

Alex Sienkiewicz¹

**Toward a Legal Land Ethic: Punitive Damages, Natural Value,
and the Ecological Commons**

Ability to see the cultural value of [the land organism] boils down, in the last analysis, to a question of intellectual humility. The shallow minded modern who has lost his rootage in the land assumes that he has already discovered what is important; it is such who prate of empires, political or economic, that will last a thousand years. It is... the scholar who appreciates that all history consists of successive excursions from a single starting point, to which man returns again and again to organize yet another search for a durable scale of values. It is... the scholar who understands why the [land] gives definition and meaning to the human enterprise.

-Aldo Leopold, *The Upshot*²

Preface

Natural values may be understood as the whole of the earth's ecological communities and all of the parts, processes, interactions, relationships, and resources that spring therefrom. More prosaic definitions of natural values include the terms *natural resources* or *ecosystem services*.³ Others take a purely anthropocentric-utilitarian stance: "natural resources are... the individual elements of the natural environment that provide economic and social services to human society."⁴ Aldo Leopold—considered by many to be the father of wildlife management, restoration ecology, and *the land ethic*⁵—was an early proponent of the idea that humanity should be conscious of its relationships with *the land* and should conserve natural values.⁶ This, because natural values tend to suffer for human prosperity. Among Leopold's notable quotations is that which states,

The outstanding scientific discovery of the twentieth century is not television or radio, but rather the complexity of the land organism. Only those who know the most about it can appreciate how little is known about it. The last word in ignorance is that man who says of animal or plant: "What good is it?" If the land mechanism as a whole is good, then every part is good, whether we understand it or not. If the biota, in the course of

aeons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering.⁷

Assuming Leopold was a wise man and that much human enterprise might qualify as *tinkering*, it behooves society to craft law and policy in such a manner that humans tinker intelligently—as Leopold prescribed. Where public policy is concerned, *speaking softly* is often appropriate for the sake of diplomacy, but wielding the law as a blunt instrument is sometimes appropriate if natural values are to be protected from the many perverse incentives inherent to a free-market economy and to human nature.

Punitive damages in the context of environmental harm do not speak merely to a jurisprudential tool to mete out punishment and compensation while creating incentives and disincentives toward a desired end. Punitive damages policy speaks to protecting those natural values that tend to suffer for human economic gain. Natural values, furthermore, tend to be inherently public. This is so, because to harm such values is to harm entire human communities, and perhaps *the* entire human community. This remains true whether humans suffer direct harm, as in a toxic torts case, or indirect harm, such as permanent damage to a distant wilderness upon whose soil one will never tread.

The idea of untrammelled, functionally-intact ecological systems—of species, organisms, interactions, and inscrutable complexity—demands a humble approach. Policy and human institutions should rarely assume that human enterprise is benign. A safer assumption holds, that human enterprise most always exacts an ecological toll—a debit taken from the ecological commons. This is not to say that all human enterprise is untenable, but rather that the tradeoffs—acceptable and unacceptable—between individual economic freewill and public natural values must be clarified and codified. If

society deems the sacrifice of certain natural values to be acceptable given certain social benefits, then law and policy are obligated to state clearly those values being sacrificed and that for which they are being traded. The law must also specify the beneficiaries of every sanctioned ecological sacrifice. In this way the public may gauge whether public natural values sacrificed are commensurate with public benefit, if any.

The problems and social tensions surrounding harm to the natural environment are not mere matters of private property and tortious behavior. They are ethical dilemmas of the highest order and touch upon the existential and metaphysical foundations of civil society, the rule of law, and the human place on earth. Acknowledging as much, however, does not simplify the balancing that must occur in the administration of justice. A continuing discourse on natural values must imbue in human culture needed humility and appreciation for the natural resources on whose shoulders we have risen to these commanding heights.

