Public Influences on Plantation Forestry

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ABSTRACT

For plantation forestry to be successful, it must be biologically possible, economically feasible, and culturally adoptable (i.e., socially acceptable). We discuss social acceptability and plantation forestry in the Pacific Northwest, stressing that social acceptability is a judgmental process that is both provisional and dependent on many complex factors, and that most decisions are based on intuition, rather than a rational evaluation of all relevant choices. We suggest that conflicts over plantation forestry can be minimized by carefully considering social acceptability and by forging formal agreements (accords) that promote the goals of both environmentalists and forest industries.

Keywords: certification; decisionmaking; forest management; public perceptions; social acceptability

"Forest" is not so much a scientific term as a social construction, dependent on contemporary norms and values.—Clarke S. Binkley, Forestry in the Next Millennium: Challenges and Opportunities for the USDA Forest Service (1999).

Plantation forestry has the potential to supply most of humanity's wood needs on a long-term basis, thereby reducing harvest pressures on natural forests (Sedjo and Botkin 1997). To fulfill this role, however, plantations must produce more wood than their natural counterparts using shorter rotations. This approach to forestry seems to be a relatively simple solution to the United States' expanding need for fiber and other forest products. However, intensive forest practices are often viewed skeptically by the public, particularly in the Pacific Northwest (PNW), where a long history of debate over natural resources persists.

Why the concern about public acceptance of plantation forestry? A number of scholars recognize the influence of social values in natural resource decisionmaking. Firey (1960) and Clawson (1975) agreed that resource policies must meet three criteria for successful implementation: they must be biologically possible (grounded in sound ecological understanding), economically feasible (benefits exceed costs), and culturally adoptable (consistent with prevailing norms and beliefs). Although much research and management action have addressed the first two criteria, there has been less attention focused on understanding the factors that foster cultural adoptability—or as it is more commonly called, social acceptability. Nevertheless, a policy lacking broad public understanding and support cannot be sustained, irrespective of its scientific rigor or economic benefits. Indeed, Sedjo and Botkin (1997) argued that regardless of their ecological, economic, and social outcomes, new approaches to forest management may never be adopted unless social resistance can be overcome.

In this article, we explore the concept of public acceptance of plantation forestry to help inform land managers and scientists of the role that social values play in this emerging industry. Industrial forestry organizations will need to provide assurance of their commitment to sustainable practices and must ultimately be willing to subject themselves to some level of independent review (McMahon 1999). Except in the southeastern states, plantation forestry has a relatively short history in the United States compared with other countries. Thus, we draw heavily from on-the-ground experiences elsewhere, especially Australia and Europe. However, our primary speculations focus on the PNW, a region in which harvests from private forests increased from a low of 38 percent in 1988 to nearly 85 percent of total harvests in 2002 (ODF 2004). This is also a region where both private and public forest managers have cast an eye toward more intensively managing lands for wood fiber. Because successful implementation ultimately requires public support, it is critical that those concerned with plantation forestry understand the structure and dynamics of public judgments. However frustrating such judgments might be, they cannot be ignored as irrelevant or dismissed by land managers or other forestry professionals.

Private/Public Context

There are no facts, only interpretations.—Friedrich Nietzsche

One of the first issues regarding the viability of plantation forestry is ownership. It is much easier to understand public concern about forest practices on federal and state lands. Particularly in the PNW, citizen sentiment has driven much of the decisionmaking on public forests in the last decade, and this is especially true wherever new or different forest practices are attempted (Shindler et al. 2002a). Therefore, it is likely that the debate over more intensive forest management on public lands—even those designated as plantations—will be passionate.

