definitions (COS 1999 pp. xiv - xvi).

These assertions became the assumptions that bounded the rationality of the Committee's report. They are in fact, part of the final rules. The amended Section 219.2 Principles, reads in part:

> (a) The first priority for planning to guide management of the National Forest System is to maintain or restore ecological sustainability of national forests and grasslands to provide for a wide variety of uses, values, products, and services. The benefits sought from these lands depend upon long-term ecological sustainability. Considering increased human uses, it is essential that uses of today do not impair the functioning of ecological processes and the ability of these natural resources to contribute to sustainability in the future. (1) Planning provides the guidance for maintaining or restoring the diversity of plant and animal communities and the productive capacity of ecological systems, the core elements of ecological sustainability.(2) Planning is based on science and other knowledge, including the use of scientifically based strategies for sustainability and benefits from independent scientific peer review.

Section 219.2 of the final rules is devoted to the requirements of ecological sustainability and requires evaluations of this sustainability in terms of ecosystem diversity, species diversity, and soil and air resources.

These additions to the vision of the forest and its governing rationality did not meet without opposition. Senator Larry Craig of Idaho initiated a General Accounting Service review of the draft of the final rules. The October 25, 2000 edition of The Oregonian reported that the GAO audit found that the new rules "overstep the law". Senator Craig was quoted in the same article as saying that the new rules were a "futile and costly attempt to set unreachable environmental goals."

One part of the Committee's report did not survive in the final rules, but I want to note it because it introduces the notion of planning in the light of ambivalence that I want to examine in the last section. In the Committee's report the sustainability of ecological processes is the

foundation of economic and social sustainability. Acknowledging that implementation of sustainability into planning models is not a precise process, the Committee outlined seven features of ecological systems that it recommended planning models should acknowledge. These features act as principles to guide thirteen areas of policy concern.

- Acknowledge the Dynamic Nature of Ecological Systems
- Acknowledge the Significance of Natural Process
- Acknowledge Uncertainty and Inherent Variability of Ecological Systems
- Acknowledge Cumulative effects
- Preserve Options
- Conserve Habitat for Native Species and Productivity of Ecological Systems
- Reduce Uncertainty Through Adaptive Management and Continuous Learning. (COS 1999, pp. xvii - xx).

The reasons that these features should be integrated into planning assumptions are not only due to the emergence of ecosystem management as the chosen management paradigm for the National Forests and Grasslands. These features are not only a realistic acknowledgement of the contingency of our knowledge concerning ecological systems, but they are also an acknowledgement of the public creation of governing rationalities through debate. The Committee's report cites what they call recent social trends as hampering the planning process envisioned by NFMA. According to the committee these include:

> (1) the national public divisions over how best to manage the national forests,
>
> (2) the emergence of wildlife and resource protection as a major goal of national environmental laws such as the Endangered Species Act and the Clean Water Act,
>
> (3) the public interest in becoming increasingly involved in sharing stewardship responsibilities and having input into management decisions,
>
> (4) the multitude of federal, state and local jurisdictions that have promulgated regulations concerning the environment,
>
> (5) the individual program-based budget structure that Congress and the Forest Service continue to operate under which undermines the ability to implement balanced plans (Report, 1999, p. 3).

The Committee contends that these developments do not fit the planning structure as formulated under NFMA. In order to begin to integrate these developments, these debates, into

planning models, the Committee recommends building upon the requirements of maintaining species diversity and ecological productivity mandated by NFMA (NFMA Sec. 6 [3] [A], [B]), and integrating with them the requirements that current understanding of the elements of ecological sustainability demand. By integrating these elements and establishing ways by which they can be measured, it can be determined when the objectives of sustainability have been attained, and these concepts can then be incorporated into planning decisions.

Alternatives to the Rational Model: Planning in the Light of Ambivalence

Do we have alternatives to the rational model in planning, or are we limited to expanding its evaluative criteria? Does the emphasis on correct ways of achieving goals preclude those unmeasurable qualities that portions of the public want to include in the rational model's vision of the world? Are the concepts of sustainability that the Committee recommends amenable to the constraints of the rational model?

Scott's description of how the simplification of knowledge is essential to understanding the more complex realities we are confronted with, so as to be able to act - can also be viewed as that wall of certainty we create to protect ourselves from ambivalence. Sociologist Zygmunt Bauman defines ambivalence as a language specific disorder; the possibility of assigning an object or an event to more than one category is a failure of the naming or classifying function that language is meant to perform. He describes the main symptom of this disorder as the acute discomfort we feel when we are unable to read a situation properly, or to choose between alternative actions (Bauman 1991).