Whether disastrous or *de minimis*, harm to the natural environment comprises an ethical problem. This holds true independent of whether environmental harm is born of a malicious crime or an unwitting act of negligence. Natural values are often public by their very nature, transcending notions of private property. Thus, the punishment, compensation, and deterrence of acts destroying public natural value comprise critical public policy considerations.

Harm to natural values begs the question, to whom is compensation owed? Who owns the environment? Alternately, who owns the right to destroy or diminish natural values that are held in trust for the broad public? Are the trustees to these values fulfilling their fiduciary duties? Who may claim title to water that falls from the sky, or

to anadromous salmonids that migrate—in ancient accord with lunar cycles—from sub-alpine streams at birth, to the open ocean, and back again to the gravel redds in which they were spawned? Who owned the elk that once roamed the Eastern Seaboard⁸ or the brook trout long ago extirpated from streams such as Rock Creek, which flows through the Nation’s Capital?⁹ Who owns the hydrological, carbon storage, and nutrient cycling functions performed by late succession forests of the coastal Oregon? Who owns the 662.2 million acres¹⁰ of public lands of the United States? Do American citizens retain a property right to clean airsheds, watersheds, viewsheds, and free roaming wildlife? There are no simple answers to these questions. While instinct urges that no one and everyone holds title to such natural phenomena, law and culture confound the matter.

Ecological complexity, coupled with socio-political complexity, makes ascription of rights and remedies for environmental harm a conundrum indeed. Nonetheless, prevailing sentiment supports the notion that natural values are simultaneously owned by all and owned by none. Natural values—or the *land organism* as Aldo Leopold put it¹¹—will outlast the tenure of any individual human life. The land and its communities of organisms, noted Leopold, are “largely inscrutable.”¹² Here, Leopold invokes intellectual and ecological humility, and the notion that intact biotic communities should be respected and maintained—even when a species’ or biotic community’s utility is not apparent. Hence, natural resource damages must reflect not merely private values lost, but also the great public import of natural values.

Though accounting for damages to natural resources and ecological systems perforce uses the tools of law and economics, none can deny that destruction of natural values—through negligence, malice, or rational self-interest—is at the core, an ethical

matter. To argue the contrary is to deny the existence of free will. Though calculation of damages is a matter of dollars and cents, natural resource policies should never be decoupled from their inherent ethical dimensions.

I. Introduction

This essay argues that: (1) Intact ecological systems comprise a resource upon which the enduring prosperity of human communities depends. In this sense, intact ecological systems are a public value and public right. (2) The law of natural resources and the environment must acknowledge and mitigate the failure of economic markets to approach an accurate, efficient accounting of natural values. Calculations of damage based solely on direct market value deny citizens and their posterity the blessings of public natural values. (3) Society must clarify and codify the public value represented by intact natural systems such that punitive damages and complimentary policies capture not merely the public right to retain natural values, but also the prohibition of significant diminution of those values by individuals and entities.

A. *An Ounce of Prevention: Punitive Damages as Deterrent*

The adage, *an ounce of prevention is worth a pound of cure*, conveys the primary idea underlying the policy of punitive damages for environmental harm. In the context of the natural environment, punitive damages are, in essence, a policy tool designed to deter—by making prohibitively expensive—that behavior which wantonly destroys natural value. The caveat being, there should be some instance of egregious environmental harm to which the government may react; there should be an incident that serves as an ignoble example. For instance, should society choose to deter multi-million-gallon oil spills, it would be useful—in one sense—to have experienced at least one such

disaster in order to cloak it in infamy. Then, lawmakers can better use punitive damages to create prospective policy. A polluter's punishment will serve to warn all others.

Despite the irony of needing a scapegoat, a deterrent or prospective mechanism is more efficient than any reactive law and policy. This is particularly true with regard to natural systems, which are comprised of values that defy monetization—values that are held in common trust.¹³ In the case of environmental harm, it is unlikely that reactive measures will fairly compensate *all* of those injured. This is so, because once damage occurs, its scale, intensity, duration, and short and long-term effects are extremely costly to measure—if it is even within human capabilities to do so. For the same reasons, the justice system will not likely punish those inflicting harm upon the natural environment to a degree commensurate with damage inflicted upon the broad public.

