MERGING PUBLIC AND PRIVATE DOMAINS: IMPLICATIONS FOR THE DESIGN AND IMPLEMENTATION OF NATURAL RESOURCE POLICY

By

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of ROJE S. GOOTEE find it satisfactory and recommend that it be accepted.

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Abstract

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Throughout the United States, social efforts to regulate privately owned natural resources generate ongoing controversy. Debates swirl regarding just how far public interests can or should extend into the private domain.

Using the State of Washington's Forest Practices Act (FPA) and an associated policy tool called the 'Alternate Plan option' as examples, this study examines the possibility that a significant portion of the social controversy may be arising, not through any deeply rooted social objection to the principle of regulation, but from structural inadequacies in forest regulatory policies. The Forests Practices Rules and related policy instruments enabled by the FPA are among the most comprehensive and innovative in the United States, and provide an excellent test case for stakeholder feedback regarding policy design.

The study analyzes society's changing perceptions regarding the regulation of privately owned natural resources, and the related public and private rights that pertain to them. Its findings reveal that unequal regulatory impacts among forest owners are a significant and inherent problem of private forest regulation. Primary causes of this phenomenon are identified and analyzed, and solution pathways for mitigation strategies, alternative policy tools, and improvements to the process of information exchange between natural resource management professionals and private forest owners are suggested and discussed. The study concludes with specific recommendations for a multi-faceted approach that can help policymakers modify and improve private forest regulation.

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DEDICATION

To the forests, and the people who love them.

Chapter 1

THE CONTEXT OF PRIVATE FOREST REGULATION

The questions of whether and how to governmentally regulate natural resource management on private lands are a source of ongoing debate in the United States. Although a few overarching federal laws such as the Endangered Species Act, Clean Air Act, and Clean Water Act provide important nationwide standards for particular situations, most regulations pertaining to privately owned natural resources are designed and implemented at the state, county, or municipal levels of government. The resulting policies are highly variable, reflective of social pressures and expectations indigenous to each particular locale.

Privately owned forests are a relatively recent addition to the list of regulated natural resources. Certain other resources related to forested habitats, such as wildlife and fisheries, have been widely regulated on private lands through state laws since the 1800's. These types of resources are mobile. They move of their own volition across property boundaries, often migrating long distances, and have therefore been defined as belonging to a broader segment of society. Water and air, though inanimate, are similarly mobile. It has long been understood that misuse by any one landowner could deprive other citizens of their right to enjoy and benefit from these types of resources. Some degree of broad-scale standardization of management has therefore been socially accepted as necessary.

The forests that host such resources, however, are stationary. Unlike mobile resources, forestland is a resource that can be bounded by property lines. In the United

States, the idea that a forest can be privately owned and that ownership implies some right to exclude public involvement is commonly accepted. Consequently, the idea of governmentally regulating private forestland has been less widely and readily adopted than the idea of regulating the more mobile, related resources. The concept of regulating private forests did not begin to gain public acceptance until well into the twentieth century. In some regions of the country it is still not regarded as appropriate. As a result, there is no broad consensus regarding how to regulate this resource. A wide range of solutions are presently employed. Some locales regulate private forests intensively, others more loosely, and still others not at all.

Early efforts at forest regulation focused almost entirely upon the public domain. Despite warnings to the contrary by notable experts such as Gifford Pinchot, most Americans believed that by carefully managing public lands, enough forest resources could be conserved to meet the needs of all (Nash et al. 1990). This idea that the public domain can supply all, or even most, of society's environmental needs draws increasing skepticism, however. The science of ecology points with mounting clarity to the importance of managing natural resources at ecosystem, bioregional, or even global scales (Frelich 2002, Kimmins 1997). Such large spatial scales signal a need for cross-boundary resource management strategies (Grumbine 1994). This fact, combined with growing public awareness that poor forest management can generate serious, negative, off-site impacts, has sparked increasing public interest in the regulation of private forests.

Interest, however, does not imply a lack of controversy. Although growing numbers of Americans appear willing to answer "Yes" to the question of *whether* private forests should be regulated, the question of *how* this might best be accomplished remains open to a wide range of interpretations. Crossing private boundaries to regulate natural resources raises a complex matrix of social and environmental issues. It reapportions not only the burdens and privileges of resource protection, but of resource ownership, as well. In the regulatory process of give-and-take, society typically restricts landowners from some previously accustomed freedom(s) to use owned resources. This may also entail personal financial costs or lost financial opportunities for the landowner. In exchange, society frequently proffers some type, or types, of relief to the landowner to help in providing better-protected resources. The process of regulation is, at root, an effort to fairly balance these elements of public and private burdens, rights, and privileges.

Scholars and policymakers alike are exploring this balance. A diverse scholarly literature is developing around several important areas of emphasis. These include analysis of conventional regulatory strategies (McDonnell and Bates 1993), discussion of new trends in regulatory policy (O'Leary et al. 1999, Vig and Kraft 2003)), ideas for alternative regulatory strategies (Durant et al. 2004, Brunner et al. 2005), studies of the implications of grassroots environmental governance (Weber 2000 and 1993, Koontz et al. 2004), suggestions for re-conceptualizing property ownership (Geisler et al. 2000, Hanna et al. 1996), analyses of the implications of 'common-pool' or communal resources (Ostrom and Schlager 1996, McKean 2000), discussions of the regulatory

"takings" debate (Meltz et al. 1999), and strategies for keeping regulations more fluidly responsive to scientific discoveries and emergent social expectations (Lee 1993, Borman and Kiester 2004).

Additionally, there is a rich reservoir of scholarly research focused more particularly upon forests, and the social effects of regulating them. Teeter et al. (2005), Lee et al. (1990), and Gibson et al. (2000), as well as many others, have explored the broad linkages between communities and forests. In work more particularly related to the geographic setting of this study, Carroll (1995) and Yaffee (1994) have analyzed the effects of mandatory retention of mature-forest endangered species habitats on the Northwest's timber-dependent communities. The effects of fire management and forest wildfires upon communities are receiving increasing attention (Carroll et al. 2004). Blatner and others (2002) have studied impacts of long-term changes in forest stand structure on Washington's forest industries. Creighton and Baumgartner (2005) have assessed family forest owners' understanding and opinions of Washington's current forest regulatory policies.

Contribution of this Study to the Current State of Knowledge:

Largely lacking from this diverse pool of scholarly literature, however, is research directed toward another important aspect of natural resource management policies: the fact that regulations designed to protect the environment often create very dissimilar outcomes among owners of ostensibly similar resources. With the exception of the work of Zobrist et al. (2004) and Zobrist and Lippke (2003), who address the disparate

economic impacts of Washington State's forest riparian regulations upon private forest owners, it is rare to find scholarly research focused upon that niche.

This research project sheds new light upon the potential implications of unintended, inequitable regulatory consequences among natural resource owners by providing a case study of Washington's private forest regulations and the policy advisors, forest owners, and other stakeholders who design and are affected by them. More particularly, the study examines and analyzes an innovative policy instrument called the "Alternate Plan" option now employed by the state in its efforts to better address the complex social consequences of private forest regulation. Washington's Forest Practices Act is recognized as both unusually longstanding and unusually comprehensive (Creighton and Baumgartner 2005, Smith 1997). From its inception in 1941 as the nation's first Forest Practices Act to include private lands, to its current far more extensive iteration, Washington's Forest Practices Act and attendant Forest Practices Rules have remained in the vanguard of innovative private forest regulatory policy. For these reasons, the state affords a highly instructive study setting.

Practical Implications of the Study:

Based as they are upon the insights of stakeholders involved with a complex regulatory system, the results of this research project can help policymakers recognize and address the symptoms and consequences of regulatory inequity among natural resource owners. Furthermore, in addition to analyzing the fundamental problem of regulatory inequities, the study discusses potential solution pathways. These can help

policymakers design more pragmatically effective private-land environmental regulations that achieve a truer balance of social fairness.

This research project is also relevant to geographic settings beyond Washington. The study results indicate that many causes of inequitable regulatory consequences among forest owners are generic, rather than particular. Consequently, the results of this study can be helpful to policymakers in many other locales.

Choice of Methodology:

"Grounded theory" (Glaser and Strauss 1999, Clarke 2005) was selected as the most appropriate research methodology for this project. This inductive, qualitative technique provides an ideal opportunity for extensive, open-ended interviews permitting knowledgeable respondents to probe complicated issues in depth. This is particularly important when studying topics that have previously seen little research, as was the case with this project. Interviewees can introduce or emphasize points that their experience indicates are particularly important, thus not only refining the current data, but also helping frame future research. The analytical technique of "constant comparison" (Glaser and Strauss 1999) allows patterns and themes of importance to emerge and be tested through the data as it is collected. These patterns and themes in turn provide a platform from which new "grounded theories" may be developed.

Further discussion of the study methodology is provided in each of Chapters 3, 4, 5, and 6 of this dissertation.

Organization of the Dissertation:

Chapter 2 offers an in-depth analysis of public and private environmental rights in relation to private forests. The general failure of environmental policymaking processes to address the issue of distributive rights, and the social and environmental implications of this omission, are discussed. Modifications to current policymaking strategies are suggested. Chapter 3 provides an in-depth discussion of the overarching problem of inequitable regulatory outcomes among private forest owners. Three underlying causes of the phenomenon are identified and analyzed, and mitigation strategies are suggested. Chapter 4 discusses the relevance of the "Alternate Plan" approach as an environmentally responsible policy instrument that may help make regulation more responsive when individual forest ownerships are disproportionately affected by a regulation. Chapter 5 addresses of the process of information exchange between forest regulators and private forest owners. It reveals that professionals and non-professionals often use disparate evaluative screens when assigning credibility to new forest management information. This in turn can affect the willingness of forest owners to adopt important new information about forest stewardship and regulatory requirements. The chapter links this phenomenon to adult learning theory, giving professionals a foundation from which to improve their effectiveness with forest owners. Chapter 6 summarizes overarching conclusions relating to private forest regulation and its underlying issue of regulatory inequities, and discusses important concepts that can aid policymakers in designing regulatory systems with improved outcomes of social fairness for natural resource owners.

This dissertation has been prepared under the Alternative Format approved by the Graduate Studies Committee. Chapter 1 serves to orient the reader within the dissertation. Chapter 2 has been formatted as a book chapter. Each of Chapters 3, 4, 5, and 6 constitutes a separate journal article manuscript. As authorized by the Alternative Format, organizational styles of these chapters may vary in accordance with the requirements of the various journals and publishers to which they will be submitted.

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Chapter 2

SOCIAL ACTION IN PRIVATE FORESTS: SEARCHING FOR BALANCE IN PUBLIC AND PRIVATE RIGHTS

Abstract: This paper provides an overview of the ongoing transitions in public and private roles related to private forest management. We begin by discussing theories that have influenced American ideas about property rights. We then turn to the concept of 'common' resources in relation to private lands. We trace the ongoing social redefinition of these resources, and the ensuing expansion of public influence over them. We conclude by noting that most current policymaking efforts largely neglect the issue of distributive rights. Although policymakers seek public input in framing desired ecological outcomes, stakeholders are often left to define and defend their separate rights through litigation or other means as the policies are implemented. We suggest that the emergent trend toward more collaborative policymaking can help resolve this problem, if policymakers and stakeholders begin the process with an earlier, more focused consideration of distributive rights and social responsibility.

Key words: Environmental policy; property rights; private forests, forest policy, environmental rights; common resources

Introduction:

The task of protecting forested habitats is never simple. It becomes even more complex, however, when society opts to regulate private lands (Cubbage 1997, Kilgore 2004, Teeter et al. 2003). Policymakers must then define and blend the public right to a healthy environment with the private rights associated with property ownership. This is often poorly accomplished in environmental policies, however, and the oversight can lead to sub-optimal social and ecological outcomes (Ostermeier and Keele 2003). Policies which leave significant numbers of stakeholders feeling disenfranchised or resentful can catalyze serious, negative ecological consequences such as non-

compliance, land conversion, and forest fragmentation (Creighton and Baumgartner 2005).

Consequently, we suggest that environmental sustainability is strongly linked to the social sustainability of policy, and to the related ability of policymakers and stakeholders to more clearly understand and effectively respond to the ethical and philosophical issues surrounding social rights in relation to natural resources. This paper provides an overview of related concepts for those interested in environmental policies pertaining to private lands.

Whose right is "right"? A transition in social perceptions:

Public and private rights are social constructs, founded upon the cultural experience and needs of a society. A society often deems certain underlying rights as fundamental and essentially unchangeable, but regards other, closely derivative rights as subject to change in response to emergent information and social trends. In the United States, property rights exhibit this dichotomy. An individual's underlying right to privately own land is considered fundamental, but associated rights relating to how the owner may use that property are less absolute or immutable. Instead, "By long-standing tradition, they embody a dynamic tension between public and private rights, transforming themselves in tandem with societal perceptions and needs. In particular, new scientific awareness, such as the interconnectedness of nature demonstrated by

ecologists, may "shape [] our evolving understandings of property rights"[1]" (Meltz et al. 1999:26).

Environmental policy pertaining to private forests reflects an ongoing cultural transition in social attitudes regarding public and private rights. This transition has been largely catalyzed by emergent scientific knowledge that is changing the way humans understand the environment. Prior to the twentieth century, the possibility that environmental capacity might limit society was largely overlooked. The nation's exuberant confidence in its social ingenuity, combined with the apparent abundance of its natural resources, led to a sense of substantial security regarding environmental sustainability. Catton and Dunlap (1978), in their seminal work on environmental sociology, labeled this once-prevalent worldview the "Human Exceptionalism Paradigm" (HEP). This social perspective presumes that, firstly, humans are unique and dominant over all other species, and, secondly, that humanity's capacity for cultural and technological innovation exempt humankind from environmental limitations. Progress, it is assumed, can "…continue without limit, making all social problems ultimately soluble" (1978:43).

The HEP embodies what is arguably the most sweeping manifestation of an *anthropocentric,* or 'human-centered' worldview. *Anthropocentrism* posits that all legal considerations and social and political institutions should be focused on maintaining and improving the well-being of humankind (Wenz 2001). Although anthropocentrists do not necessarily consider the environment as something to be recklessly exploited, they

[1] Ruckleshaus v. Monsanto Co., 467 U.S. 986, 1003 (1984) (quoting United States v. General Motors, 323 U.S. 373, 377-78 (1945)), as cited by Meltz et al. 1999:26).

contend "…the non-human world is best considered ethically in terms of its instrumental values to human beings" (Palmer 2003:18). The environment is regarded primarily as a social resource, a commodity, a tool for aiding human development. The HEP, however, takes this idea one step further: the environment is presumed to be effectually inexhaustible, and devoid of internal requirements or intrinsic value. Humans are believed to owe it little, if any, ethical or moral obligation. Indeed, the environment is often perceived as an obstacle to be overcome.

This HEP worldview influenced every aspect of early American environmental policy, or lack thereof. Particularly little attention was paid to environmental management on private lands. The prevailing belief that the environment was inexhaustible contributed to a cultural acceptance of the idea that the right to make environmental management choices within private boundaries could and should rest exclusively with the landowner. Society did not regard public or governmental intervention as necessary or desirable. A forest owner, therefore, could make virtually autonomous resource management choices.

The single exception to this rule pertained to wildlife. Wildlife was understood to be owned in common by society and managed by the states, although a private landowner could still freely prohibit any other person from accessing the wildlife present upon his or her property. During this era, society exercised virtually no other public rights pertaining to environmental management decisions on private forests. All other 'common' resources were considered limited to the lands of the public domain. The

early social willingness to regulate wildlife, however, set an important precedent for future changes pertaining to other resources.

By the mid-twentieth century, public perceptions about the environment and its management were shifting dramatically. In 1945, the State of Washington enacted the first Forest Practices Act in the nation to regulate private lands. The Act was a legal and philosophical landmark. We suggest that the state's milestone decision to accord the public the right to govern private forestry decisions was symptomatic of four important transitions in social thinking. All emerged in the late nineteenth or early twentieth century and are still evolving. All are still changing the way society views rights related to natural resources on private lands.

One transition resulted from a gradual social rejection of the logic of the HEP. Although the paradigm still has its adherents, its premise that the environment is inexhaustible is no longer widely accepted. Society began to recognize that imprudent management can negatively affect human well-being, despite the natural abundance and productivity of America's natural resources. Public concern over widespread and visible abuse of resources was mounting. Persuasive voices such as George Perkins Marsh, John Muir, John Wesley Powell, and Gifford Pinchot began to advocate for environmental conservation and the setting aside of a public domain where natural resources could be more properly managed (Nash 1990).

Even so, until the mid-twentieth century society continued to largely ignore private forests. Early international forestry experts such as Bernhard Fernow cautioned that sustainable forest management was not fiscally practical in the American setting.

Costs were too high and income too low due to the relatively small and highly dispersed market population. J.E. Defebaugh, editor of *The Timberman,* addressing an American Forestry Association meeting in 1893, stated that lumbermen had no interest in forest preservation or forest management and deserved no criticism for their attitude. He argued they were merely acting in rational response to the demands of American consumers, and that responsibility for forest degradation rested with the entire American population, not just the timber industry. He went on to say that private forest conservation would only become feasible when "…the forest area is small in proportion to population" (paraphrase and quotation from Dana and Fairfax 1980:55).

Defebaugh's foresight was prophetic. Washington State did not enact the landmark first Forest Practices Act for private lands until more than fifty years later. When the State did so, it was, as he predicted, in response to mounting public concern over the state's rapidly dwindling forest resources.

Meanwhile, environmental science, and the social sciences that interpret it, began to study and understand the earth in new ways. The earlier paradigm that conceptualized nature as 'plastic' and able to be infinitely molded to fit the will of humans began to give way to a new realization that instead nature was 'elastic' and could snap if excessively pressured (Murphy 1994). Influential scientists and theorists such as Paul Erlich, Barry Commoner, Rachel Carson, and Garrett Hardin began to introduce concepts such as 'carrying capacity', 'biodiversity', 'critical load', and 'tragedy of the commons' to policymakers, politicians, and the general public. Environmental issues became integral to political platforms, social policies, and personal perspectives

at every level of society. Public leniency toward poor management of private forests began to fade.

The second critical transition in social thinking arose in response to this expanded scientific understanding of the environment. It manifested itself as a shift away from the traditional anthropocentric viewpoint of the HEP, and toward a new variant of anthropocentrism which we term 'pragmatic anthropocentrism'. This revised worldview perceives conservation as important and in the best interests of humankind. Although still 'human-centered', this philosophy re-conceptualizes the position of humans in relation to nature, perceiving the two as interdependent. The act of degrading the environment is therefore viewed as self-destructive and morally wrong, because it can potentially harm oneself and/or threaten the well-being of others (Wenz 2001, Light and Rolston 2003). "People judge that what is occurring to the environment is not merely irritating, inconvenient, disappointing, or unfortunate, but immoral, bad, wrong, or evil" (Elliott 2001:177). We suggest that the emergence of 'pragmatic anthropocentrism' helped set the stage for a new social willingness to regulate private forests and other privately owned natural resources. In response to the emerging scientific revelations supporting the concept of environmental limits, society began to perceive a need to protect itself from the potential environmental degradation that private landowners could cause.

Pragmatic anthropocentrism advocates protecting the environment, not for the sake of the environment itself, but because doing so protects humans. It retains the traditional anthropocentric perspective that humans are superior to other species and

have an *a priori* right to use the environment for their own benefit. *Simultaneously, however, a third, very different, non-anthropocentric interpretation of the relationship between humans and their environment was emerging.* Often termed *'biocentrism'*, this philosophy argues that society should protect the environment not just for the sake of humankind, but because of a moral obligation to the environment itself (Elliot 2001, Taylor 2003). Biocentrists contend that the environment has intrinsic value, and, in the eyes of some (e.g. Singer 2003, Stone 2002), perhaps even intrinsic rights. Humans are perceived as privileged to be stewards. The concept of human superiority is denied. Human failure to respect and care for the environment is therefore viewed as an act of wrongdoing (Taylor 2003, Naess 2003). [2]

The biocentric perspective has not achieved as much popular support as the pragmatic variant of anthropocentrism that superseded the HEP perspectives. It has numerous advocates, however, and has contributed substantially to policy outcomes, particularly with regard to wilderness and sensitive species management. Its greatest impact upon private forest policy is arguably its functional outcome: like 'pragmatic anthropocentrism', 'biocentrism' justifies environmental protection, i.e. regulation. We suggest, therefore, that the biocentric point of view contributes additional momentum to the conclusion of 'pragmatic anthropocentrism' that the public has a right to regulate private forests.

The fourth major social transition influencing cultural perceptions about environmental rights is the emergence of ecosystem science. Its origins coincide

[2] Excellent anthologies and discussions of anthropocentric and biocentric perspectives may be found in Wenz (2001), Jamieson (2001), Schmidtz and Willott (2002), and Light and Rolston (2003).

chronologically with the vanguard of the political transition toward private forest regulation. The word “ecosystem” and its related concepts were first coined by a British scientist, Sir Arthur Tansley, in 1935. In 1953 it was adopted by Eugene Odum as the core concept in his influential book *Fundamentals of Ecology.* Since then it has remained integral to the environmental policymaking discourse (Golley 1994). One fundamental tenet of ecosystem science is the importance of managing forested habitats at large spatial scales (Kohm and Franklin 1997, Kimmins 1997). This cannot be effectively accomplished without overarching, cross-boundary management, since ecosystem integrity may be compromised by fragmented management strategies (Best 2004). Golley describes ecosystem management as a social ethic as well as a science, because it addresses not only ecological interrelationships but also the interrelationships of humans within nature. “In a life-threatening situation our tendency is to move toward the self; in life-enlarging situations our tendency is to lose the self. In this complex of potential actions, recognition of the ecosystem leads us to choose life-enhancing actions where we may. Thus, the ecosystem concept provides a rationale for ethical behavior” (Golley 1994: 17).

