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Drivers of natural resource-based political conflict

MARTIN NIE

College of Forestry and Conservation, University of Montana, Missoula, MT 59812, U.S.A.
E-mail: mnie@forestry.umt.edu

Abstract. Why are some natural resource-based political conflicts so controversial, acrimonious and intractable? What factors drive these conflicts? And what turns the common political conflict into the high-level, symbolic, and sustained political conflict? This paper conceptualizes the 'drivers' of natural resource-based political conflict in the United States. It examines the dominant themes, patterns and underlying logic of these conflicts. The very nature and context of these cases sometimes promise intractability, but they are also often 'wicked by design' in that political actors, institutions and policy processes often compound them. The following drivers of conflict are discussed: scarcity, the policy surrogate, the sacred and spiritual and importance of place, policy design (historical and budgetary), policy frames, scientific disagreement and uncertainty, electoral politics and the use of wedge issues, political and interest group strategy, media framing, adversarial governance, Constitutional, statutory and administrative language, and distrust. The paper finishes by placing natural resource-based conflict in political perspective.

Introduction

Environmental political conflict seems to be increasing in number and intensity. Many environmental conflicts could be categorized as distributive or regulatory policy debates. Who gets how much water and when? or who must do what and why? are questions characteristic of such conflicts. The battle lines and political motivations are easy to identify. Irrigator A believes she is entitled to more water than irrigator B, and corporation X does not want to bear the costs of installing pollution equipment benefiting community Y. But there is another type of environmental conflict that is more difficult to explain. Adding endangered salmon to the irrigation conflict, for example, changes the scope and stakes of the conflict in important ways. Highly controversial political conflicts over natural resource policy have become the norm. Take the following cases for example: drilling for oil in the Arctic National Wildlife Refuge (ANWR), wolf and grizzly bear reintroduction in the American West, salmon recovery, tribal sacred places and species, motorized recreation on public lands, and wilderness and roadless lands designation and management, among dozens of others.

Political conflicts like these are often 'wicked' in that they go beyond scientific, economic and techno-rational analysis and methods of problem solving. They are often value-based political conflicts grounded in competing deep-core human values. Unlike 'tame' policy/planning problems, these issues are often extremely controversial, acrimonious, symbolic, intractable, divisive, and ex-

pensive. Furthermore, trends and projections promise more controversy and increasingly wicked policy problems. Human population growth, resource scarcity, urbanization, trends in public lands recreation, sprawl and the loss of open space, and an array of other factors will serve as the backdrop for future political conflict.

Background

Why are so many natural resource policy issues so controversial, acrimonious and intractable? In answering this question, and focused on the U.S. context, I find it useful to make a distinction between primary and secondary drivers of conflict. The former refers to what is so often at the core of these conflicts: competing human values. The latter refers to more secondary sources and causes. They may not be at the core of these conflicts, but their presence and importance is unmistakable. There are numerous case studies examining natural resource-based political conflicts. While there is a need for even more detailed case analysis, it is also necessary to organize further what work has already been done. The following accomplishes this by conceptualizing some of the dominant themes and 'drivers' of natural resource-based political conflict in the U.S. It examines the patterns and underlying logic of these conflicts.

Clearly there are other ways of conceptualizing such conflict.[1] Yaffee (1997: p. 329), for example, emphasizes the importance of 'fundamental behavioral tendencies at many levels of human social organization' as a way to think about the problems underlying the current state of environmental policy processes. A number of behavioral biases often lead to policy impasses (and poor choices) according to Yaffee (1997). These include short-term rationality, competitive behavior, fragmentation of interests and values, fragmentation of responsibilities and authorities, and fragmentation of information and knowledge. Perhaps, says Yaffee (1997: p. 329), this is why so many environmental policy issues have a sense of deja vu about them: ' "Didn't we just deal with this? Didn't we already solve this?" ask decision makers and the public alike. Battles over national forest plans, debates over national energy policy, and conflicts over "solving" the water problems of the arid West all represent recurring choices, made with considerable effort, whose temporary solutions never seem to deal with the underlying problems.' As Yaffee's work demonstrates, the conceptualization drawn here is but one of several that are possible. Nevertheless, the drivers that follow most definitely have an impact on levels of conflict and controversy.

This paper is organized into three broad sections. First, an overview of the 'wicked' policy problem is provided. It then answers the question of why these conflicts are so often intractable by conceptualizing the dominant drivers of natural resource-based political conflict.

These issues are 'wicked by nature' and 'wicked by design.' In other words, the very nature and context of some cases and issues essentially promise

political conflict – they are wicked by nature. But they are also wicked by design in that political actors, institutions and decision making processes often compound them. Finally, the paper finishes by briefly placing conflict in political perspective. The goal of the paper is to provide a useful and general conceptualization of natural resource conflicts, not to capture or exhaust all of the possible contextual factors that go into them. As such, I paint with a rather broad brush – a roller in fact – but do so understanding that such an approach inevitably leaves out many of the rich particulars and nuances that make these conflicts unique. And as will be seen, this is not a strict categorization, for most tough conflicts will be driven by numerous interrelated factors.

Missing from the following discussion is any in-depth analysis of the role that values and culture play in natural resource-based political conflict (see, for example, Kellert, 1996; Kempton, Boster and Hartley, 1995; Milbrath, 1984; Olsen, Lodwick and Dunlap, 1992; Paehlke, 1989). They are not being slighted; rather, it is simply beyond the scope of this paper to give detailed attention to this first-order driver. Nonetheless, many natural resource disputes are really fundamental disagreements over values. As Aldo Leopold (1966: p. xvii) summarized, 'There are some who can live without wild things, and some who cannot… . The whole conflict thus boils down to a question of degree. We of the minority see a law of diminishing returns in progress; our opponents do not.'

Complicating things, however, is that these conflicts are sometimes less about mutually exclusive values than they are about conflicting priorities and competing economic interests (Schmidtz, 2000). The question of whether one can afford environmental values is an important one. Furthermore, sometimes these conflicts are more about governance – conflict stemming from how decisions are made – than they are about values or interests. Given this then, the trick is to figure out: (1) when such conflicts are driven primarily by competing and mutually exclusive values, (2) when they are driven primarily by value trade-offs and problems stemming from the ranking of these values, (3) whether they are due to competing values or to competing interests, and (4) when they are driven primarily by more controllable factors, such as adversarial political institutions and processes, problematic statutory language, budgetary incentives, and divisive interest group strategies.

The wicked policy problem

A useful distinction can be made between wicked and tame policy problems. Scientists and engineers are often given a clear mission and asked to answer tame policy problems in which there is a right or wrong answer. The task at hand may be difficult and certainly complex but is nevertheless tame. Not only is the problem well-defined but the problem-solver knows whether or not the problem has been solved. Wicked problems, on the other hand, characterize most public policy and planning issues. Rittel and Webber (1973: p. 160) explain:

> As distinguished from problems in the natural sciences, which are definable and separable and may have solutions that are findable, the problems of governmental planning – and especially those of social or policy planning – are ill-defined; and they rely upon elusive political judgment for resolution. (Not 'solution.' Social problems are never solved. At best they are only resolved – over and over again.)… . We use the term 'wicked' in a meaning akin to that of 'malignant' (in contrast to 'benign') or 'vicious' (like a circle) or 'tricky' (like a leprechaun) or 'aggressive' (like a lion, in contrast to the docility of a lamb).

A few cues provided by Rittel and Webber (1973) help explain how wicked and tame policy problems differ. First, there is no definitive formulation of a wicked problem. In fact, 'the formulation of a wicked problem *is* the problem!' because those that get to define the problem have the upper-hand in forwarding their proposed solution (and political agenda) to the problem (p. 161). Second, wicked problems have no 'stopping rule,' meaning that the problem-(re)solver never quite knows when the job is done. Work stops not because the problem has been solved but because of external factors such as limits on resources, time and patience. Third, solutions to wicked problems are not true or false, but good or bad. Such judgments vary of course depending on interests, values, and ideology. Fourth, every wicked problem is essentially unique. Many of these problems have important contextual differences and distinguishing properties that make classification, standardizing and one-size-fits-all approaches problematic. Finally, every wicked problem can be considered to be a symptom of another problem. The search for a causal explanation of a policy problem reveals important interconnections between lower-level and higher-level problems. At what level do planners and policy makers tackle an issue? Rittel and Webber (1973: p. 165) explain that 'the higher the level of a problem's formulation, the broader and more general it becomes: and the more difficult it becomes to do something about it. On the other hand, one should not try to cure symptoms: and therefore one should try to settle the problem on as high a level as possible.' These and other characteristics help differentiate wicked and tame policy problems.

The challenges posed by wicked policy problems have been widely recognized. Harmon and Mayer (1986) examine organizations and public administration from a wicked problem perspective. Fischer (1993: p. 172) suggests that 'modern political systems have more and more been confronted with a new category of "wicked" or "intractable" problems that seem to respond only to increased doses of [public] participation.' In examining the problem of siting hazardous facilities and risk assessment, he says that conflict surrounding NIMBY issues 'are almost invariably described with terms such as "undisciplined," "uncontrollable," "recalcitrant," and "unmanageable" ' (2000: p. 129).