But what about the ability of private landowners to implement plantation forestry? Historically, the path for private forest owners has been much less contentious. However, there is evidence that the public is finding ways to influence decisions on these lands as well. Although public protest and use of the media to call attention to specific practices are becoming more common, the most concrete form of influence is reflected in changes to state laws and regulations that govern forest practices. By lobbying state legislators or using the ballot initiative process, citizen groups have begun to change the face of private forestry in California, Oregon, and Washington. For example, in the last 20 years scenic buffers have been required along state highways, tighter standards for reforestation now exist, and new regulations affecting riparian systems are in place. In Oregon, a 1998 ballot initiative to reduce the size of clearcuts was defeated; however, new initiatives are again underway in both Oregon and California to limit chemical use and harvesting practices on private lands.

The experience of MacMillan Bloedel in the early 1990s provides insight into the potential for a company to lose its social license to operate (see Cashore and Vertinsky 2000). MacMillan Bloedel was targeted by environmental groups because of its practice of clearcutting old-growth. This pressure resulted in a significant shift in management strategy as the company sought to retain its social goodwill and be effective in the marketplace. Further evidence of increasing attention to social considerations is in the stance taken by large multinational corporations. Weyerhaeuser Company and Stora Enso, for example, both produce annual reports that address social responsibility.

There are at least three reasons why private forest managers should pay attention to public acceptance of their practices. First, forests are often viewed as a larger societal good, regardless of ownership. Regardless of one's position on this notion, certainly some forest activities can have broad "downstream" effects on society as a whole, and the public deserves (demands) access to decisions that affect their resources. In areas where plantation forestry is practiced, the financial benefits seem to accrue to a few, although the forest themselves (and the jobs that are created) are often viewed as "belonging" to everyone (Tonts et al. 2001). The question of "Who benefits from forest plantations?" will always be a key concern.

Second, plantations compete with other uses of forest and agricultural land, and the resulting outcomes affect communities. A transition to plantation forestry is more widely accepted when the lands in question are marginally productive or generally are considered to be in poor ecological condition (Lockie 2002). However, when productive natural forests are to be converted to plantations, citizens are much less supportive, often voicing concerns about the potential for high grading, cut-and-run harvesting, and a decline in long-term land values (Schirmer and Kanowski 2001). Community concerns also involve the impacts of plantations on population structure. For example, much of the evidence from Australia suggests that property owners who lease or sell their lands to timber companies do not remain in their local communities (Tonts et al. 2001). Consequently, the remaining residents fear a decline in both the provision of basic services and the vitality of the local economy (Schirmer 2002).

The third reason involves concerns over ecological sustainability. Research from countries where plantation forestry is more advanced indicates that citizens are worried not only about the loss of productive agricultural lands, but also about off-site impacts. Central concerns involve the use of chemicals, declines in water quality, changes to biodiversity, fragmentation, and impacts on tourism because of changes in the landscape (Schirmer and Kanowski 2001, Wilkinson et al. 2001). Similar concerns have been voiced in American forest communities over intensive harvesting practices (e.g., Bliss 2000), especially in the PNW where *all* forms of harvesting come under scrutiny. Less focused objections also include a general distrust of big business or the bureaucracy, the perceived inequities of the political process (the big guy always wins), and philosophical objections to forest biotechnology (e.g., clonal forestry or genetic engineering). Each of these concerns can be exacerbated by a lack of understanding about the methods and outcomes of plantation forestry.

It is important to recognize that not all public sentiment toward forest plantations is negative. Many of the positive views stem from beliefs that high-yielding plantations will (1) enhance a region's competitiveness in an increasingly global forest products market; (2) play an environmentally beneficial role by reducing harvest pressures on other natural forests; and (3) generate positive ecological effects as they replace degraded or marginal agricultural lands (Sedjo 1999). From a community perspective, plantation forestry also has been seen as contributing to a more diversified economy. Plantations require people to tend, harvest, and transport timber—and many communities hope for establishment of local processing industries (Schirmer and Tonts 2002). In addition, when landowners lease their property to others, the resulting income may enable family members to seek work off the "farm."