We suggest that, although each of these social and scientific perspectives defines the relationship between humans and their environment from quite divergent frames of reference, they share one similar outcome in terms of environmental policy: all point to the importance of environmental protection. They cumulatively affect cultural perceptions regarding public and private rights in relation to environmental management

decisions on private lands. Correlatively, they have catalyzed an increasing cultural willingness to regulate private forests.

They do, however, offer quite different ethical and practical perspectives regarding how this should be achieved. The tangling of the anthropocentric, non-anthropocentric, and purely science-based perspectives has led to escalating controversy about how to protect all of the earth's resources, including those on private lands. This comingled paradigm is changing cultural perceptions of property rights in very fundamental ways, and has opened a veritable Pandora's Box of ethical issues related to how best to draw the line between private and common resources.

Who Owns What?

"A property right is enforceable authority to undertake particular actions related to a specific domain" (Commons 1968, as paraphrased by Ostrom and Schlager 1996:130). "Individuals who hold rights of exclusion have the authority to define the qualifications that individuals must meet in order to access a resource" (Ostrom and Schlager 1996:132). There is nothing inherently either permanent or transitory about these rights. "Whether [they are] right or wrong, good or bad, depends on the specifics of a particular situation including the goals of management – framed within the goals and expectations of a society" (McCay 1996:121).

In the United States, private forest property rights were originally regarded as 'exclusive'; in other words, the forest owner had to right to exclude anyone and/or everyone from the use or management of the property. In legal terminology this type of uncontested ownership is also known as "fee simple", meaning in essence that if one

pays for a property, one owns everything associated with it. *Black's Law Dictionary* (2004:1095) defines a fee simple right as conferring "the exclusive right of possessing, enjoying, and disposing of a thing … which in no way depends on another man's courtesy", and fee simple private property as "protected from being taken for public uses…[which] belongs absolutely to an individual, and of which he has the exclusive right of disposition" (2004:1096).

'Exclusive' forest ownership is philosophically compatible with the worldview of the HEP, wherein the environment is perceived as an inexhaustible commodity, commodities are meant to be used, and since the environmental commodity is believed to be limitless, any environmental management choices a forest owner may make are not believed to pose any potential harm to society. During the era when the HEP dominated the American worldview, it was therefore socially acceptable for a private forest owner to exclusively use his or her natural resources in whatever fashion best suited that landowner. Opinions about a landowner's management might be expressed within the community, but formal social or legal intervention in private environmental management decisions was rare.

The concept of 'fee simple', 'exclusive' forest ownership still has many advocates. Some simply believe there is no legal or moral ground for changing this older cultural norm and allowing the public to intervene in private environmental management. Others, including free market advocates such as Terry Andersen and Donald Leal (2001), contend that exclusive property rights combined with unfettered capitalist markets offer the *best* potential for environmental protection. Private owners

will theoretically protect their resources in order to better profit from them. Arguing along similar lines, Tietenberg (2001) contends that the desire to protect their own financial interests will incentivize property owners to manage their natural resources sustainably, as long as the overarching social system is based upon exclusivity and transferability of ownership, and enforces those rights for property owners.

The changing paradigms of the mid-twentieth century, however, are leading a steadily growing proportion of society to favor expanding public control over natural resource management on private lands. Private lands are increasingly viewed as integral components of ecosystems, subject to public oversight, and no longer inviolate islands of autonomy. Many property rights theorists hold that the concepts of purely exclusive ownership and unregulated capitalistic markets have proven ineffective as tools for achieving forest sustainability. The rapid, nationwide trend toward tighter regulation of private forests and other wildlands makes it clear that policymakers, and indeed society, increasingly agree. Some theorists go so far as to suggest that ecosystem processes are inherently public, not private, property, and hence society should re-examine not only the rights to resource management, but also the fundamental right to own the land itself (e.g. Varner 1994). To date, however, efforts to address private forest protection have focused primarily on the rights associated with property *use,* rather than the more fundamental right associated with ownership.

Ironically, proposals such as Varner's for a restructuring of property ownership, while fairly radical in relation to current norms, are nonetheless based upon an established and fairly conservative legal precedent: In employing what is often referred

to as a ‘revisionist’ or ‘positivist’ perspective, many property rights theorists and legal experts commonly describe private lands as being culturally endowed with a “bundle of rights” (e.g. McCay 1996:114). “In takings analysis….the house, the parcel of land, the harvestable timber, is not itself the property. Rather, “property” refers to the group of rights inhering in the citizen’s relation to the physical thing, as the right to possess, use, and dispose of it (Meltz et al. 1999:26-27). This ‘bundle of rights’ is often metaphorically compared to a ‘bundle of sticks’, wherein society is able to take sticks from, or give sticks to a private landowner in response to shifting cultural paradigms. This image is often used to illustrate the idea that the removal of one or even several rights or “sticks” from the landowner is not an inappropriate level of public “taking”, because the landowner still retains a large bundle.

What is now occurring in private forest regulatory policy is a significant social readjustment of the ‘bundle of rights’ accorded to landowners. Although the state-to-state variability in policies means that the residual bundles differ from one locale to another, the clear trend is toward a blending of public with private rights through increased regulation. Society has a new understanding of the social and environmental risks associated with private mismanagement of natural resources. Since the now widely-accepted philosophical perspectives of ‘pragmatic anthropocentrism’ and ‘biocentrism’ incorporate the idea that resource mismanagement is ethically wrong because it poses potential harm to others, society is reconsidering its former tolerance of ‘exclusivity’ in relationship to forest ownership rights.

Consequently, society is taking back many of the 'sticks' from the 'bundle of rights' it had long left in the hands of private property owners. "Property derives not from nature, but from culture. It does not refer to things, but to social agreements about how humans relate to things (McCay 1996: 112).

The "Commons" Become More Common:

The first natural resource 'stick' that society retrieved from the bundle of private forest property rights was the ownership of wildlife. Even in the earliest and most anthropocentric phases of American settlement, wildlife was considered a 'common' resource. This was a logical outcome, for both social and scientific reasons.

Many early Anglo-Americans remembered and objected to traditional European laws and customs that awarded the aristocracy exclusive access to the game on their large estates, a custom that deprived many of the 'lesser' social classes of a potentially important food source. Early American views regarding wildlife and other environmental property were also greatly influenced by philosophers such as the Englishman John Locke and the German G.W. Hegel. Locke, in his classic 18th century book *The Second Treatise of Government,* developed the idea that property originates when a person exerts labor upon an object. Through one's labor one might create or develop and lay claim to various things, including land and its associated resources, and upon doing so be entitled to an exclusive right to them. Nature that was not so claimed was regarded as a legacy to be shared by all of society (Eagle 2001). This philosophy formed the foundation of the original American model of private land ownership, and hence private forest ownership. A property owner was entitled to exclusive rights because only the

owner had worked to earn the property. Wildlife, however, did not fit Locke's definition of private property because wildlife populations are free-roaming and are not something one creates or develops through one's own labor. Wildlife populations therefore fit Locke's idea of a legacy of nature, to be owned in common by all of society.

Hegel, whose life spanned the late 18th and early 19th century, envisioned property ownership quite differently, as a social system that grants individuals the right to own property, yet tempers that right with controls (Raymond and Fairfax 1999 *on* Hegel:688). The social decision to declare wildlife a common resource was also consistent with Hegel's model of property ownership. Since wildlife cannot be contained within property boundaries, it was impossible to assign ownership to one human without depriving others of the right to use or enjoy an animal that came their way. Furthermore, during the era when this policy developed, wildlife was still an important food source for a large proportion of the human population. Public ownership and control of wildlife was therefore both socially and scientifically expedient.

It was wildlife biologists, therefore, who began some of the earliest explorations into the ethics and practical complexities of overlapping public and private rights in relation to natural resources. As early as the 1940's and 1950's the noted biologist Durward L. Allen was offering insights into the philosophical implications of 'common' resources on private lands. Allen wrote not only of problems that accrue when private landowners mismanage a 'common' resource, but also of the effect that public insensitivity to and misuse of private property can have upon a private owner's incentive to protect that resource (Allen 1954).

Allen, Pasour, Hardin, and many others, also noted that ‘common’ resources are as likely to require protection from the public as from the private sector. In the case of common or *nonexcludable* resources, citizens may reap the benefits from those resources without having to share in the costs of protecting them – a problem popularly called the “free rider” phenomenon (Pasour 1981). Garrett Hardin famously described the social inclination to abuse common resources as “the tragedy of the commons” (2002:331). Although important exceptions occur, the assertion of Allen, Hardin and others that common resources must often be protected from “social vandalism” (Allen 1954:327) has been repeatedly proven correct. In Washington State, as in many other locales, emergent public concern over the environmental damage that resulted from such social neglect was a primary catalyst of the onset of forest regulation.

As the trends toward conservation-oriented pragmatic anthropocentrism, biocentrism, and ecosystem management began to pervade mid-twentieth-century policy and custom, the list of resources on private land that society newly deemed ‘common’ or socially shared grew steadily. Increasingly, society recognized the intricate and multi-dimensional linkages within ecosystems. The phenomenon of off-site effects was better and better understood. Society also began to accept the idea that healthy resources require consideration at very large spatial scales, and that structural heterogeneity and biodiversity are critical if natural resources are to thrive over the long term. The convergence of these social and scientific trends raised a new awareness that privately owned resources affect overall ecosystem condition, and therefore affect the well-being of society.

Social attention turned first to what we call the 'mobile resources' that can actually move across property boundaries. The dynamics of these resources made it more obvious that they affect multiple stakeholders. A public right to require appropriate care for these resources was therefore more apparent. Consequently, public rights and laws pertaining to other mobile resources such as air and water on private lands began to be added to those pertaining to wildlife.

Concurrently, a few states also began to expand the list of 'common' resources to include what we refer to as 'stationary' resources' such as timber and rangeland that can be contained within property boundaries. Because it remains socially acceptable for private landowners to prohibit the public from physical access to their land, members of the outside community still may never actually come into contact with these types of resources upon a private land parcel unless the owner extracts the resources and exports them to the outside community. Society was increasingly aware, however, that the management of even 'stationary resources' can produce significant off-site social and ecological effects, and that the continued absence of regulation could be socially detrimental.

Washington's landmark first effort at regulating private forests was promptly challenged in court. "The Washington Supreme Court upheld the 1945 state act as a reasonable exercise of state policy power which was justified by the need to conserve natural resources in the public interest" (Dana and Fairfax 1980:276)[3]. This milestone ruling established the constitutionality of private forest regulation, and set the stage for a

[3] *State v. Dexter;* case heard by the Washington State Supreme Court.

steadily growing and widespread social trend toward extending certain public rights into the private domain. It represented a major shift in social ideals, by allowing public controls over 'stationary' resources inside private property boundaries rather than limiting public influence to 'mobile' resources that naturally travel across boundary lines.

New Ways of Envisioning Public and Private Rights:

These evolving scientific and social perceptions are catalyzing new approaches to private forest regulatory policy (Kohm and Franklin 1997, Frelich 2002). The science of ecology is showing that management actions undertaken on one property will often cause a cascade of reactions elsewhere (Kimmins 1997). Management recommendations and policies are consequently shifting away from the individual forest stand or private land parcel level to the broad social bases of ecosystems, watersheds, bio-regions, and global cooperation (Teeter et al. 2003). The public is no longer willing to be left out of the policymaking debate (Weber 2003, 2000). Such sweeping, multi-dimensional social and ecological linkages do not lend themselves well to traditional regulatory institutions or norms of property rights and boundaries (Cortner and Moote 1999). The need for cross-boundary management capabilities is therefore leading a transition toward alternative governance strategies (Gibson et al. 2000), innovative policy instruments (Chapters 4 and 6 of this dissertation), and more collaborative policymaking (Daniels and Walker 1996, Varghese et al.).

At the core of this transition is a steadily growing social perception that private natural resource management is appropriately a shared public and private endeavor (Rose 1997). The original American model of environmental property rights, which

resembled Locke's theory of property as possessions over which an owner has earned generally exclusive control, is not reflected in most contemporary private forest regulatory policy. Instead, current policies more closely echo Hegel's early vision of property ownership as a social system wherein land may be owned but society retains the right to exert control.

The early ideas of Locke and Hegel have been followed by more contemporary theories that help capture and interpret the transitioning social attitudes toward public and private rights in relation to private land management. These newer models of property rights incorporate a notably stronger element of dynamism. For example, Singer's 'social relations' model views property as a system of social relationships in which rights are given and taken along a continuum of social scales. These scales range from the entirety of society to the small scale of individual relationships (2000).

Geisler similarly conceptualizes property as more than just a construct of physical ownership. In his 'social utility property' model, environmental rights pertaining to private lands are understood to be a dynamic social relationship, shaped by changing cultural conditions (Geisler 2000). Geisler and Daneker (2000), elaborating upon this model, visualize conservation as a product between two separate cultures of property – public and private. This model more holistically describes the element of negotiation that occurs as stakeholders strive to ensure that their respective interests are met. Also still helpful is the metaphor of the 'bundle of sticks", which lends itself well to any of these models as a way of visualizing the dynamic giving and taking of rights that is inherent in social change. Furthermore, because this metaphor is so pervasively used

in legal, political, and regulatory contexts, it is useful as a point of mutual understanding for policymakers and stakeholders as they try to demarcate public and private rights in privately owned environments.

These theories and metaphors are very helpful in terms of enabling stakeholders to better understand the public-private relationship in the context of private forests. The theories do not, however, address an often-unrecognized, related source of social and legal tension that affects the dynamics of property rights pertaining to private forests.

We suggest that the source of this tension is the frequent 'disconnect' between emergent scientific knowledge and established property rights custom; in other words between scientific and other-than-scientific interpretations of ecological limits and requirements. Many policymakers and other stakeholders regard science as an entity that should hold an authoritative, or at least highly influential, sway over environmental policies. But because science is often at the forefront of new social understanding pertaining to ecological limits, it is also often a 'lone voice' warning of a need for new social restraints in relation to environmental resources -- i.e. new limits on accustomed environmental property rights. As a result, science is frequently at odds with established cultural understandings regarding property rights. Furthermore, because governments are typically positioned by society as both a primary provider of scientific expertise, and a primary regulatory entity, governments likewise tend to find themselves frequently at odds with established cultural understandings of property rights. Governments are often expected to serve as the lead entity in designing new regulations that respond to emergent scientific knowledge. This means governments

and scientists are frequently the first, and sometimes unwelcome, voice to suggest a rearrangement of accustomed public and private rights and privileges; i.e. new regulation. Stakeholders facing a potential loss of 'sticks' from their established 'bundle of rights' are likely to be resentful, and may attempt to block new policy through legal or other means. The situation is further complicated by the fact that the new policy, based on the new redistribution of public and private rights, may conflict with or overlap previous policy based upon a former set of cultural expectations.

This leads to what Raymond and Fairfax well describe as a "fragmentation of policy" (1999). Policies pertaining to the protection of public and private environmental interests are often poorly meshed, or completely at odds. Young (2002) describes this as a failure to adequately "fit" and "scale" policies to their social and institutional contexts and/or design them for efficient "interplay". One widely-recognized, negative, unintended consequence of this tension between emergent science and correlated new limits on environmental rights is social and legal gridlock.

Social diversity as an avenue to shared worldviews and the unlocking of gridlock:

Much difficulty associated with contemporary environmental policymaking is due to the fact that related regulations, statutes, and institutions have been developed piecemeal, rather than systemically (Raymond and Fairfax 1999). The result is often less-than-optimal resource management and an inequitable distribution of the ethical rights and responsibilities to and for those resources. While it is important to understand all of the individual components of a regulatory system, it is equally important to

understand that to be optimally effective they must function interactively (Young 2002). It is also essential to understand that public and private rights in relation to ecosystems carry social obligations and responsibilities that should be equitably and systemically distributed among the pool of affected stakeholders.

How then might society bring all these diverse ecological and social components together? How can ecosystem science be integrated with social ethics to achieve environmental sustainability? Early signs of hope for the disentanglement of these wicked problems may be found in the groundswell of collaborative environmental policymaking. We suggest that this ongoing, gradual displacement of traditional command-and-control regulation is more than just an important political and social trend. It is also an encouraging example of how improved scientific understanding may serve as a catalyst for social and ethical reform.

One of the most profound social changes catalyzed by ecosystem science has been the emergent understanding that policies must be functional at large spatial scales and long temporal scales, and incorporate the full hierarchy of the natural components of an ecosystem. "The hierarchical approach to ecology makes it possible to shift the focus from preservation of single organisms or management of single resources to protecting the resilience of socially important ecological processes and the services they generate" (Costanza and Folke 1996:26). Stakeholders are finding they may be best able to provide management at these scales by collaboratively bringing into play the full scale and hierarchy of the affected social community. "This alternative perspective is important in recognizing proportionality and inequality in both the causes and

consequences of environmental problems. And it points toward a focus on collective action and other social responses to environmental problems (McCay: 1996:112). Golley, in his essay on "Grounding Ethics in Ecological Science" concludes, "In this complex of potential actions, recognition of the ecosystem leads us to choose life-enhancing actions where we may. Thus, the ecosystem concept provides a rationale for ethical behavior….The concept underpins the bioregional movement that seeks to fit culture to land, socially, politically, and environmentally." (Golley 1994:17-18).

Weber describes the grassroots collaborative movement as "…an ongoing, collaborative governance arrangement in which inclusive coalitions of the unalike come together in a deliberative effort to resolve policy problems… of a particular place" (2003:3). It is these "coalitions of the unalike", working to simultaneously protect both human communities and ecosystems, that we believe can better construct and merge the environmental rights of diverse public and private stakeholders. The idea of using community-level collaboration to resolve social issues is hardly new, but its application to natural resource management is a relatively recent phenomenon in contemporary America. It is a logical one, however. Scott points out that "necessarily simple, top-down command-and-control institutions "…can never adequately represent the actual complexity of natural or social processes. [They are] …too coarse, too static, and too stylized" (1998:262). "The residents of a community live together, sharing a common life, and they also act together, solving common problems and seizing opportunities for improving their common life" (Wilkinson 1991:102).

Collaborative discussions regarding environmental management would benefit from a purposive expansion to include a more explicit discussion and develop a more comprehensive social understanding of the issue of distributive rights…a topic now often missing from the environmental policymaking discourse. Currently, stakeholders are most often left to try to defend their accustomed, separate positions at the end of the policymaking process, when litigation is often their only real recourse. A most likely outcome is gridlock, and policies with diminished effectiveness. Because the social community is the unit that originally defines these rights, however, it is the logical unit from which to address the need for change, and to do so early enough in the process to restore the potential for consensual policies. If society is to think of ecosystems as holistic ecological communities – as environmental science shows it must – it is a natural extension to understand that holistic, i.e. collaborative, communities of social ideas should be brought to bear upon the apportionment of rights and responsibilities pertaining to environmental management (Daniels and Walker 1996).

Oran Young (2002) offers an insightful analysis of the advantages of this strategy of matching decisional structure with inherent ecosystem structure. He advocates a two-step process for making resource management decisions. He suggests first assessing and understanding the relational and structural (in addition to scientific or biological) nature of an ecosystem problem, in terms of its scale and the vertical and horizontal interplay between its components, and then fitting the institutional design of the decision making system to that ecosystem. We suggest that the issue of distributive rights is a critical, yet often currently unaddressed, component of the relational and

structural nature of an ecosystem problem, and that a properly ‘fitted’ and optimally effective regulatory system is unlikely to be achievable if unresolved issues related to social rights create persistent tension.

The traditional style of top-down command-and-control regulatory management may be viewed as “largely analytical, linear, causal, reductionist, hierarchical, and focused on observables” (Kritek 2001:188). This structure does not lend itself easily to discussion of social interrelationships, including discussion of public and private environmental rights. A collaborative approach, by contrast, has an inherently systemic structure, with embedded feedback loops. It can much more readily address “relationships between all the pieces” (Kritek 2001:190). In view of the fact that ecology itself is a science of inter-relationships, the trend toward collaborative, inter-relational decision making processes to delineate ecosystem management seems a very natural fit (Golley 1994). A collaborative decision making atmosphere offers the most realistic avenue for achieving a socially supported blend of the complex social inter-relationships inherent in the issue of public and private environmental rights, and then applying that blend to the management of the ecological inter-relationships of an ecosystem.

We agree with Golley and Young that the most likely unit for socially sustainable solution-finding when managing the natural heterogeneity of ecosystems is the correspondingly natural heterogeneity of the community of affected stakeholders. Collaborative settings provide the deepest pool of potential ideas for management solutions. And, as Young concludes, collaboration leads toward equity, making it a good ethical as well as intellectual ‘fit’ for environmental management decision making.

"Heterogeneity regarding actor interests actually increases the scope for striking institutional bargains" (Young 2002:180). Settings where collaborative capacity is high hold excellent potential for socially equitable resolutions in the environmental debate (Weber et al. 2005; Daniels and Walker 1996, 2001). As Young summarizes, "One way to address…an equity problem is to devise an arrangement under which those with the greatest capacity to address the problem help those who are less fortunate by developing mechanisms featuring technology transfers and capacity building" (Young 2002:181).

