

Montana – A Modern Day Paradigm for Collapse?

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MONTANA – A MODERN DAY PARADIGM FOR *COLLAPSE*?

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ABSTRACT

Jared Diamond suggests that the US state of Montana is a modern paradigm for his theory of ‘ecocide’, where a society’s failure to recognise environmental degradation ultimately leads to its demise. However, Diamond’s analysis of Montana is factually flawed and lacks a historical understanding of institutions and incentives which have both caused problems and resolved conflicting ideas about how natural resources such as water, forests and minerals, should be managed. Montana is actually a modern paradigm for why the changing preferences and values of any society are best accommodated by institutions that enable values to be expressed through voluntary decision-making rather than through the political process.

INTRODUCTION

Chapter 2 of Jared Diamond’s *Collapse* utilises the US state of Montana as a modern paradigm for his theory of ‘ecocide’ – when people inadvertently destroy the environmental resources on which their societies depend.(Diamond, 6)

In January 2005 at a lecture about *Collapse*, I was intrigued by Diamond’s discussion of Montana. I (a second-generation Montanan) asked Diamond for his opinion about how a society, such as that of Montana, might be able to resolve conflicting ideas (especially where they relate to environment and resource issues) and to accommodate conflicting values.

Diamond glibly replied that inevitably some values must be sacrificed to others; while this is unfortunate, it cannot be avoided. Despite having written this long tome, it seemed clear that Diamond’s research had not led him to consider any genuine answer to the question. After reading the long tome, it seems clear that Diamond intends to alarm the reader with interesting and imaginary facts presented in a static fashion.

This article critiques Diamond’s analysis of Montana and concludes that the state is indeed useful as an example of environment and resource issues, but for different reasons than Diamond outlines. Modern Montana illustrates the urgent need for decentralised, institutional approaches which enable the state’s residents to coexist even though they may hold different values.

WHY MONTANA?

According to Diamond, Montana suffers from a host of problems – immigrants, global warming, water scarcity, unhealthy forests, endangered and invasive species – which make it useful a modern microcosm of the larger phenomena that Diamond hopes to prove in *Collapse*. In addition to analysis of those issues, he relies on anecdotes from Montana residents who represent the state's dynamic populace: first-generation ranchers, their third-generation children, new residents and a few others to illustrate his worldview.

To start off, Diamond states forebodingly:

Seemingly pristine Montana actually suffers from serious environmental problems ...[which] translate into economic problems. They provide much of the explanation for why Montana's economy has been declining in recent decades to the point where what was formerly one of our richest states is now one of the poorest. (56)

Thus, suggests Diamond, Montana is only pristine on the surface – if one digs a little deeper, one will uncover all of its 'dirty laundry'. Diamond suggests that Montana has arrived at its present imperilled state because of reluctance to allow collective action via government to solve its problems:

In modern times a reason why Montanans have been so reluctant to solve their problems caused by mining, logging and ranching is that those three industries used to be the pillars of the Montana economy, and that they have become bound up with Montana's pioneer spirit and identity. Montanans' pioneer commitment to individual freedom and self-sufficiency has similarly made them reluctant to accept their new need for government planning and for curbing individual rights.(432)

In reality, it is that same collective action, by the federal government, which has contributed heavily to the economic problems in Montana that Diamond describes. As such, his brief and selective overview of the state illustrates a distinct failure to dig deeper for the answer to the question he poses in the subtitle of *Collapse*: "How societies choose to fail or succeed." As a result, Diamond presents a false dilemma: that environment and resource problems inevitably lead to conflict and can only be solved with interventionist and collectivist state action.

MONTANA AS AN ISLAND?

To make the case that Montana is similar to the past and present societies that he analyses in other chapters in *Collapse*, Diamond presents an attractive straw man to rip apart:

Half of the income of Montana residents doesn't come from their work in Montana but instead consists of money flowing into Montana from other U.S. states: federal government transfer payments (such as Social Security, Medicare, Medicaid and poverty programs) and private out-of-state funds

(out-of-state pensions, earnings on real estate equity and business income). That is, Montana's own economy already falls far short of supporting the Montana lifestyle, which is instead supported by and dependent on the rest of the U.S. If Montana were an isolated island...its present First World economy would already have collapsed, nor could it have developed that economy in the first place. (74)

Elsewhere, he cynically notes that Montanans “don't bristle at the federal government's money, of which Montana receives and accepts about a dollar-and-a-half for every dollar sent from Montana to Washington” (64). This hazy thought experiment, combined with environmental problems alleged to have been caused by short-sighted and rapacious business, is the only justification that Diamond presents for including Montana as a modern example of potential 'ecocide' in *Collapse*.

To address his claim that Montana's residents essentially rely on handouts from other states and the federal government, four important observations may be made.

First, those people who receive individual payments from the federal government (for instance, 'entitlement programmes' such as Social Security which every American pays for via his or her tax dollars) are usually not the same people as those who pay taxes to government. Diamond himself notes that many people who have second homes in the state do not live there on a full time basis, and thus they do not pay federal income taxes from Montana to Washington.