In gauging damage, the law will sometimes call upon economists to estimate the market value of affected natural resources such as a flowing headwaters stream or a thriving run of anadromous sockeye salmon. However, the idea, that an individual or corporation could fairly compensate a human community and its progeny—and each successive generation thereafter—for semi-permanent or permanent ecological harm is dubious. Therefore, the notion of punitive damages—of calculating damages above and beyond compensation—is perverse. It is perverse only because human ability to determine accurate *compensatory* damages is, at best, limited. Therefore, calculating damages beyond those of a compensatory nature is problematic. While determining appropriate penalties over and above compensatory damages does not inspire confidence from a valuation standpoint, the notion of a punitive mechanism—so ominous as to curb self-interested takings from the ecological commons—is auspicious.

Thus, if punitive damages policy is to protect public ecological values by deterring reckless behavior, then monetization of non-market natural values is ineluctable. And so, in order to administer punitive damages, the ineffable must be described in market terms; nature's inscrutable processes, places, and biological webs must be reduced to hard currency; the experts must determine the threshold at which an actor's marginal cost outweighs her marginal benefit.

This essay does not delve into the esoteric calculus of ascribing dollar valuations to natural phenomena. Rather, this essay argues that conventional law and policy fail to account for the public value of intact natural systems and that this failure must be remedied—in part, by reworking punitive damages policy.

There exists a tension between nature's non-market values and the market-based criteria embraced by the law and policy of punitive damages. This tension manifests in an undervaluation of ecological harm. In another sense, this tension manifests in an undervaluation of intact ecologies. Thus, to the extent significant ecological harm persists, then law and policy must be modified to address this persistence. If ecological harm persists in the face of punitive damages policies, then the courts, the economists, and the experts have erred in (1) their valuation of natural resources and the punitive measures which might preclude their degradation or (2) their choice of punitive damages as the primary policy measure. Put another way, if punitive damages are not deterring undesirable acts or omissions, then (1) the punitive costs imposed did not exceed the value of the polluter's incremental financial gains or (2) the punitive damages policy was, in and of itself, an inappropriate policy measure. The notion that a *bad actor* will inflict ecological harm, so long as she can make a profit by doing so, supports this assertion.

A legal cannon holds that decisions to breach contracts are, in reality, economic choices. This cannon further supports the assertion that decisions to forego precautionary measures are often based on rational self-interest. That is to say, every individual and entity possesses a choice between abiding by environmental regulations and violating those regulations and (if caught) simply paying damages.¹⁴ Here, however, the contract is more akin to Rousseau's *social contract*¹⁵ than to a private agreement between parties. To the degree that foregoing environmental protection is profitable for the scofflaw, the broad public and the ecological commons will always suffer loss.

Importantly, profound ecological harm persists—at multiple spatial and temporal scales.¹⁶ Many argue that punitive damages, at present, have no significant deterrent effect.¹⁷ In the least, persistent infliction of damage upon the ecological commons by individuals and entities indicates that punitive damages are not deterring ecological harm to a degree citizens and lawmakers would prefer. Thus, the policy of punitive damages for environmental harm must be restructured to reflect: not merely private market-based losses that result from damage to the environment and its natural resources, but also the immense public losses that result from harm to natural systems. Only in this way can damage/cost valuations approach an accurate accounting of harm. Only in this way can punitive damages serve a deterrent function. Punitive damages are a useful tool, but must be applied so as to achieve justice reflecting the unique circumstances of individual cases.¹⁸ While valuation criteria must account for non-market values, these criteria must be clarified and codified so that remuneration, punishment, and valuation are consistent across different polities and legal jurisdictions. Punitive damages must represent the reckoning force behind any suite of environmental or natural resource policies.