Implications for Policymaking:

Some theorists, such as Varner (1994), contend that since cross-boundary strategies are a prerequisite for ecosystem management, society may be facing a need to end its custom of viewing land as private property. Others, such as Best (2004), do not carry this argument so far, but nonetheless caution that cross-boundary management strategies and institutions are severely complicated by the typically poor fit between property boundaries and ecosystem boundaries. "Traditional notions of property management and ownership complicate ecosystem management….The concept of individualism provides a deterrent to policy based on public and transgenerational considerations" (O'Leary et al. 1999:10). We suggest, however, that the public's right to a healthy and well-managed ecosystem does not require an undermining of traditional customs relating to land ownership, or a redrawing of more ecologically 'logical' boundary lines across the landscape. The problem of

environmental degradation and related infringements on public rights is not caused by land *ownership*, it is caused by land *use.*

Consequently, the answer to the problem of how to meet public expectations on private forests lies not in the land, but in the social relationships of the individuals and society who are affected by that land. Conflict arises between public and private interests only when the public and private stakeholders hold opposing views about who has which right in relation to resource management decisions on private land. What is needed, therefore, is a means of bringing public and private interests into a more shared agreement regarding the distribution of rights related to resource management decision-making. This idea is well captured in the model proposed by Geisler (2000), in which property rights are understood to be fundamentally a dynamic social relationship. Geisler and Daneker (2000) further capture the matter when they envision conservation as an outcome generated by two subcultures of property – public and private. The task of forest conservation, then, is fundamentally an interaction between the public, represented by the policymakers and regulatory agencies, and the private forest owners, collectively and individually, as they negotiate their respective shares of the 'bundle of rights' associated with the management of a private forest.

We suggest that what is needed for the task of policymaking is a reorientation of focus, to include room for this expanded view of conservation as a social interaction between public and private interests. At present, most policymaking efforts treat conservation as a matter that primarily requires reshaping the physical operations of humans in relation to the ecological parameters of the forests. Policymakers begin by

delineating the biological needs of the ecosystem and the expectations of its stakeholders. The policymaking group then devises operational specifications for forest management practices, accommodating as many public expectations as possible without impinging too far upon ecosystem needs. The issue of distributive rights is rarely explicitly addressed. Instead, it is all too often left to resurface in the implementation phase of the policy process, where it is tackled by segregate factions of frustrated and oppositional stakeholders through litigation, non-compliance, land conversion, and other negative gridlock as they attempt to defend or regain their new or prior 'bundle of rights'.

A corollary problem related to this approach is that attention to the circumstances of the private forest owners, if it occurs, is too often an afterthought in the policymaking process. What is askew in this strategy is the fact that it tends to position key players – the forest owners -- as opponents of the public interest, rather than potential allies. The public is cast in an offensive role, as an entity asserting a majority right to rule. The forest owners are cast in a defensive role, as a stakeholder group quite likely to object to the new regulatory process because it will remove 'sticks' from their accustomed 'bundle of rights' and/or add 'sticks' to their 'bundle' of operational costs and responsibilities. We believe this is a largely illogical approach to addressing the issue of distributive social rights in environmental policymaking, because it fosters social tension rather than social cooperation.

We suggest that a more reasoned approach would be to re-shape these social roles during the early stages of the policymaking process, giving forethought rather than

afterthought to the issue of distributive rights. This would substantially improve the opportunity to create policies wherein the public and the forest owners can more easily respond as cooperators, rather than as public aggressors opposite mostly reluctant or defensive private objectors. This would present two important advantages: Firstly, it would create a better, more collaborative opportunity for all stakeholders to mutually understand and address the fundamental issue of distributive public and private rights in relation to resources on private forests. Stakeholders would thereby have a greater opportunity to arrive at a shared worldview. And, secondly, it could be expected to reduce the incidence of policies that leave stakeholders disenfranchised, resentful, and inclined toward ecologically and socially detrimental choices such as non-compliance, non-regulation, litigation, forest conversion, and forest fragmentation.

When stakeholders become disillusioned with and unsupportive of a policy, it is often simply because they believe that policy has not appropriately addressed their rights (Meltz et al. 1999, Wise 2004). Since environmental rights can be understood to be a dynamic social relationship between public and private interests (Hegel, Singer 2000, Geisler and Daneker 2000), and since collaborative policymaking processes are widely recognized to hold excellent potential for capitalizing upon dynamism to bring opposing factions into closer understanding of one another's perspectives, we believe this type of policymaking format holds the greatest potential for achieving more socially harmonious outcomes in the distribution of environmental rights and responsibilities. By moving the discussion of distributive rights to the front end of the policymaking process, stakeholders have the chance to begin to better understand and accept the rationales

behind proposed adjustments in the distribution of environmental rights before policies are implemented. This can in turn lead to more socially sustainable policies.

This amounts to "re-rationalizing" our approach to private forest policy. "The [environmental] crisis and the ecology movement have a profound lesson for sociology: the sociological construction of the relationship between the social and the natural must be done in a way that maintains the importance of social constructions without reducing reality to a social construction" (Murphy 1994:ix.) In other words, society's expectations regarding environmental policies need to fit the realities of the ecosystem's limits and capacities, and, in order to accomplish this, the policymaking process may need to pay as much attention to helping stakeholders adjust their social expectations as it does to addressing the biophysical characteristics of the ecosystem.

The traditional approach to environmental policymaking pays close attention to the latter half of this equation, but largely neglects the former. Although even command-and-control policymaking often allows and *assesses* stakeholder input, such input is typically limited to a 'snapshot' opportunity that involves a one-time verbal or written statement. There is little or no opportunity for the collaborative discussion that might lead stakeholders to *adjust* their perspectives to include a larger understanding of the circumstances or worldviews of other stakeholders. Without this type of open and collective discussion, it is unlikely that the diverse stakeholder groups affected by an environment will grow to understand one another's perspectives with regard to the distribution of environmental rights. It is commensurately unlikely that policy solutions

will distribute rights in a way that all key stakeholder groups can understand and support.

Conclusion:

The idea of 'rights' in relation to the environment is a social construction. The society that envisions those rights can therefore also envision changing them. It is often suggested that the 'rational' self-interest of humans will lead them to overuse the common resources of their environment, because no advantage accrues to an individual who protects a common resource, or the rights of others to use it (Hardin 2002, Pasour 1981). Environmental 'rights' and 'regulations' are often socially framed in these negative terms, working from an underlying presumption that many stakeholders will misuse resources, and that others will need to try to avert that misuse.

There is mounting evidence, however, that society is ready to re-draw these cultural expectations. The important social trends of pragmatic anthropocentrism, biocentrism, and ecosystem science all have the effect of redirecting stakeholders toward a changed awareness that one's 'rational' self-interest is in fact best served by protecting the environment. This has generated increasing public interest in environmental management choices on private forests, and a commensurate interest in redistributing related public and private rights when such redistribution promotes environmental sustainability. Murphy describes this type of social process as "rerationalizing rationality" (1994:65-82).

Many environmental policymaking processes, however, currently leave key stakeholders poorly prepared to understand or support the rights of others in relation to

their own. We suggest that an important step toward resolving this problem, and thereby better readying a community to protect an ecosystem, is to provide an opportunity for that community to collaboratively define and distribute private and public environmental rights. We further anticipate that there is a direct link between equitably distributed environmental rights and positive ecological outcomes on private lands. A stakeholder who believes a policy reasonably upholds his or her rights is more likely to support and comply with the policy than if they believe it does not. Social support for environmental policy is therefore directly linked to social opinion regarding how fairly that policy distributes the rights and responsibilities for environmental protection. If a policy is to retain widespread support, it must be grounded in a solid consideration of the issue of environmental rights.

All too often, however, current policymaking attends to environmental management rules and prescriptions, and then leaves key stakeholders to cope with the social consequences. Because the distribution of rights has not been resolved early in the policymaking process, policymakers often inadvertently construct a social setting in which effective policy implementation is obstructed because key stakeholder groups remain engaged in an oppositional tug-of-war over the ‘bundle of rights’ associated with that ecosystem. In the absence of a collaborative venue for apportioning rights and responsibilities, stakeholders often resort to segregate attempts to defend their positions through means such as litigation or non-compliance. The outcome is predictable: the now-notorious phenomenon of environmental management ‘gridlock’.

The failure of a policy to generate broad-based social understanding of the rationale behind changes in accustomed environmental property rights has the further disadvantage of too often placing landowners in opposition to the policy, rather than engaging them as some of society's most logical allies and leaders in the act of conserving resources on private lands. Well-informed and incentivized forest owners are well positioned as potential stewards of common resources on private lands because of their proximity to and vested interest in the land they own. Policies that position landowners as a problem rather than as a supportive part of the solution therefore can be expected to reduce the likelihood of optimal and socially efficient environmental stewardship.

We suggest that more collaborative policymaking strategies can help resolve these problems by moving stakeholders toward an essential ideological repositioning. Collaboration opens an opportunity for all key stakeholder groups to participate in a purposeful and equitable delineation of the rights and responsibilities related to their common resources. Well-run collaborative efforts that are designed to include a discussion of environmental rights can therefore bring diverse stakeholders to a more cooperative readiness to share in the task of environmental protection, by developing a distribution of rights that is more widely understood and socially supported. Stakeholders are then better able to accept that they are part of and ethically responsible to an interdependent community of other stakeholders.

Aldo Leopold, in his classic discussion of the importance of a land ethic, effectively captured the fact that the act of caring for a landscape is fundamentally a

social interaction: “An ethic, philosophically, is a differentiation of social from anti-social conduct. These are two definitions of one thing… The ecologist calls these symbioses” (Leopold 1949:202). It follows that environmental policy, if is to most effectively promote an ethic of sustainability, needs to foster symbiotic rather than anti-social relationships between key stakeholders. An essential ingredient for this type of social symbiosis is careful, collaborative attention to the distribution of environmental rights. After all, fair is fair.

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Chapter 3
PRIVATE FORESTS AND EQUITABLE REGULATION

Abstract: Sustainable management of forested ecosystems implies a need for cross-boundary management at large spatial scales. This has catalyzed increasing social interest in regulating private forests. Using the well-known "grounded theory" research method, we interviewed stakeholders in Washington State to learn their perspectives about processes and effects of private forest regulation. We identified an important and often poorly recognized outcome: regulation rarely affects all private forest owners similarly. Instead, the burdens and advantages of being regulated tend to be distributed unevenly within this key stakeholder group. We found three primary causes for these inequitable outcomes: 1. Natural landscape variability, 2. oversights in policy design, and 3. disparate interests and goals among forest owners. In this paper, we analyze these causes, identify solution pathways, and discuss implications for policymakers.

Key words: Environmental policy, private forests, forest regulation, regulatory outcomes, unintended consequences, social equity

Introduction:

Private forest management practices, once largely left to the personal discretion of forest owners, are a subject of growing public concern. One outcome, now reflected at all levels of government, is a steadily escalating willingness to regulate these forests (Maini 2003:14, Teeter *et al.* 2003). Regulating private forests, however, poses a distinctive, and, in some locales, relatively untested set of social and political challenges. Although publicly owned forests have been regulated for well over a century, the substantially dissimilar social and legal context of private land ownership poses a quite different, and in some ways more difficult, matrix of issues. The public right to a healthy environment must be blended with the individual rights of the forest

owners (Kilgore 2004). In order to design socially appropriate regulations, policymakers therefore need to define and address these public and private rights.

In the United States, primary responsibility for private forest regulation has devolved to the states. Related resources such as air, water, and threatened and endangered species, are additionally subject to overarching federal regulations. Many states, including Washington, became more proactive about regulating private forests in part to avoid resource degradation that could trigger more restrictive federal rules (Dana and Fairfax 1980). States can often retain more local power by independently demonstrating their ability to protect natural resources without federal supervision. To do so, the states have employed diverse strategies. There is little consistency in the structure or scope of regulation (Kilgore *et al*. 2003). The learning curve for forest policymakers is correspondingly steep. Regulatory approaches and outcomes from one locale can therefore be instructive for many others.

To help shed light on this complex issue, we studied forest stakeholders involved in the design, use, and administration of Washington State's "Alternate Plan" option (WAC 222-12-040) [4], an innovative policy tool that brings diverse stakeholders together to consider private forest management projects that may differ from the standard

[4]Washington State relies upon a complex collaborative process to design its Forest Practices Rules. Stakeholder input is obtained from seven formal advisory boards and committees designed to provide a diverse array of scientific and other stakeholder perspectives. The Rules developed through this collaboration are then implemented by means of a top-down regulatory system similar to those in common use elsewhere in the United States. The Rules are administered and enforced by a network of State regulatory agencies charged with overseeing natural resources on public and private lands. Landowners who believe they can accomplish equivalent or better levels of environmental protection by means of a different management technique may propose an "Alternate Plan" for review and consideration by an interdisciplinary, interagency team of natural resource management professionals.

prescriptive requirements of the State's Forest Practices Rules. Because use of the Alternate Plan option requires a solid understanding of both forest ecology and the State's forest regulatory policies, stakeholders involved with this policy tool tend to be well informed and experienced, and therefore able to provide a rich store of insight into the private forest regulatory process. The purpose of our study was to aid policymakers and other stakeholders in better understanding how Washington's private forest regulatory outcomes are perceived by those who design, implement, or administer them through their employment or personal landownership.

This paper addresses one important 'grounded theory' that emerged from the study: Many types of forest regulations, no matter how carefully designed, often result in a substantially unequal distribution of impacts among forest owners. Policymakers seeking to produce a more equitable outcome can expect the need to develop options for mitigating this problem. We analyze causes of inequitable outcomes from forest regulation, and discuss potential solutions and policymaking implications.

Literature Review:

When regulating private lands, a public asserts a right to expect certain outcomes from private landowners (Schelhas 2003, Singer 2000). The relevant public and private rights, however, are often poorly defined and integrated (Ostermeier and Keele 2003). Many positive outcomes of regulation, such as improved wildlife and fisheries habitats, water quality, air quality, and aesthetics typically accrue to both the public and the private property owners, but without careful foresight in policy design the

social burden for achieving those outcomes may fall disproportionately upon the private ownership group (Meltz *et al.* 1999).

Although the concept of large-spatial-scale, cross-boundary ecosystem management is widely conceded to be ecologically sound (Kohm *et al.* 1997, Kimmins 1997), significant and continued social challenges can be expected (Belin 2005, Blomquist and Schlager 2005). Regulatory systems and institutions are highly complex. Their horizontal and vertical linkages can become functionally problematic or ineffectual. They may fail to "fit" the problem they are designed to address, match the scale of the issue, and/or they may not interlink appropriately with other, related regulatory systems and institutions (Young 2002). Furthermore, political systems are founded upon legal boundaries rather than ecosystem boundaries. Blending the two can be expected to be problematic (O'Leary *et al.* 1999:10). Society may need to reexamine traditional concepts of ownership and entitlement if long-term, socially equitable environmental protection is to be achieved (Geisler *et al.* 2000, Hanna *et al.* 1996).

The courts have managed only a fragmented approach toward cases testing public versus private environmental rights. This has hindered the establishment of clear legal precedent to guide policymakers in developing socially sustainable regulation (Meltz *et al.* 1999). Washington State has succeeded in instituting rigorous private forest management standards without needing to modify established land ownership conventions to the extent predicted by Varner (1994) and others, but public "access", "withdrawal", and "collective choice" rights pertaining to private lands (Ostrom and Schlager 1996:131) are clearly undergoing continual reassessment. This is evidenced

by the State's increasingly comprehensive regulations. They embody McKean's conclusion that "…it is appropriate to think of forests as a complex of many commodities with attributes of both common-pool and public goods" (Gibson *et al.* 2000:7).

While these and other authors have analyzed ways in which regulations may affect a stakeholder group as a whole, or produce disparate outcomes *between* landowner and non-landowner stakeholder groups, few have focused on the fact that forest regulation may produce inequitable outcomes *within* a forest owner stakeholder group. With the exception of the work of Zobrist *et al.* on disparate impacts of Washington's riparian regulations among forest owners, we believe our study is among the first (Zobrist and Lippke 2005, Zobrist *et al*. 2004).

There is, however, a body of literature that presages our results by analyzing how the diverse personal circumstances of private forest owners may induce disparate *non-regulatory* outcomes among them. It is widely recognized that private forest owners come from a broad range of personal backgrounds, and that these affect their management goals and outcomes (Birch 1996, Blatner and Greene 1989, Butler and Leatherberry 2004). John Bliss found that personal interests are often more influential to forest owners than external incentives such as foresters, forest tax laws, or cost-sharing programs when they decided management goals (Bliss 1988). Finley *at al.* found "… a strong association between interest in [cross-boundary] cooperation and profiling variables such as age, affluence, personal values, and attitudes" (2006:10).

We found that these types of differences in personal circumstances, backgrounds, and management goals can also factor into a forest owner's regulatory

outcomes. In other words, as we will detail below, the degree to which a landowner is affected by a particular regulation is linked in part to whether and how that regulation relates to a landowner's experience, goals, and objectives, and to the unique physical characteristics of that owner's forestland.

Study Area and Context:

The study area included the entire State of Washington. Private forests are integral to the State's culture and economy, comprising roughly 42 percent of its 22 million total acres of forestland. Approximately 31 percent of the private forests are classified as industrial, and 69 percent as non-industrial. The industrial sector consists of about 60 ownerships, while non-industrial ownerships number over 90,000 (WA-DNR 2001, Erickson and Rinehart 2005).

Washington is divided by the Cascade Mountains into two regions, commonly called the east and west 'sides'. Each is distinctly different, both ecologically and socially. The 'west side' is much more densely populated and culturally and economically diverse. The climate is moist, the soils deep, the forests predominantly evenaged and highly productive. The 'east side' is significantly more rural. With the exception of the city of Spokane, most communities are economically dependent upon natural resources and, in some locales, tourism. The drier climate and younger soils produce more ecologically and structurally diverse forests of somewhat lower productivity (WA-DNR 2005). This regional dichotomy adds significantly to the social and ecological richness of the state, and to the complexity of its issues pertaining to private forest regulation.

Washington has been widely recognized as an innovator in private forest policy since 1941, when it became the first state in the nation to regulate private forests. It has remained in the vanguard of policy innovation. Its current regulatory system is among the most collaborative and comprehensive in the nation (Creighton and Baumgartner 2005:192, Smith 1997:431-433). This system's combined elements of broad scope, duration, collaboration, and innovation make it an excellent 'field laboratory'. Its stakeholders can offer an unusual depth of experience and insight pertaining to forest regulatory processes and outcomes.

Research Method:

This study analyzed whether and how well Washington's "Alternate Plan" option is meeting its dual goals of maintaining high standards of environmental protection and improving the responsiveness of the forest regulatory process to the needs and circumstances of forest owners (WAC 222-12-040). Because the "Alternate Plan" option is embedded in the larger context of private forest regulation, our study also included an analysis of the forces that catalyzed the need for this new policy tool. One of these catalytic forces revealed by the study, and the topic of this paper, is the problem of inequitable regulatory outcomes among private forest owners.

We relied upon the well-established qualitative research method known as "grounded theory" (Glaser and Strauss 1999, Clarke 2005). This inductive process enables the development of a highly nuanced and comprehensive body of information about the social phenomena being studied. Data is collected through loosely guided interviews designed to ensure that all respondents cover the same topics. The process

builds an increasingly rich representation of stakeholder perspectives. Typically, observable patterns and themes begin to surface early in the data collection process and are then tested with additional interviews and observations. Responses are continually sorted, categorized, and analyzed for patterns and themes of commonality from which new theories can be built (Glaser and Strauss 1999, Clarke 2005). Analytical insights and new theory emerge through the data, in contrast to deductive studies wherein data is tested against previous theories and predetermined hypotheses.

The sample population is selected purposively rather than randomly or statistically, and is designed to capture the full diversity of stakeholder viewpoints (Glaser and Strauss 1999, Charmaz 2000). Sample size is therefore determined by the complexity of the subject and the diversity of the relevant population, rather than the numeric size or distribution of the population. Data collection is suspended only when patterns stabilize and no novel information is forthcoming (Glaser and Strauss 1999:61-62, Strauss and Corbin 1990:136). Although the results are not suitable for statistical analysis, this method provides a richer and more fully-developed picture of the subject under study than can be obtained through quantitative methods such as surveys or questionnaires.

One-hundred nine interviews were conducted with stakeholders who guide or are affected by Washington State's private forest regulatory policies. One-hundred three interviews were conducted in person, and six by telephone. Most lasted about two hours. The interview process was ongoing from September 2004 through December 2006. The sample included non-industrial forest owners, industrial forest owners,

representatives from Native American tribes, natural resource consultants, policy advisors, state and federal land management agency employees, and members of relevant special interest groups. Initial interviewees were selected on the basis of referrals from the Washington Department of Natural Resources. Other names were then obtained via chain referral. Each interviewee was asked to discuss: their background and role(s) in natural resource management, overall impressions of the concept of private forest regulation, perceptions regarding public and private roles in relation to private forest protection, impressions of Washington's specific policy instruments, impressions of familiar governmental entities charged with administering regulatory policies, their sources of information regarding forest management and regulation, and their environmental issue(s) of greatest concern. Forest owners were additionally asked to describe their management objectives, their successes and challenges in meeting those objectives, and how they believed their property related to the community and to ecosystem management within the larger landscape. Additionally, four interdisciplinary field reviews of private forest practice proposals were observed, field visits were made to four additional forests and one sawmill, and two forest owner organization meetings and eight forest policy advisory panel meetings were observed.

Results:

Many of the interviewees, across all stakeholder groups, described an emerging awareness that regulation affects private forest owners in previously unexpected ways. Many described examples wherein regulatory impacts had been highly disparate from

one property to another, resulting in comparative advantages and disadvantages among owners. Such disparateness was a source of frustration for many of the forest owners we interviewed, and a matter of escalating concern among many policy advisors as well as individuals working directly with landowners. The causes of the inequitable regulatory outcomes described by our interviewees fell into three broad categories. 1. Natural landscape variability, 2. Policy design, and 3. Variability in landowner goals and circumstances.