The wicked policy problem is clearly evident in natural resource policy, like planning-intensive public forest management. Allen and Gould (1986) describe how finding the most economically efficient method of constructing a road

Table 1. Drivers of natural resource-based political conflict.

Driver	Attributes & identifiers
Scarcity	What's at stake? Scarcity theory of value/marginal valuation Increase in political symbolism Human population growth On global, regional & local level Over-appropriation metaphor
The policy surrogate	Political strategy Entangled-multidimensional policy problems Broader sociopolitical & cultural conflicts
The sacred & spiritual, & importance of place	Tribal resource management American Indian sacred sites Intrinsic environmental values Fundamental moral & religious views Non-secular place attachment
Policy design	Historical context ('lords of yesterday') 'Checkerboard' land distribution Agency incentive structures Incompatible legislation-budgets Lack of legislative direction in how to resolve political conflicts
Policy frames	Policy controversy as frame conflict Institutional actors sponsoring conflicting frames Assumptional beliefs & perceptions Political interpretation of facts & evidence Narrative policy stories Use of symbols & synechdoches
Scientific disagreement & uncertainty	Scope of adversarial analysis/dueling scientists/science wars Uncertainty about what is at stake Relationship to decision making The different aims of science, politics & management Framing conflict in scientific-technical terms
Electoral politics & the wedge issue	Issues-conflicts as wedges to win-keep political advantage Conflict & political campaigns Political showmanship The political spectacle
Political & interest group strategy	Issues-conflicts for political-institutional advantage Organizational maintenance Environmental crisis-orientation Mirroring & matching communication strategies
Media framing	Schema of press: focus on game of politics Drama, conflict & polarization as prerequisites for news worthiness The adversarial frame: dichotomy/duality & extremism/confrontation

Table 1. (Continued)

Driver	Attributes & identifiers
Adversarial governance	Constitutive factors The pathologies of natural resource governance Governance & interest group strategy Institutionalization of conflict The procedural republic Ballot initiatives Federalism & sovereignty Agency decision making processes
Constitutional, statutory & administrative language	The implications of vague or contradictory language-mandates Conflict from compromise legislation Complementary opposites Contradictory mandates Lack of concrete guidance in how to resolve conflicts Trade-off avoidance Vague and ambiguous agency philosophy
Distrust	Lack of trust between political actors makes conflict resolution, problem solving & constructive communication difficult As driver and/or byproduct of conflict Importance of history As impediment to experimentation, collaboration & new approaches to problem-solving Related to litigation & adversarial approaches to governance

system or determining the most productive rotation length for a timber stand are tame problems, in part because they have right or wrong answers. But as Allen and Gould explain (1986: p. 21), these are not the most challenging tasks confronting policy makers and planners: 'The efficient road system is only relevant, however, after a decision has been made that it is appropriate to build a road in that particular drainage. Similarly, optimum rotation means nothing unless timber harvesting is desired for that stand.'[2]

Conceptualizing the drivers of natural resource-based political conflict

Scarcity

Controversy and intractable conflict will increase as more of the natural world becomes endangered.[3] The question of 'what's at stake' is important here. American wilderness advocates, for example, are continually engaged in high-level political conflict over the 2.39% of the lower 48 states that is federally-designated wilderness (Landres and Meyer, 2000).[4] They are also trying to limit additional roadbuilding by the U.S. Forest Service – an agency that maintains and administers approximately 386,000 miles of roads on National

Forest lands (USDA, 2000: pp. 3–21). Other advocates are fighting for the 1% of tall grass prairie remaining in the U.S. (Bush, 2003: p. 36). And conflict over grizzly bear conservation has been quite controversial in part because they have been eliminated from all but approximately 2% of their historic range in the lower 48 states (USDI, 2000: pp. 1–5). These and other examples – endangered wild salmon runs, number of undammed rivers, remaining old growth, and so on – clearly explain why these conflicts are so intractable: in many cases, there is not much left to fight over, and what remains is ecologically and symbolically significant. When many scientists and conservationists believe that the evolutionary process itself is threatened, the stakes of the debate have to be raised.

Nash (2001: pp. 345–46) uses the economic concept of marginal valuation to help explain the value of wilderness (and civilization). Put simply, wilderness becomes more valuable as civilization becomes more abundant and nature more scarce. He (2001: p. 249) contends that 'a simple scarcity theory of value, coupled with the shrinking size of the American wilderness relative to American civilization, underlies modern wilderness philosophy.' He goes on to apply the theory to various issues such as international eco-tourism (e.g., exporting African wilderness to those with lots of civilization and little wild land) and why urbanites are so often wilderness advocates while those living in or near wild places are not.

Scarcity also helps explain the level of controversy over 'the last best places.' This means that those last national and regional 'gems' and symbolic landscapes will gain additional value and become more embattled in the future. Wilderness areas, the 'crown jewels' in the U.S. National Park system, the Rocky Mountains, the Adirondacks and northern New England in the Northeast, the Everglades, the Appalachians, northern Minnesota in the Midwest, and Alaska on a national level will gain additional symbolic value and its attendant conflict and controversy. Alaska provides a case in point. Debate over ANWR, the Alaskan rainforest, and the state's wolf population, among other issues, is terribly controversial in part due to the state's 'last frontier' status (real or imagined). As the U.S. (Alaska included) becomes more developed, paved, concentrated and homogenized, conflict over Alaska – 'the last frontier' – will increase as well.

Political conflict over northern Minnesota's Boundary Waters Canoe Area Wilderness (BWCAW) provides another illustration. It is the most litigated, legislated, heavily visited and controversial wilderness area in the United States (Duncan and Proescholdt, 1999; Proescholdt, Rapson and Heinselman, 1995). This is in part due to the scarcity of protected wilderness east of the Rocky Mountains. At roughly one million acres in size, the BWCAW is one of the largest wilderness areas east of the Rockies. There is a special attachment to this place, especially for those in the Midwest who have little wild country and federally-designated wilderness within a day's drive. Wilderness advocates are continually fighting over the 1.4% of the state that is federally designated wilderness – 813,631 acres out of 51,205,760 total acreage in Minnesota (Cody, 1995; see USDA 2000 for lower estimated roadless lands in the state). They

view threats to this wilderness not as one threat to one wilderness, but rather one threat to the only major wilderness area in the region.

Scarcity is also related to human population growth, and much of this growth is taking place in the 'new' American West. Along with this growth comes the tendency of Americans to join interest groups fighting for their preferred special or public interest. More groups are making more sophisticated demands from the same resource base. With each national forest debate, for example, one could easily list the dozens and sometimes hundreds of user groups claiming some sort of stakeholder status: the corporate timber industry, local timber contractors, environmentalists (from birders to Earth First!ers), school districts, recreationists (from off-road-vehicle proponents to low-impact advocating hikers to equestrians), and so on.

Trends in motorized recreation further compound the scarcity issue (and perceptions of). Motorized vehicles, from jet skis to snowmobiles, make a place smaller. That is of course part of their attraction: users like being able to travel through more space more quickly. But that is also why they have generated such backlash and animosity among others. Human-powered users of public lands, from hikers to canoeists, feel as though places shrink when motors are allowed: the peak that once took two days to summit now takes two hours, and the chain-of-lakes that once took a week to paddle now takes a day. Human-powered users, displaced by motorized recreators, then concentrate in those places free of motors, meaning more users in smaller spaces.

Water conflict in the American West is often due to its over-appropriation – there are more legal rights to water than there is water. Much of the same thing is happening on public and private lands, especially in the American West. The region, put simply, is over-appropriated: more people want more things from the same resource base. This scarcity factor will seriously challenge all forms of conflict resolution, including collaborative conservation, because many conservationists believe that there is not much left to compromise. They also want compromise to be seen contextually, that compromise on top of compromise eventually leads to nothing left to compromise. They ask us to envision a piece of paper. Now rip it in half. Rip it again. And again. Now what is left? The logical conclusion from such an activity illustrates the relationship between scarcity and conflict.

The policy surrogate

Relatively straightforward policy problems can turn wicked when they are used by political actors as a surrogate to debate larger and more controversial problems. Political strategy is involved, but so too is the entangled and interconnected nature of most environmental policy problems. One is essentially forced to wander into the wicked world of wilderness and public lands ranching politics if they are serious about carnivore conservation for example. Or how can one not get into dams and water politics if they are serious about salmon recovery?