B. Overview

This essay explores various modes of natural value and human relationships with these values. These values implicate public spirit, community, and the broad well-being of society. Next, this essay examines the most infamous of punitive damage cases, the Exxon Valdez disaster. This essay concludes that a strong punitive damages policy must truly punish untenable acts or omissions—no matter the ostensible market-based inefficiencies that might result. Strong and consistently applied punitive damages policies are necessary if law, policy, and society are to act upon a land ethic and acknowledge the value of the ecological commons to the human generations of today as well as those of tomorrow. Operating under the assumption that environmental harm and damage to natural resources implicate public well-being, this essay's object is to provoke thought on how best to mitigate congestion at the crossroads of environmental law, public policy, and human values.

II. Natural Resource Damages: the Crossroads of Law and Economics

The notion of punitive damages lends credence to a Hobbesian view of human nature, whereby human instinct tends inherently toward selfishness, moral corruption, and corner-cutting.¹⁹ *Solitary, poor, nasty, brutish, and short.* This was Thomas Hobbes' characterization of human existence in an untrammelled state—absent civil society and the sovereign rule of law.²⁰ As the Reverend John Maclean said, “man, by nature, is a damn mess.”²¹ Some would consider this pessimistic. Others equate humankind's rational self-interest with the free market's *invisible hand*, in which society is propitiously cupped.²² Regardless of one's inclinations, the ability to explain and predict human behavior is important with respect to preventing human-actuated damage to the natural environment and its resources. For its ability to explain human behavior

and to ascribe values (sometimes accurately), the social science of economics is here useful. Moreover, if economics explains human behavior under given conditions, then law may be designed to respond appropriately. In the case of punitive damages, the law should create disincentives for inflicting environmental harm, while also creating incentives for erring on the side of precaution. The realm of punitive damages is thus a crossroads where the science of economics merges with the institution of law—both that of human construction as well as universal or natural law. The myriad human values that law and society must reconcile, however, complicate matters.

Punitive damages for environmental harm exist today in varying contexts and degrees. Punitive damage assessments are controversial and complex, figuring prominently in both civil and criminal law. Few argue that malicious acts or omissions resulting in significant environmental harm should go unpunished. Nonetheless, the issue is blurred where damage stems not from malice, but from plain negligence. Furthermore, one must ask whether imposing punitive damages on a particular actor, such as a private corporation, will accomplish the goal of deterrence. To what degree does assessing a monetary fine intended to punish, actually punish those who might have prevented the damage in the first place? Who in particular bears the onus when a corporation is fined? If the goal of punitive damages is punishment and deterrence, what is the appropriate monetary threshold that will accomplish these goals in any given situation? How is public natural value to be monetized? Depending upon the answers to these questions, punitive damages may or may not be the most appropriate policy tool.

As the aforementioned vagaries suggest, the policy goals behind punitive damages must be clarified if such policies are to serve a useful purpose. Likewise, the

values that underlie punitive damages policy, as applied to particular acts or omissions, must come to the fore if the efficacy of such policy is going to be debated. That is to say, the law must not simply prohibit oil spills or the poaching of a threatened species of wildlife; the law must communicate that prohibitions have been codified to protect the ecological commons and the intergenerational public value it represents. Courts may then look to these fundamental values in order to achieve more consistent application of punitive damages to particular cases. The common law will then better mirror the values driving legislative statutes.