Evidence from Australia, however, suggests that attitudes toward plantations differ among communities. Rural communities with more diversified commodity conditions, including a wider range of industries, are less likely to express concerns about plantations than those with a narrower economic base (Tonts et al. 2001). In addition, the public has a clear preference for more integrated and diversified farm-forestry systems over large-scale industrial plantations (Schirmer 2002). The rationale is that farm-forestry involves a resident landowner and is integrated with more traditional agricultural pursuits.

A major problem in attempting to resolve the social conflicts over plantation forestry is a lack of adequate information about the validity of the various concerns. Without this information and a mechanism for exploring and discussing community concerns, local governments and regulatory authorities will be forced to make decisions based on perceptions rather than on solid evidence about positive or negative impacts (Schirmer 2002).

The Nature of Social Acceptability

Nothing endures but change.—Heraclitus (c. 500 B.C.)

The notion of social acceptability has taken substantial prominence in natural resource management in recent years (see Shindler et al. 2002a). It is a judgmental process in which comparisons are involved, and knowledge and awareness shape the judgments. Furthermore, judgments are conditional and contextual. The lack of public support for natural resource initiatives is often attributed to an inadequate understanding of the scientific bases for such policies (Bliss 2000). In the face of complex decisions, the search for answers is typically guided by "sound science" and "good eco-

nomics." When public dissent is present, land managers tend to treat contrary views as unfounded, inaccurate, or misguided. In short, the contrary views are wrong ("if only they understood the facts") or selfish ("just another case of NIMBY-ism [not in my backyard]"), and these can be overcome with more facts and rational explanations. Clearly, few decisions are solely a function of objective science (Stankey 1995). Technical information is critical in describing the alternatives, consequences, and implications of decisions, but such information seldom defines what is best, right, or correct (Shindler et al. 2002a). Ultimately decisions express the social and political values represented in the decisionmaking process.

Not everything that can be counted counts, and not everything that counts can be counted.—Albert Einstein

Research suggests that judgments evolve from a complex suite of factors—most often those that are seen as relevant and based on personal experience—including the context of the situation, aesthetic and ecological concerns, knowledge of alternatives and consequences, the political process (particularly fairness), and trust in the decision-makers (Shindler et al. 2002a). Thus, public judgments are provisional in nature. In one sense, the job is never finished because contexts, conditions, and populations change. For example, dynamic populations in the PNW influence the social acceptability of any management practice. Population growth in the region is primarily driven by in-migration. Immigration rates during the 1990s, for example, were 4 percent to 5 percent per year (Northwest Environment Watch 2003), suggesting that foresters must hit a moving target—a public that is constantly changing, bringing new experiences, expectations, knowledge, and values to the discussion.

These changes also are associated with a shift toward environmentalist attitudes (Hendee and Pitstick 1994) that is particularly pronounced in the PNW—and these shifts contribute to the declining support for intensive activities such as plantation forestry. There also appears to be a regional decline in public confidence and trust in our forest institutions. Trust in public natural resource agencies (e.g., US Fish and Wildlife Service, USDA Forest Service, USDI Bureau of Land Management, Washington Department of Natural Resources) to maintain and restore healthy forest conditions ranged from only 40 percent (National Marine Fisheries Service) to 61 percent (Oregon Department of Forestry) among residents of Oregon and Washington (Shindler et al. 2002b). The public has diverse perceptions and values, which also vary by region in the United States (Brunson and Shindler 2004). Plantation forestry practices that are socially acceptable in the Southeast, for example, may not be acceptable in the PNW where this brand of management is just beginning to be established.

Decisionmaking

The great decisions of human life have, as a rule, more to do with instincts and mysterious unconscious factors than with conscious will and well-meaning reasonableness.—Carl Jung

There is a growing recognition that biological systems are complex and there is substantial uncertainty in the predictions that are made, particularly over the long time horizons involved in forest management. Furthermore, issues of scale are gaining greater recognition. Resource professionals are moving away from stand-level management to a larger landscape perspective. Within this expanding view, complexity and uncertainty have increased enormously. The consequences of our activities become harder to predict at increasingly larger scales. At the same time, politicians and the public are attempting to understand this complexity and have increasing expectations about what managers and scientists can deliver. In addition to "knowing our audience" (e.g., how they will respond to various management activities), it is also important to consider how they evaluate technical information and make decisions about alternatives for resource allocation.