The northern spotted owl, for example, played the surrogate role during the 'forest wars' in the Pacific Northwest. For environmentalists, the owl was an important social and ecological indicator species. Some groups also used the owl as a way to preserve additional wildlands and challenge federal land management and endangered species policy and practices in general. The owl issue was in fact many issues in one says Yaffee (1994: pp. 53–54):

> What often appear to be simple conflicts pitting one interest against another, such as owls versus jobs, are often multidimensional conflicts between a variety of substantive, political, personal, and bureaucratic interests. As a result, such conflicts draw the attention of hundreds of individuals, groups, and agencies, all with a variety of motives. As these issues become intertwined, each subissue becomes harder to separate and deal with. In aggregate, seemingly small issues often generate large stakes, making resolution difficult.

And how do we settle such conflicts? As Yaffee (1994: p. 56) notes, we do not get together as a nation and decide what our values are every year: 'Instead, the choices we make as a society do this implicitly. This mode of value legitimation makes seemingly small management controversies much more significant than they might otherwise be.'

Primm and Clark (1996) and I (Nie, 2003) find much of the same in our analyses of conflict over carnivore conservation. Several broader issues like debate over the Endangered Species Act (ESA), ecosystem management and use of public lands manifest themselves in the issue of carnivore conservation. As Primm and Clark (1996: p. 1037) put it, 'Wrangling over carnivore conservation is also often a "surrogate" for broader cultural conflicts: preservation versus use of resources, recreation-based economies versus extraction-dependent economies, urban versus rural values, and states'-rights versus federalism.'

Recent controversy over fire in the West provides another example of the policy surrogate. A number of political actors have used the debate over fire management as a springboard to rehash (re-stoke) old conflicts over forest management practices. The U.S. Forest Service (USFS) has used fire to spur a larger debate over what it believes is excessive environmental analysis required by various rules and laws, cumbersome decision making processes, and overly litigious environmental strategies (see USDA Forest Service, 2002). Thus the fire story is not just about fire and threats to Western communities, but rather one over fire, environmental analysis, the administrative appeals process, the appropriate role of the courts, public participation, the democratic process, and the role of the U.S. forest system in the 21st century. These surrogate issues should be debated because they seriously affect, or are affected by, fire policy and management, but they also enlarge the fire conflict and make it more difficult to resolve (contain).

The sacred and spiritual, and importance of place

Some natural resource issues and conflicts have sacred and spiritual dimensions that make them incredibly wicked and difficult to resolve. A number of examples are provided by debates over American Indian sacred sites: rock climbing on Wyoming's Devil's Tower (Bear's Lodge), using waste water to make snow for skiing on northern Arizona's San Francisco Peaks, tourism and protection of southern Utah's Rainbow Bridge, mining along Montana's Rocky Mountain Front, and building roads and dams that would desecrate or flood sacred lands are a few recent cases (Brady, 1999–2000; Carmean, 2002; Smith and Manning, 1997; Winslow, 1996).

Fish and wildlife policy is also affected by the spiritual and sacred. Wolves are a spiritual totem for the Nez Perce of Idaho and the Ojibwe of the Lake Superior region (Nie, 2003; Wilson, 1999). For the Lakota Sioux and other members of the Intertribal Bison Cooperative, saving Yellowstone bison from slaughter means saving the spirit of the bison (Cromley, 2002), and for many tribes in the Pacific Northwest, salmon recovery is a religious and cultural imperative. Environmental conflicts like these are also religious conflicts, and religious conflicts are wicked by their very nature because deep-core values, beliefs and human dignity are at stake.

Of course one does not have to be an American Indian to believe that places or things can be sacred or have spiritual qualities. 'Dam Hetch Hetchy! As well dam for watertanks the people's cathedrals and churches, for no holier temple has ever been consecrated by the heart of man' writes John Muir in defending Yosemite and wild places everywhere (Muir, 2000: pp. 3–8). In wilderness is God, said Muir, using a language of 'mountain temples,' 'sublime rocks,' and the need for 'places to play in and pray in, where nature may heal and cheer and give strength to body and soul alike.' Many contemporary environmentalists have continued Muir's tradition, although their language is now a mix of science, economics and the spiritual or intrinsic.[5]

Anthropological work also shows that environmentalists are not the only ones to hold such views. Kempton, Boster and Hartley (1995: pp. 2–3), for instance, find that American perspectives on global environmental change 'are based on fundamental moral and religious views on the relationship between nature and humanity, other species' rights, humanity's right to change or manage nature, and our society's responsibility to future generations.' Some policymakers are also not afraid to talk openly about spiritual values and environmental protection. Former Secretary of the Interior Bruce Babbitt, for example, stated that the ESA should be defended for spiritual reasons: it was 'the Noah's ark of our day' (quoted in Nelson, 2000: p. 67). Nelson (2000: p. 68) argues that 'American environmentalism might best be understood as in its essence a new religious movement in a nation famous for its religious crusades.' He sees this willingness to bring up religious considerations as partly constructive because 'it recognizes that social values are at the heart of much of current environmental policy making' (2000: p. 68), but he is also critical of 'environ-

mental theology' in part because he believes that it is the value foundation of what he considers the misguided wilderness and ecosystem management policy espoused by the USFS – an agency he would like abolished.

Some conflicts might also be driven by a non-secular special attachment to a place. One does not have to speak in terms of sacredness or spirituality to have a fundamental and moral concern about an important species, landscape and/or community. The continuing controversy over mining and drilling along Montana's Rocky Mountain Front is a case in point, as are the increasing number of place-based environmental groups that fiercely try to protect a part of the world. It also helps explain why many displaced rural workers, timber workers in the Pacific Northwest for example, are so reluctant to leave their community and place to find work elsewhere. Again, there is a lot at stake in these conflicts. The good news, however, is that these special attachments may help us move toward a common ground based on a mutual love of place (Kemmis, 1990).

Policy design

Many sustained conflicts are due to policies designed in a particular historical context. History often explains their perpetuity. Wilkinson (1992) shows how utilitarian frontier-era values were written into so many American natural resource laws, from prior appropriation to mining policy, and how these 'lords of yesterday' still contribute to political conflict and controversy. Other historical examples include 19th century land distribution policies in which states and private entities were given lands intermixed with federal lands in a checkerboard pattern that continues to cause serious conflict in the Western states.[6]

State trust lands provide another example. School lands were granted by Congress to the states when they joined the Union. Section 16 in each township was promised to the states (in the General Land Ordinance of 1785) with the stated purpose of supporting common schools and similar public institutions (Souder and Fairfax, 1996). Similar to other trust arrangements, these lands are to be managed for the financial benefit of schools, meaning revenue production, but many of these state trust lands are in isolated locations, and sometimes within national forest and wilderness area boundaries. In Utah, for example, more than 5,000 land parcels are remotely isolated in a checkerboard pattern in sections 2, 16, 32, and 36 of each township in most of Utah's public lands, a pattern that disregards road access, topography, scenic and wilderness qualities, and other environmental values (McKell and Harward, 1999: pp. 137–138). The history of school trust lands continues to drive and affect conflict over Southern Utah wilderness and monument designation – one of the longest running wilderness conflicts in the country – because these trust lands are often found within proposed wilderness boundaries. While preservationist, utilitarian and other values or interests may be at the core of this wilderness debate, the peculiar history of land ownership and management in the West continues to

affect the conflict in important ways. As the school trust land example illustrates, it would be difficult to even imagine a more conflict-prone land distribution pattern than the one currently in place.

Another example of conflict sustained through policy design in a particular historical context is provided by forest policy. The National Forest Revenue Act of 1908 and an additional act in 1911 ensured that 25% of forest receipts be distributed to county governments for public schools and roads. This was a policy designed to help stabilize the economic base of rural communities and compensate them for the limitations on the taxable land base created by federal forest designation (see Clary, 1986; Sample, 1990). Receiving most of its funding from timber sales, the national forest 25% fund provided an incentive to counties to support timber harvesting versus non-commodity types of management (Cubbage, O'Laughlin and Bullock, 1993). This policy exacerbated forest-based political conflict because forest-dependent communities had a strong economic incentive to maximize timber production. Calls for lowering production levels were thus seen not only as a threat to logging jobs, but to the community's children, infrastructure and future as well. Illustrating the fact that drivers of conflict can be changed, the Secure Rural Schools and Community Self Determination Act of 2000 was passed as a way to stabilize county payments. It gave counties the option of sticking with the 25% fund model or choosing another payments formula established by law.

Policies designed with problematic budgetary incentives perpetuate many natural resource conflicts. The Knutson-Vandenburg Act of 1930, for example, requires timber purchasers to pay a portion of the sale costs into a fund that goes back to the USFS and is used for regeneration and may be used for wildlife and recreation management and administration. This policy provides a budgetary incentive for the USFS to harvest timber, even if it means the federal government loses money from below-cost timber sales. 'This incentive is responsible for many, if not most, of the controversies and conflicts over national forest timber cutting' says O'Toole (2002a; see also 1988). Similar incentives are written into other natural resource and wildlife policies, from some grazing fees and oil and gas revenues going to the Bureau of Land Management to hunting and fishing license fees going to state wildlife agencies (O'Toole, 2002b). Incentives like these often perpetuate conflict because an agency often finds itself incapable (from a self-interested budget maximization standpoint) of doing something that many interests wish it would not do, and even if these incentives might not matter as much as some believe, the perception that they do still matters.