Second, the majority of payments to individuals from the federal government (again, such as Social Security) are generated by tax dollars that were paid in the past and individuals believe that the federal government will, in good confidence, pay them this money in the future after they retire. It is not the same money as that which is collected by Washington, DC every year in April (although the system, as currently structured, is “pay as you go” – but this is a problem with the programme per se, not the fact that people in Montana receive that money). Moreover, the issue of which state the money was earned, versus which state it goes to, is insignificant.

Third, since even before the era of the Great Depression (1929–1939), federal government spending at a national level has been on an upwards trend. More and more government funding exists for myriad government programmes, and while individual taxpayers (including many Montanans) may object to that growing spending, there is little that an individual can do to stop this trend. For instance, a significant contributor to federal spending in Montana is agricultural subsidies from the US Department of Agriculture (EWG, 2005).

Fourth, the federal government's jurisdiction over lands in the state is large in comparison to other states – according to the US Bureau of Land Management, the federal government owns approximately 27% of the state's land (BLM, 1996). As a result, Montanans have little influence over the use of federal tax money on those lands; for instance, federal government wages and salaries alone totaled \$844 billion in 2003 and this does not include a calculation for the operating costs of federal government agencies within Montana. If that land belonged to the state, or to individuals, the amount of federal spending would decline substantially.

With those four observations in mind, an analysis of 2003 payments by Montanans to the federal government versus funds received reveals that while Montanans paid

Table 1. Federal government spending in Montana, 2003

Type of payment	Amount of federal government spending in 2003 (US\$)	Percentage
Salaries and wages of federal Government employees	844,555,449	16.8%
Loans (combined)	789,353,814	15.7%
Insurance	948,767,908	18.9%
Grants	1,938,455,188	38.6%
Procurement contracts	497,284,221	21.5%
Sum	5,018,416,580	
Retirement & disability payments (Social Security, Medicare, etc.)	2,315,004,564	60.7%
Direct payments for individuals	1,032,487,285	27.1%
Direct payments other than individual	464,644,893	12.2%
Sum	3,812,136,742	
Total US\$ (\$billions) paid to Washington by Montanans in 2003	4,126,000,000	

Sources: US Census Bureau (2005), the Tax Foundation (2005)

\$4,126 billion in federal taxes, they received \$3,812 billion in individual payments from the federal government.

Other federal spending in the state in 2003 amounted to \$5,018 billion. Of this, 16.8% was for the wages and salaries of federal employees, 21.5% was for procurement contracts (through which the federal government purchased goods and services) and 34.6% was for loans and insurance.

Whatever one thinks about the merits or disadvantages of such federal spending, the fact is that Diamond's assertion that the state relies on handouts does not hold up – and his primary justification for thinking that Montana might be an 'island' therefore does not exist.

Although Diamond observes that Montana isn't self-sufficient, this is merely an observation (which in turn assumes that self-sufficiency must be a good thing): it has no bearing on whether or not the state could be self-sufficient.

Moreover, even if Diamond is undertaking a thought experiment ("What would happen if Montana were an island ...?"), it has little relevance for thinking about modern policy issues. Montana is one state in a country with 49 other states with an interdependent history. In that country, people are free to move, and over the past century, many people have chosen to move to Montana as they are now wealthy enough (unlike most Montanans) to own two homes, to afford to travel between those homes and to enjoy a large amount of leisure time. In that country, economic activity between individual states is extremely interdependent.

Perhaps more than anything else, Montana is today experiencing the effect of a growing US economy. Montana's residents, as Diamond repeatedly observes, now constitute an array of both native individuals, and wealthy, retired or semi-retired

people who have migrated to the state from elsewhere. It is only logical that their earnings come from out-of-state pensions, business income, as well as from federal government programs that they already paid for with their tax dollars. If these individuals lived in another state, they would receive those payments in that state – regardless of how much tax revenue is remitted to Washington each year by that state.

Montana's economy has become far less productive because it (and the state's natural resources) has been undermined by federal government in many ways in the past decades. Many of the state's businesses have been bankrupted or are no longer viable – but not because their activities have undermined the state's resources and natural environment. The state's taxing and spending policies have a significant effect on Montana's economy: Robert Natelson, a Professor of Law at the University of Montana, concluded that

There is a clear inverse correlation between level of state and local government revenue and comparative economic growth. From 1969 through 1984, for example, Montana state and local government revenue rose sharply, both in absolute terms and as a percentage of income. Montana's economic performance began to lag the nation a few years after this period began, and continued to lag until a few years after this period ended. (Natelson, 1994)

Indeed, many Montanans have moved away, indeed because there are fewer economic opportunities than in the past. Again, this is largely a result of exogenous factors in the form of government policy, which have little or nothing to do with any of the environmental phenomena Diamond describes elsewhere in *Collapse*.

None of Diamond's claims or anecdotes constitutes sufficient evidence that Montana's economy "falls far short of supporting the Montana lifestyle."

MONTANA'S ENVIRONMENT AND RESOURCE ISSUES

Diamond makes a series of claims about specific environment and resource issues in Montana – including logging and burning of forests (41), mining (35) and water (49).