A. Natural Value: Public by Nature

What is environmental harm or damage to natural resources/ natural value? This seems a rhetorical question, but it warrants discussion. Lawmakers and law interpreters must answer this question in a plenary fashion if punitive damages are to be effective and useful. Damage to natural value would include 1989's 11 million gallon Exxon Valdez oil spill into Prince William Sound.²³ It would also include the disposal of 80,000 tons of dioxins and other toxins that festered beneath unknowing residents of Love Canal, New York through the 1970s.²⁴ But what of less infamous instances, such as 2000's Pinestrip timber sale in Oregon's Umpqua National Forest, in which U.S.F.S. foresters accidentally allowed Boise Cascade, Corp. (now Office Max, Inc.) to clearcut 12 acres of late succession riparian forest reserve?²⁵ Does the fact that Boise Cascade had paid the Forest Service \$245,000 for the harvested timber affect analysis of the indiscretion?²⁶ What of 2002's payload drop of toxic fire retardant into Oregon's Fall River, a once-blue ribbon spring creek? This mishap resulted in the death of (at least) 20,000 brown trout, Oregon red band trout, brook trout, and whitefish.²⁷ Does it matter that the hapless airplane pilot was a government employee fighting wildfire on public forest lands?

These are discrete, conspicuous events, but what of inter-temporal damage that is difficult to monitor and control? For example, does any obligation or duty attach to a Colorado rancher whose land abuts the Colorado River, riparian habitat for threatened Colorado River cutthroat trout?²⁸ Over decades, this rancher allows her cattle to graze off the scouler willow, water birch, and narrowleaf cottonwood whose root systems undergird the streambank's structural integrity. Increasingly, the shoreline erodes, clogging spawning habitat and harming threatened salmonid populations. As time passes, no vegetation takes root on the friable banks. Hence there is no coarse-woody debris to provide shelter for riparian birds, mammals, and fish. While restoration to reference conditions is, in rare circumstances, possible, what is the cost? Who foots the bill? Will the rancher's grandchildren enjoy the existence of native cutthroat trout in the upper Colorado? Who is harmed by the rancher's behavior? Does the rancher have any short or long-term obligation to avoid such harm? If so, to whom is she obligated?

What of the western water right holder who regularly extracts more than her allocated share of surface water from a flowing river, but does so late at night—knowing that other members of her community will not notice the taking? What of the person who dumps her auto ashtray's contents onto the street, to be carried into the local stream or river?

These anecdotes represent a small sample of instances of harm that routinely threaten public natural value. Many other modes of harm to natural values exist. Among these are: hard rock mining, mountain top removal, the garage mechanic who disposes her motor oil in the river, the small beach community that surreptitiously fills its wetlands for development as property values climb, the poacher of wild game, and more. This

essay does not attempt to reconcile the infinite modes of damage to natural value.

Rather, the message is that there exist myriad categories of natural value. Further, many of the values harmed most often are inherently public—independent of whether implicated land and resource owners or users are private entities or citizens.

Public value is manifest in many different natural resource issues. Speaking of the rights to water that flows through public waterways, former Director of the Bureau of Reclamation, Elwood Mead (the namesake of Lake Mead National Recreation Area, NV) wrote in 1903:

The whole system is wrong. It is wrong in principle as well as faulty in procedure. It assumes that the establishment of titles to snows on the mountains and the rain falling on public land and the water collected in lakes and rivers, on the use of which the development of the State must in great measure depend, is a private matter. It ignores public interests in a resource upon which the enduring prosperity of communities must rest.²⁹

Though Mead referred to the inherent natural value and public nature of fresh water, the idea translates easily to other natural resources, such as wildlife, open space, clean air and water, public land, and others. Aldo Leopold conveyed sentiments similar to Mead's when speaking of wildlife:

We have realized dimly, of course, that a day afield was good for the tired businessman. We have also realized that destruction of wildlife removed the incentive for days afield. But we have not yet learned to express the value of wildlife in terms of social welfare. Some have attempted to justify wildlife conservation in terms of meat, others in terms of personal pleasure, others in terms of cash, still others in the interest of science, education, agriculture, art, public health, and even military preparedness. But few have so far realized and expressed the whole truth, namely, that all these things are but factors in a broad social value, and that wildlife, like golf, is a social asset.³⁰