Budgets not only help explain agency behavior, but they also drive and perpetuate many of these conflicts. A pattern often repeats itself in natural resource policymaking: vague or contradictory legislative directives are followed by incompatible budgetary mandates. Forest policy provides an illustration. As discussed below, the USFS has traditionally overextended itself in implementing its multiple use directive. Despite legislation like the National Forest Management Act (NFMA) and agency implementing rules emphasizing

biodiversity, public participation, and non-commodity forest values, many of the most important forest management decisions have been made through the Congressional budgetary process. Behan (2001: p. 194) argues that NFMA is but a 'diversionary smoke screen' because the crucial forest management decisions regarding logging and road building are made in the federal budgeting process. In other words, the forest planning process did not resolve conflict because the critical decisions were being made by political representatives sitting on key resource and appropriations committees. Political interests hoping for a legislative fix to these conflicts should thus also pay due attention to the budgetary process and agency incentives.

It is also important to consider whether or not many of our natural resource policies are designed to resolve political conflicts. The Multiple Use and Sustained Yield Act (MUSYA) of 1960 provides no real guidance on how the USFS is to resolve conflict among its multiple-users. Conflict between motorized recreationists and preservationists raise even more questions. This is troubling given that this may be the intractable dispute of the future (Laitos and Carr, 1999). MUSYA and NFMA provide little guidance here according to Breazeale (2001: p. 325): 'Having to referee and resolve the conflict between recreation and preservation will require the USFS to act on little experience and with even less statutory guidance on how to resolve issues between two dominant uses.' This conflict, like others, is value-based, and current forest policy was not written to resolve value-based political conflicts. Says Breazeale (2001: p. 326), 'The management of national forests is management of value conflicts in America. NFMA, from its inception, was not intended to resolve value conflicts. NFMA was intended to keep science and politics in separate domains and allow the professionals to find the best scientific answer. However, there is no longer a separation between politics, science, and management.'

From a conflict perspective, would it be possible even to imagine a more problematic and absurd land distribution and resource policy framework than the one currently in place? While it made sense at the time, it now seems as though it was concocted with malicious intent, as a way to frustrate citizens forever and cause nightmares for resource managers. One is tempted to see it as the result of a conspiratorial bad joke played on future generations by a group of drunken legislators: 'first, let's segment the landscape like a checkerboard, with private and public lands intermixed like a crazy quilt; then, we'll give away sections of land in each township and tell counties that they have to be used to generate revenue for public schools, and of course some of these sections will later be found within wilderness areas; next, we'll create a budgetary incentive for the USFS to harvest timber, even if such sales end up losing money for the general treasury; and of course, we'll pass lots of laws that don't tell these agencies much about how they might resolve the conflicts resulting from such a problematic framework.' This is facetious and unfair to be sure, for each design had its historical context and rationality, but seen through the lens of contemporary resource conflict, the collective consequences are more than troublesome.

Policy frames

Many of these conflicts are frame conflicts in that they are part of a larger policy story told by various political actors. The framing process is one reason why so many conflicts are intractable. As Gray (2003: p. 12) explains, 'When we frame a conflict, we develop interpretations about what the conflict is about, why it is occurring, the motivations of the parties involved, and how the conflict should be settled.'

Similar to the tame-wicked distinction drawn here, Schön and Rein (1994) contrast policy *disagreements* with policy *controversies*. The former refers to disputes that can be resolved by examining the facts and evidence of the situation. Policy controversies, on the other hand, are often immune to resolution by appeal to the facts (p. 4). Parties involved in enduring policy controversies often engage in a type of selective attention. That is, they differ in what they consider to be facts relevant to the dispute, and when they do agree on the relevant facts, they often interpret them differently. Conflicting policy frames help us understand why in some conflicts it seems as though interests disagree on what they disagree about it. Schön and Rein (1994: p. 5) explain, 'By focusing our attention on different facts and by interpreting the same facts in different ways, we have a remarkable ability, when we are embroiled in controversy, to dismiss the evidence adduced by our antagonists. We display an astonishing virtuosity in "patching" our arguments so as to assimilate counterevidence and refute countervailing arguments.'

For Schön and Rein (1994: p. 23), these controversies are seen as disputes in which the contending parties hold conflicting 'policy frames,' or underlying assumptional structures of belief, perception and appreciation. Frames are 'grounded in the institutions that sponsor them, and policy controversies are disputes among institutional actors who sponsor conflicting frames' (p. 29). They are also usually tacit, 'which means that we tend to argue *from* our tacit frames *to* our explicit policy positions. Although frames exert a powerful influence on what we see and how we interpret what we see, they belong to the taken-for-granted world of policy making, and we are usually unaware of their role in organizing our actions, thoughts, and perceptions' (p. 34). The 'policy controversy as frame conflict' also helps explain what solutions are proposed by various parties. 'Their struggles over the naming and framing of a policy situation are symbolic contests over the social meaning of an issue domain, where meaning implies not only what is at issue but what is to be done' (p. 29).

Take the case of fire and 'forest health.' Debate over Western forest fires in now a debate over what constitutes a healthy forest. What interests would be opposed to healthy forests? But what does this mean? What facts and evidence are pertinent in proving health or sickness? Insects, dying trees and fire are signs of forest sickness if one sees this forest as a 'storehouse' providing multiple resources for multiple interests to promote economic growth. Perhaps this is why the controversial 1995 salvage timber rider, branded 'logging without laws' by its opponents, was defended in the name of forest health, as is President

Bush's more recent 'Healthy Forests Initiative.' But they are not necessarily signs of sickness if one views them from an ecologically-centered natural history of place (Langston, 1995 for in-depth treatment), and even if the various sides agree on what a healthy forest would look like, they usually disagree on what caused the problem and what should therefore be done about it. Are unhealthy forests due to too much intensive management and scientific and agency hubris? Or are unhealthy forests due to not enough active management and human manipulation? The solutions to this messy 'forest health problem' logically flow from its policy framing.

Policy frames can be seen as a type of story that is told by various political actors, and these narrative policy stories, including the use of symbols and synecdoches to tell them, help explain why some controversies are more wicked than others. Narrative policy or 'causal' stories are told by policy participants as a way to explain how the world works (Stone, 1988). Similar to crafting a novel, political actors use narrative story lines and story telling devices as a way to help define problems, lay blame and responsibility and thus shape the policy agenda. Definitions of policy problems usually have a narrative structure with a beginning, middle and end. Furthermore, says Stone (1997: p. 138), 'They have heroes and villains and innocent victims, and they pit the forces of evil against the forces of good. The story line in policy writing is often hidden, but one should not be thwarted by the surface details from searching for the underlying story. Often what appears as conflict over details is really disagreement about the fundamental story.'

Symbols also play an important function in telling these stories, and often escalate conflict (Edelman, 1964; 1971; Stone, 1988). Many contested places and species have such symbolic values attached to them. The synecdoche is another important storytelling device. This is a figure of speech in which a part is used to represent the whole. They are important symbolic devices, says Stone (1997: p. 137), 'because we often make policies based on examples believed to be representative of a larger universe.' Their use in politics is pervasive. Examples are often served up as typical cases of a larger problem. 'These typical cases then define the entire problem and frame the policy response' (Stone, 1997: p. 145). One common genre, says Stone (1997: p. 146), is the horror story: 'Politicians or interest groups deliberately choose one egregious or outlandish incident to represent the universe of cases, and then use that example to build support for changing an entire rule or policy that is addressed to the larger universe.'

The symbol, story and synecdoche are ubiquitous in natural resource conflicts. The explosive debate over ANWR, for example, is partly explained by its symbolism and its role in larger policy stories told by competing sides. It is quite clear that environmentalists have drawn a line in the sand (or permafrost) and see this place as inviolate. They are not only afraid of what might happen to this place – 'America's Serengeti' – but what might happen to sacrosanct places that were once seen as off-limits to commercial exploitation. They tell the policy story of a society without limits. They have also raised the stakes of the

debate. The League of Conservation Voters (LCV), for example, which publishes an annual scorecard of how lawmakers vote on environmental legislation, sent a letter to all Senators saying that votes on new drilling in Alaska would count double. The LCV political director says the issue has become symbolic: 'It is a litmus test to see who favors a flawed energy policy that relies on fossil fuels and who supports a newer, cleaner energy policy' (Rosenbaum, 2002). Congressional opponents of drilling, even a small amount, see it as 'the equivalent of running a razor blade across the face of the Mona Lisa' (Seelye, 2002). Drilling proponents, on the other hand, including the Bush administration, see the issue as a touchstone and a matter of principle (Rosenbaum, 2002). They define the problem quite differently, casting it as a national security issue: the U.S. will be more secure and less dependent on foreign sources of oil if we open up ANWR.[7]

Debate over wolf and grizzly bear reintroduction provides another example of how symbolism can turn environmental conflict wicked (Primm and Clark, 1996; Nie, 2003). Both species are potent symbols of American wilderness and are seen as such by important stakeholders. The wolf and grizzly bear are an important part of the fight over wilderness preservation and roadless areas. For many wildlife advocates, the wolf and bear symbolize wilderness – how close we have come to losing it and the possibility of safeguarding its future. These symbols, moreover, resonate with millions of Americans and are thus used by conservation groups like Defenders of Wildlife and The Wilderness Society as a way to build and retain membership.