1. *Inequitable regulatory consequences resulting from natural landscape variability*: Because no two properties are exactly alike, the extent to which a natural resource regulation affects a landowner is largely dependent upon the presence and distribution of that resource upon the owner's land. Within our study, the most common examples pertained to the naturally irregular distribution of threatened and endangered species habitats, and/or riparian zones. Many described these habitats as subject to a network of state and federal regulations that are more complicated, more rigorous, and more likely to be inequitable than other types of regulations. The type and magnitude of regulatory effect depends upon the presence and scope of the habitats upon any given property. Regulatory outcomes are hence inherently variable among owners.

Landowners with sensitive species often needed to substantially alter their forest practices to provide required levels of protection. By contrast, owners without such species usually experienced little or no impact from the same regulation(s). As one consultant explained, "The last thing most landowners want is to find something like a spotted owl [requiring a large area of protected habitat]. It puts them at a real

disadvantage compared to their neighbors who don't have threatened or endangered species."

Riparian regulations that restrict timber harvest were another common source of highly variable impacts. Riparian regulations affect only properties with water resources; properties without such resources are essentially unaffected. Furthermore, under Washington State's policies, the width of the required protected area is determined by a complex matrix of ecological parameters including the size of the riparian resource, and the average mature height of the dominant timber species indigenous to that riparian zone. Consequently, the degree of effect upon a specific property is influenced by the relative importance of the particular riparian resource(s) that happen to occur upon that parcel. For example, larger, fish- bearing streams are regulated much more restrictively than smaller ones. Regulatory impacts also depend upon the size and shape of the property. Several interviewees described cases wherein particular owners have lost the potential for active timber management on a large portion of their land because their property boundaries were originally designed to maximize stream frontage. "These new [riparian] regulations have just been a nightmare," said one owner of a long, narrow, riverfront property. He continued, "We're really limited in what we can do [in terms of timber harvest] on our place now, even though my wife's family has been here for generations and we've always managed the place sustainably. There wouldn't even be a riparian forest still here if we hadn't always taken pretty good care of it. We were pretty stunned when we found out about the new 'regs'". Then, pointing toward an adjacent, upland property that he described as having

no riparian resources, he said, “Our neighbors have hardly been affected at all, though. They can still pretty much log their whole place. It doesn’t seem fair.”

Endangered species regulations present an especial challenge in Washington due to the inordinate extent of the state’s lands and waters affected by state and federal ‘listings’. Many of Washington’s at-risk species require habitats of large spatial scale[5]. Cumulatively, such listings currently affect some 60,000 miles of waterways and 10 million upland acres of the state’s non-federal forestlands (Creighton and Baumgartner 2005:192). As one agency employee we interviewed summarized, “There is really no one and nothing that we do in this State that isn’t affected to some degree by endangered species regulations.” Riparian regulations also have unusually widespread effects in Washington simply because the State’s water resources are so extensive. Even when considering only these two types of regulations, a large proportion of the State’s forest owners experience highly disparate regulatory outcomes as a result of natural landscape variability.

The overarching phenomenon is not unique to Washington, however. It may be expected in any locale with a characteristically diverse ecosystem. When regulations must focus on protecting site-specific needs of individual species or localized habitats,

[5] Notable among listed upland species are the northern spotted owl (*Strix occidentalis)* (State 1988, Federal threatened 1990), the marbled murrelet (*Brachyramphus mormoratus*) (State 1993, Federal 1992), and the North American lynx (*Lynx Canadensis*) (State 1993, Federal threatened 2000). Also listed are several runs of anadramous fishes, including steelhead (*Onchorynchus mykiss*) (Upper Columbia, Federal endangered 1997, Snake River and Lower Columbia Federal threatened 1997 and 1998, respectively); two runs of sockeye salmon (*Onchorynchus nerka*) (Snake River Federal endangered 1999, Ozette Lake Federal threatened 1999); bull trout (*Salvelinus confluentus*) (east-side Federal threatened 1998, west coast Federal endangered 1999), and the Upper Columbia spring run Chinook salmon (*Onchorynchus tshawytscha*) (Federal 1999). (Information from Forest Practices Board 2005 and WDFW SOC lists).

natural landscape variability will inherently produce unequal effects among individual properties.

By contrast, quite a few forest owners said it had been easier to adapt to other kinds of rules that tended to affect all properties in an area more equally[6]. Prescriptive policies such as post-harvest regulations that "blanket" all forest owners generally are less likely to produce stricter or more lenient rules for one forest owner than another. Every owner in an ecological region must meet the same requirement. As one forest owner summarized, "I don't have much problem with the upland harvest 'regs'. I guess I wish they weren't so strict, but at least all of us [owners] are in the same boat."

2. *Inequitable regulatory consequences resulting from policy design*: Dissimilar outcomes among owners can occur because of the manner in which individual policies are constructed, or because of the manner in which they do, or do not, interlink with other policies. In some instances, policy designers simply overlook the potential for such a result. The unintended consequences may not become apparent until the policies are implemented. For example, some of the policy advisors we interviewed indicated that few had anticipated a need to consider how forest regulations compare with regulations for other rural land uses such as agriculture. This oversight, however, has resulted in a new source of inequitable regulatory outcomes among forest owners.

For example, forest owners are required to protect certain ecological parameters such as water quality and riparian habitats much more rigorously than are agricultural,

[6] Examples include regulated post-harvest stocking levels (e.g. WAC 222-34-010(2)), or the required number of post-harvest wildlife reserve trees (e.g. WAC 222-30-11(b).

industrial, or urban property owners. Several forest owners whose properties adjoin farms or urban fringe areas pointed out the contrast between the wide, carefully protected riparian buffers they are now required to maintain on their forestlands, versus the lesser requirements for properties zoned for non-forest uses along the same stream. Additionally, forest owners with fish-bearing streams are required to design structures such as culverts to permit easy fish passage. Other types of landowners, however, as well as county and city governments and road departments, are not. This not only creates a financial disadvantage for affected forest owners, it also creates the conundrum of blocking fish from reaching protected forested areas because downstream agricultural, industrial, and urban owners are not expected to make similar habitat improvements. One frustrated forest owner stood at his boundary fence and pointed first to the mature forest he is required to maintain along his stream, and then to the stretch of water immediately downstream on the neighboring farm, where the riparian zone was allowed to be kept virtually denuded of vegetation. He summed up his exasperation by saying, “I don’t mind doing my share of environmental protection. But it sure looks to me like I’m being required to do more than my share. What about these other guys?”

Another forest owner demonstrated the disparity between regulations controlling herbicide use on forest lands versus agricultural lands. This owner had planted forest tree seedlings during the same year that his adjoining neighbor had planted Christmas tree seedlings. The Christmas trees were more advanced in size and growth rate, because their owner could spray additional herbicides and keep the plantation clear of

all competing vegetation. This was permitted because Christmas trees are classified as an agricultural crop rather than a forest, and hence subject to more lenient rules regarding herbicide use. The forest owner, however, preferred his own, slightly slower-growing plantation, because the lighter use of herbicides on his own property had resulted in retention of more of the natural biodiversity of the landscape. " Almost nothing natural uses those Christmas tree fields. You hardly ever see a bird or any wildlife, or even a blade of grass in there", he observed.

Some interviewees claimed that such regulatory discrepancies push landowners to de-emphasize forestry in favor of other land uses, and that these pressures may also be subject to regional advantages and disadvantages. By farming or grazing more acres in lieu of favoring forests, for example, some properties can be classified as agricultural land, and are thereby eligible for lower taxes and the less restrictive agricultural land use regulations. Since east-side forest types produce less profitable timber but are often well suited to mixed agro-forestry, some of our interviewees believed that east-side forest owners are more likely than west-side owners to be tempted to emphasize or completely convert to agriculture or other land uses.

In some instances, policy designers foresee the potential for inequitable regulatory consequences, but believe the merits of a particular policy outweigh this problem and that any negative social consequences should be handled through mitigation strategies rather than a policy revision. For example, some believed the presence of a threatened or endangered species implied such a need for urgency that ecological requirements could appropriately take precedence. Social inequities could

then be alleviated through some form of formal assistance to affected landowners, while leaving the "teeth" of the regulation intact.

Some policy advisors and administrators we interviewed believed that forest owners are asked to bear a disproportionate share of the burden of environmental protection. Many, however, defended the forest regulations, saying that although regulatory equity was important, it was also important to ensure ecological protection where ever possible. "The fact that we can't protect an entire ecosystem doesn't mean that we shouldn't protect the parts that we can", said one. Said another, "Urban areas are pretty much a loss, and the agricultural lobby is so powerful that we can't do much to improve biodiversity on farms. If we don't focus on protecting forests, we won't have anything left at all."

3. *Inequitable regulatory consequences linked to forest owner interests and objectives*: Simply put, the manner in which a forest owner will be affected by regulations depends in part upon their management goals. For example, in Washington State, a forest owner must sign a "non-conversion" moratorium before undertaking a timber harvest. The owner must agree to refrain from selling or converting the property to any use not associated with timber growing for six years following the harvest. Some owners say they aren't materially affected by this rule, because they have no desire to sell their land. "We've heard about the moratorium", said one such owner, "and I don't really think it's fair that forest owners would be singled out in such a way. But it doesn't really affect our family much personally, because our kids want to keep our forestland." Other owners, however, feel the effects of the moratorium more keenly. One said, "That

property was supposed to provide my kids' college tuition. When we bought it fifteen years ago we expected to be able to harvest it or sell it or do whatever we wanted. Now we're much more restricted. I'm not sure how we're going to manage the college costs."

Other examples abound. Some of the most common relate to regulations restricting timber harvest levels. Forest owners interested in maximizing timber extraction said they were greatly affected by, and often greatly resentful of, such regulations. Others who were already engaged in practicing sustainable forestry, by contrast, often said the same regulations required only moderate or minimal changes to their accustomed forest practices or harvest levels. Still others who had no interest in timber harvest said they experienced little if any impact from such regulations.

Another common problem arises when regulations require the preparation of detailed and fairly sophisticated pre-project planning documents before projects can be implemented. The preparation of these documents typically requires professional expertise. This has the desirable outcome of helping ensure that an owner is prepared to meet the regulatory standards of environmental protection, but can have the negative outcome of making the process of forest management less accessible for some forest owners than for others. Among our interviewees, it was clear that such requirements favor industrial forest owners with professionals on staff, and non-industrial owners with professional resource management backgrounds or the financial ability to hire professional consulting help. "We don't really have any problems with the permitting process. The foresters and biologists in our office just fold that into the rest of their work that goes into designing and supervising the projects", said one industrial forest owner.

A non-industrial tree farmer with a professional forestry background said, “I don’t know how I’d get through this if I didn’t have a pretty strong background to begin with. My place is too small, and my projects are too small, to pay for hiring someone else to get these permit applications ready.” One non-industrial forest owner with no professional forestry background said “I couldn’t have done this [permit] if the State forester hadn’t helped so much. I talked to a consultant first, but I just don’t have that kind of money.” Private forest owners, however, far outnumber state foresters, and the latter cannot assist every owner who doesn’t have access to a private consultant. Furthermore, the intent of most of the regulatory programs is that the forest owner, not the State government, is responsible for preparing the pertinent applications and reports for any forest practices they wish to undertake[7]. As one agency leader said, “State foresters shouldn’t be spending their time helping individual forest owners prepare project plans and permit applications. We’re charged with managing resources for the interests of the entire public. If we single out some owners for special assistance, we’re being unfair to the others.”

Forest owners without professional resources often described feeling daunted by the State’s complicated planning and permitting requirements. All regulated forest practices require a permit, and sensitive or unusual projects require additional, sophisticated documentation. Nearly all of our interviewees, across all stakeholder groups, were of the opinion that these permits can rarely be adequately prepared

[7] One notable exception is the State’s Forest Riparian Easement Program, which reimburses qualified forest owners for a certain portion of the stumpage value of timber they are required to leave unharvested within riparian zones. The State provides substantial procedural assistance to each applicant.

without professional expertise. Some forest owners said this had caused them to reject the idea of implementing some projects. Many other stakeholders worried that this unintended and inequitable regulatory outcome may deter some forest owners from undertaking environmentally beneficial activities to improve forest health and habitat quality. Such projects are often expensive, and/or produce little or no income from extracted resources to offset project costs. If required project planning and permit applications obligate the significant additional expense of professional consulting assistance, some forest owners will not or cannot proceed.

Social awareness that regulations may produce inequitable consequences among individual forest ownerships: Washington's Forest Practices Act recognizes that regulation can have disparate effects among broad *categories* of forest owners. In particular, "The legislature finds that increasing regulatory requirements continue to diminish the economic viability of small forest landowners" (2002 WA RCW 76.13.100). A principal reason is simply the characteristically smaller size of non-industrial forest properties. Even one sensitive area such as a riparian zone or an endangered species habitat may result in a high percentage of restricted land on a small land parcel. This, combined with the fact that non-industrial owners typically have fewer financial resources than industrial companies, means they often find it more difficult to absorb costs or losses that result from regulatory restrictions. The State has developed a number of programs and policy instruments to assist the non-industrial ownership

category[8]. The results of this study indicate, however, that although the policy instruments represent important 'first steps', some have complicated procedural requirements that favor some landowners and disadvantage others.

Recognition of the fact that regulations frequently produce disparate impacts upon *individual* forest owners was not widely evident among many interviewees in this study. Although many recounted stories of individual forest ownerships that had been affected disproportionately by one or more regulations, most of the policy advisors, policy administrators, and representatives of special interest groups or Native American tribes seemed to regard these cases as exceptions. Many forest owners and consultants, however, were convinced this was actually a frequent outcome. Our study results corroborate this latter viewpoint. Inequitable regulatory consequences among forest owners appear to be a common, rather than unusual, occurrence.

A few of the stakeholders we interviewed said they believed the privileges associated with property ownership outweighed any potential negative impacts from regulation, and that mitigation was not necessary or justified. A very few others objected to mitigation because of ecological concerns, believing it would weaken the standards of environmental protection established by the regulations. Many of the policy advisors and agency employees we interviewed, however, described an emerging realization that regulatory consequences are less predictable than they had once thought. As one agency employee summarized, "For a long time I really didn't

[8] Important examples include the Small Forest Landowner Office (RCW 76.13.110), the Alternate Plan option (WAC 222-12-040), Landowner Option Plan (WAC 222-16-100), Cooperative Habitat Enhancement Agreement (WAC 222-16-105), and the Forest Riparian Easement Program (WAC 222-21-005).

believe they [forest owners] had anything to complain about. After working with them for the past few years, though, they've just about got me convinced. Some of them have really been hit hard by the regulations."

Discussion:

This study revealed that forest management regulations, no matter how carefully designed, cannot be expected to affect all forest owners equitably. Even when policymakers create regulations that avoid the pitfalls of poor design or failure to interlink effectively with other related policies, inequitable outcomes will arise due to landscape variability and/or the personal circumstances of the landowners. *This does not, however, imply that the regulation of forests is inherently problematic or untenable.* It is worth noting that virtually all of the people we interviewed, across all stakeholder groups, supported the overarching concept of regulating forests. Most viewed it as a necessary part of any strategy for achieving long-term forest health and sustainability. The question, then, is not whether to regulate, but how. If one accepts the fundamental democratic principle that all citizens are entitled to reasonably equal treatment under the law, it is implicitly evident that forest regulatory systems should be designed in such a way that forest owners can experience reasonably equal outcomes. Since all inequitable outcomes cannot be prevented, it is appropriate to mitigate them when they occur. When developing mitigation strategies, however, policymakers can expect that each of the three causes of inequitable regulatory outcomes will present a different set of challenges in terms of finding solutions.

Solution pathways for inequitable regulatory consequences that arise from natural landscape variability: Landscape variability is largely irreducible; it is fundamental to any natural environment and cannot be "designed away". The challenge, then, is to fairly disperse the rights and responsibilities pertaining to conservation among the affected public and private stakeholders (Ostermeier and Keele 2003), and avoid allowing the regulatory process to unduly "take" or require a disproportionate share of contribution from any individual (Meltz *et al.* 1999). Unequal regulatory impacts can be mitigated through provisions that provide relief to individuals who are disproportionately affected by a regulation.

As our interviewees repeatedly illustrated, a policy protecting a resource that naturally occurs unevenly across a landscape – such as endangered species or riparian habitats – will never affect all owners equally, simply because such resources do not and cannot occur similarly from one property to another. Consequently, when trying to improve the equitableness of these types of rules and regulations, policymakers are likely to be limited to post-regulatory mitigation measures, scaled to the individual or small-group level, and focused toward the subset of forest owners who are disproportionately affected.

An array of familiar policy instruments could be readily adapted as solutions. These include cost-sharing programs, conservation easement payments, stewardship recognition programs, and fee or regulation waivers for landowners who are proactive about environmental protection. Many of these instruments were originally developed as "incentives" to encourage improved stewardship in locales where conservation

efforts are not mandatory. They are just as applicable to the task of reducing disproportionate or inequitable impacts where conservation is compulsory – i.e. regulated – rather than only voluntary. This strategy spreads the responsibility for conservation more evenly between the landowner and the public, and can mitigate certain unequal costs or burdens associated with environmental protection.

Washington has begun adapting some of these types of policy instruments to the new purpose of providing regulatory relief. Examples include the Forest Riparian Easement Program, Cooperative Habitat Enhancement Program, Landowner Option Program, and Alternate Plan option. These have been variously more and less successful, and all remain under ongoing adaptive review by the State.

Solution pathways for inequitable regulatory consequences that arise from policy design: Here, the potential array of solutions is more fluid and varied, because policymakers may work from the "front-end" of the policy design process, as well as from its later phases of implementation or mitigation. The source of the problem – policy design – is also the source of the solution. Socially inequitable outcomes can be "designed away". In some cases, an entire policy structure can be reworked to better "fit" its desired environmental and social outcomes. It can also be "scaled" to better accommodate consideration of outcomes at the individual owner level. Elements of "vertical interplay", such as linkages between inter-related federal and state policies, and "horizontal interplay", such as disparities in environmental protection standards between land use zoning designations, may be brought into greater harmony as needed (Young 2002).

The fact that policymakers can work from the “front end” of the process and therefore enjoy a larger pool of solutions does not, however, imply that solutions are necessarily easy. Policymakers and stakeholders alike may be reluctant to undertake a revision – policymakers because of the complexity and public expense of the process, and stakeholders because they are wary that potential changes may not support their interests or perspectives. Policy analysts contend that it is sometimes easier to attach a mitigation or ‘stopgap” measure to a policy rather than develop the “collaborative capacity” (Weber *et al.* 2005) required to fundamentally restructure the policy itself. Policymakers thus make a strategic decision to avoid a full-scale policy remediation (Fiorino 1993: 169,192). A number of the more experienced policy advisors interviewed in this study also advocated this approach. It can, however, add yet another layer of complexity to the regulatory structure because mitigation measures focused at the individual landowner level often require an additional administrative workload, in the form of some process to verify that the landowner is legitimately deserving of special consideration.

Nonetheless, mitigation measures can often provide a best and most easily implemented solution for retrofitting a policy, by providing improved social outcomes without reducing the ecological rigor of the overarching law. Mitigation strategies often allow agency professionals an opportunity to review each case, and, if needed, modify or reject applications to ensure that the environment remains adequately protected. This is a well-established strategy in environmental policymaking, perhaps best known in relation to market-based, negative incentives commonly integral to pollution control

laws (Fiorino 1993:171). Mitigation instruments now common in forest policy, however, often utilize positive rather than negative incentives. Options such as cost-sharing programs, conservation easements, or regulatory waivers offer forest owners some reward in exchange for an agreement to protect a particular resource. Currently such programs are usually open to any owner who wishes to apply; the programs are not specifically tailored to provide relief primarily to subset of owners who are being disproportionately affected by a regulation. These types of mitigation strategies could, however, be readily adapted to address this purpose.

Solution pathways for inequitable regulatory outcomes that arise due to disparate interests and objectives among landowners: Not all forest owners will feel undue effects from a regulation, if that regulation does not interfere with or cause them to modify their prior interests or management objectives. For example, the large percentage of owners who don't want to harvest their timber (Butler and Leatherberry 2004) are not likely to feel materially affected by timber harvest regulations. In attempting to mitigate inequitable effects of a regulation, therefore, policymakers need only focus on a subset of forest owners – those whose management objectives are materially and disproportionately restricted by the mandates of the regulation. The fact that policymakers will rarely need to provide mitigation measures for the total number of landowners helps reduce the scope and complexity of strategies necessary for dealing with inequitable regulatory outcomes. Additionally, it is helpful that policymakers can rely on policy tools similar to those that can be used where disproportionate outcomes are due to other causes such as landscape variability or oversights in policy design.

Here again, familiar strategies such as conservation easements, cost-sharing, or opportunities alternative management prescriptions can be adapted to mitigate problematic social outcomes.

The affected subset of landowners can be expected to differ with each type of regulatory policy. The group concerned about a riparian policy may be quite different from the group affected by a policy pertaining to an upland wildlife species, for example. If policymakers have correctly identified the relevant subset of owners, solutions can be more efficiently tailored to produce optimal social and environmental outcomes.

Inversely, if policymakers fail to correctly estimate the extent of the subset of landowners genuinely needing relief, the oversight is likely to contribute to a variety of unintended consequences. As one high-ranking agency employee cautioned, “this type of error can lead to a whole array of ‘perverse incentives’, like discouragement, non-compliance with regulations, and more willingness to sell or convert forestlands”.