The literature on decisionmaking is deep and rich, and a few points are particularly germane to this discussion. Most research on decisionmaking is based on the assumption that decisions are made by incorporating quantitative information in a type of benefit-cost analysis. However, Orasanu and Connolly (1993) detailed four models of decisionmaking. The *rational* approach involves a thorough evaluation of relevant choices. The rational decisionmaker stops and thinks, clarifies goals, determines facts, develops options, considers consequences, makes a decision, monitors the outcome, then modifies the decision as needed. The *dependent* approach relies on others for direction. This approach is associated with situations of pervasive uncertainty and decisionmakers that are either ignorant of the situation or have shifting desires. Dependent decisionmakers manage uncertainty through mimicry of others important to them. If the people they mimic are also ignorant, they may suffer no loss, but if the people they mimic are knowledgeable, then they stand to gain.

The *avoidant* decisionmaker simply ignores the need for making a decision, whereas the *intuitive* decisionmaker relies on "hunches" or feelings. Intuitive decision makers use pattern matching and quickly look for characteristics in the situation that strike them as familiar. For example, what previous decisions have they made that are similar? Intuitive decisionmakers use associative reasoning, quickly assessing relationships between objects or events, and then applying these relationships to new situations. For example, how does their knowledge of similar situations work here? Although most people use all four decision approaches at one time or another, "expert" (e.g., policy) decisionmakers usually use the intuitive approach (Orasanu and Connolly 1993). In support of this idea, decision scientists are now finding that only about 5 percent of all decisions are made by comparing alternatives (Klein 2002). Even for complex decisions, people typically consider only one option.

Comparing different options is enormously complex, especially because most of the impacts are ill-defined or uncertain. In the case of plantation forestry, we need to be cognizant of the role that scientific information really plays in decisions. It is unrealistic to expect that scientists and managers can educate and convince the public that certain activities are justified by simply providing objective quantitative information (Stankey 1995). Of course, this does not even address whether the scientific information is truly objective in the first place, and many scholars stress that all ideas, including those of scientists, are informed by values (e.g., Jasanoff 1987).

If we carry this line of reasoning to the PNW (i.e., with its tendency toward polarized views on resource issues), we see real problems ahead for the movement toward intensive plantation forestry. Absent other intervening influences, opinions are likely to break down across traditional lines—those who support more intensive plantation management versus those who favor more preservationist forms of forest manage-

ment—and we have already seen how this debate has played out in recent years.

One solution to the challenges faced by plantation forestry is forest certification. Forest certification can work in the landowners' favor to legitimize their operations (McMahon 1999). Generally, forest certification by the Forest Stewardship Council (FSC) has made plantations more credible—the evidence being large plantations certified in Chile, South Africa, and New Zealand. Many environmental groups now supporting the FSC may also recognize that certified plantations are an appropriate and legitimate means for producing wood fiber in the United States. On the other hand, FSC certification has been criticized because of their stances on certain issues, such as their ban on the use of genetically modified trees, even for research purposes (Strauss et al. 2001).

Compared with other regions, forest landowners in the PNW should be better able to meet changing public expectations. This is because state laws governing forest practices in the PNW are generally consistent with emerging international criteria for sustainability (McMahon 1999). In Oregon, for example, comprehensive land-use laws (which limit development of lands suitable for agriculture and forestry) tend to promote plantation forestry. Furthermore, Oregon's tax laws, which levy lands based on their productivity (i.e., growing trees faster), are now a major incentive for practicing plantation forestry.