Park politics provides another example. Yellowstone National Park has long been a principal battleground and lightening rod for controversy, partly due to its historic status as the world's first national park, and second, because it is among the few relatively intact ecosystems left in the lower 48 states (see Primm and Clark, 1996b). As noted by Keiter (1991: p. 3), 'debate over how these lands are to be managed has escalated into a symbolic issue of national and international significance. Indeed, a controversy like the one surrounding the summer 1988 fires illustrates the scientific, philosophical, legal, and economic complexities confronting today's land managers, who are responsible for maintaining the Yellowstone domain in the face of a growing population with increasingly diverse expectations and values.' Issues surrounding wolf reintroduction, grizzly bears, bison and elk management, fire as an ecological process, preservation and 'natural regulation' policy, and ecosystem management, among others, are made even more wicked because of Yellowstone's symbolic status (Keiter, 1997). Pyne (1998) also shows how various historical events and cultural influences, including the role of art and literature, played a significant role in turning the canyon into the *Grand Canyon*, and what this inevitably meant for 20th century environmentalism.

Scientific disagreement and uncertainty

Natural resource policy and management decisions are increasingly characterized by a type of conflict in which the contested role of science is often a large part. These conflicts most often find their way into the judicial system where judges increasingly rule upon scientific grounds (Jasanoff, 1995). This means that conflicts often have a particularly American flavor, combining our faith in science and technology with our love of litigation.

Competing scientific claims and a type of adversarial analysis seems to have become the norm in natural resource policymaking and management (see Busenberg, 1999). Debates over old growth, salmon, endangered and threatened species, and fire and forest health are a few recent examples. Or witness the number of times that the National Academy of Sciences has been asked to intervene and clarify the scientific record in various natural resource disputes – and how often the conflict went unresolved. In short, these 'science wars' have complicated an already complex decision making environment. Uncertainty also affects conflict because we are often unsure of what is at stake. Will a particular decision imperil an endangered species or prove beneficial or simply not matter? We usually cannot be certain and thus call for more research. Meanwhile, decisions have to be made, and the slow scientific process may raise more questions than it answers. Given this, it is also a useful way to forestall a decision that some actors might not want made.

Scientific disagreement and the other drivers of conflict discussed herein are interrelated in numerous ways. First, our political representatives often frame value and interest-based political conflicts as scientific ones and thus postpone or escape responsibility for making the tough choices required of them (Wagner, 1999). Our natural resource agencies, the USFS most prominently, also have a deeply-seated penchant for defining resource problems and solutions using a language of expert-driven 'scientific management.' This leads to the pervasive feeling among many actors that these agencies 'just don't get it.' Other political actors, including environmental groups, often do the same, so we end up debating relevant but not always central issues at the core of a controversy. Sometimes we get bogged down in technical disagreements when the real issues at play go unexamined. The story is usually the same, and I would be a rich man if I had a quarter for every time I heard the line: 'the other side is just not using good science.' What happens, then, is that different groups use their science (and economic analyses) to forward their preferred policy objectives. This is not to suggest that 'best available science' should not be an important component to these conflicts, but that we should pause before asking science to resolve them.

Electoral politics and the wedge issue

Political actors often use symbolic issues as wedges. They are used as a way to win or keep office and show key voters, constituents and interests on what side one stands. It is a sort of political showmanship that has the effect of deepening conflict. It is the grist in the political cartoonists' mill and helps explain why some environmental issues become resurrected on a 2-4-6 year political campaign timetable. Politicians often craft a 'political spectacle' as a way to (re)-construct social problems, crises, enemies and leaders (Edelman, 1988). Creating a successful wedge is often the goal of such political strategy.

Environmental politics in Minnesota provides a good example. Republicans, and even some Democrats, have consistently used BWCAW and Voyageurs National Park management issues as a wedge – a way to divide Democrats in northern Minnesota. This mostly rural region – which has a strong public lands, timber, mining, and union presence – has traditionally swung to the Democrats in the past. While fiscally liberal, however, the region is also rather socially conservative and has pockets of vocal environmental opposition, especially when it comes to public land issues. This unique political context has put those like the late Senator Paul Wellstone in a difficult political position, for he had to win the union-friendly north and the environmental vote to carry the state. Understanding this, Republicans regularly use various wilderness, park and public lands issues as a wedge – a way to divide the democratic northland and remind voters how they differ. The effect is not only to breath life into once dormant issues, but to consciously make certain issues and places as controversial as possible for short-term political advantage.

Political and interest group strategy

Politicians are not the only actors to use environmental issues for political or institutional advantage. Environmental interest groups often use particular issues, species or controversies as a way to gain or maintain group membership and raise money (from dues and/or foundation support). 'Organizational maintenance' and other economic factors are a fact of life for environmental and other groups; thus, success is partly measured by the economic support of donors and growth of the organization (Shaiko, 1999). This helps explain the crisis-orientation of Washington-based environmental groups. This is not to suggest that these crises are fabricated or have no basis in fact, but rather to question why some crises seem never to go away and why others are never identified. This crisis orientation, in my opinion, is often appropriate due to the scarcity factor discussed above, but it can also be abused by groups, resulting in lost credibility, questioned legitimacy and a 'boy who cried wolf' type of public perception toward some groups and their tactics. It also helps explain why more chronic and root-level problems, like human population growth, are often not prioritized.

Professional Washington-based environmental groups have been criticized from within and without for such crisis-oriented strategizing. Knudson (2001), for example, recently wrote a series of controversial articles focused on 'Environment, Inc.' Part of the series focused on this crisis-oriented approach to fund-raising. For example, Defenders of Wildlife, says Knudson, focuses on wolves and sensational stories about them because of its effectiveness in fund raising and increasing membership. It is not that much different from the classic Greenpeace harp seal campaign in which brutal images of bloodied seals were used to raise awareness and money.

Crisis is an important part of the policy story told by members of the wise use movement as well (Switzer, 1997). These stories run the gamut, from typical political hyperbole to full-fledged militia-type conspiracy theory. Whatever the merits and need for such a crisis-orientation, for environmentalists and wise-users, for purposes here, it is enough to point out how such strategy makes some issues quite controversial. Former Chief of the U.S. Forest Service, Jack Ward Thomas (2000: p. 6), for example, believes that polarization intensified in the 1980s with the rise of the 'conflict industry' that 'featured paid advocates fighting for the objectives of groups on the extremes of the debates.' He believes that the volatility surrounding federal land management 'could be eased by concerted efforts to bring voices of moderation into the debate to provide credible alternatives to the "spin doctors" that make their living by and through dissemination of propaganda and the creation and exacerbation of conflict. These gladiators get paid to win, not to search out consensus' (Thomas, 1996: p. 18).

Framing is also important here. Lange (1993) documents how interest groups used an 'interactive logic' of mirroring and matching of each other's strategies during the conflict over old growth and the northern spotted owl in the Pacific Northwest. An important part of these competing information campaigns included framing and reframing the debate and selecting either high or low numbers to support a group's position (e.g., job losses and remaining old growth). Each group also vilified opponents and ennobled itself. Says Lange (1993: p. 249), 'Both sides claim they have "compromised"; both hold that "science" favors their position; both imply "morality" and "the common good" as their guiding forces.' They also simplified and dramatized the conflict by using images and slogans such as 'owls vs. man' (the title of a *Time* magazine article on the subject). A mirroring and matching strategy of lobbying and litigating then followed. Note that the goal here according to Lange (1993) is not to communicate with each other, but to the public and political decision makers. It also has a type of spiral effect in that one group's communicative strategy is based on the previous or predicted moves of the other group. This sort of interest group strategy and dysfunctional communicative behavior not only deepens conflict but makes it difficult to stop once it starts.

Media framing

The media often play a central role in exacerbating wicked environmental conflict. Unfortunately, they often do more to obfuscate than clarify the central issues involved. Value conflicts and serious policy choices are seldom analyzed. Instead, the media focus on how these issues are playing politically. The focus is not on the 'what' of public policy, but on the 'hows' of politics. The schema of the press means it pays attention to the game of politics; thus, its horserace-like coverage – who is ahead, behind, by how many poll points, and why (Fallows, 1997; Patterson, 1994). Environmental conflicts simply become part of this never-ending game analysis.