Like Mead and Leopold, others have invoked the public value of natural resources—in many contexts. In a strident defense of nationally-held public lands from the County

Movement that would have seen those lands privatized, Chief (Emeritus) of the U.S. Forest Service, Jack Ward Thomas, invoked public welfare and its dependence upon social assets of natural value:

Speaking for myself, I won't stand for [making public lands private] for me and I won't stand for it for my grandchildren and I won't stand for it for their children yet unborn. This heritage is too precious and so unique in the world to be traded away for potage. These lands are *our* lands—all the lands that most of us will ever own. These lands are ours today and our children's in years to come. Such a birthright stands alone in all the earth. Hell no!³¹

And so, damages to natural resources—whether title to the underlying estate is publicly or privately held—affect the greater public's welfare. As these testaments indicate, natural values—the land—represent various and visceral components of human lives. Because natural resource damages are various, they implicate many realms of the law: administrative law, criminal law, environmental law, international law, maritime law, natural resource law, public land law, the law of wildlife and game management, torts, and others. Through all of these realms of discourse runs a common thread—namely, that of public welfare and its dependence on the ecological commons.

Although this essay addresses the law and policy of the United States, international efforts such as the Kyoto Accords acknowledge *universal* public values and the increasing realization that many environmental problems are trans-boundary in scope.³² Many nations agree that the earth's capacity to supply resources and support all extant forms of life is fixed in space and time.³³ The United Nations 1975 Charter of the Economic Rights and Duties of States speaks of “Common Responsibilities towards the International Community[:]”³⁴

The protection, preservation and enhancement of the environment for the present and future generations is the responsibility of all [s]tates. All

[s]tates shall endeavor to establish their own environmental and developmental policies in conformity with such responsibility. The environmental policies of all states shall enhance and not adversely affect the present and future development potential of developing countries. All states have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction. All states should cooperate in evolving international norms and regulations in the field of the environment.³⁵

Although policy does not frequently acknowledge the link between public welfare and the ecological commons, this interrelationship undergirds the jurisprudence of natural resources damages. Punitive damages, in particular, if developed and applied consistently, can serve as an effective means for protecting the ecological commons by deterring feckless behavior. At present, punitive damages policy requires revision such that public natural values are brought to the fore and administration/valuation criteria of punitive damages policies are normalized across jurisdictions.

B. Punitive Damages as Deterrent Policy

Why are punitive damages important? What is their purpose? Environmental protection is a national and international concern. Studies reflecting public willingness to pay increased taxes in order to prevent damage to natural resources bear out this concern.³⁶ Although an illegally polluted body of water or extirpated wildlife population might warrant compensation from the polluters, there is never a guarantee of restoration to prior conditions—ecological, economic, or otherwise.³⁷ Thus, policy that deters harm to natural values is auspicious, whereas reactive policy mandating mitigation is dubious. Moreover, reactive law and policy tend to create perverse incentives in cases where a bad actor's marginal benefit from a particular act or omission outweighs her marginal costs. That is to say, a polluter, poacher, or private corporation will continue to harm public natural values so long as the harmful act or omission begets an incremental gain. Further,

as companies become more viable, the (relative) marginal costs of their polluting may diminish, thus increasing the likelihood that pollution activity will occur.

Philosopher Garrett Hardin's landmark essay, *Tragedy of the Commons*, illustrates the central problem of commonly-held natural values suffering at the hands of individual decisions. The following instance illustrates takings from the ecological commons—in this case, through the vector of resource pollution as opposed to that of resource extraction. Both are equally pernicious, at least where unsanctioned.³⁸

In a reverse way, the tragedy of the commons reappears in problems of pollution. Here it is not taking something out of the commons, but of putting something in—sewage or chemical, radioactive and heat wastes into water; noxious and dangerous fumes into the air; and distracting and unpleasant advertising signs into the line of sight. The calculations of utility are much the same as before. The rational man finds that his share of the cost of the waste he discharges into the commons is less than the cost of purifying his wastes before releasing them. Since this is true for everyone, we are locked into a system of 'fouling our own nest,' so long as we behave only as independent, rational, free-enterprisers.³⁹