He says that these problems are exacerbating the state's economic problems, and in some cases, that those problems were caused by short-term attitudes by business enterprises. Unlike other parts of *Collapse*, Diamond provides no historical account of these issues, apart from alleging that rapacious industry or the inherent stubbornness of native Montanans has caused the problems.

The following sections analyse these issues in light of previous acts and management strategies by the federal government. The issues which Diamond believes are evidence of Montana's collapse – especially forests, water, minerals – have some of the following traits:

1. In the case of minerals and water, they are governed by rules that were developed in the 19th century which suited the needs of early settlers. These rules have generally not been allowed to evolve to suit changing preferences and demands on resources, though there is reason for hope.
2. In the case of Montana's forests, at least 70% are controlled by the federal government directly, or indirectly through federal regulation.

3. In the case of forests and minerals, federal agencies and regulations have created perverse incentives which have negatively affected Montana's ability to sustainably utilize those resources while creating productive economic activity.

FORESTS

With regard to forests, logging and forest fires and the need for fibre harvested from forests, Diamond presents straw men, supposedly represented by differing views of Montana's residents: we could either log in Montana or export environmental problems to Canada or Brazil (e.g. by cutting down Brazil's rainforest).

Diamond claims that the origin of Montana's forest problems lie with previous uses of the forest. For instance:

"In order to be able to re-establish uniform even-aged trees of chosen tree species, and thereby to maximize timber yields and increase logging efficiency, logging was carried out by clear-cutting all trees rather than by selective logging of marked individual trees." (41)

He then goes on to say that logging, as well as fire suppression and sheep grazing, have caused Montana's forests to be unhealthy (46) and therefore more subject to catastrophic forest fires.

Diamond also argues that solutions to these problems are not forthcoming because of their cost:

The problem of catastrophic forest fires in dry parts of the U.S. Intermontane West could probably be brought under control by management techniques to reduce the fuel load, such as by mechanically thinning out new growth in the understory and removing fallen dead timber. Unfortunately, carrying out that solution on a large scale is considered prohibitively expensive. (437)

In an ideal world, the Forest Service would manage and restore the forests, thin them out, and remove the dense understory by cutting or by controlled small fires. But that would cost over a thousand dollars per acre for the one hundred million acres of western US forests, or a total of about \$100 billion. No politician or voter wants to spend that kind of money. (45)

But these are only observations. 'Costs' can only be relevant to the question if timberlands and other resources are governed by markets and their underlying institutions, which they are not. Private lands, in contrast to USFS lands, are managed with a different set of private incentives and not according to political whims and the incentives of government bureaucrats – and as a result they are generally far more productive.

As economist Robert Nelson noted in testimony to the U.S. Congress:

It is remarkable that an agency responsible for managing a natural resource asset of immense wealth—including more than 10 percent of the land area of the

lower 48 states and some of the prime timber growing forests in the world—has consistently imposed large net claims on the U.S. Treasury. Most recently, the General Accounting Office just reported that Forest Service timber sales from 1992 to 1994 returned \$1 billion less to the federal treasury than the sale costs incurred by the government. (Nelson, 1995)

In fact, Diamond has conveniently omitted a major part of the story about Montana's forests. Out of 93 million acres of land in Montana, 23 million are forested and the majority of these are in the western part of the state. A total of 16.5 million acres – 72% of the total amount of forested land – are administered by federal government entities, including the US Forest Service (which manages approximately 14.6 million acres) and the Bureau of Land Management (which manages 804,000 acres). (Smith *et al.* 2002)

Several decades ago scientists and researchers showed that management of US federal forests by the US Forest Service was flawed, not for lack of expertise but for the lack of appropriate incentives, which stems from government bureaucracy. Marion Clawson, a forester from Nevada (another Western state with a large proportion of government-owned land), published a 1976 article in *Science* saying that the US Forest Service had a “disastrous” management record (1976). Clawson also wrote that popular conceptions of logging (e.g. ‘select cutting’) were not always necessarily the best practice for the health of a forest; indeed, depending on the type of tree species, a clear cut might mimic the effect of a fire in nature.

The origin of many of Montana's forest issues relating to the US Forest Service in fact relates to the extent to which the federal government allowed or refused patenting of timber claims at the end of the 19th century.

After the Colonial Era, the US expanded its territory through various acquisitions of land: “Between 1781 and 1853, the federal government acquired over 1,327,000,000 acres of land, most of which was made available for private patenting” (Libecap, 1986).

Following those acquisitions, the United States population was encouraged to move west. The era has been described by the phrase “manifest destiny”. The US government passed various acts to encourage settlement of lands in the western United States, the most well-known of which is the Homestead Act of 1862 (Allen, 1991). The Act allotted 160 acres to homesteaders, who in exchange agreed to settle the land and live on it for five years, or to purchase it for \$1.25 an acre after six months.

Most of the land in the eastern US had already been patented and was privately held. Under the Homestead Act much of the land in the fertile Mississippi river valley was brought under private ownership. But in the western US, especially west of the 100th parallel (100 degrees longitude) much of the land lacked enough water to support farming (see Stegner 1953), and 160 acres was not a sufficient allotment to profitably engage in other economic activities (e.g. ranging cattle or managing timber).