Political actors also understand what it usually takes to get attention from the media, and thus take a step closer in having their issues placed on the governmental agenda. Drama, conflict and polarization are often prerequisites. One of two things then follows: political actors frame an issue in the most polarizing way possible in order to gain media attention, or the media take an environmental issue and make it as polarizing as possible in order to 'infotain' their customers. Either way, it makes for increased conflict and controversy.

Central here is how the media often frame environmental news. 'The adversarial frame' is one dominant and highly formulaic construction that frames environmental issues 'as seemingly irreconcilable conflicts between neatly defined, diametrically opposed groups' (Karlberg, 1997: p. 24). Karlberg finds that dichotomy/duality and extremism/confrontation are two defining features of how the media frame environmental news. A dueling perspectives template is used to portray two distinct, mutually exclusive and stereotyped camps. Conflict is then dramatized by emphasizing extreme and confrontational statements and actions. The implications are serious. First, the media essentially require conflict and extremism for an issue to be newsworthy. As Karlberg (1997: p. 25) explains, 'Extremism becomes a ticket for admission to the public sphere.' Also important is how such a simplistic and dichotomous frame limits the range of perspectives and decision alternatives that are presented to the public. Rarely is an issue so simple as 'jobs versus owls' or 'use versus preservation.' A range of alternatives are therefore excluded from public discourse. Furthermore, notes Karlberg (1997), the underlying values, ethics, needs, motives, aspirations and fears among stakeholders are not part of this frame; thus, whatever shared values and common ground that might exist among stakeholders is lost.

Adversarial governance

Many of our adversarial institutions and processes encourage disputants to start from the extremes and this often makes environmental conflict more polarizing than necessary. The American Constitution and its philosophy of a 'compound republic' sets up a system of vertical (federalism) and horizontal (separation of powers) division that essentially promises perpetual conflict. The

American rulebook on how to settle conflict essentially promises more of it, but it is not just the Constitution that is worth considering here. Superimpose on this rulebook legislative processes, the proliferation of interest groups, political parties, administrative rules, and other substantive and procedural requisites and we get 'the institutionalization of conflict' (Brunner, 2002 for in-depth treatment of the problems and pathologies of natural resources governance). There is also an important dynamic between structures of governance and group strategy. In other words, wicked political conflict is often the result of adversarial group strategy, and this strategy is deliberately chosen to fit adversarial political institutions and processes.

Environmental policymaking processes provide myriad examples. Such processes often set up a type of 'structured incapacity' that exacerbates conflict and makes finding the common interest and promoting productive interaction difficult (Higgins, 2002). Public hearings, for example, have been one popular way agencies have solicited public comment, which they are often required to do by law. But 'public hearings' are often a misnomer because little hearing is actually done. Instead, the process encourages more conflict, divisiveness, grandstanding, and broad one-sided policy statements. As Kemmis (1990: p. 57) notes, they can be seen as one part of Sandel's (1984) 'procedural republic and the unencumbered self': a process that encourages citizens to behave unencumbered by any sense of responsibility to one another. Participants often see this process as a way to make policy demands, and they expect their adversaries to do the same, all the while seeing the agency or decision maker as the final arbiter of competing claims. The incentive is not to accommodate opposing views, but to provide input that is unequivocally for or against something. After all, if the decision maker is going to consider, and perhaps even weigh public input, better make that input as zero-tolerance as possible.

Direct democratic processes provide another example. Ballot initiatives have increasingly been used as a way to deal with environmental conflict. For example, 30 wildlife-related ballot measures were voted on through 2001 (Initiative and Referendum Institute, 2001), and more than 19 of these took place after 1990 (Minnis, 1998). Whatever the merits of the ballot initiative as a way to make public policy, it is an adversarial and dichotomous (yes/no, for/against) zero-sum approach that is inherently divisive. Furthermore, those groups engaged in these campaigns are compelled to politic in a way that deepens these conflicts; thus, issues are often framed to polarize, vilify and over-simplify.

The American system of federalism also sets up conflict over sovereignty, and as the history of international relations makes clear, questions over sovereignty raise the stakes of the debate. While cooperative behavior and harmonious relations exist, the federal government, states and tribes often appear locked in conflict over sovereign rights to land, water and wildlife. Western states and interests have long complained of the pervasive federal presence and its attendant environmental laws and regulations for example, but sovereignty continues to affect how natural resource conflicts are understood, from endan-

gered species management to more recent calls for more decentralized, regional, collaborative resource management (Kemmis, 2001).

Some administrative decision making processes also exacerbate conflict. Wondolleck (1988: p. 107), for example, illustrates how the decision making process used by the USFS to resolve national forest disputes 'proceeds as if governed by a natural law of "conservation of conflict." ' For her, this process is at the root of the impasse in managing national forests. As structured, says Wondolleck (1988: p. 87), the agency's decision making process is divisive: 'It promotes distrust between parties, it encourages adversarial behavior, it leads to extreme position-taking and, ultimately, it ensures opposition to whatever decision is rendered.' She also maintains that the process 'often avoids issues underlying specific disputes, in favor of attention to more immediate or site-specific questions' (p. 98). While many changes internal and external to the agency have taken place since Wondolleck's study (1988), USFS decision making, from the public comment process to the administrative appeals process, still figures prominently in many national forest disputes.

Constitutional, statutory and administrative language

This section might be more appropriately titled: 'to the extent practicable,' 'when in trouble, delegate,' or better yet, 'when in doubt, mumble.' Vague or contradictory legislation drives and perpetuates many conflicts and often turns the value-based political conflict into the sustained value-based legal-administrative conflict. It is beyond the scope of this paper to examine in any detail why this happens, and whether it is a good or bad for democracy; instead, it simply examines the impact of constitutional, statutory and administrative language on political conflicts.

Challenges stemming from vague or contradictory legislative directives are quite common. In a pluralistic community, as noted by Lasswell and McDougal (1992: p. 26), 'technical rules of law are commonly created in sets of complementary opposites, of highly ambiguous and incomplete reference, to express all pluralistic interests… .' These 'complementary opposites' often put federal land management agencies in a difficult position. As noted by Coggins, Wilkinson and Leshy (2001: p. 8), 'Historical missions and practices have been severely eroded by new statutes, and new missions have been charted, but congressional directives often have held out little concrete guidance in concrete situations, and procedural requisites have proliferated. Interests over a wide spectrum forcibly argue that their conception of the public interest should prevail in the circumstances, and all sides are willing to resort to higher forums if dissatisfied with decisional results.' The implications are of course serious. Not only does such language and inconsistent directives put managers in a bind and ensure endless conflict, but as Brunner (2002: p. 30) points out, it also undermines democratic accountability. After all, if Congress gives vague and/or contradictory directives, and these directives are not effectively implemented, who is responsible?

Sometimes conflict is caused, or at least not resolved, due to what is in a law. The National Park Service Organic Act of 1916 is often cited as an example. Congress mandated that the national parks were to be managed 'to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.' Is this a contradictory mandate? How is the Park Service to balance preservation with recreation and public use? Legal scholars, judges and historians have made it clear that there is no contradiction here, and that the Service's primary obligation is to preserve natural conditions (Keiter, 1997; Winks, 1997). Nevertheless, various interests have used the 'recreation mandate' as a way to challenge park decisions they do not like, including in the recent case of snowmobiles in Yellowstone. Even the Park Service, says Keiter (1997: p. 654), 'has frequently subordinated its statutory preservationist obligation to its public use obligation.' The Service's elimination of predators, suppression of fire, introduction of exotic game fish species, and the building of railroad lines, hotels, roads and other facilities are historic examples of how the Service has long emphasized the 'enjoyment' part of its mandate.

Conflict over wilderness management provides another case in point. The 1964 Wilderness Act defines wilderness as an 'area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain.' To protect this wilderness character, the Act generally prohibits such things as roads, structures and installations, commercial enterprises, motorized equipment and the use of mechanized transport. But the Act – like most legislation forged through compromise – also made exceptions in some places for 'nonconforming wilderness uses,' such as pre-existing grazing, air access, motorboat use, water developments and a time-limited exception for mining activities (see Gorte, 1998 for list of current exemptions). Some of these exceptions are found in mandatory clauses, while others are subject to agency discretion. It is with the latter that most conflict and controversy arises (Meyer, 2000).

The political history of the Boundary Waters Canoe Area Wilderness (BWCAW) perfectly illustrates how conflict often results from imprecise or contradictory statutory language that is the result of compromise legislation. The 1964 Wilderness Act exempted the BWCAW from full wilderness status by permitting the continuation of already established motorboat use and allowing commercial logging to continue to the extent it remains consistent with 'maintaining … the primitive character of the area.' Predictably, litigation focused on mining, logging, motorboats and snowmobiles followed. Interests battled over Congressional intent, the meaning of 'primitive,' and what constitutes an incompatible wilderness use. As noted by Duncan and Proescholdt (1999: p. 626), 'The continuation of logging, mining, and motorized use in the BWCAW created fifteen years of public controversy and debate,' and ultimately led to the passage of the BWCAW Act in 1978, but even this act of Congress did not settle these disputes. While the act ended logging entirely, it only *restricted*

other nonconforming wilderness uses; thus, conflict and controversy continues over this highly symbolic and regionally scarce wilderness. (The Wilderness Society listed the BWCAW as among the 10 most endangered wild lands in 1997.)