Certainty as an element of the rational model is essential. We may be lacking in data, or in competent data, and we may be lacking in full knowledge of the consequences of our actions, but we must proceed with some level of certainty or our plans may wither from lack of support. My question is this: are we able to build uncertainty, or rather the discomfort of ambivalence into our planning models and yet still proceed with the necessary level of certainty?

The seven features of ecological systems that the Committee recommended planning models should acknowledge and policies should be guided by all highlight uncertainty in some way. There is no language in the final forest rules which refers to these features as guiding principles, but just noting a few of them may give an indication of how planning in the light of ambivalence might proceed.

Acknowledge the Dynamic Nature of Ecological Systems

The understanding of natural systems that ecologists bring to their science has evolved from considering nature as existing in a steady state or balance to one that recognizes its inherently dynamic interdependence, which is in effect, a dynamic of nonequilibrium. If we also recognize that the influence of unanticipated disturbances are factors in the maintenance of systems, then the models of planning actions to sustain systems becomes tentative at best.

Acknowledge the Significance of Natural Processes

The Committee cites the lack of appreciation of natural processes in past forest planning. Timber harvests were guided by NFMA mandates of "maximum sustained yield" which generally assumed that disturbances, especially fire and insect infestation could and would be suppressed (COS pp. 24-26). These disturbances could therefore be ignored in planning models. When disturbances were successful, the mandated timber harvest levels were under-achieved. When projects of disturbance suppression were successful, they often created different problems.

Acknowledge Uncertainty and Inherent Variability of Ecological Systems

Uncertainty in this context refers to the "scientific uncertainty that arises from incomplete understanding of how ecological systems work or insufficient information to determine the relationships between processes" (COS 1999 p. 25). Uncertainty also refers to incomplete knowledge of the impacts of planning decisions. Variability refers to the different ways similar processes may work under differing thresholds of adaptation in different locations or spatial scales. "Analysis of management alternatives must consider the lack of complete understanding of relationships within ecological systems [and] confidence limits on projections into the future" (COS 1999 p. 25). In contrast, timber harvests under NFMA were presented as a specific value and not a range of values. The factor of uncertainty was not a factor at all and consequently unrealistic expectations were generated for Congress and the public (Forest Ecosystem Management Team, 1993, pp. IV- 3-38).

Acknowledge Cumulative Effects

Cumulative effects were defined in administrative rules for NEPA regulations as "the impact on the environment resulting from the incremental impact of the action when added to other past, present and reasonably foreseeable actions regardless of what agency or person undertakes such actions" (Federal Register 43 (230) 55978-56007, Nov. 29, 1978). This definition of cumulative effects assumes that an effect from a management action can be identified as an addition of effects. An ecological understanding recognizes multiple responses to changes in ecological systems. Since natural disturbances are integral to ecological systems, the difficulty in integrating unpredictable disturbances into studies of cumulative effects is daunting. Similarly, many types of cumulative effects from project actions may not become apparent until after a single disturbance or a single action makes them evident. Floods may expose the cumulative effects of overgrazing in riparian areas. Fire may expose the cumulative effects of fire suppression. Storms may expose the cumulative effects of consistent road building. Cumulative effects on one spatial level may have consequences on other levels. Existing management models in NFMA do not specifically mention cumulative effects, or methods of cumulative effect analyses (COS 1999, p. 26).

Preserve Options

Options are to be preserved precisely because of the incomplete nature of our knowledge. In the Committee's language, preserving options "assumes that an acceptable range of choices will be available to address the environmental problems confronting future human

generations…This philosophy is, perhaps, best encapsulated by focusing first on what we leave before focusing on what we take from ecological systems" (COS 1999 pp. 25-26).

These recommendations do not abandon the rational planning model even in light of their emphasis on uncertainty, variability, lack of complete understanding, and limits to confidence. Rather, the Committee proceeds certain that a certain order can be restored to understanding. An orderly world is a world in which 'one knows how to go on', or in which one knows how to calculate the probability of an event. The way that the Committee advises us to go on with forestry planning is as an experiment. Their advice is get on with a model of adaptive management, that is, management actions as experiments in order to "reduce uncertainty through continuous learning"

This emphasis on adaptive management, or management not as plans, but as contingent, working notebooks is a new dimension to the rational model. It bespeaks a certain modestly regarding our self-confidence in scientific knowledge, and in our ability to know something as the truth.

There is another way that we are able to know how to go on, and that is through talking to each other. The discomfort of ambivalence is a social as well as a personal phenomenon. I have not mentioned collaborative planing experiments in this essay, but the possibilities that they hold for mutual understanding and the continued evolution of the rationalities that govern our lives are manifold. If Friedmann is right in assessing a plurality of rational systems, then an understanding of the assumptions beneath these systems should allow *rational* people to engage in conversation. And conversations are worthwhile when they change the conversationalists.

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