Moreover, no provision was made for commercial enterprises to patent (e.g. to make an exclusive claim) land (Libecap, no date, 20), except for the transcontinental railroad, which received approximately 127 million acres of land grants in the West

“as stimulus for extending transportation systems to sparsely populated regions” (Libecap, *ibid*).

Despite a few reforms to enable larger claims, much of the land west of the 100th parallel remained unsettled. In 1879, a government Public Lands Commission called for “the classification and sale of western lands according to their best use, [but] nothing was done.” Lacking the ability to commercially patent land, “much lumbering occurred on federal land illegally without secure property rights” (Libecap, *ibid*).

In 1889, Montana became the 41st state, and in 1891 the General Revision Act established national forest reserves:

The subsequent permanent reservation by the Federal Government of some 168 million acres of forest land in the lower forty-eight states in the National forests was a major reversal of the long tradition of federal land divestiture. (Libecap, 1989, 71)

Why did this situation occur? As Libecap (no date, 8) explains,

Essentially, failures on the part of the federal government meant that private claimants could not patent lands that they desired to claim. This government failure fuelled opposition by some parties of private patenting of these lands, who mistakenly believed that business interests were the cause of the problem. The strict focus of U.S. land policy on small farm allocations, based on climatic and soil conditions in the eastern U.S., meant that private claimants for viable dryland farms and ranches on the Great Plains and Great Basin and for sufficient tracts of timberland in the Pacific Northwest to support lumber mills could not legally obtain title to the property they sought. They often occupied or used the lands without formal title, but after the turn of the 20th Century, the federal government began to gradually withdraw the lands from private entry. Today, large tracts of the western continental U.S. and much of Alaska remain in federal ownership largely because of the inflexibility of federal land policy in these regions.

An additional 175 million acres of range land (excluding Alaska) in the American West were assigned to the US Department of the Interior (Libecap, 1989, 72). In the end, says Libecap:

One-third of the continental US remained owned by the federal government, and [government controlled] 60 percent of the thirteen far Western states where federal land laws worked least well. (Libecap, no date)

The second contributing factor to the disarray of Montana’s forests occurred after this acquisition, during the US Progressive Era during the first half of the 20th century. This era had numerous facets, it resulted in a new ‘conservation ethic’ which defined to the government’s approach to its recently-acquired western lands. Karl Hess Jr. (1992) writes that this conservation ethic was a

natural – and logical – response to the intellectual milieu of the late nineteenth and early twentieth centuries. It bore the unmistakable signature of an emerging national progressive movement, a single-minded commitment to purging inefficiency, waste and greed from society. And its conservation message spawned a progressive landscape vision, a vision of men and women assuming conscious and purposeful control over nature and directing its uses to the exclusive benefit of humankind. A progressive vision of this magnitude required no less than a complete revamping of American society. (77)

Fundamentally, concludes Hess, the progressive vision “signalled a profound loss of faith in the ability of all but a select few to steward and care for the western landscape...” (79–80).

Although the United States was founded on principles of self-determination and private initiative, and it espoused a political philosophy which celebrated minimal intervention in the affairs of its citizens, the Progressive Era was in many ways a complete reversal of those tenets. Its chief proponents placed confidence in almighty and enlightened bureaucrats to achieve more efficiency, more economic growth, more progress for the collective good, than individuals operating on their own. Not only would this be beneficial for the economy, it was necessary.

The philosophy of ‘scientific management’ was the justification for government to apply these progressive ideals broadly to American society and to public lands. Economist Robert H. Nelson writes

Scientific management was a theory not only about the capabilities of scientific knowledge to transform the physical world but also of the political institutions by which this knowledge would be put to use. The theory of ‘scientific management redefines what had hitherto been political problems as management problems, the solution of which is governed by the logic of science ...

An inevitable tension was created with a traditional precept of American democracy—how could “government by the people” be replaced by government by a new professional elite? Progressives saw their efforts as a corrective to the failures of American democracy in the late 19th century, when government – if not outright corrupt – had become the captive of big business and other special interests. (Nelson, 1999 citing Lee, 1995)

Various government institutions were established during the Progressive Era to carry out this vision on those recently-acquired government lands. In 1905, all federal forest reserves were transferred to the Department of Agriculture, and its Division of Forestry was renamed to the United States Forest Service (Hess, 1992, 76) with Gifford Pinchot, a key Progressive intellectual, serving as its leader.

In its 1933 “National Plan for American Forestry”, the Forest Service declared that

The depletion of America’s forest resources, may be largely attributed to the national conception of the rights of the private citizen and the policies set up to protect those rights even at the expense of the public welfare... ‘Laissez-faire

private effort has seriously deteriorated or destroyed the base of resource of timber, forage and land universally...[Private ownership is the] 'most unstable form' [for resource management]. (Hess, 1992, 79–80, quoting USFS)

With this statement, the Forest Service signalled its distrust of private enterprise and individuals to manage forests, and all prospects of enabling decentralised management had seemingly disappeared.