The seemingly endless debate over U.S. Forest Service (USFS) management provides another example. Legislation like the Multiple Use Sustained Yield Act (MUSYA) of 1960, the National Forest Management Act (NFMA) of 1976, and an agency philosophy that basically promises everything to everyone ensures sustained levels of conflict among disgruntled users and concerned citizens. Hirt (1994: p. xix) concludes that the policy structure of the USFS 'essentially guarantees controversy because it embodies contradictory mandates.' With its multiple use mandate, not only does it promise timber, forage, water, fish and game, and recreational opportunities, many of which conflict with each other, but it is also suppose to regulate public uses to preserve biological integrity and forest esthetics. According to Hirt (1994: p. xxi), 'When facing conflicts among users or situations that called for a choice between production and preservation, managers adopted instead the optimistic view that choices did not really have to be made yet if foresters simply applied more intensive management.' This 'conspiracy of optimism,' as Hirt calls it, also compounds the scarcity problem discussed above. Overextending commitments to more groups wanting more things is certain to exacerbate conflict.

The management of tribal sacred places provides yet another example of the importance of language and political conflict. Take the recent controversy over the voluntary climbing ban at Devil's Tower National Monument in Wyoming. The National Park Service (NPS) asks climbers to not climb the tower during the month of June, as a way to respect the spiritual beliefs of American Indians. The NPS was sued for violating the First Amendment of the U.S. Constitution which reads in part, 'Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof.' Is this Park Service policy an 'excessive entanglement' of church and state? Or is it merely an 'accommodation' of religion, allowing for its free exercise? To answer, one must wade into establishment clause jurisprudence, a world with multiple and often conflicting interpretations of the First Amendment.

Congress has not helped resolve the conflict either, for the 1978 American Indian Religious Freedom Act (AIRFA) is often considered a broad policy statement with no effective enforcement mechanism (Carmean, 2002). Concerned about these issues, President Clinton entered the fray and issued Executive Order 13,007 in 1996. It reads, 'In managing Federal lands, each executive branch agency with statutory or administrative responsibility for the management of Federal lands shall, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites.' While certainly not empty of content, the Order's qualified and *to the extent practicable* language certainly limits its application and use as a political tool. This

case shows that while Constitutional, statutory or executive language may not always put political conflict in motion, neither does it always help manage or resolve these conflicts once underway.

Equally problematic are the sometimes unclear ideas and philosophies guiding natural resource agencies. The myriad understandings and applications of 'ecosystem management' provides an example. What does this idea mean in practice? How do managers know when they have done it successfully? Is it outcome-based or process-based? While there are consistent themes and principles separating ecosystem management from traditional resource management in the literature (Cortner and Moote, 1999; Grumbine, 1993), in practice, the distinction is often not so clear. Different applications of ecosystem management are not that surprising since this management philosophy has not replaced agency missions and mandates, but has rather been superimposed on top of them.

Why ecosystem management? Certainly part of the answer lies in the requirements mandated by the ESA and the challenges posed by transboundary environmental management, but perhaps ecosystem management was really embraced by the USFS as a way to resolve the continual conflict in which it found itself mired (Jones et al., 1995). It is quite possible that the vagueness of the term is what agencies like the USFS find most politically attractive. Instead of treating the Forest Service's embrace of ecosystem management as a rational and scientific move to a new management regime, Freeman (2002: p. 633) traces its development as a political strategy: 'Ecosystem management was an ambiguous, undefined concept that the agency could shape in the context of political events… . In the volatile and politicized atmosphere of forest policy, the Forest Service attempted to change its image by adopting a new name for its practices, resorting to the common practice of meeting conflict and crisis with vague, sensationalist political imagery and drama.'

But how do varying interpretations of ecosystem management affect political conflict? In one sense, they postpone it. As noted by the General Accounting Office (1994: p. 24), 'In the absence of a clear statement of federal priorities for sustaining or restoring ecosystems and the minimum level of ecosystem health needed to do so, ecosystem management has come to represent different things to different people.' Or as the Congressional Research Service (Corn, 1993: p. 2) put it, 'There is not enough agreement on the meaning of the concept to hinder its popularity.' But the amorphous nature of the term also causes and perpetuates political conflict. Because management success under this new paradigm can no longer be measured in board-feet or in some other easily quantifiable way, critics like Fitzsimmons (1999: p. 9) believe it is a type of dogmatic 'enviro-babble' simply masking nature worship. The vagueness of this new paradigm troubles him (1999: p. xii), for it 'portends a greatly expanded role for the federal government in resource and land use decision making throughout the nation.' The broad language of ecosystem management can also invite cynicism, even among those believing in its basic values and principles, as it becomes everything to everyone.

Conflict over ecosystem management is also compounded by the policy story and policy surrogate drivers discussed above. Some wise users allege that ecosystem management is used by agencies as a ruse for gaining control over more land (Primm and Clark, 1996: p. 147). Pendley (1995: p. 110), for example, argues that the National Park Service and its allies 'use the parks as "beachheads" to assert federal control over more and more of the West' and that the concept of the Greater Yellowstone Ecosystem is an example of such land-grabbing by 'covetous bureaucrats and environmental extremists.'

A wide-angle lens helps in understanding the relationship between political language and wicked conflict. It is not just a case of one vague or contradictory law, but multiple and often competing statutes that are further complicated by equally vague or changing management philosophies that are interpreted differently by political actors.

Distrust

Lost or diminished trust among and between governmental and nongovernmental actors is another consequence of sustained wicked conflicts. Distrust could be conceptualized as either a driver or byproduct of these conflicts. However one thinks about it, it often plays a primary and vicious role by undermining constructive debate and public inquiry. It is certainly a major obstacle in finding common ground or working compromises and in advancing innovative and experimental approaches to problem-solving. This means that there may be little interest in collaborating if such past endeavors took a wrong turn or were not faithfully implemented. Once bitten, twice shy. And adversarial and legalistic approaches to conflict resolution are the chosen venues when trust (and social capital) run low. Moreover, groups are likely to oppose any effort at giving an agency more administrative discretion and flexibility if they believe that the agency will abuse it. It also explains why so many environmental groups prefer 'legislative hammers' like the ESA and are skeptical of alternative models based on voluntary compliance.

Supporting examples are easy to find. For instance, many of those supporting the Sierra Club's end-commercial-logging campaign do so because they feel that the USFS cannot be trusted to find a reasonable and ecologically-based balance among multiple uses. They are critical of the agency's rhetorical use of 'forest health,' 'stewardship,' and 'restoration,' seeing such terminology as a cover for large-scale commercial logging exploitation. In many cases, says the Sierra Club, the USFS 'has been its own worst enemy and created tremendous distrust of forest restoration by misnaming large-scale logging projects in sensitive and controversial areas as restoration projects' (Sierra Club, 2002: p. 4). When asked why the Club supports such a controversial position, one board member cites a number of legal cases in which he believes the agency clearly misled the public. Mistrust also explains why the Forest Service, under President Bush's leadership, has faced such strong resistance to its new plan-

ning rules giving the agency more flexibility, and why so many groups are reluctant to give it any more discretionary space.

Conflict in political perspective

It is beyond the scope of this paper to answer with any justice the 'so what' and 'where to go from here' questions. That is for another paper. Nonetheless, a few points are in order that may help place natural resource-based conflict in political perspective.

One lesson that should not be taken away from this synthesis is that all conflict is bad conflict (see Coser, 1956 for the functions of social conflict). Quite the contrary, conflict is to be expected in pluralistic democracies, and is often a sign that democracy is working, not that it is dysfunctional. One is reminded of the old saw that when we like the decisions that are being made, we call it democracy, and when we do not, we call it politics. The public's aversion to conflict and disagreement is particularly troublesome. The democratic process is slow and often characterized by compromise, uncertainty, disagreement and conflict, but as Hibbing and Theiss-Morse (1995: p. 18) find in their influential study of public attitudes toward American political institutions, Americans tend to dislike such democratic processes, including debate and publicly hashing things out, seeing it not as informed debate but rather as haggling or bickering. They conclude that 'people do not wish to see uncertainty, conflicting opinions, long debate, competing interests, confusion, bargaining, and compromised, imperfect solutions. They want government to do its job quietly and efficiently, sans conflict and sans fuss. In short, we submit, they often seek a patently unrealistic form of democracy' (p. 147). Americans, they find, want 'stealth democracy' – democracy without the mess. They want, for example, both procedural efficiency and procedural equity. 'Just as people want governmental services without the pain of taxes, they also want democratic procedures without the pain of witnessing what comes along with those procedures' (p. 19).