There is substantial room for overlap between the three primary causes of inequitable consequences of regulation among forest owners. Their combined effects may produce an almost infinite variety of outcomes. For example, the landscape variables on an owner’s property may include a number of highly sensitive, tightly regulated resources, but those regulatory restrictions may in essence be a non-event for that owner if the owner’s management objectives do not include resource extraction. Or, endangered species regulations may place substantial constraints on a variety of potential management activities, but if a property owner is a wildlife enthusiast that outcome may be viewed as a welcome opportunity to benefit wildlife rather than as a

restriction. A tree farmer, by contrast, with sustainable resource extraction as a management goal, may feel significantly constrained by the regulation and view it with resentment. The challenge for policymakers is to identify the subset(s) of landowners who may be experiencing a genuinely disproportionate burden as a result of regulation, and then tailor remedial strategies that help improve social equitability while still adequately meeting the needs of the ecosystem.

Conclusion:

The fact that forest regulation is producing inequitable outcomes among Washington's private forest owners is not surprising. There is also no reason to believe that this problem is peculiar to Washington State or limited to forested ecosystems. It is just as likely to occur in other locales and with other types of regulated natural resource habitats simply because the primary causes of the problem – landscape variability, complexities of policy design, and dissimilar circumstances among individual land ownerships – are generic, rather than particular to any specific setting.

Implications: There are several important implications for forest policymakers. First, as the trend toward more comprehensive regulation of privately owned natural resources continues, it is ecologically and politically risky to leave this problem of inequitable regulatory impacts among forest owners unattended. Private ownerships control a significant percentage of the forests and other wildlands in the United States, and hence have substantial cumulative influence over ecological outcomes. If policymakers fail to recognize and mitigate inequitable regulatory impacts among forest owners, there is reason to expect a growing incidence of unintended negative ecological

and political consequences. These include unwillingness on the part of disproportionately affected landowners to provide publicly desired levels of ecological protection, and reduced support for the concept of public intervention in private resource management.

Second, if mitigation strategies are to be effective, they must be 'user-friendly.' Programs requiring complicated application processes or documentation beyond the financial or other capabilities of the average forest owner provide few real solutions. Indeed, such requirements actually add to the problem of inequitable regulatory outcomes rather than alleviating it, because they place the mitigation opportunities within reach of only a relatively privileged few of the legitimately eligible landowners. Policymakers may find it advisable to provide for governmental support or involvement in order to make a mitigation program more equally accessible to all.

Third, even when employing a relatively familiar and tested policy tool such as a conservation easement, policymakers may need to incorporate some means of filtering out applicants who are 'gaming the system'. Some types of mitigation programs can be vulnerable to applicants who apply for public compensation to 'refrain' from management activities they would never have actually undertaken. An appropriate filtering technique could be as simple as a requiring all applicants to present a stewardship plan documenting the landowner's prior intent and interest in actively managing that resource. Funds for stewardship planning are already widely available to forest owners through governmental programs. Consequently, a requirement for this particular type of plan would be unlikely to create an unreasonable or unequal burden

for any owner, yet could serve as a means of deterring frivolous claims and substantiating legitimate ones.

Fourth, although fiscal compensation to landowners is likely to be one important mitigation tool simply because so many regulatory outcomes cause landowners to incur opportunity costs, compensatory payment is not the only possible or effective mitigation strategy. In some situations, other alternatives may hold as much potential for alleviating regulatory inequities and present the significant advantage of reducing costs to taxpayers. Programs such as Washington's Alternate Plan option that allow landowners to vary from blanket, programmatic regulations and develop site-appropriate, innovative, yet still environmentally responsible resource management strategies can be appropriate in certain contexts. Less tangible incentives such as programs recognizing good stewardship can also be effective.

Lastly, ecologically sustainable forests can best be achieved through socially sustainable policies. Forest owners are a policymaker's most logical allies in the effort to achieve sustainable environmental stewardship on private forests. Consequently, creating policies that are alert to the circumstances of forest ownership may in many ways be as relevant as creating policies that are alert to the conditions of the forests.

This study indicates that inequitable regulatory consequences are a common but remediable outcome among private forest owners. In the words of one of the forest owners we interviewed, "It's not right, but it's real, so let's deal with it." As another concluded, "Nearly everyone wants resource protection. The biggest question is just

finding a way that we all share the burden." Understanding the cause of unintended and inequitable regulatory consequences is a good first step.

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Chapter 4

NEW CHOICES AND CHALLENGES FOR REGULATED PRIVATE FORESTS: THE "ALTERNATE PLAN" OPTION

(A preliminary presentation of this material was made at the International Union of Forest Research Organizations' symposium on "Small-scale Rural Forest Use and Management: global policies versus local knowledge" in Gerardmer, France, June 25, 2008.)

Abstract: The State of Washington has developed a policy instrument that substantially amends traditional "top-down" private forest regulation. Called the "Alternate Plan" option, it gives landowners unusual new flexibility in designing forest management projects for their property. Projects may depart from any of the State's established Forest Practices Rules, if the property owner can satisfactorily demonstrate that a customized proposal would provide equivalent environmental protection. The State provides a prompt review and decision, then supervises project implementation and monitors compliance with the approved project specifications. Using the "grounded theory" method of qualitative research, we interviewed 109 stakeholders involved in the design, use, and implementation of this innovative program. From this data we evaluate the functional advantages and challenges inherent in this new regulatory approach, suggest modifications to improve its effectiveness, and discuss policymaking implications.

Key words: Alternate Plans, private forests, forest policy, collaboration, forest owners

Introduction:

In recent decades, public concern for forested habitats has prompted a trend toward tighter regulation of privately owned forests. Within the United States, this task is primarily undertaken at the state governmental level. Many states employ various 'soft law' approaches to encourage improved stewardship by providing information and

assistance to forest owners. A steadily increasing number of states, however, turn additionally to mandatory “top-down”, “command-and-control” regulation to achieve more consistent standards of environmental protection. These “top-down” regulatory systems typically utilize fairly detailed prescriptive rules outlining accepted forest practices, enforced by state and federal agencies.

Policymakers often allow or encourage public input during the early stages of regulatory design. This is particularly true in Washington State, where a system of unusually collaborative stakeholder involvement has formed the foundation of the forest regulatory rulemaking process since the 1970’s (Smith 1997:430-433). Once the prescriptive regulations are agreed upon, however, most “top-down” regulatory systems become quite inflexible. Forest owners are bound to abide by the rules as written. Any significant change must occur at the governmental level, and involve a formal policy revision. Individual stakeholder requests for exceptions are not encouraged, and typically require cumbersome procedures and lengthy governmental review. Until the advent of the “Alternate Plan” option, this was the case in Washington, as elsewhere.

With its innovative “Alternate Plan” option, however, Washington State, has taken the unusual step of opening the later, post-design phases of its ‘top-down’ forest regulatory process. Using this new policy tool, forest owners can propose customized forest management projects that may include exceptions to any of the State’s established Forest Practices Rules, as long as equivalent or better levels of

environmental protection are provided.[9] Acting as the lead agency, the Washington Department of Natural Resources (DNR) orchestrates a prompt interdisciplinary, interagency review of each application. The DNR has only 30 days to accept, modify, or reject an application for a 2-year permit, or 45 days for a 5-year permit. Lastly, the DNR serves as the compliance monitor.

Washington's Forest Practices Rules are recognized as among the most restrictive and comprehensive in the nation (Creighton and Baumgartner 2005:192). Introducing new flexibility into such a tightly structured regulatory system poses significant challenges and opportunities for both the forest owners using the Alternate Plan option and the regulatory entities administering it. This paper represents part of a larger study of the implications of this new regulatory strategy (Gootee et al. 2006, 2007, and 2008 a, b, c). Here, we examine functional elements of the program, and discuss its broader implications as a new regulatory approach.

Literature Review:

We know of no information in the scientific literature specific to the Alternate Plan option. To our knowledge, our study is the first to analyze this regulatory approach. There is, however, a rich body of theory pertaining to more general environmental policymaking trends that are catalyzing innovations such as the Alternate Plan option.

[9] The "Alternate Plan" option was first conceptualized in Washington in the late 1900's. Early versions of the policy, however, proved too complicated and the program went virtually unused. It was revised in the 2001 Forest Practices Rules (WAC 222-12-040 and 0401), and related 2002 Forest Practices Act (RCW 76.09 and 76.13). Since then, it has grown steadily in popularity. As of this writing, total applications number approximately 2000.

Traditional top-down, command-and-control regulation has formed the backbone of American environmental policy since the early 1800's. It reflects the Progressive Conservationist philosophy that the environment and related public interests are best understood and protected by scientific experts (Nash 1990:69-71). In its original configuration, public stakeholders were largely excluded from the policymaking process. By the mid-twentieth century, however, it was clear that this approach was not meeting diverse social expectations (Chertow and Esty et al. 1997). A nationwide trend toward greater public involvement emerged (Weber 2000 and 2003). One outcome has been the widespread use of approaches that allow more pluralist democratic input to policy design, but continue to rely upon hierarchical governmental authority for the post-design phases of policy implementation and compliance enforcement. Washington State's forest regulatory system is built upon this latter strategy.

There is also a trend toward tailoring policies to their specific settings, thus making them more responsive to social expectations and emergent scientific knowledge (Buck et al 2001). Many analysts recommend the inclusion of formal strategies such as "adaptive management" or "options forestry" (Lee 1993, Borman and Kiester 2004). Norton describes this as a "practical philosophy" that seeks to "…find a reasonable scalar match between social systems and their decision processes, on the one hand, and the systems that provide the ecological context for the society on the other" (Norton 1995:144). Young discusses the importance of also tailoring the institutional element of environmental management, to improve horizontal and vertical integrations through attention to "fit", "interplay", and "scale" (Young 2002:4-28).

Local landscape, culture, and social capital are often best understood by local residents. Their involvement in policymaking can frequently help improve both social and ecological outcomes (John and Mlay 1998). These considerations are particularly pertinent in the private land context, because property owners often have an especially close attachment to and familiarity with their land (Creighton et al. 2008). Local involvement can also help policymakers more effectively address the legal (Meltz et al. 1999) and social (Teeter et al. 2003) implications of private property ownership.

This reorientation toward more pluralistic environmental policymaking and management poses problems as well as opportunities, however. Consequently, many analysts recommend retaining some element of governmental involvement and authority. Governments are often better able than grassroots entities to provide Infrastructure and scientific expertise (Bidwell and Ryan 2006, Cubbage 1997.) Tailoring regulatory policy to fit individual interests poses significant risks to broad-scale ecological integrity unless some centralized enforcement of scientifically credible environmental protection standards is maintained (Best 2004). The establishment and monitoring of such standards can often be more effectively handled through a governmental institution (Durant *et al.* 2004:512). Furthermore, the collaboration required in any pluralist involvement can be challenging as well as rewarding (Weber et al. 2005, Daniels and Walker 2001), because individual and local preference must be kept accountable to broader democratic rights (Weber 2002: 67 and 254). Governmental entities can often facilitate such efforts (Koontz et al. 2004).

The Alternate Plan option comprises an innovative blend of these components of bottom-up pluralism and top-down institutionalized environmental management. The policy is designed to respond to the highly localized social and ecological context of individual private properties while remaining accountable to broad public interests. It invites grassroots innovation, yet retains hierarchical governmental authority to ensure environmental protection and enforce individual compliance with public expectations. Although considered a work in progress that is still being adaptively refined, this new policy instrument holds promise as a tool to help improve governmental ability to address social and ecological considerations in the private land context.

Study Area and Methods:

This study analyzed whether and how the "Alternate Plan" option was meetings its dual goals of maintaining high standards of environmental protection and offering an improved level of regulatory responsiveness to private forest owners. We conducted research throughout the State of Washington. Private and Native American tribal forests comprise about 42 percent of the 22 million forested acres. Approximately 31 percent of the private forests are considered industrial. The remaining 69 percent are non-industrial (Erickson and Rinehart 2005.) There are roughly 90,000 non-industrial forest ownerships, most at100 acres or less in size (WA-DNR 2001).

We chose qualitative, inductive methods because they permit the collection of a nuanced body of data that can explain not only "what" is happening, but "why". This is particularly important when studying a subject that has previously seen little research and about which only limited prior information is available, as was the case with this

project. Our research question asked whether the Alternate Plan option could meet its goal of maintaining ecological protection and simultaneously providing new regulatory responsiveness to forest owners.

"Grounded theory" data is collected through semi-structured interviews that are loosely guided to ensure that all study participants covered the same topics. Sampling is purposive, rather than random or statistically selective. The sample size is determined by the emerging data. New interviewees are sought until additional interviews yield only repetitive, rather than new, information. We conducted 109 interviews with a broad spectrum of stakeholders involved in the design, use, and administration of the Alternate Plan option: industrial and non-industrial forest owners, Native American tribal representatives, state and federal natural resource management agency personnel, policy advisors, consultants, and representatives of special interest groups that focus on this policy. Interviewing was ongoing from August 2004 through December 2006. Most interviews lasted about two hours. Additionally, 164 Alternate Plan case files were reviewed.

Data was analyzed using the "constant comparison" technique. As the data is gathered, the results of each interview are compared with the previous ones. This permits the steady coding and accumulation of similar information into categories, then themes, and eventually theories (Glaser and Strauss 1999: 101-116). Additionally, Clarke's (2005) 'situational analysis' technique was used to visually organize the accumulating data.

This paper addresses three of the findings that emerged from our data analysis: 1. Firstly, the Alternate Plan option introduces a new and different social transparency to the late end of a traditional top-down regulatory process; 2. The Alternate Plan strategy holds potential for helping to improve intra- and inter-agency coordination and communication; and 3. The long-term effectiveness of the Alternate Plan strategy depends upon sustained, rigorous, institutional attention to accountability for social and environmental outcomes.

Results:

The Alternate Plan process may be 'unpacked' into five distinct procedural phases: 1. Project design and application process, 2. Agency review and decision, 3. Project implementation, 4. Compliance monitoring, and 5. Effectiveness monitoring. Our results indicate that the overall performance of the Alternate Plan option is somewhat uneven simply because some of these phases function more smoothly than others. Thus, each phase is analyzed separately in order to shed light on potential refinements.

Phase 1 – Project Design and Application Process: Many interviewees said the rigor and complexity of Washington's forest regulations make professional assistance a *de facto* requirement for most forest practices applications, including the Alternate Plan program. We found that most Alternate Plan proposals are prepared by natural resource professionals, so the incidence of ecologically unrealistic or ill-advised proposals is relatively low, and the approval rate by the State is relatively high. The large majority of the cases we reviewed were approved with moderate to no

modification. In general, although many forest owners described frustration with various phases of the program, those who started with good professional guidance seldom complained of major surprises with their proposals. Instances of extremely dissatisfied landowners were most often associated with proposals made without early professional counsel.

Forest owners without professional help described the Alternate Plan process as quite daunting. "I looked at it", said one forest owner, "but it's way too complicated for me. It just didn't seem worth it." In some instances DNR foresters have helped landowners navigate the application process, but as one said:

> "Landowners can't expect state employees to write these applications for them. We just don't have enough staff. We can, and should, be giving any applicant advice about these projects, but the documentation and written design are supposed to be up to the landowner."

The State is refining and revising the process to make it more user-friendly. Additionally, a 'template' has been devised that streamlines the application and review phases for ecologically uncomplicated forest thinning proposals.[10]

Phase 2 – Interdisciplinary Review and Agency Decision: The review phase of the Alternate Plan process is highly dynamic, interactive, and labor intensive. Many

[10] The 'template' process uses a less complicated application form, and minimizes the interdisciplinary review phase if the DNR forester coordinating the process deems the proposed project ecologically low-risk. The template concept was developed to address the increasing numbers of ecologically similar proposals to thin overstocked riparian stands. As of this writing, this is the only template available. A second one, for "hardwood conversions", is being considered. "Hardwood conversion" projects reduce the hardwood species component in timber stands to favor conifers, where conifers are ecologically preferable for purposes such as maintaining consistent stream temperatures for fisheries populations.

participants described it as difficult, albeit important. The process includes at least one field visit to the project site by an interdisciplinary, interagency review team. Teams include anywhere from a few to a dozen or more members, depending on the complexity of the project. During the site visits, landowners have an opportunity to explain their proposals. If team members raise objections or propose alternatives, all sides attempt to arrive at a collaborative agreement. After evaluating the verbal and written input, the DNR renders a final decision to approve, modify, or reject the proposal.

Not surprisingly, the review phase emerged as by far the most controversial element of the Alternate Plan program among our interviewees. Many individuals on both sides of the table said they found themselves poorly prepared for the challenges of this highly collaborative process. Quite a few forest owners were taken aback by the intense scrutiny and attention reviewers gave to their project proposal. One owner said, “My project was planned by a good consultant, but on the day of the field review we still had to go through parts of that stand on almost a tree-by-tree basis with the reviewers.” Notably, though, overall stakeholder satisfaction with the review process appeared to be improving as the program matured during the course of our study. As the DNR has worked to refine the program, and as familiarity combined with favorable field results have begun to build agency confidence in the program’s ability to maintain suitable levels of ecological protection, many stakeholders said the atmosphere of the reviews had become much more positive. One forest owner who was a repeat user said, “I had sixteen people show up on the review team for my first proposal, and we had a hard

time coming to an agreement. On the second one, though, I could use the template. The review was pretty easy – just a couple of foresters and a biologist."

Some reviewers also described challenges. Many indicated that although they felt quite qualified to evaluate the ecological components of an Alternate Plan proposal, they were not particularly at ease with the collaboration. As one forester said, "Our background prepares us well for managing forests, but not so well for managing people. I never expected it would be so complicated. I'd sure like to get some training in facilitation." Forest owners often perceived these problems. One remarked, "It didn't seem like any of them [the agency employees] were willing to take a leadership role, so getting to an agreement was tough."

Consistency, or the lack thereof, was a major concern among forest owners. Many complained about internal disagreements on the teams, wherein two or more professionals did not agree on acceptable forest practices. Others complained that ostensibly similar forest practices were approved on one proposal, yet disapproved on others. "It seems like it would really help if the same people [reviewers] could come out each time", said one forest owner. Quite a few agency employees also suggested this idea, although many nonetheless defended the occurrence of variable opinions among professionals. As one said, "Some of these proposals are complicated, and they're on ecologically sensitive sites. The purpose of the review is so people with different experience can help discover problems before it's too late."

Many program participants, however, said that despite the difficulties of collaboration, they greatly appreciated other outcomes of the review process.

Participants often said the Alternate Plan program had materially improved their understanding of other stakeholders and institutions. Some said it had made them more empathetic to the circumstances of forest ownership, several had been impressed with how an Alternate Plan project had brought tribal and non-tribal forest owners together to accomplish a common goal, and many said it had been constructive at building inter-agency cooperation and task-sharing. One agency employee summarized this by saying, "Finally, we have something that gets us all working together, on the same page."

Phase 3 – Project Implementation: Most stakeholders described this phase as relatively unproblematic. Once the project details were settled in the review phase, participants were generally vested in the agreed-upon project. Many landowners also said they did not want to jeopardize the continuance of the program, and implemented Alternate Plans especially carefully. One forest owner widely recognized for good stewardship said, "We [forest owners] are already adding so much to the community, but the regulations are taking away a lot of the credibility for all that we do. Alternate Plans help us prove our case." Most forest contractors said Alternate Plans rarely posed any major operational challenges. Although sensitive Alternate Plan sites often require very careful implementation of forest practices, the allowable practices themselves are rarely unusual.

Phase 4 – Compliance Monitoring: Agency officials reported relatively few problems with non-compliance. Most attributed this to the rigor of the Alternate Plan process. Alternate Plan projects are closely supervised, regularly inspected, and have

detailed specifications, so incentives for careful performance by forest owners and their operators are high.

Agency employees also said that the program itself works as a positive incentive. It appeals mostly to fairly well-experienced active forest managers who are accustomed to working with the State's regulatory system. Many of these owners said that they willingly complied with the regulatory agencies; many agency employees emphasized that point also. In general, many industrial and non-industrial owners said they were highly appreciative of the Alternate Plan program, and disinclined to conduct their operations in a way that might increase the likelihood that their future proposals might be denied. "Alternate Plans are the best thing we've got going for us", said one owner.

Phase 5 – Effectiveness Monitoring: Alternate Plan applicants are required to allow the DNR to conduct post-project monitoring. Agency employees, however, said the State has neither time nor resources to monitor these sites. Few landowners were collecting firm data, either, although many were informally evaluating the effects of their Alternate Plan(s).

We also found that very few interviewees knew of anyone closely monitoring financial or social outcomes. Because Alternate Plans tend to be embedded within larger, standard Forest Practices permits, many interviewees said costs were difficult to segregate. Some agency employees believed the program was fairly expensive to administer, but most considered the cost justifiable.

Industrial owners and tree farmers with generally larger harvest projects believed Alternate Plans were quite cost-effective for their businesses. Many non-industrial

owners, by contrast, believed their profits were largely outweighed by the costs of the Alternate Plans because their projects were smaller in scale. Quite a few among this group, however, said they would continue to use the program anyway because it met other ownership objectives such as personalized care for their land, or an opportunity to retain a formally accepted "voice" for more independent decision-making within the regulatory setting.

Despite the general lack of programmatic monitoring, however, most stakeholders said they were inclined to believe that the Alternate Plan option generally does a good job of protecting ecological function. A few forest owners believed it might be doing a better job than was ecologically necessary, but most expressed pride in the outcome of their project(s). Some agency employees were cautious about the long-term implications of the program, but most considered it at least satisfactory. Most environmental group representatives we interviewed were unaware of the program and expressed no concerns. As one said, "We focus primarily on public lands, because we can have more effect on a greater number of acres. We rarely get involved with private land policies." The one stakeholder group that expressed fairly collective concern was the Native American tribes. Many tribal representatives were skeptical of the program's long-term ability to match the ecological protection of the Forest Practices Rules.