The mid-20th century in fact proved no different than previous decades in forest management. The Federal government passed a variety of Acts – including the Wilderness Act of 1964, the Endangered Species Act of 1972 and the National Forest Management Act of 1976 – all of which implied that again, the federal government's approach towards public lands and resources in the western USA had massively shifted towards diminishing the extent to which natural resources could be extracted from those forests. As a result, these laws were increasingly evoked to satisfy preservationist pursuits via the federal government.

In the 1990s the USFS shifted its ideas towards 'ecosystem management' (Nelson 1999). It is possible that this shift reflected the intense lobbying efforts of environmental groups of the USFS during the 1980s, plus a growing tendency amongst the increasingly environmentally aware American public to demand that government preserve America's pristine forests on public lands.

Based on a combination of these ideas and laws, environmental interest groups spent many resources during the 1980s and 1990s lobbying both in Montana and in Washington DC to restrict the use of forests and other resources on federal lands in Montana.

This long explanation serves to illustrate why Montana's collectively-owned federal forests are neither 'natural' nor well-managed. This is the result of a complex political history which is absent to the story that Diamond has presented. Essentially, Montana's forests have been controlled not by local people (much less private interests), but by federal bureaucrats who fall prey to environmental lobbyists. All of the evidence suggests that if the USFS lands were to be decentralised, either by devolving them to the states, or giving a share to every US citizen (an idea suggested in Hess, 1992), it is almost certain that better solutions would result.

The health of Montana's forests is not, as Diamond's story suggests, the result of poor business practices. In fact, to the extent that poor business practices did exist (or continue to exist), they were as a result of perverse incentives created by the federal government. Likewise, the economic problems have little to do with some arbitrary state of health and 'environmental problems' as Diamond suggests.

Moreover, the physical, immovable nature of Montana's forests and rangeland easily lends itself to being governed by property rights – but the 'all-or-nothing' approach by interest groups acting in the political process is often a barrier to pragmatic approaches which would lead to healthier forests, happier loggers and happier environmental groups.

MINING

Diamond claims that many of Montana's environmental problems are the result of industry. Nowhere is this clearer, he implies, than in the case of mining: "By far the biggest toxic waste issue is posed by residues from metal mining". (35)

Diamond’s worldview leads him to make erroneous assertions about Montana’s abandoned mines without using evidence, and then glibly to proclaim that rapacious industry is at fault: “While denial or minimization of responsibility may be in the short-term financial interests of the mining company, it is bad for society as a whole and it may also be bad for the long-term interests of the company itself, or of the entire mining industry.” (37)

He claims that Montana has over 20,000 abandoned mines (36), whose tailings are leaching toxic minerals into the state’s already-scarce water supply. It is unclear from what source this figure was obtained, and Diamond provides no citation. A variety of sources have analysed abandoned mines in Montana, and have reached very different conclusions:

- “The State of Montana has inventoried its abandoned non-coal mine sites. Thus far, Montana has found 245 abandoned mines which have the potential to impact surface waters because they are within 100 feet of a stream. Of these, 71 sites have discharging adits (mine entrances emitting acid mine drainage into the environment).” (Janklow, 2000)
- A 1998 report by the Western Governors Association suggested that a total of 6,000 sites existed in Montana, 1656 of which had been reclaimed. (Western Governors Association, 1998)
- The Montana state office of the US Bureau of Land Management “identified about 1,000 sites on BLM-managed lands in that state.” (GAO, 1996) (Those sites are included in the 6,000 estimate by the WGA).
- Economist David Gerard (2000), citing a 1998 study by Montana’s Department of Environmental Quality, concludes that “In Montana the state has evaluated more than 3,800 sites based on their environmental and safety characteristics, and has designated 380 priority cleanup sites from this list.” (See Table 2)

Since Diamond did not bother to verify the figure he cites, it seems that his vast overestimate of abandoned mines is simply intended to alarm the reader and to greatly exaggerate the extent of toxic waste in Montana. Because of clean-up costs presumed to be associated with those 20,000 imaginary abandoned mines, he says that “Some of my Montana friends say...Montana would have been better off in the long run if it had never mined copper at all but had just imported it from Chile.” (36) Never mind the fact

Table 2. Ownership of inactive mines and priority cleanup sites in Montana

	Priority sites	All inactive sites
Private	262	1820
Public	85	1325
Unclassified	33	709
Total	380	3834

Source: Gerard (2000) citing Montana Department of Environmental Quality (1998) “Montana Inactive Mine Inventory and Mine Reclamation Priorities.”

that the US economy benefited from the copper extracted from Montana, and that the transportation and extraction technology characteristic to much of the 19th and early 20th century precluded such mutually beneficial trade from occurring as it does today.

Equally important, but likewise omitted by Diamond, is an understanding of the complex reasons that 3834 abandoned mines exist in Montana (and other western states have similar numbers). When mining began in the western USA in the 19th century, miners evolved informal rules and property rights to govern their claims. Libecap (no date, 4) writes that the US Mining Law of 1872 was a codification of those informal rules:

Although the mining industry developed around locally-devised property rights, these rules were not recognized by the federal government until 1866, when the first federal mineral rights law was enacted authorizing the transfer of title to private claimants. The 1866 law ratified the distribution of ownership outlined by local mining camp rules. And these same provisions were kept intact in the Mining Law of 1872 that remains in effect today for patenting private hard-rock mineral claims on federal lands. Under this institutional arrangement, the mining industry flourished, becoming often the first industrial sector in most western states.