The certification phenomenon is also impacting the marketplace—again via the influence of environmental groups and the pressures they have successfully applied to large wood-buying companies such as The Home Depot. Governments, largely through the Leadership in Energy and Environmental Design (LEED) building standards, also influence the demand for certification as they begin to require the use of certified products in their construction projects. It appears that certification has moved into the mainstream. As companies adopt forest certification (regardless of the system selected), it influences their management practices. The main certification systems active in North America have evolved significantly since their introduction. The upshot (from a public acceptance standpoint) is that citizen awareness and expectations for certified products are likely to increase.

Aligning Environmental Values and Plantation Forestry

Given the very different perspectives that the public, environmental groups, professional foresters, and forest industry bring to this issue, what role might plantations play in future forest management? Depending on the established "rules of the game," we argue that an emphasis on plantations will either reinforce and exacerbate existing conflicts, or lead to a reduction in conflict and the potential for a brand new approach to forest management. This argument assumes that environmental interests see forests as a larger societal good (e.g., they provide common pool resources of air, clean water, wildlife habitat, aesthetic values, and so on), whereas industrial and private forest owners focus on private goods such as timber, paper, and other products. Common pool resources are those that are both finite (i.e., subtractable or rivalrous in consumption), and costly or difficult to exclude from potential users; whereas, private goods are finite, but easy to exclude from potential users (McKean 2000).

Thus, in the absence of any formal arrangements linking the increased use of plantations to resource conservation elsewhere, we expect that environmental groups will be skeptical of plantation forests. Simply, it is in the interest of environmental groups to push forestry operations toward the preservation end of the continuum and advocate for increased regulations. Alternatively, it is in the interest of industry to push operations toward the intensive forestry end of the management continuum and advocate for decreased regulation.

Is there any way to encourage environmental groups and industry to advocate for components of each other's basic goals? We suggest a radical alternative that could contribute to such an arrangement—a specific formal agreement that links plantations (and high yields) in one forest land base with protecting forests in another. Under these agreements (see Rosoman 2003), environmental groups might support a definition of plantations that encompasses practices at the more intensive end of the management spectrum and resist regulations that limit plantation productivity. They would do this because protected areas would be increased by enhancing the productivity of plantation forests (i.e., via the formal linking agreement). Similarly, the forest industry might support a strict definition of protected areas and support rules to keep them in their natural state, for fear of breaking the agreement and losing their high-yield land base.

Is this pie-in-the-sky thinking from a bunch of social scientists? Empirical evidence from Canada and New Zealand indicates that such formal arrangements can lead to a more holistic emphasis on a range of forestry values, changing the positions of forest industry, landowners, and environmental groups. Following long and intensive negotiations, formal agreements (accords) in both Canada and New Zealand (signed by all parties) designated areas for intensive forestry *and* expanded the protected areas network (Ontario Forest Accord Advisory Board 2001, Rosoman 2003). In both cases, unexpected support came from industry and environmental groups nationwide. Even Greenpeace, a group that does not traditionally participate in such agreements (and excluded itself from the New Zealand accord) was swayed by this approach, with one Greenpeace official noting that, "plantations are not forests, but we have learnt to live with them to achieve destructively sourced wood substitution and native forest restoration and protection" (Rosoman 2003). Similarly, a spokesperson for the Canadian firm, Abitibi Consolidated, noted that "The war in the woods took up so much time, energy, and resources. Now our foresters spend more time on managing the forests better. We are going for win-win, rather than win-lose" (Ontario Forest Accord Advisory Board 2001).

Lessons for the Pacific Northwest?

What are the lessons for the PNW? On the one hand, past struggles over forest conservation in the PNW occurred in the absence of formal links to intensive forestry; therefore, future options are constrained by past solutions. Nonetheless, there may be other conservation initiatives that could be linked to plantation forest management. Such initiatives might include designation of forestland that would be required to be managed under a natural forest regime, along with development of a network of conservation easements. Although much work would need to be done to think creatively about how a Northwest Forest Accord might be constructed, experience elsewhere indicates that the payoffs in goodwill, enhanced understanding among interest

groups, and sustainable use of forest resources make such an effort a laudable goal.

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