Discussion:

Taken holistically, the Alternate Plan option appears to be more than the sum of its parts. It is more than just a new approach to regulating private forests. It also

produces certain functional outcomes that extend well beyond the implications of its localized projects.

Firstly, under the Alternate Plan option, regulators and individual property owners work together directly and collaboratively. They often emerge from this process with strong impressions of one another's worldviews. Well-run collaborative phases enable forest owners to better understand and accept the provisions required by the regulators. At the same time, the process helps regulators look more critically at the regulations and with greater understanding of the landowners' experiences. In short, the Alternate Plan option introduces a new, and most importantly, a two-way element of transparency into the later stages of the regulatory process. It enables stakeholders to experience, either actually or vicariously, the social effects of those regulations.

Secondly, again due to the collaborative interdisciplinary, interagency review phase, the Alternate Plan option appears to be helping improve intra- and inter-institutional communication. As professional peers have worked together on the teams, interpersonal respect has often increased, and confidence in the rigor and effectiveness of the review process has improved. Coordination among peers has also commensurately improved. One result has been a trend toward smaller review teams. Resource specialists are coordinating their efforts with their intra- and interagency peers to ensure that a project is adequately, not overly, covered. This improved coordination is beneficial to all. It enables a more efficient distribution of the workload without reducing effectiveness, and presents landowners with teams of less intimidating size.

Thirdly, and very importantly, we believe that it is only through sustained commitment to the rigor of the program that the Alternate Plan option can achieve its long-term objective of making regulation more responsive to forest owners without compromising high standards of environmental protection. The same flexibility that renders the program so powerful also makes it vulnerable to misapplication. It is possible that ecological protection may suffer if the project design process begins to allow less careful attention to ecological function or if the review process becomes less thorough. Conversely, there is also a possibility for the program to fail to be just to forest owners if the review process is biased against regulatory flexibility. It may also fail if reviewers are not sufficiently confident in their authority as decision-makers to be willing to depart from established precedent and seriously consider legitimately innovative proposals.

The State of Washington believes the formal element of "adaptive management" (e.g. Lee 1993) that pervades its overall forest regulatory strategy substantially protects the Alternate Plan option against this type of vulnerability. Adaptive management provides an ongoing format for refining this new policy instrument and addressing any ineffective outcomes. Adaptive review and refinement of the Alternate Plan option has been virtually continual to date. Stakeholder confidence improved perceptibly and steadily over the course of our study. We believe that the involvement of such a broad spectrum of players in the preparation and administration of each proposal, while unquestionably making the collaborative processes more challenging, helps increase the program's accountability and potential for good ecological and social outcomes.

Additionally, the process is quite fluid. Any legitimate player who becomes concerned about any particular project can opt to participate. This further ensures the rigor of the program and helps protect it from misuse.

Some simple functional modifications could substantially reduce certain problems that currently plague the front-end phases of the Alternate Plan process. For example, to reduce the instances of ill-advised Alternate Plan projects, the State could more carefully publicize the importance of seeking early professional advice.

Other functional modifications could address weaknesses in the collaborative review phase. Although inherent collaborative capacity (Weber et al. 2005) appears high in most Alternate Plan settings, in many instances it is not being fully realized. This is a common paradox in American environmental policies (Daniels and Walker 2001:4). Policies are intended to protect the interests of stakeholders, but the experts who make the policies are rarely trained to interact effectively with those stakeholders. In general, resource professionals are not well prepared for team-building, facilitation, or leadership roles. Appropriate training, however, is readily available and could easily be provided for agency employees involved in the collaborative processes. Within the Alternate Plan option, this would particularly effective if permanent interdisciplinary review teams were developed at the agencies' district level and trained as a functional unit.

Despite the potential benefits of such modifications, we believe the Alternate Plan option is fundamentally sound as long as the process remains rigorous and continues to incorporate a ready mechanism for adaptive refinement. This policy instrument embodies many elements that theorists increasingly concur are essential for

democratically responsive yet ecologically sound environmental policy. Its overarching capacities for public accountability, scientific credibility, and compliance enforcement are built into its top-down administrative structure, while improved capacities for social inclusiveness are infused through its mandate to remain open to bottom-up grassroots influence (Weber et al., Durant et al, O'Leary et al, Vig et al. etc. etc.). And, just as importantly, it is closely scaled to its context – private forest ownership. Private forests are distinctive, and we believe that some provision for policy responsiveness at the individual level is appropriate. The Alternate Plan option accomplishes such responsiveness, and does so in a way that is scaled to its individual property context, improves the interplay between relevant administrative institutions, and fits the ecological and social parameters of a particular site and situation (Young 2002, Norton 1995)

Conclusion:

The Alternate Plan option entails a significant departure from customary approaches to top-down command-and-control regulation. It is also very different from the increasingly popular concept of "bottom-up" collaborative governance. It incorporates elements of both, but combines them in entirely new ways. Most existing policies, whether top-down or bottom-up, are designed to gather a set of collective public interests into a unified management strategy. That strategy is then broadly applied to a landscape, with the goal of standardizing environmental management in accordance with the expectations of the affected public.

The Alternate Plan option takes a virtually opposite approach. It endorses separate, rather than collective, management strategies. In so doing, it addresses the highly nuanced social and ecological context of private forest ownerships, and permits the development of customized management strategies that capture those nuances. Forest owners can develop management projects better tailored to their own interests and to the very particular biophysical characteristics of their land. Yet the Alternate Plan option is not a decentralized or entirely individualized form of environmental management. Like conventional policies, it operates under an umbrella of public interest, and is oriented toward guarding that interest. It holds individual forest owners accountable to the public through careful scientific review of each proposal, and retains hierarchical governmental authority to ensure that individuals comply with approved management provisions.

Notably, most stakeholders we interviewed described functional challenges as occurring primarily in the 'front-end' application and review phases of the Alternate Plan process. Only rarely did anyone describe significant problems in the 'late-end' project implementation or compliance monitoring phases. We believe this high degree of satisfaction at the late end of the process indicates that by the time a project is implemented, all of the involved parties have arrived at a shared set of expectations. We consider this one of the principal advantages of the Alternate Plan approach: the personally interactive and highly collaborative nature of its 'front-end' phases lead to 'late-end' outcomes that are better understood and accepted by all involved.

The Alternate Plan option is conceptually simple and functionally easy to replicate. It does not replace established regulatory systems, nor require any significant change in regulatory infrastructure. It simply adds a means of making an existing regulatory system more responsive to site-specific considerations and to the social context of private land ownership. As such, we believe it can serve as a valuable addition to many other environmental regulatory settings.

At present, the Alternate Plan program remains a relatively small-scale and low-profile forest regulatory option used only in the State of Washington. It's potential importance at a broader level, however, is substantial. In the words of an influential environmental attorney, "How significant is the Alternate Plan option? It's huge. It hasn't hit the radar screen for many people yet, but we've never seen anything like it. It keeps environmental standards high, and at the same time allows social flexibility. It's crucially important as a regulatory model."

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Chapter 5

CHOOSING WHAT TO BELIEVE ABOUT FORESTS: DIFFERENCES BETWEEN PROFESSIONAL AND NON-PROFESSIONAL EVALUATIVE CRITERIA

(This paper has been accepted for presentation at the forthcoming International Union of Forest Research Organizations symposium on “Seeing the Forest Beyond the Trees: new possibilities and expectations for products and services from small-scale forestry”, to be held in Morgantown, Virginia, U.S.A., June 7-11, 2009.)

Abstract: Interviews with 109 forest owners and forest policy administrators revealed that many natural resource management professionals may not correctly anticipate how forest owners evaluate new forest management information. Most professionals evaluated new information on the basis of its scientific credibility. Forest owners with non-professional backgrounds, however, often used a different evaluative screen. Willingness to adopt information was greatly influenced by the forest owner’s social impressions of the individual(s) delivering it. If a natural resource professional or institution did not establish a positive learning atmosphere, many forest owners would resist not only that information provider, but also the information they delivered. This study links these findings to adult learning theory, to demonstrate that the natural resource professionals most effective with forest owners were those who provided classic elements of a good adult learning environment.

Keywords: private forests, forest owners, information exchange, adult learning, learning environments

Introduction:

To manage forestlands well, owners need to understand the principles of good forest stewardship. Additionally, where private forest management is subject to regulation, owners need to understand not only the regulatory policies, but also the social and ecological imperatives behind them. Landowners who do not realize why change is justified are less likely to willingly adopt improved forest management

strategies (Creighton and Baumgartner 2005:197). As Daniels and Walker emphasize, "Decision quality is linked directly to learning" (2001:76).

Consequently, natural resource professionals who advise private forest owners need to foster an effective learning environment. To do so, it is necessary to understand forest owners as well as forests (Cartmell et al. 2006, Downing and Finley 2005). To help professionals assess their value, we studied the process of information exchange between and among forest owners and natural resource management professionals in the State of Washington. This was part of a larger study examining the effectiveness of Washington's Alternate Plan option[11] an innovative, self-directed program available to private forest owners in the State of Washington. Because Alternate Plans are subject to rigorous interdisciplinary, interagency review, they must be founded upon a solid understanding of forest ecology to earn approval. To obtain this knowledge, forest owners using this fairly complex policy instrument typically rely upon diverse information sources and can therefore provide many insightful comparisons.

Our study revealed a 'disconnect' between forest owners and many professionals who provide them with information: Forest owners often did not use the same criteria as natural resource professionals to determine the credibility of information. The failure to perceive this misalignment reduced the effectiveness of many professionals and their respective institutions, because they did not understand what forest owners sought in

[11] The Alternate Plan option (WA RCW 76.09; 76.13, and WAC 222-12-040) permits forest owners to suggest management alternatives that differ from the State's prescriptive Forest Practices Rules (WAC 222), if the alternative can be expected to result in equivalent or better levels of ecological protection.

the process of information exchange. In this paper we examine this problem and suggest ways in which professionals can interact more productively with forest owners.

Literature Review:

Key insights to effective information exchange may be found in the literature pertaining to the adult learning process. Research has long confirmed that adults gravitate toward certain core elements in learning environment. Daniels and Walker, in their seminal work on collaborative environmental learning, summarize, “Adults bring more experience, less patience, and little tolerance for being ‘taught’; they want to learn actively while they are working on the issues that are important to them. They need to be co-learners much more than pupils” (2001:79). Knowles’ seminal analyses found that adults tend to be self-directed rather than dependent learners. They respect and learn from cumulative experience. With age, most become increasingly pragmatic about linking learning to the development of their social and occupational roles. Most people also desire concrete outcomes and immediate applicability (Knowles 1980). Vella (1994) identified a number of principles key to effective adult learning environments. Three crucial linkages within these principles are: 1) The importance of mutual respect between educators and adult learners, 2) the focus of adult learners upon praxis, and 3) the importance of experiential learning and accountability, as opposed to more passive forms of instruction.

Experiential learning is an important foundation for both understanding and choosing between new subjects (Daniels and Walker 2001, Knowles 1980, Vella 1994). Kolb’s classic model illustrates experiential learning as a circular continuum of four

phases. In the first, “reflective observation”, the learner questions and decides “why” an issue or problem is important. In the second, “abstract conceptualization”, the learner conceives “what” to do about it. During the third, “active experimentation”, the learner works on how to solve the problem, testing potential solutions. Finally, through “concrete experience”, the learner applies the new solutions, and potentially uses them as a springboard to new, related learning (Kolb 1984, Daniels and Walker 2001:86-90). Individuals may display markedly different levels of personal strengths within particular phases of the cycle, but will predictably need to progress through all four.

This latter understanding that learning is a cycle rather than a “snapshot” is particularly important. Individuals believe and take action pertaining to an issue or policy based upon their established understanding or “way of knowing” that issue (Feldman et al. 2006:89). Learning is in essence a dynamic process of coming to an expanded, revised, or new understanding. Professionals engaged in advising forest owners are often attempting to persuade the forest owner to a new “way of knowing” the fundamentals of forest management and/or regulatory policy.

Also key to adult learning is the element of empathy, or “situational cognition” (Rogoff 1984:3). In other words, adults want evidence that the information provider relates to and understands their circumstances “from the inside out”. Regardless how conceptually sound, information is unlikely to be adopted unless conveyed through personnel and media attuned to its recipients (Burch and DeLuca 1984, Keen and Mahanty 2006). Kittredge (2004) found that forest owners gravitate strongly toward empathetic information providers, rather than those who simply try to inform, teach, or

regulate them. Bliss (1988) drew a related, important conclusion: although external influences such as regulations, incentive programs, and information from foresters affected the timing and scale of private forestry projects, forest owners relied more upon internal influences such as their own personal backgrounds, sense of identity, and experiential relationship to forests to decide the more fundamental issue of forest management goals.

In their search for empathetic information providers, some learners preferentially rely upon a network of peers who share their "way of knowing". Salaman's classic work (1974) defines one important type of network as an "occupational community", a group of people who, albeit loosely, share a "mental world composed of assumptions, attitudes, knowledge, expectations, and shared history". Members of an occupational community "…tend to look at each other as a primary reference group. Thus, the opinions and values of other "insiders" come to be seen as more important than those of out-group members" (Carroll and Lee 1990:142). But while it is true that networks often resist non-empathetic information providers, a growing body of research indicates networks can also serve as an avenue toward, rather than an obstacle to, learning exchange (Weber and Khademian 2008). Once new information has been accepted, networks offer a dynamic, efficient means of transmission throughout the networked community.

A critical link between all of these concepts of learning environments, learning cycles, empathy, networks, and "ways of knowing" is that all are fluid. Each presents a continuum of opportunities, and together they present a dynamic matrix of opportunities,

for information exchange. There is substantial evidence, however, that effective adult learning also requires a dynamic of reciprocity. In other words, adults respond best to 'experts' who respect the learners' prior knowledge, offering a learning dynamic that is more horizontal than hierarchical or vertical (Keen and Mahanty 2006, Weber et al. 2005). "For adults, learning in and about the environment should never be a pre-packaged experience of expert/learner, but rather a contextualized practice that recognizes the wealth of knowledge that exists in a group" (Clover 2002:5). McGrath (2006:5) concurs: "The cycle of discovery, integration, application, and transmission of new knowledge is dynamic and non-hierarchical". Mellow contends that professionals working in rural settings must be especially attentive to this issue. Rural cultures typically value close, neighborly relationships and rarely respond well to the type of intellectual distance fostered by the conventional, hierarchical professional/non-professional relationship (Mellow 2005).

Also relevant is the literature pertaining to transitioning social perceptions of science and scientists (Ozawa 1991). Forest management, once primarily a technical matter of improving commodity production, now encompasses far more diverse social interests (Smith 1997). Society and scientists are increasingly aware that scientific discovery is a dynamic, open-ended process wherein any current knowledge is not necessarily conclusive (Jasanoff and Martello 2004). Kohm and Franklin write, "…the most important result of ecological research on forest landscapes and ecosystems has been an appreciation of their complexity and the limitations of our knowledge (1997:5). Consequently, the public is increasingly unwilling to view natural resource professionals

as omniscient regarding appropriate environmental management strategies, and often resentful of professionals who attempt to retain hierarchical “expert/non-expert” relationships with stakeholders (Luckert 2006, Winter et al. 2004).

An important implication from each of these areas of the literature is that natural resource professionals may often need more than scientific credentials in order to gain credibility with forest owners. Instead, most landowners can be expected to employ a fairly complex matrix of personal, social, and experiential elements to screen new information and its providers.

Methods:

Study Area and Forest Ownership Context: The study area included all of Washington State. Private forests comprise approximately 9.4 of its 22 million forested acres, and have long been integral to the State’s culture and economy (WA-DNR 2005, Erickson and Rinehart 2005). The industrial forest sector is comprised of about 60 ownerships (Erickson and Rinehart 2005) controlling roughly 31 percent of the non-tribal private forestland (Mason 2007). The remaining 69 percent, an estimated 90,000 ownerships (WA-DNR 2001), are classified as non-industrial. About half (51 percent) are large parcels of 5000 acres or more. These include most of the Tribal lands, large private investors, conservation groups, TIMO’s and REIT’s. The remaining 49 percent are categorized as “small” forests. Of these, the majority are less than 100 acres in size (Erickson and Rinehart 2005). They are highly biodiverse, providing habitat for an estimated 85 percent of the State’s wildlife species, as well as numerous other important ecological services (WA-DNR 2001).

Private forest owners receive advice and/or regulatory oversight from several agencies, including the State Department of Natural Resources, Department of Fish and Wildlife, and Department of Ecology, as well as the federal Natural Resource Conservation Service. In matters involving federally listed threatened or endangered species, the United States Fish and Wildlife Service and/or Natural Marine Fisheries Service also become involved. Washington State University Extension is a non-regulatory institutional information provider. Forest owners also turn to consultants, forest ownership organizations, and peer networks.

Data Collection and Analysis: We relied upon "grounded theory" methodology (Glaser and Strauss 1999, Clarke 2005), a qualitative, inductive research technique. Data is collected through in-depth, one-on-one interviews, enabling participants to elaborate upon the research topic in their own words. This produces a comprehensive, nuanced body of data that can significantly illuminate a complex subject.

Grounded theory studies employ purposive rather than random or statistical sampling. Study participants are selected to ensure the diversity of the sample and capture the full range of perspectives. Additional participants are sought until interviews fail to reveal new data, a point known as "theoretical saturation" (Glaser and Strauss 1999:61). The size and composition of the sample pool is dictated by the emerging data. We interviewed 109 individuals, including non-industrial private forest owners, industrial timber company personnel, Native American Tribal members and employees, state and federal land management agency employees, policy advisors, interest group representatives, and consultants. All interviews were loosely guided, to ensure that

each covered the same set of topics. One hundred three interviews were conducted in person, and six by telephone. Most of the in-person interviews lasted at least two hours, but over thirty took as many as four, often involving a second visit. The six telephone interviews lasted about 30 to 45 minutes each.

Data was analyzed using the technique of "constant comparison" (Glaser and Strauss 1999:105). This permits the researcher to compare and analyze data as it is gathered, discovering emergent themes and patterns throughout the study. Situational word maps (Clarke 2005) were employed as a supplemental analytical tool, providing a visual framework from which to gather patterns and emergent themes into new, grounded theories.

This paper addresses one important grounded theory that emerged from the study: many natural resource professionals do not correctly anticipate the criteria forest owners use to evaluate new forest management information or its providers, nor their reasons for doing so. As a result, the effectiveness of information exchange between certain institutions and many forest owners is diminished. We analyze causes of this problem, discuss implications, and suggest solutions.

Results:

Categories of information providers:

This study defines information providers as *institutions, organizations, or individuals delivering what they consider to be authoritative information about forest management and stewardship to forest owners.* Five categories of information providers were found to be influencing the sampled forest owners:

1. *Institutions,* such as agencies, universities, and professional membership organizations, wherein nearly all persons producing and/or providing information have professional, scientific training in natural resource management.
2. *Consultants,* individuals or companies who advise forest owners for a fee. All have relevant experience, and most have professional training and credentials.
3. *Organizational networks,* such as forest owner groups, trade groups, or other special interest groups whose leaders, members, and outside information sources may or may not have professional backgrounds in natural resource management.
4. *Non-organized professional peer networks,* consisting of persons with professional backgrounds related to natural resource management.
5. *Informal networks,* such as family, friends, or neighbors who may have extensive experiential backgrounds, but usually do not have professional training.

Forest ownership categories:

The forest owners in our sample fit three general ownership categories widely recognized in the literature: 1. Industrial timber companies, 2. Native American Tribes, and 3. Non-industrial private forest owners (NIPF's). Our data revealed that each played a different role, displayed distinctive patterns of behavior, and tended to elicit different institutional responses within the process of information exchange.

1.Industrial timber companies typically employed professional foresters, and often other natural resource specialists. These professionals obtained and screened much of the new forest management information used by their companies. The companies were closely networked through a well-organized and politically influential trade organization, and displayed a strong sense of occupational community. Most relied upon their in-house experiential and scientific expertise, trade organization, and a peer network of consultants as their primary information providers. Institutional scientific sources, including professional associations, were also important.

For decades, industrial forest owners in Washington have proactively endorsed and participated in collaborative forest policymaking. Most said they understood and accepted the regulatory outcomes. Consequently, the atmosphere of information exchange between employees of the timber companies and the regulatory institutions was generally positive. Although a hierarchical dynamic was present due to the regulatory authority of the agencies, it was fairly low-key. Information transfer often exhibited a fairly horizontal dynamic more characteristic of a peer-to-peer interaction.

2. Native American forest owners from 34 Tribes own and manage about six percent of the state's forested acreage (USDA 2000). Through treaty rights, they also influence many aspects of state natural resource management policy on non-tribal lands. To fulfill these roles, most employ professional natural resource management specialists. Some also conduct independent research. Tribal members who oversee natural resource management from non- professional backgrounds tend to have extensive experiential expertise. Tribal representatives interviewed during this study

said the tribes relied mostly upon institutional sources for information, particularly universities and peer-reviewed publications. The tribes were most interested in information oriented toward multi-resource or ecosystem management.

Information exchange between most natural resource management professionals and the tribes was based upon a relatively peer-to-peer relationship. Because of the legally sovereign status of the tribes, interactions between governmental institutions and tribes lacked the hierarchical dynamic evident in institutional interactions with the regulated industrial and NIPF ownership groups. Many professionals also accorded the tribes stature due to the quality of their independent scientific research. "The tribes are more and more impressive", said one federal employee. "We consider many of them pretty much on a scientific par with the State agencies."

3. *Non-industrial private forest owners (NIPF's)* were a diverse group including individuals, families, small collaboratives, small and large legal partnerships, homeownership organizations, and public destination facilities. The relationship between natural resource professionals and most NIPF owners was often markedly more 'vertical' or hierarchical than that between professionals and the industrial or tribal forest owners.