The reason that the industry flourished is because this law enabled the security that miners needed to explore and produce minerals (Libecap, *ibid*; Morriss and Meiners, forthcoming; Gordon and VanDoren, 1998). The principles it established (explained in detail in Morriss and Meiners, forthcoming) “provide several important institutional advantages.” Principle of these is that it enables individuals to create value by investing their resources in attaining knowledge about mineral deposits. It provides an incentive by enabling transfer of title for a nominal fee to those who possess such knowledge – and thus “rewards the creation of tradable property rights in valuable assets.” (Morriss and Meiners, *ibid*.)

In combination with other laws, mining claims were subject to very complex ownership patterns:

As a result of various land policies, it was common for the same mine site and processing facilities to be located both on public land (e.g., mining claims) and private land. Even for sites on private lands, however, often there is either no identifiable owner or the owner does not have the financial resources to reclaim the site. In cases where there is no identifiable and solvent owner, the site is considered to be abandoned. (Gerard, 2000)

The lands they occupied contained a relatively scattered population. Until recently, environmental concerns were far less prominent in the eyes of the average citizen. Today, Montana’s population is far greater. Most Americans are wealthier, and as a result, environmental consciousness is higher. The ongoing effects of mineral extraction have only in the past few decades crossed most the radar screen of most people.

As this relates to mines and toxic waste, Gerard (1997) suggests that

The majority of unreclaimed land was mined before regulations [requiring reclamation] went into effect. The abandoned mines that dot the western landscape, and the toxic tailings that accompany some of them, are a by-product of the mineral demands of an industrial society at a time when reclamation was not required or expected.

During the past few decades, technological innovations have enabled mining companies to carry out their activities far more sustainably than in past eras, and even to clean up old mine sites. However, a federal government regulation known as Superfund (the Comprehensive Environmental Response, Compensation, and Liability Act of 1980) creates retroactive liability for enterprises such as mines, with some perverse unintended consequences for such enterprises. As Gerard observes,

This means that firms may be held liable for past damages and for the costs of cleaning up wastes left behind by previous operations. Such retroactive liability creates a disincentive for returning to previously used sites that may be economically viable. While modern reclamation techniques could mitigate past damages, companies are leery about even exploring old sites since they might be held liable for cleanup even if mining does not materialize. Thus, old mine sites are left to be cleaned up at taxpayer expense or not cleaned at all (*ibid*).

Other federal regulations have had similar perverse effects, says Gerard,

If a state begins to clean up an old site, it is required to reduce pollution levels to the levels specified by the Clean Water Act, regardless of cost. Faced with this level of cleanup or nothing at all, states often have an incentive to do nothing (*ibid*).

Still other federal interventions – such as the fact that federally owned lands cannot be privatized in any other way than the General Mining Law (Morris and Meiners, forthcoming) and thus it is frequently acquired under the statute for non-mining purposes (*ibid*) – have caused the law's opponents to claim that the law is unfair, unjust and/or unreasonable. Yet such claims are fundamentally misguided – as the problem lies in the fact that a great deal of land remains in under the jurisdiction of the federal government, with little scope to claim those lands and few means to change that situation.

As Gerard (*ibid*) suggests, there is no reason to despair. If we are really concerned about pollution emanating from old mines, we should look at the whole range of reasons why cleanup is not occurring, including the perverse incentives created by regulations – the same ones that Diamond advocates as the solutions to Montana's environmental problems. With regard to the state's 'toxic' wastes, a new, creative and decentralised approach is needed – so Diamond's claims are not only wrong and alarmist, they are counterproductive.

WATER

Diamond argues that water scarcity in Montana is caused and exacerbated by one factor alone: climate change. He states, “While global warming will produce winners as well as losers in different places around the world, Montana will be among the big losers because its rainfall was already marginally adequate for agriculture.” (49–50)

By combining climate change with an influx of people who are buying homes – for instance, in the Bitterroot Valley – Diamond can make the foreboding assumption that in the future Montana will not have enough water:

The Bitterroot’s other water supply besides snowmelt-fed irrigation consists of wells for domestic water use, tapping into underground aquifers. They, too, face the problem of increasing demand for decreasing water ...[because] the Bitterroot’s continuing population explosion means more people drinking more water and flushing more toilets. (52)

Diamond also mentions that “Sections of the Big Hole River have actually dried up in some recent dry summers” (51) – but the reality is that this problem relates to the rules which govern water use.