As suggested by philosophers and economists alike, rational self-interest will have individuals and entities detracting from public values insofar as the actor gains from doing so.⁴⁰ Though many instances of damage to natural value are not tragedies of the commons in the strict economic sense, the same ilk of externalities—those benefiting a few while burdening the public—abound. Thus, deterrents such as punitive damages can, if applied properly, comprise a valuable component of environmental and natural resource policies designed to protect public natural value.

C. The Pyramid of Environmental Protection

Environmental protection consists of a (conceptual) pyramid of actors and actions: agencies, organizations, stakeholders, entities, and individuals. At the pyramid's base are frequent modes of enforcement. At the pyramid's apex are relatively infrequent

modes of enforcement. State, tribal, and local prosecutors and attorneys general; state and tribal environmental and natural resource agencies; and citizen groups and individuals comprise the pyramid's base. These actors engage in a variety of activities, ranging from: issuing citations, compliance orders, permits, revocations; to filing *citizen suits* and private lawsuits; to civil or criminal proceedings before administrative tribunals or in state or federal venues.⁴¹

Federal administrative agencies and their formal administrative actions under federal environmental laws comprise the next tier of the pyramid. These agencies include the Coast Guard; the Army Corps of Engineers; the Departments of Interior, Commerce, Housing and Urban Development; and the Environmental Protection Agency (EPA). EPA exercises primary enforcement authority under the suite of federal environmental protection laws. These include: the Clean Air Act (CAA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA/Superfund), the Clean Water Act (CWA), the Resources Conservation and Recovery Act (RCRA), and others. Each federal environmental statute differs in its particular application, but most authorize agencies to issue emergency orders to prevent risks to public health, take remedial action, and issue compliance orders.⁴²

Civil actions brought in federal district court by the United States comprise the next tier in the pyramid. The preponderance of federal environmental laws provide for civil or judicial enforcement to secure injunctive relief, civil penalties, recovery of government response costs, enforcement of administrative orders, or other relief. The Department of Justice (DOJ) has, in recent years, carried an active docket of more than

1,000 matters under federal environmental protection statutes. This amounts, on average, to a new federal complaint filed each day.⁴³

Criminal actions stand atop of the conceptual pyramid as the most infrequent environmental protection actions. Interestingly, many criminal environmental enforcement cases are based on criminal provisions of the same federal environmental laws that affect lower levels of *the pyramid*.⁴⁴

Importantly, there is a distinction between remedies under federal environmental statutes (and their state counterparts) and common law remedies that may address both public and private rights.

D. Compensatory Remedies for Environmental Harm

A number of common law theories allow private and public entities to seek compensatory damages for harm to natural resources. Among these are nuisance, trespass, negligence, and strict liability. Depending upon circumstances, an injured party might also invoke breach of contract or warranty, misrepresentation, or fraud. Subtleties and nuances may vary between jurisdictions, but overarching remedial application of these claims is similar as between states. These theories are applied to natural resource damage claims in much the same way they are applied to property claims. The aforementioned common law claims are particularly useful to those harmed, but unable to bring claim under federal environmental protection statutes such as CERCLA.⁴⁵

Importantly, Section 929 of the Restatement (Second) of Torts provides that a person whose land/ property has been contaminated or otherwise harmed (but not completely devalued) is due the difference between the value of the land prior to the harm and that after the harm.⁴⁶ Comments note that reasonable remediation or restoration costs to original condition are generally allowable as long as these costs are not

disproportionate to the loss of value.⁴⁷ This commentary on property damage bespeaks the same problems inherent to punitive damages policy as designed to protect the environment. Namely, the language ignores the notion that restoration to some prior ecological baseline is often impossible.⁴⁸ Further, the cost of restoration or remediation might, in certain cases, dwarf the market value of the property as it existed prior to the harm. Moreover, the Restatement language makes no reference to broad public losses associated with environmental harm.