We found two broad sub-categories of NIPF's, each with very different expectations and experiences regarding information exchange:

a. *Tree farmers,* whose primary management goals included active forest management and some degree of profit from forest products, and

b. *Non tree farmers* who owned forestland for a variety of other reasons such as personal enjoyment, land investment, rural businesses, or conservation.

Both sub-categories gravitated strongly toward praxis in their preferences regarding information topics. They wanted basic information about applied forest management and stewardship for both timber and non-timber resources, and information providers who related to the day-to-day realities of forest ownership. With the exception of a few tree farmers, most NIPF's actively shunned complicated or highly sophisticated evaluative tools or information, considering them a poor fit for their small forest ownerships, and typically beyond their personal level of preparedness to utilize or interpret. Most tree farmers and many non tree farmers resisted hierarchical expert-to-layperson dynamics in their information exchange settings. As one tree farmer summarized, "I wish every agency employee could be required to own at least a small piece of forestland. Maybe then they'd really understand what this is all about. It doesn't cost them anything to place all these restrictions on us, but the solutions aren't so easy when you have to balance all the other considerations that go with owning land."

The tree farmers and non tree farmers diverged sharply, however, in their relationships with institutional information providers, as well as in their approaches to choosing and evaluating information and providers. Many tree farmers had professional resource management backgrounds themselves, or extensive experiential backgrounds. These individuals were well known to agency employees, policy advisors, and other

involved stakeholders, and often accorded substantial respect. Most tree farmers felt competent to find and review much of their information independently, and or worked closely and regularly with trusted consultants. Nearly all tree farmers were fairly closely networked and displayed a strong sense of occupational community. Many participated actively in state and national forest owner organizations. Most relied heavily upon one another for learning.

The non tree farmers, by contrast, had far more diverse backgrounds and goals. Many displayed little tendency to network and few if any characteristics of occupational community. Most of the non-tree farmers exhibited notably less confidence than tree farmers in their own ability to evaluate information independently. Most had found one or a few individuals, either professional or non-professional, to whom they turned most often for information. Most shunned information providers whom they did not personally know and trust.

The NIPF's in both sub-categories used a more diverse pool of information providers than did the industrial or Tribal groups. Their primary providers were Extension services, state and federal agency resource professionals, consultants, forestry organizations, and informal networks. Each is discussed in detail below.

Information providers used by NIPF's:

Washington State University Cooperative Extension (WSU Extension) was the information provider most consistently preferred by these NIPF's. There were only a handful of detractors, and their dissatisfaction had to do with the scope of service available, rather than its quality. NIPF's typically used descriptors such as "trusted",

"objective", and "understands us" when describing WSU Extension foresters. As one forest owner summarized, "We had a *great* [her emphasis] Extension forester. He really understood what forest ownership is all about, really focused on helping us learn about and take care of our trees. He retired recently though. They say they don't have enough funds to replace him. I'm not sure what we'll do now. There's really not another good alternative available. The Extension people seem to be the only ones without an axe to grind. The agencies – well, a lot of them mean well, but they're pretty political."

State and federal natural resource management agencies were the most widely *familiar* information providers among these NIPF's, and also the most controversial. All the forest owners had interacted with state and federal professionals while planning and implementing regulated forest practices. Some also turned to them for more general assistance. Notably, the Small Forest Landowner Office (SFLO) within the State Department of Natural Resources (DNR) was the most favored entity. The SFLO focuses on the NIPF sphere, and is primarily an advisory, rather than a regulatory, entity. As one owner said, "The SFLO foresters are really good. There seem to be a lot of landowners who don't know about them, though, which is a real shame."

It was not unusual for NIPF's to believe the agencies were inconsistent in terms of their management recommendations and regulatory interpretations. In regard to all agencies, it was common for NIPF's to name an individual employee as helpful, yet add a qualifier saying they had reservations about the agencies in general. NIPF's often described seeking out individual employees who seemed more empathetic or impartial

than others. As one NIPF said, “I really like [a named individual]. He really knows his stuff and we’ve got a very good relationship. I wish there were more like him, but so many of these guys seem to be pitching a philosophy. I never really feel like a lot of them care what it’s like to be in my shoes.”

Inversely, the agency employees we interviewed described as wide a range of opinions about forest owners as forest owners did about agency employees. A few expressed disillusionment with the perceived motives or competence of the overall forest owner population. Some doubted that information from the agencies could widely change forest owner attitudes. Many others, however, were less inclined to generalize, either positively or negatively. They considered forest owners on a case-by-case basis, describing variously positive or negative relationships with different individuals. A few were very respectful and empathetic toward NIPF’s in general, saying they believed the large majority wanted to take care of their land, received information willingly, and did their best to understand and meet regulatory requirements. Said one agency employee, “It’s great that they do as well as they do, especially the owners with property where big chunks are affected by things like riparian or endangered species rules.”

Consultants were used by a majority of both tree farmers and non tree farmers. Washington’s private forest practice regulations are generally regarded as so complicated that very few non-professional owners can navigate them without professional guidance. Many tree farmers and non tree farmers alike described their consultant as their primary information source. Quite a few others used consultants intermittently, for assistance with significant projects. Few of these owners complained

about the need for a consultant. Most considered their services and information a good investment. Those who could not afford or did not want a consultant, however, typically obtained professional help from an Extension or state agency forester when needed.

Forest owner organizations, especially the Washington Farm Forestry Association, were heavily relied upon by those forest owners who enjoyed networking as a strategy for gathering information. A few used organizations as their primary information source, and several others considered them helpful. They found the organization(s) pragmatically attuned to their ownership context and their informational needs. Many NIPF's we interviewed, however, were "non-joiners" who described themselves as not enjoying organizational meetings or gatherings. Organizational information providers were reaching a relatively small proportion of the NIPF's in our sample, although significantly influencing most they did reach.

Informal networks, comprised primarily of non-professionals, were quite influential among many NIPF's. This was in sharp contrast to the industrial and tribal forest owners, who were much less likely to rely on informal information sources. A few NIPF's described informal providers as their preferred source of information, and nearly half mentioned them as helpful. Significantly, some owners said they would more willingly rely on information from this source than on scientific information from an institution or professional, if they did not like the relationship offered by that institution or its employee(s).

Divergent evaluative criteria between professionals and non-professionals: Natural resource professionals usually evaluated new forest management information

based upon the merits of the information itself, and /or its producers. They used widely accepted criteria such as “professional reputation”, “scientific credibility”, and “peer review”. Consequently, many professionals considered information *deliverers* to be largely interchangeable. In other words, professionals would generally accept the same piece of information as readily from one deliverer as from another. Many thought forest owners would do the same. “The science speaks for itself. I don’t really understand why so many of them [the forest owners] want to keep arguing about it”, said one agency employee.

By contrast, most non-professional forest owners selected forest management information based in part upon their *social* impressions of the person or institution delivering it. Professional credentials and scientific rigor alone were not usually their only or final decision points. Instead, they tended to evaluate the perceived attitude and intent of the individual(s) delivering the information. This subjective impression was a significant factor in their decisions regarding which information to adopt or reject. As a result, many NIPF’s did not consider information deliverers interchangeable. Few were tolerant of a professional whom they did not believe respected them, their personal situation, or their experience. If they believed someone did not convey this type of empathy, a substantial number said they would turn to another advisor if possible, including, for quite a few, to informal or non-scientific sources. In one such case, a landowner frustrated with a particular agency employee said, “That guy was the weakest link throughout all of this [effort to design a timber harvest on his property]. Finally, though, we got to the right people and we could hardly believe what a difference

that made". Another commented, "I hope I'm getting good guidance from [a particular agency employee], but I really like having my forestry consultant as a backup. I know he's looking out for me."

Most consultants, and certain agency employees, closely predicted how forest owners would go about choosing information and its deliverers. Notably, many of these same professionals were spontaneously mentioned by name by forest owners as good information sources, indicating that these professionals not only recognized what was needed, but were largely successful at providing it.

Many other natural resource professionals, however, did not so clearly understand what non-professional forest owners sought. Those professionals often expressed frustration that forest owners seemed indifferent or resistant to the information they provided, even information based upon what the professionals regarded as "indisputable science". This dichotomy underscores the importance of interpersonal relationships in the process of forest management information exchange, particularly when working with non-professional forest owners who may be looking for a trusted guide, more than just raw information.

Discussion:

The learning environment and information exchange: The contrast between the learning environment experienced by most natural resource professionals and that described by many non-professional forest owners was striking. Professionals shared a learning atmosphere in which they experienced essentially membership status and a related level of collegial respect within the professional network. Their employers often

provided materials, opportunities, and funding for learning. Professionals usually had a solid background in the new material they needed to learn. New subjects were often of their own choosing, and almost always clearly relevant to their work. In other words, many core elements that researchers have long recognized as essential for effective adult learning – self-direction, reciprocal respect between information providers and learners, situational cognition, praxis, and immediacy of applicability – tend to be inherent in the professional world (Rogoff 1984, Vella 1994, Daniels and Walker 2001).

Non-professional forest owners, by contrast, particularly among the NIPF group, described a markedly different learning atmosphere, one in which many of these elements were often lacking. Many non-professional owners experienced collegial or 'peer' status only within their forest owner organization and/or the circle of family and friends who acted as their 'informal information providers'. The peer respect and empathy they encountered with these providers often led non-professional owners to prefer them, even though some information obtainable from these sources might not be scientifically based or ecologically sound. Non-professional forest owners often described being left with an impression of veiled disrespect from professional resource managers, particularly those from the regulatory agencies.

It appeared that, in addition to overlooking the need to provide a respectful learning atmosphere and openness to the circumstances of the forest owner, many professionals may also bypass critical early phases of the learning cycle (Kolb 1984, Daniels and Walker 2001:86-92). Professionals often failed to adequately explain the relevance of new concepts or regulations to non-professional forest owners before

requiring implementation. Since “the order in which learning occurs is essential to its effectiveness” (Vella 1994, quoted in Daniels and Walker 2001:86), this type of omission can be expected to be problematic.

Most forest owners we interviewed, in all ownership categories, displayed very predictable traits of adult learners (Knowles 1980 and 1984, Daniels and Walker 2001:80-92). They sought information providers who respected the owner’s experience, were open to non-hierarchical dialogue, friendly and reasonably empathetic to their circumstances, and who convinced them that the new information led to tangible, improved outcomes. Those forest owners who said they had found satisfactory learning experiences described information providers who were offering most or all of these elements. Owners who expressed frustration or dissatisfaction generally described professionals who had lacked these qualities. Significantly, many forest owners who described feeling most at ease in the overall environment of forest management learning were professionals themselves, or the rare laypersons whose experiential knowledge had earned them a level of peer status from the professional community.

Our results indicated that most institutions had developed a fairly effective atmosphere of information exchange with the industrial and Tribal forest ownership categories, wherein many key players are professionals or have respected experiential backgrounds. Among NIPF’s however, where institutional professionals most often interact with layperson forest owners, the process of information exchange often left much to be desired. Given the fact that the vast majority of forest owners – over 90,000 in Washington alone – fall into this category of layperson NIPF’s, inadequacies in their

learning experiences can be expected to have large consequences, both ecologically and socially.

It is not surprising that professionals may often overlook the need to replicate aspects of their own more positive learning atmosphere in their interactions with non-professional forest owners. Professionals may simply take their own setting for granted, forgetting that some of its desirable elements are less inherent, and therefore must be purposely cultivated, in information exchange between professionals and laypersons. According to our study results, however, such oversights can substantially diminish a professional's effectiveness. Inadequacies in the learning environment of forest owners led not only to misconceptions about forest ecology and management, but also to disillusionment with many of the professionals and institutions advising them.

Forest owner preferences among deliverers of information: Many forest owners in this study expressed marked preferences among information deliverers. Most importantly, the way a forest owner felt about the learning environment offered by a deliverer often colored the owner's willingness to adopt new information. Institutions and individual professionals who were failing to foster an effective atmosphere for learning were commensurately engendering resentment, and in some cases resistance, from forest owners. Within our sample, it was clear that forest owners were more likely to willingly adopt recommended forest management strategies when information providers were respectful of the owners "ways of knowing" their forest (Feldman et al. 2006), offering an effective learning environment (Vella 1994, Daniels and Walker 2001)

that enabled forest owners to understand and support the recommended forest management changes.

Our results somewhat contradict the conclusions of Downing and Finley (2005:5), who found that nearly half of the early adopter forest owners they surveyed in Pennsylvania said it did not matter to them who sponsored an educational program. This disparity in results, however, may be attributable simply to variances in locale. The two sample pools are influenced by different institutions, and by different sets of state regulations. This explanation is consistent with the results of Winter et al. (2004), who discovered that homeowners in Florida, California, and Michigan displayed significantly different state-by-state levels of trust in institutional competence related to forest fuels management.

Closely paralleling trends from other studies nationwide (e.g. Magill et al. 2004, Kelsy and Mariger 2002), the forest owners in our study gravitated strongly toward praxis in their preferences regarding information topics. They wanted basic information about applied forest management for both timber and non-timber resources. They sought more than ‘subjects’ in their learning environment, however – they sought ‘substance’. When a particular information provider didn’t supply the ‘substance’ of a positive learning environment, many forest owners turned elsewhere. Like most adult learners, these forest owners wanted to be respected for their own experience and knowledge. They tended to reject professionals who tried to maintain a hierarchical ‘teaching’ dynamic. Optimal adult learning environments encourage a two-way sharing of knowledge, rather than an action in which a professional ‘expert’ tries to teach a ‘non-

expert'. Both the learner and the information provider must be willing to learn (Clover 2002, McGrath 2006.)

The disparate criteria used by professionals and non-professionals to evaluate information providers often led to divergent perceptions about what constitutes an optimally effective institution. One example revolves around the ostensibly similar information transfer provided by WSU Extension and the Small Forest Landowner Office (SFLO). Both institutions are non-regulatory in nature, and oriented toward providing scientifically credible information and assistance to NIPF's. Consequently, many policy advisors and agency administrators expected forest owners would turn to the SFLO as willingly as to Extension. Many forest owners, however, associated each of these institutions with a markedly different type of learning environment and exhibited a strong preference for Extension.

This was because forest owners often perceived the state and federal regulatory agencies as hierarchical and/or relatively politicized, and therefore lacking an objective, approachable atmosphere for information sharing. To some extent, the agencies are victims of their own mandates. Charged with implementing forest regulatory laws, compliance supervision and enforcement are a necessary part of their focus. Many forest owners, especially non-professional NIPF's, however, associated this with negativism. Quite a few NIPF's extended this perception to the SFLO. They did not conceptually separate it from its regulatory parent agency, the Department of Natural Resources. By contrast, many NIPF's described WSU Extension as more positivist, and seemingly more focused on helping them 'get it right'. Not surprisingly, many

owners preferred and trusted this learning atmosphere. These findings are predictable when one considers that Extension's institutional mandate is closely aligned with core elements of an optimal adult learning environment – a respectful, non-hierarchical interaction with landowners, and the type of pragmatic, contextually oriented subject material that adult learners typically desire (Extension Committee on Organization and Policy 1985).

These results do not imply that regulatory agencies do not provide valuable services, or that they are inherently hindered from developing a style of information transfer appreciated by more forest owners. These results do indicate, however, the wisdom of realigning institutional foci to more closely address forest owner expectations, and also of retaining a politically neutral entity such as Extension in the available pool of information providers.

It is important to note that, except from their consultants, most of the forest owners we interviewed did not describe a need, or even a desire, for a close, ongoing, personal interaction with their information providers – a level of service that most institutions could never realistically provide. Instead, many owners only called upon natural resource management institutions when undertaking some sort of regulated forest practice upon their property. When forest owners did interact with these agencies, however, they sought what might be best termed "professional courtesy". The cultivation of such a setting does not require complicated changes in institutional practices or staffing. It simply requires that institutional employees understand and are willing to foster the elements of an effective learning atmosphere.

Networks as an avenue for learning exchange: Certain subsets of forest owners – notably the non-industrial tree farmers, industrial companies, and certain Tribal groups – displayed a strong sense of occupational community and a related inclination to prefer others from their community network as information sources. Network members were often perceived as most likely to empathetically share the owner's 'way of knowing' (Feldman et al 2006), and to provide commensurately relevant information. Many forest owners within our sample pool who described networking as an important information source could be considered 'best managers'. Information targeted to such individuals is likely to be shared and trusted by a broader community than information provided to an individual outside such a network (Bowers 2000, Feldman et al. 2006, Weber and Khademian 2008). Blatner et al. found that 'joiners' in the Washington Farm Forestry Association, Washington's largest organized group of non-industrial forest owners, tend to share similar goals and use their organization both as an information source and as a guide to other sources (2004a:140).

Networks present a dynamic and flexible opportunity for information providers to more efficiently transmit information to a wide range of individuals (Weber and Khademian 2008:334, Feldman et al. 2006:96). Many professionals we interviewed also demonstrated a strong tendency to network with their own peers, and a related sense of occupational community. They often described their peer network as their preferred, and often primary, source of information. It should therefore be fairly easy for professionals to understand this phenomenon among forest owners, and to perceive its potential in information exchange. Often, the professionals named by forest owners as

popular information sources were simply individuals who had succeeded in earning some degree of ‘membership’ status and related respect within a forest owner network. They had then parlayed this respect into an opportunity to present new forest management ideas to key individuals in the network, who in turn began advocating them to others.

Conclusions and Implications:

A number of excellent studies have examined forest owner preferences among information *delivery* formats such as printed materials, workshops, field visits, internet, or other media (e.g. Cartmell et al. 2006, Magill et al. 2004). Few, however, have examined forest owner expectations of individuals who *deliver* the information. Ours is the only study we have found that explores the possibility that forest owners expect professionals to deliver not only information, but also the classic social elements of a good adult learning environment.

This study found that institutions working with private forest owners may face an unexpected layer of social complexity in the process of information exchange. Conventional credentials such as “peer review”, “scientific credibility”, and “professional reputation” used within the scientific community were often insufficient to establish the credibility of institutional personnel and information with many forest owners, particularly owners without their own professional natural resource management backgrounds. Instead, when non-professional forest owners felt unqualified to personally evaluate the scientific credibility or technical merit of new resource management information, many fell back on something they *did* feel qualified to assess: their social impressions of the

attitudes and intent of the information deliverer. Forest owners sought evidence of reciprocal respect, professional courtesy, and situational empathy from their information providers. When these elements were present, many forest owners said they were more likely to adopt the information brought by the provider.

When these elements were absent, however, many owners, particularly among the NIPF group, said they were more likely to reject not only the provider, but also the information. If they were unconvinced that the information provider was empathetic to their situation and had their best interests in mind, many forest owners said they were less likely to trust or adopt their recommended forest management practices. Consequently, many non-professional forest owners did not consider information sources readily interchangeable. They commonly expressed strong preferences for some individuals and institutions, and resisted or avoided others. Some were also willing to turn to non-scientific sources for information or guidance when institutional professionals failed to embody the qualities of respect and situational empathy they sought.

These findings suggest that an important prerequisite for effective information exchange between natural resource professionals and forest owners is simply the ability of professionals to understand and cultivate core elements of a good adult learning environment (Knowles 1980 and 1984, Vella 1994, Daniels and Walker 2001). These include reciprocal respect from the educator, horizontal rather than primarily vertical or hierarchical avenues for dialogue and information exchange, pragmatic evidence that the information 'fits' the learner's circumstances, and a willingness on the part of the

educator to try to understand the worldview of the learner. Within our study, natural resource management professionals more consistently established this type of learning dynamic with forest owners whom they were more likely to approach as peers – those owners who had professional backgrounds in natural resource management, or unusually impressive levels of experiential expertise. Among non-professional forest owners, however, particularly within the NIPF group, many – although certainly not all -- professionals were creating a much less consistent learning environment, one that lacked these elements and thus often engendered frustration and even resentment. As a result, these professionals were only sub-optimally effective at convincing owners to willingly adopt the information they recommended.

Natural resource professionals additionally need to recognize that learning is a multi-phased process (Kolb 1984, Daniels and Walker 2001). Many professionals in our study overlooked the pitfalls of neglecting early phases of the learning cycle, particularly in terms of failing to demonstrate “why” new information and regulations are relevant before pressing forest owners for implementation or regulatory compliance.

Natural resource professionals can also benefit from understanding the positive implications of an “occupational community”. Many of the forest owners we interviewed, particularly among the industrial, tribal, and NIPF ‘tree farmer’ categories, exhibited a strong preference to turn to a network of peers as a primary information source. Natural resource professionals may be able to greatly enhance their effectiveness at information transfer by earning “membership” within such networks and thus becoming part of their preferred information base.

It is highly likely that these results and implications are not unique to the State of Washington. As Mellow reveals, “being professional” requires a different touch when interacting with rural laypersons in general (2005:68). Professional training and rural landownership are couched in such disparate social contexts that blending them may create inevitable challenges. Professionals are taught to respect and accept such things as empirical data, and professional and scientific credentials. This paradigm is often foreign to rural communities, where residents customarily adhere to a very different set of acceptance criteria such as friendship, kinship, practical experience, and neighborliness.

Our results indicate that an important part of “being professional” when working with forest owners is simply fostering a good atmosphere for adult learning. The hierarchical intellectual distance characteristic of the “expert/’non-expert” relationship can be counterproductive. Instead, natural resource professionals need to cultivate the more empathetic, mutually respectful dialogue long recognized as preferred by adult learners. In other words, institutions working with forest owners may need to focus their attention as keenly upon earning the acceptance of the owners as upon managing the forests. “It is of paramount importance that professionals helping NIPF owners understand the objectives and interests of the owners” (Blatner et al. 1991:94). As one forest owner we interviewed concluded: “It’s all about relationships.”