Lawyer Jack Sterne observes:

The most often repeated maxim of Western water law is, ‘first in time, first in right.’ This simple concept carries with it significant consequences for fish. Water rights established first have nearly absolute priority over all other junior rights, including those of the state. In times of scarcity, senior appropriators possess the right to cut off junior appropriators. Because most rivers in the Northwest are over-appropriated, especially during the critical summer months, rivers can be completely de-watered, regardless of the effects on fish. (Sterne, 1997, 2)

The main issues with water rules, as well as the other resource issues discussed in this paper, are how rights are defined, how they can be used and the prospects for exchange between different users. Whether or not Diamond’s claim is correct, the question in Montana is how to ensure that water is used sustainably, for whatever uses people desire in the state, now and in the future.

Again, Diamond provides little background about water issues in the western USA. Economist Terry Anderson (1983) writes that, during the homesteading era, states in the western USA faced greater water scarcity than their eastern counterparts and the law that evolved reflected that greater scarcity. “As settlers devoted more efforts to defining and enforcing property rights, a system of water law evolved... [where] water rights were defined and enforced and made transferable.”

Because states faced different circumstances with their water, “No two states handled the problem in identical ways. But every state had a body of water law that affected water quality and quantity. In addition, each state’s water law rested on a common law foundation that applied common law rules for protecting environmental

property rights.” (Morriss *et al.* 2004). Until the passage of federal water quality statutes in 1972, states, communities and regions were responsible for the management of their own water quality and quantity. (*ibid.* citing Meiners, Thomas and Yandle, 2000)

Water is an issue that demonstrates a more wide-ranging phenomenon in the west, as Anderson and Snyder observe:

The western frontier was an experiment with the evolution of property rights. Because the actors in that experiment had to bear the consequences of their actions, they had an incentive to develop institutions that got the incentives [for resource use] right. Because water was a limiting factor in agriculture and mining, it was critical to provide incentives for private owners to invest in delivering water to where it was most productive. The prior appropriation doctrine effectively got the incentives right. (1997, 44)

These rights were based on the prior appropriation doctrine. The idea of ‘beneficial use’ – namely, that a person has a right to withdraw a specific quantity of water, but only if he uses it – evolved as part of that doctrine as the law was codified in state law (for further explanation of this process, see Morriss *et al.* 2004; Anderson and Snyder, 1997).

Without bothering to examine the interesting origin of the rule, Diamond laments that

Irrigation rights apply only to so-called ‘beneficial’ use of water benefiting the piece of land holding the right. Leaving water in the river for the fish and for the tourists trying to float down the river on rafts is not considered a ‘beneficial’ right.

However, the problem is historical: It is not a normative decision on the part of the law to disadvantage tourists, it is because states have narrowly construed the things that qualify as ‘beneficial use’, and the law has not evolved to accommodate changing preferences among potential users of water. This can have a negative effect on environmental uses of water.

Today, observes Landry (2001, 4) ‘beneficial use’ standards prevent new and innovative uses of water: “[they] severely limit the way water can be used because states have narrowly defined the uses that are considered beneficial..[and] are now heavily biased in favor of historical uses, such as farming and ranching.”

For instance, irrigation uses for agriculture were probably given precedence, not because this society lacked environmentally enlightened politicians or academics, but because Montana’s population was smaller, meaning that fewer people were competing for use of water. Likewise, the economic value of water for irrigation uses in agriculture was relatively higher at the time.

Trading between water users is one possibility to resolve the problem of streams drying up in the summer. By enabling prices to dictate the use of water, tourists,

farmers and other uses would be able to react to the information that those prices convey: tourists might indeed value water in a stream more than the farmer could earn from using the same amount of water to grow alfalfa, and thus the tourists could compensate the farmer for the water that he has foregone. This is only one example of the mutually beneficial outcomes that could be generated by water trading, both for water users and the environment.

However, Landry (2001) shows that trading between potential water users has been restricted based on “beneficial use standards, no-injury rules, public interest reviews, use-it-or-lose-it requirements, and limitations on conserved water.” He continues, “By loosening or eliminating these restrictions, state governments could allow markets to provide an abundant supply of high quality water.” (*ibid*)

There is a ray of hope, as some entities in Montana – such as the Montana Water Trust – and other western states have begun to engage in negotiating mutually beneficial outcomes by trading water. Such voluntary, private transactions could be the future of water conservation in the western USA – with benefits for both people and the environment – if they are allowed to.

In other cases, interesting proposals are being made to reform water laws, to enable water to be allocated through markets, and thus may be used efficiently, sustainably and in its most highly-valued uses. This creates incentives for conservation (Morriss *et al.* 2002).

CHANGING PREFERENCES AND VALUES

Diamond doubts that Montana’s environment and resource issues will improve: “We don’t know which approaches the citizens of Montana will ultimately choose, and we don’t know whether Montana’s environmental and economic problems will get better or worse.” (74)

He implies to the reader that Montana’s future is imperilled both because past actions have destroyed its natural environment and because the core values held by some Montanans are an obstacle (in his view) to achieving enlightened environmental protection:

Unfortunately, by permitting unrestricted land use and thereby making possible an influx of new residents, Montanans’ long-standing and continuing opposition to government regulation is responsible for degradation of the beautiful natural environment and quality of life that they cherish. (65)

He ultimately suggests that a society could be judged on its success or failure if it knows “which core values to hold on to, and which ones to discard and replace with new values, when times change.” (433)

But throughout the chapter, and indeed the entire book, Diamond provides no metric by which a society could make that decision. Many of the isolated past and present societies that he has analysed in *Collapse* are culturally homogeneous, but modern, interdependent societies – including Montana – are unlikely to hold, collectively, the same values.