Similar to a slow burning ground fire in some forest types, political conflict should be seen as healthy, natural and an essential part of the system. Rather than suppressing all conflict, we should encourage it to burn on a regular basis. Like fire, we exclude it at our own peril. But political conflict can also be of the unhealthy type. Letting this type of conflict burn uncontrolled is akin to allowing a very unnaturally dense forest to burn at will. Many of these wicked conflicts, moreover, are like dry lightening-caused fires: they burn extremely hot and extinguishing them is difficult.

Some conflicts might be bad for both democracy and the natural world. As noted by Schön and Rein (1994: p. 8), 'institutionalized political contention' can lead 'to stalemate or to pendulum swings from one extreme position to another, as one side or another comes to political power.' Stalemate can be good or bad depending on one's position, but extreme pendulum swings are certainly not beneficial when it comes to such things as ecological restoration, endangered

species recovery, land use planning or rural community stability. Many of our democratic institutions, moreover, have a limited capacity to manage such conflicts, and they are now seriously strained, and as Brunner and Colburn (2002b: p. 246) note, 'As competition intensifies on more policy issues, and more policy areas become congested, more groups will have to commit additional resources to realize smaller gains.'

These conflicts also seem to have their own momentum, and once in motion, it is difficult to slow them down or change their direction. Once again, there is a common pattern or logic here: the harder one interest pushes, the harder the other pulls. As discussed above, this pattern is the logical consequence of adversarial institutions and processes that encourage disputants to start from the extremes.

But complicating things is the fact that even the big conflagrations can be quite healthy from a conservation standpoint. American environmental history provides numerous examples: timber exploitation and the 'big cut' of New England and the lake states created the conflict and backlash necessary for the creation of the Forest Service and system; the historic fight over Yosemite's Hetch Hetchy valley helped set the stage for the creation of the national park system; conflict over Dinosaur National Monument and the Grand Canyon, among other places, transformed American environmentalism and the tools and strategies it uses; the high profile clearcutting controversies in the Bitterroot and Monongahela National Forests led to the passage of the National Forest Management Act, and more recent conflicts over the northern spotted owl and wolf recovery have forced agencies to think about endangered species and ecosystem management in practice.

Distinguishing between the healthy and unhealthy conflict will be more art than science, but there are questions that can be asked to help us make the distinction. The most central is this: is this conflict internally driven by competing human values or is it driven by external factors such as political institutions, processes, budgets and communication strategies that prevent the common interest from being realized? Most likely it will be driven by internal (values) and external (governance and politics) factors. Hopefully, the conflict will be driven more by the latter than former because negotiating governance may be easier than negotiating deep-core human values. Even if the conflict is more value-based, however, focusing on natural resource governance can help clarify the central values in play and help determine if they are compatible with others, and if not, what to do about it.

Another important issue for further consideration is the role of the manager and public administrator in these conflicts. They will play a role in them whether by design or by default. A rule of decision and conflict avoidance appears to be the track taken by many managers. At the very least, it is important to recognize that such conflicts and wicked problems exist, and that they cannot be resolved by wishing them away, or by casting them as technical matters to be resolved by experts, or by blaming nefarious interests for purposely trying to damage or destroy things. Administrative leadership can take

several forms, including the promotion and facilitation of substantive and constructive debate among governmental and non-governmental actors, and the constructive reframing of issues and conflicts, among others.

Using a conflict-centered approach to natural resource policy demonstrates the importance of governance *and* politics. Natural resource governance, including political institutions and decision making processes, is central, but so too are political factors like electoral politics and the use of wedges, media coverage and interest group strategies. The lesson, then, is that 'fixing' what is wrong with natural resource governance must go beyond the constitutive. Focusing on institutions, statutory mandates, administrative rulemaking, and public land law writ large, while of critical importance, is not enough. The more political-type drivers must also be seriously examined, but it is also likely that changes in politics might very well follow changes in law and governance.

Perhaps thinking of conflict in terms of drivers will enable us to match the right resolution strategy to the right driver. Of course, it is harder than it sounds because multiple drivers will be at work, and participants will not agree on what ones matter most. Nevertheless, a few examples are in order to illustrate how this conceptualization might be applied on the ground. First, if our assessment is that conflict X is driven primarily by inappropriate budgetary incentives, let us focus on how to remove or reconfigure such incentives in a way that is as mutually agreeable as possible. We might also come back time and again to the lack of statutory guidance provided by Congress, and if that is the case, let us focus our politics on Congress. What about adversarial policy frames? Increased public participation and collaborative conservation strategies might help us in redefining some intractable conflicts. And what if our assessment of a particular forest conflict is that it is driven primarily by scientific disagreement and uncertainty? First, we should ensure that the conflict is really science-based and is not erroneously framed as such. If correctly framed, we could then consider applying a number of tools that might help us with this scientific disagreement, like adaptive management strategies, forest certification, civic science, or collaborative monitoring. But what should we do if the conflict seems to be hopelessly driven by competing values? A satisfying answer is again beyond this paper's scope, but we should first ensure that an economic/interest-based or institutional/process-based conflict has not been mistakenly defined as a value-based one. If values do seem to be at the core of this conflict, we should consider moving the conflict from the impossible realm of the abstract and philosophical to real cases in real places. That is, instead of debating the meaning of nature and our place in it until we are blue in the face, let us instead just walk the ground and tell each other what we like and do not like and then see what happens.

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Notes

1. See Lan (1997: p. 30) for an overview of the conflict resolution approach to public administration and the lack of conflict studies in public administration literature. He groups conflict into four types: structured, partially structured, unstructured and revolutionary. In structured conflicts, like budget allocation conflicts within and/or between the executive and legislative branches, conflicts are clearly defined and 'the parties are fully bound by rules, social norms, and ethical standards.' In unstructured conflicts, however, 'there is no defined method, rule, or timeline for the resolution of such conflict' and 'agreed-upon rules for their resolution are often lacking.' Many natural resource conflicts are partially structured, 'with norms, rules, and regulations constraining some of the behaviors in conflict resolution while leaving others to the free choices of the individuals.' In federal forest management, for example, the U.S. Forest Service (USFS) has general authority over management decisions, but due to the National Environmental Policy Act of 1969 and the National Forest Management Act of 1976, USFS decision making must also include the public. Parties not satisfied with agency decisions and the process in which they are made can turn to other venues like the courts for resolution.
2. The wicked problem is a serious challenge to the synoptic or rational-comprehensive model of natural resource planning – a planning process that is scientifically-based and expert-driven. Multiple values and goals, competing problem definitions, varying interpretations of the public interest, lack of information, and myriad other factors require other approaches to natural resource planning and problem-solving, many of which are more inclusive and participatory in nature (Lachapelle et al., 2003; McCool and Guthrie, 2001; Wondolleck, 1988).
3. Scarcity also has the potential of turning the environmental conflict into the violent environmental conflict. Homer-Dixon (2001), for instance, makes the connection between resource scarcity and 'eco-violence' (for example, the relationship between water scarcity, migration, urbanization, tribal-cultural strife and international insecurity). A dialogue between nongovernmental experts and the U.S. intelligence community also emphasizes demographic and natural resource-based factors like water scarcity as important 'drivers' and trends that may produce future conflict and affect American natural security (National Intelligence Council, 2000). At lower levels, think of the type of struggle than often ensues among siblings over the last piece of pizza.
4. This number will not be universally agreed upon, for what about roadless lands, parks, monuments and other places that are ostensibly protected but may lack official wilderness designation? But such challenges perfectly demonstrate how political actors do not debate from an agreed upon base of 'facts' and 'evidence' (as discussed in more detail in the policy frames section).
5. Many of those critical of the environmental agenda are frustrated with the more implicit sacred and spiritual dimensions of these conflicts. One bizarre suit in northern Minnesota, for example, was filed by the Associated Contract Loggers against two environmental groups and the USFS for adopting the 'religion of Deep Ecology' in public lands timber policy (Myers, 2000). The suit, dismissed by the federal district court as falling below minimum standards, tried to define the 'timber harvest level problem' as a 'constitutional separation of church and state problem.' Loggers in this case simply tried to turn a forest management dispute into a religious one.

6. Former Forest Service Chief Jack Ward Thomas is not ambivalent about these checkerboard blocks: 'The son-of-a-bitch that invented checkerboards ought to be sitting in hell on coals roasting. For a very long time… . Let's face it: ecological systems don't come in squares' (quoted in Szpaller, 2003: p. 9).
7. Although symbols and stories are an important part of this controversy, the core conflict boils down to competing values. Even the circumspect Congressional Research Service sees it as such: 'Taken together, these issues mean that the 1002 [ANWR] debate sometimes takes on a feud-like aspect due to a culture clash: those who believe in wilderness (statutory or otherwise) as place where "man is a visitor who does not remain" versus those who place a higher value on job creation or economic development' (CRS, 2001: p. 10).

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