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Chapter 6

PUSH, OR PULL? DISINCENTIVES AND INCENTIVES IN NATURAL RESOURCE POLICY

Abstract: Interviews with 109 private forest policy stakeholders in the State of Washington provided extensive insights into the challenges associated with private forest regulation. Using "grounded theory" methodology, we developed this data into several new theories, which are discussed in separate manuscripts. This paper summarizes the major findings of the entire study, and weaves them into a three-way approach for modifying and improving conventional approaches to private forest regulation.

Key words: environmental policy, private forests, policy reform, forest regulation, forest owners

Introduction:

The effort to balance the public need for healthy forests with the individual rights of private forest owners generates ongoing controversy in the United States. There are no easy or standardized solutions, and the current spectrum of policies ranges from minimal to extensive governmental supervision depending upon locale. Traditional command-and-control policy, originally developed for the public domain, is typically the regulatory instrument of choice (Harrington et al. 2004). In most instances, the policies in use on federal and state public forests are simply extended to include private forests.

The results of this study suggest, however, that the markedly different social and legal context of private forest ownership justifies a modified regulatory approach. The "command-and-control" strategy was developed to apply generalized standards of

improved management to vast areas of public land overseen by a limited number of agency staff (Vig *et al.* 2003; Fiorino 1995.) It is most effective at providing a 'broad brush' of forest protection to lands owned by a large and fairly distant public.

Private forests, however, embody a very different set of social and physical characteristics, and therefore present a commensurately different set of opportunities and challenges. Parcels are small, each is owned individually and managed separately, and many owners or their employees tend to be directly involved, keenly interested, and closely familiar with their owned landscape. Furthermore, the legal rights inherent in private land ownership present a continual puzzle to policymakers, who must juggle the rights of the individual with the rights of the public. Consequently, the private forest context is better suited to a "fine brush" approach to forest conservation, one scaled to be attentive to localized differences. The challenge, then, is to accomplish landscape-level forest protection for the benefit of the public without overstepping the legal and ethical consideration due to the individual forest ownerships.

This paper briefly outlines a three-way matrix of tools for modifying and improving the private-land application of the prevailing command-and-control approach to forest regulation. These tools include a reorientation toward greater distributive equity in the regulatory impacts affecting forest owners (Chapter 3), a format for creating more positive relationships for learning and information exchange with forest owners (Chapter 5), and a way to refocus policy from the coercive or 'disincentives' approach inherent in conventional command-and-control policy to a more 'incentives' oriented variant that

fosters voluntary good stewardship on the part of forest owners (Chapter 4; Gootee et al. 2006; Gootee et al. 2008).

This paper builds upon several important grounded theories that emerged from our larger study of Washington State's private forest regulatory system (Chapters 2, 3, 4, and 5), and weaves them into an overarching recommendation for a modified strategy of private forest regulation.

A Brief Summary of Literature Used Throughout the Study:

In the United States, early efforts at environmental protection were limited almost entirely to the public domain. "The first and still most common type of policy instrument is some form of direct regulation of the action of firms and households. This is often referred to as 'command-and-control'…" (Harrington *et al.* 2004:1). Reactive more often than proactive, most such policies are catalyzed by a perceptible decline in resource health, and structured in the form of prescriptive standards for improved management combined with compliance enforcement (Ribe et al. 2002; Macdonnell *et al*. 1993).

By the mid-1900's, increasing public interest in environmental health led to heightened scrutiny of resource management practices on private lands. The State of Washington led the way in 1946, implementing the nation's first forest practices law to include private lands (Dana and Fairfax 1980:266). By the 1960's, the science of ecology added impetus to the idea of regulating private forests, as society grew more aware of the importance of managing ecosystems at large, cross-boundary spatial scales (Kohm *et al.* 1997; Kimmins 1997). One by one, additional states began folding private lands into their forest regulatory policies.

The predominant “command and control” or “managerial” style of policymaking “…emphasizes the technical aspects of regulatory policy and identifies the need for expertise both as a structural barrier to and substitute for democratic participation” (Williams and Matheny 1995:11). Although often effective at improving the health of natural resources, this paradigm has generated mixed results at best in terms of social support and enthusiasm. Recommendations for change abound (e.g. Durant *et al.* 2004; Chertow and Esty 1997). In particular, many scholars and policy analysts advocate more devolved control and greater social responsiveness (e.g. Weber 2003; Lowry 2003).

An important point upon which these and many other authors concur is that, while there is significant justification for the recent trend toward social inclusiveness, governmental influence remains helpful. Governmental oversight and infrastructure are often the best venue for ensuring accountability for environmental protection outcomes (e.g. Durant *et al.* 2004; Rabe 2003; Kilgore *et al.* 2003).

We recommend a variant of this latter strategy: a hierarchical, enforceable system of fairly traditional governmental regulation that prevents poor private forest stewardship, supplemented by a varied palette of outcome-oriented policy tools providing proactive forest managers with stronger system of incentives and rewards for good forest stewardship.

Research Method and Study Context:

Using the well known “grounded theory” (Glaser and Strauss 1999; Clarke 2005) method of inductive, qualitative research, we interviewed 109 forest stakeholders in the

State of Washington. The state's long-standing reputation as an innovator in private forest regulatory policy makes it a useful example for policymakers and analysts elsewhere. Its current regulatory package is among the most comprehensive in the nation (Creighton and Baumgartner 2005: 192).

"Grounded theory" sample populations are selected purposively. The researcher begins with a few key individuals recognized as particularly well-informed about the relevant issues. Additional interviewees are then selected by means of chain referral as the researcher follows trails of information. New respondents are sought until further interviews are generating only repetitive data. The sample size and composition are therefore determined by the emergent data, rather than statistically or randomly pre-selected. The results of a grounded theory study are not suitable for statistical or numeric comparison. Instead, they provide a deep and highly nuanced pool of information about a complex and multi-layered subject.

Our interview respondents represented a broad spectrum of experiential and professional backgrounds, including industrial, non-industrial, and tribal forest owners, consultants, policy advisors, state and federal land management agency employees, and members of relevant special interest groups. Many individuals played an active role in Washington's forest policymaking system. The interview process was ongoing from September 2004 through December 2006. All interviews were confidential.

Data were analyzed using the technique of "constant comparison" characteristic of the "grounded theory" research method (Glaser and Strauss 1999). As observable patterns began to emerge early in the data collection process, they were tested with

additional interviews and observations. Responses were continually sorted, categorized, and analyzed for patterns and themes of commonality from which new grounded theory could be built.

Results:

The diverse stakeholders in our study included individuals who design Washington's private forest policies, administer those policies, and are regulated by them. Taken together, the breadth of experience of these stakeholders provided a holistic view of the State's private forest ownership context, including the regulatory challenges within that context, and regulatory concepts that are variously proving more and less successful in meeting them. Their combined input points to the merit of re-focusing of private forest policy to include a broader consideration of the situational context of private forest ownership. This is a shift from the purely "push" strategy of traditional command-and-control policy, which focuses on creating disincentives for poor environmental stewardship, toward a modified strategy that incorporates more "pull", by creating more positive incentives for *good* stewardship

The private forest ownership context*:* Perhaps the only legitimate generalization that may be drawn about private forest ownerships is that they are far too diverse to be generalized. Within our sample, very few properties could be considered similar to another. Even parcels that shared basic ecological similarities bore the distinctively different signatures of the diverse management goals and interests of their respective owners.

This element of ‘difference’ was also strongly apparent in the regulatory outcomes experienced by each ownership. The State’s Forest Practices Rules affected each parcel distinctively, based upon the physical distribution of natural resources on the land, and on what the owner wished to do with those resources (Chapter 3). Forest owners in need of information about forest regulations and management often had greatly dissimilar experiences in the process of information transfer (Chapter 5). And, based upon their unique financial and other personal circumstances, each owner was variously more or less able to utilize policy instruments that the State has tailored for private forest owners (Chapter 4; Gootee et al. 2008; Gootee et al. 2006). In short, it was clear that any particular private forest owner could expect his/her personal experience within the regulatory arena to be different from other owners’ experiences.

The effect of the ‘learning environment’ upon forest owners’ willingness to adopt new forest management information*:* The forest owners in our sample revealed a strong link between their social impressions of the motives, attitudes, and intent of an information provider, and their willingness or lack of willingness to adopt information from that provider. Many forest owners actively sought information providers who offered an atmosphere of learning exchange characterized by classic elements of a good adult learning environment (Knowles 1980 and 1984; Vella 1994; Rogoff 1984, Kolb). Elements of central importance to these forest owners included situational cognition; empathy; a respectful, non-hierarchical opportunity for two-way learning; clear evidence of the practical usefulness of the new information and related management recommendations; and an ability to tailor information to the forest owner’s

current phase of readiness within the learning cycle. Information providers who failed to realize the significance of these elements were often resisted or rejected by the forest owners.

Regulatory concepts for the private land context*:* The policy instruments affecting private forest owners utilized four widely disparate conceptual approaches:

1. Disincentives for poor stewardship, i.e. classic 'command-and-control' regulation. This well-established and widely-known strategy is the foundation of the State's Forest Practices Rules (WAC 222, 2001). The Rules are detailed and prescriptive, and administered and enforced by governmental agencies. Forest owners in our sample reacted to them variously, depending upon how the Forest Practices Rules affected their particular property and/or blended or did not blend with their management goals and expectations (Chapter 3). For example, forest owners disinterested in timber harvest were less concerned about prospective regulatory restrictions on timber harvest than were owners who wished to harvest their timber and had been accustomed to doing so with fewer restrictions in prior decades.
2. Incentives for good stewardship provide tangible rewards for forest owners who engage in approved forest management practices. Examples include cost-sharing agreements, and conservation easements including the innovative Forest Riparian Easement Program (FREP) (WAC 222-21). The FREP pays qualified non-industrial forest owners for the market value

of the standing timber that the owner is required to leave unharvested within protected riparian management zones. In exchange, the forest owner enters into a 50-year agreement to manage the timber in accordance with State expectations.

Incentives programs tended to be quite popular among most forest owners in our sample. A few owners, however, objected to the concept of conservation easements because of the implication that land was better served by minimal or no management than by active, recurrent management. Most of this subset of owners preferred cost-sharing agreements oriented toward active management. Some among this subset, though, pointed out that cost-sharing agreements carry their own share of challenges. These challenges arise because most cost-sharing programs are funded with “soft” money, i.e. budgets that are typically unpredictable from one year to the next. Consequently, owners who favored long-term planning strategies sometimes described cost-sharing provisions as useful when the programs coincidentally fit an owner’s short-term management needs, but not reliable as an incentive for longer-term planning of resource improvement projects.

Some policy advisors and resource professionals also objected to conservation easements, but for somewhat different reasons. They believed easements excessively favored some individuals over others, were too easy to abuse, and/or were too costly to taxpayers. Some forest

owners, policy advisors, and resource professionals believed Alternate Plans (WAC 222-12-040) were a much more satisfactory all-around solution because they could provide site-specific, ecologically responsible forest management, along with needed regulatory relief to a landowner, at a greatly reduced cost to the State. Under an Alternate Plan the forest owner may be able to achieve a degree of financial relief by gaining State permission to carefully extract some otherwise-restricted resources, thereby reducing the amount of financial relief that might otherwise be needed in the form of a FREP or other conservation easement payment from the State.

3. ‘Removal of disincentives’ for good stewardship. Disincentives for good stewardship are increasingly recognized as inherent in certain forest regulatory laws, for example those pertaining to endangered species protection. A forest owner who improves habitat and attracts an endangered species will be subjected to tighter regulations requiring the protection of that species.

    To address the regulatory disincentive to create habitat for northern spotted owls and marbled murrelets, the State has developed two programs, the Cooperative Habitat Enhancement Agreement (CHEA) (WAC 222-16-105) and the Landowner Option Plan (LOP) (WAC 222-16-100). The programs exempt the landowner from the potential of an increased level of regulation. They have not proven popular with

landowners, and have gone virtually unused. Quite a few of the agency employees we interviewed speculated that this lack of interest from forest owners was linked to a lack of interest in sensitive species, and/or to a reluctance on the part of forest owners to tackle the procedural challenges of the programs, since both programs require the owner to prepare an environmental impact assessment.

The forest owners, however, painted quite a different scenario. In general, forest owners greatly preferred the concept of 'incentives' over that of 'removing disincentives'. The owners who knew of CHEA's and LOP's believed the lack of use was due more to distrust of government than to resistance to sensitive species or procedural complexities. Forest owners doubted that the government would keep its promise to refrain from new regulations. Several owners substantiated this argument by pointing out that Habitat Conservation Plans, which similarly address habitat protection for at-risk species, are being used by a number of landowners despite the fact that the HCP process is at least as complicated, if not more, than the CHEA and LOP processes. We suggest that a key difference between these programs, and a key reason for their disparate levels of adoption by forest owners, is that HCP's utilize an 'incentives' approach, while the CHEA and LOP utilize the much less popular tactic of "removing disincentives".

4. Opportunities for individualized, owner-driven, site-specific management. These include widely-used concepts such as Stewardship Plans, which work within the prescriptive Forest Practices Rules, and less-familiar options such as Alternate Plans (WAC 222-12-040), which work beyond them.[12] Habitat Conservation Plans are another widely familiar example.

   The Alternate Plan concept was popular with many of the forest owners we interviewed, but most considered HCP's too complicated for all but the most well-to-do or professionally well-qualified forest owners. The Alternate Plan concept was also increasingly accepted or supported by many natural resource professionals and other stakeholders, many of whom described initial skepticism that the program would maintain high levels of ecological protection.

Regulatory challenges within the private forest ownership context: The lack of consistent regulatory outcomes among forest owners poses a primary challenge for policymakers. Our study results revealed, however, that although policymakers have recognized and begun to address key inequities between broad categories of forest owners, the additional, serious layer of inequities occurring at the individual ownership level is not being as clearly identified or remedied.

[12] Alternate Plans permit a forest owner to vary from any of the State's established Forest Practice Rules, if the landowner can demonstrate that their proposal can be expected to provide levels of ecological protection equal to or better than those that would be obtained under the Rules. The state provides a comprehensive interdisciplinary, interagency review, and promises a short turn-around time of only 30 days for a 2-year permit application, or 45 days for a 5-year application.

For example, the State has recognized that the NIPF group as a whole is being more severely and negatively impacted by the forest regulations than the industrial forest owner group (WA-RCW 76.13.100). These heavier impacts are due in part to the fact that NIPF's own smaller parcels of land, and typically have more limited financial and professional resources. To help remedy the problems faced by the NIPF's, the State has developed a Small Forest Landowner Office, and also programs such as the FREP and Alternate Plan option intended specifically to better meet the needs of these smaller forests. The approachability of the Alternate Plan option, however, is closely related to a forest owner's access to professional help, which in turn is closely related to scope of the forest operation and/or to the financial resources of that forest owner. Consequently, the program is much more easily used by industrial than non-industrial owners, and among non-industrial owners appears to favor those with sufficient financial resources to afford a consultant.

The FREP, by contrast, is more equally accessible to all NIPF's with riparian resources, because the State contributes most of the costs of the application process. A financially well-to-do or professionally competent forest owner therefore has no advantage over one with fewer financial resources or limited forestry experience. The FREP only deals with riparian habitats, however, and therefore presents a different type of inequity among forest owners. It favors owners impacted by riparian regulation, but leaves other owners with different, heavy regulatory losses without relief because there is no comparable program to compensate for their particular type of problem.

These types of inequitable regulatory outcomes can be exacerbated by the inequitable experiences that forest owners often encounter during information transfer (Chapter 5). A forest owner's ability to navigate the regulatory system is closely linked to the quality of information available to them. Less experienced forest owners can find themselves at a disadvantage, either because they do not know where to turn for information, or because they are often less likely to be accepted into a professional or other experienced peer network of information exchange.

Policymakers face a dual challenge when attempting to design regulatory strategies -- and regulatory relief strategies -- for private lands: Every property is unique, and every owner is unique. Private forest regulatory policy therefore needs to address not only the ecological complexities of the properties, but also the social complexities of the forest owner population. Many policy advisors within our sample said they were increasingly aware that forest policy needs to recognize forest owners as not one target audience, but many. Washington State's Alternate Plan option, FREP, LOP, and CHEA represent a significant and thoughtful attempt to address several of these target audiences. These are important and worthwhile programs, and the fact that they are producing some unintended social consequences in no way diminishes their importance. All of them are subject to ongoing review by the State, and there is every reason to believe that the formal Adaptive Management provision that pervades Washington's forest policymaking system can enable adjustments to them as necessary.

Discussion:

The classic, command-and-control strategy of regulating by providing broad-brush, punitive disincentives to poor stewardship remains a valuable tool for protecting forest sustainability in the private land context, particularly when forest owners are personally indifferent to conservation. Command-and-control regulation has some serious shortcomings, however, in relation to forest owners who are willing or pro-active good stewards. Consequently, we suggest supplementing it with other, more positivist policy options that can re-scale regulation to the individual property level, capitalize upon voluntary good stewardship, distribute regulatory impacts more equitably, and reposition owners as allies rather than obstacles to good management.

The command-and-control strategy of providing disincentives for poor stewardship has another widely recognized and serious shortcoming in that it is ironically susceptible to producing unintended disincentives for *good* stewardship. Examples abound in both state and federal policies. For instance, most threatened and endangered species regulations are structured so that discovery of an at-risk species on a private property produces an array of new restrictions. These may be at odds with the accustomed management practices of the property owner (Weber *et al.* 2005). The owner may therefore become alienated from any desire to participate in species recovery strategies. The law, in effect, has created a disincentive to good management.

This type of policy phenomenon is widely recognized, but our study revealed a different and important nuance: there is a strong link between these types of unintended disincentives and the problem of inequitable regulatory outcomes among private landowners. What is generally not well understood is the fact that a primary reason an

owner may regard such restrictions as punitive is because they are inequitable. Regulatory restrictions are typically scaled to the size, sensitivity, and relative importance of the regulated resource – the more important the resource, the more restrictive the regulation. The owner of a more strictly regulated property is at a disadvantage compared to others who own properties that are less affected. Furthermore, the disadvantaged owner is often legally helpless to remedy the situation. This strategy produces an inherently inequitable outcome among landowners.

Consequently, this strategy of "regulating by disincentive" may imply that the private forests with the most sensitive habitats – those presumably most in need of ecological protection – may be among those most vulnerable to producing owners frustrated or discouraged by regulation. It follows that owners most frustrated or discouraged by regulation are among those most likely to resent, resist, or avoid compliance, or to stop owning forestland.

The phrase "removing disincentives" has become commonplace in the policymaking lexicon, and discussion of this strategy often surfaced spontaneously in our interviews. Policy analysts point out its merit as a mitigation tool that can help address negative regulatory consequences for stakeholders, and also as a means of retrofitting a policy without requiring a full revision or re-legislation (Fiorino 1995). The forest owners in our study often regarded this policy strategy of 'removing disincentives' with suspicion, however, and indicated reluctance or unwillingness to participate in programs founded on such a premise. This was primarily due to their lack of confidence

that the governmental regulatory entities would not restore the disincentives at some future point in time.

By contrast, the results of our study revealed a strong support among forest owners for the strategy of regulating with ‘incentives” for good management. We suggest that this strategy can also more easily be designed to produce more equitable outcomes, because programs can be designed to be evenly accessible among the group of affected owners. Furthermore, the ‘incentives’ approach clearly resulted in forest owners who are more enthusiastic about participating in measures to conserve resources. In short, the ‘incentives’ approach relies on positive, rather than negative, motivation, and appears to be producing more positive outcomes, both socially and ecologically.

Conclusion:

Used alone, the command-and-control approach to private forest regulation changes the behavior of forest owners with a ‘hammer’ – and in the process often bruises the owner’s attitude toward forest stewardship. If, however, command-and-control policies are supplemented with policy options that mitigate inequitable regulatory outcomes, offer forest owners a positive learning atmosphere, and provide incentives for good stewardship, policymakers can harness the power of enthusiasm.

It is widely understood that voluntary good stewardship of the environment is more socially, ecologically, and administratively effective than reluctant, enforced compliance. This is particularly true in the private land context, where the landowner is the agent most directly and efficiently able to care for a particular land parcel. The

results of this study provide policymakers with an integrated, three-way approach for encouraging landowners toward good stewardship. 1. prepare natural resource professionals for effective information exchange with forest owners by familiarizing them with the core principles of a good adult learning environment. 2. recognize and fairly mitigate the inequitable social outcomes that inevitably arise from environmental policy due to natural variability of the landscape, flaws in policy design, and/or differences in the circumstances or goals of individual landowners. 3. re-scale policy from the broad, blanket approach best suited to large public ownerships, and fit it to the highly localized and individualized context of private land ownership. This may be accomplished through a variety of types of policy instruments that modify, but do not necessarily replace, an overarching system of more traditional regulatory control. Tools currently being tested for this purpose include Alternate Plans and variances, conservation easements, cost-sharing programs, and regulatory waivers for landowners who demonstrate a proactive willingness to engage in habitat improvements. Other programs that foster owner-to-owner mentorships, and offer formal recognition for good stewardship should also be considered.

The current language of environmental policy reflects a subtle cultural misperception: the language describes only non-human natural resources. It speaks of "forest" regulation, "wildlife" regulation, "air" or "water" regulation. In fact, however, policy does not regulate "natural resources" or "environments", but "people". At root, environmental policy is a society's effort to change the way humans behave toward and interact with their ecosystem. To be optimally effective, therefore, it must address the

human resource in a manner that holistically encourages the desired outcomes in human behaviors and attitudes.

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