In terms of resolving conflicts of values in Montana, Diamond finds no concrete philosophical reason (because there is none) to prevent non-native Montanans from moving to the state: one value that Americans cherish is the freedom to move from state to state within the United States. Yet because these non-native individuals are more likely to appeal to the federal government for action on environmental issues, why does Diamond take their side – rather than trying to accurately present the situation?

In fact, Diamond presents a false dilemma about values. In Montana and other societies, we should not ask which values are ‘right’ or ‘wrong’. Individuals, not societies, have values. Importantly, most modern pluralistic societies are made up of individuals who are able to have different values without going to war or killing each other. Because it fails to accommodate the individuals’ ability to hold different values simultaneously, collectivism has dismally failed everywhere collectivism has been tried. It applied to public lands in the USA is no exception.

Diamond leads the reader to believe that political solutions are the only way to resolve Montana’s problems. The problem is that when government imposes some values through policy, rather than allowing individuals to express their values through voluntary market exchange, ultimately one value is sacrificed to another. The nature of government action ultimately relies on brute force rather than moral, economic or myriad other justifications. A few people benefit at the expense of a larger (but less politically influential) group of people, and the people who lose are inclined to feel strongly about the issue.

Montana has been no stranger to shifting values: since the state’s founding, it has experienced a variety of philosophies that have informed policies which govern the state’s public lands and resources. Indeed, many people’s livelihoods and values have been undermined as a result of collectivist state policies dictated in Washington, DC, without proper recourse or an attempt to resolve the situation once and for all.

In part, many federal policies were supported by wealthy migrants to Montana who were offended by the state’s reliance on natural resources. The federal political system enabled special interests, rather than Montanans, to influence policies towards the state. Because he takes for granted that the solution to Montana’s conflicting values is government, Diamond’s analysis of Montana is not sophisticated enough to explore how a society could enable all of values held by its individual members to co-exist and indeed, to change and evolve over time.

What would that society look like, say in Montana? It would entail the federal government enabling the state to govern itself, its resources and the environment in a decentralised manner with the institutions of the free society (property rights, contracts, an effective, transparent and predictable legal system, a small government that upholds these institutions). Likewise, the federal government would step back to allow experimentation and evolution of solutions and approaches which enable better decision-making – for instance, in complying with environmental regulations.

In contrast to regulations or state dictate imposed from above and from afar, the institutions of the free society provide a neutral environment where individual values can co-exist. Over time, institutions such as property rights can act as a bridge for

human preferences to shift – especially because as humans become materially better off, they are more likely to regard the natural environment higher in their scheme of values. Economist Bruce Yandle calls this is an “ever changing definition of environmental rights.” (Yandle, 1998, 149)

Societies that enable decision-making to take place according to those institutions are far more likely to be successful at achieving pluralism without conflict. Those institutions enable their citizens to generate mutually beneficial outcomes, even as human values and preferences change over time.

Diamond seems to view natural resources and the environment as ‘absolute’ concepts. Yet the changing philosophical winds that have governed public lands policy in the US overwhelmingly suggest that people change their views about the environment as time marches on, especially as they grow wealthier. Combined with the development of new technologies that enable resources to be conserved and protected, institutions enable a process-based approach, rather than the absolutist approach favoured by Diamond, to environment and resource issues.

In the past century, many of the resources within Montana’s boundaries have expropriated, regulated and abused by the US federal government. At the same time, the US public has demonstrated a growing environmental consciousness which has enabled the federal government to seize more and more power over public lands. Diamond feeds that propensity by simplistically attributing Montana’s problems to rapacious and short-sighted business activity. Unfortunately, his lack of informed analysis might lead the reader to flawed conclusions.

Instead of being subject to market processes, those public lands have been managed through the political process. Those political decisions have precluded the evolution of arrangements that might enable parties to bargain with each other over competing uses of resources – whether for logging, mining, ranching, tourism or preservation. Sterne (1997), writing about water, suggests that

“Many interests in Montana are reticent to deal with the state, so private parties can play an important role. In addition, private parties frequently have better contacts in the community and are more successful at finding potential leases because they are comfortable operating in the free market.”

In some cases today, private initiative is being harnessed to protect Montana’s environment and resources. For instance, Diamond speaks approvingly of a conservation organisation called the Montana Land Reliance, which has secured easements along rivers to ensure the quality of streams for the long-term future. This is similar to the activities of an organisation in the UK - the Anglers Conservation Association - which has since 1948 acted in a private capacity to ensure water quality. (Bate, 2000)

Would Diamond not consider that Montanans might want to extend similar private, decentralised approaches across the entire spectrum of their environment and resource issues? Given the failure of other approaches – namely, those imposed through the federal government which have been the real cause of problems that he

discusses – such institutional experimentation is probably the best way to ensure that Montana’s future is one which enables individuals with different values to co-exist.

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