Importantly, federal environmental statutes will usually preempt traditional common law remedies. *City of Milwaukee v. Illinois* established this rule, noting its applicability in circumstances where (1) the federal statutory scheme has established a comprehensive program administered by an expert agency and (2) Congress intended to occupy a particular field.⁴⁹ Federal statutes such as CAA, CERCLA, CWA, RCRA, and others establish comprehensive regulatory programs to be administered by federal agencies. These federal statutes and others contain provisions allowing compensation to those injured as a result of destroyed or diminished natural values.

Federal environmental laws address particular modes of harm to public values such as clean air, clean water, and functioning natural systems. Many environmental statutes contain citizen suit provisions which allow private parties to seek injunctions to halt deleterious behavior, abate endangerments, and in some cases, to recover litigation costs.⁵⁰ Although *Erie R.R. v. Tompkins*⁵¹ established that there “is no general federal common law,” federal common law continues to develop when rule uniformity is required in order to protect “uniquely federal interests,” or when Congress has prompted the development of a particular realm of federal common law.⁵² A point of friction in the

law exists, however, with regard to private claims of damage. “The demise of federal common law of nuisance [at the hands of preemptive federal statutes] has had a substantial impact on the remedies available to private parties.”⁵³ Thus in many cases, private parties must rely on state law to bring damage claims. This is so because federal environmental statutes tend to limit damage claims to polities such as individual states, Indian tribes, and the United States collectively.⁵⁴ Although true and precise valuation/compensation is perhaps a nonsequitur in the realm of ecological disasters, compensatory provisions are a necessary stepping stone toward the legal recognition of natural values’ great import to society.

E. Punitive Remedies Generally

Under common law, punitive damage awards hinge upon the discretion of the trier of fact, and are intended to punish the defendant rather than compensate the plaintiff. Punitive damages are recoverable in cases where actual damages (compensatory or nominal) are recoverable on an independent claim of relief.⁵⁵ Punitive damages are appropriate in the case of a “deliberate act or omission with knowledge of a high degree of harm and reckless indifference to consequences.”⁵⁶ The descriptors: willful, wanton, malicious, reckless, and gross negligence, are often associated with acts to which punitive damages may be applied. Punitive damage awards are constitutionally valid so long as they are based on objective criteria and the defendant is protected from procedural irregularity.⁵⁷

III. The Market, Natural Value, and Ethical Dimensions

A. What are Natural Values?

Aldo Leopold’s *Land Ethic*, in its breadth and simplicity, encompasses the natural values to which law, policy, and neoclassical economic theory have traditionally paid little heed. Leopold noted that, “*a thing is right* when it tends to preserve the integrity,

stability, and beauty of the biotic community.”⁵⁸ In preserving the integrity, stability, and beauty of the biotic community, all values that attach to the biotic community are, likewise, preserved. These include intrinsic and option values ascribed to something because it exists, because there is value inherent to its being—independent of whether that value is harnessed, extracted, or used to one’s advantage. These include intergenerational or bequest values relating to the notion that one generation does not retain the right to deprive successive generations of humans from the natural values it enjoyed. These also include values relating to ecological function and health as well as cultural values relating to spirituality and religion. Finally, these include values tending more toward direct human utility, such as recreation. Notions of scarcity punctuate all such values. To this end, neoclassical economic supply-and-demand models may be applied to natural values just as they are applied to conventional market values. Something’s scarcity directly affects what the thing is worth. This holds true for natural values despite their absence from commodity markets. Leopold argued that natural values, despite their neglect, are commodities and must be valued as such if they are to be conserved. Natural resources—per Leopold’s reasoning—are, indeed, things *of use, advantage, or value*.⁵⁹

B. Intrinsic or Existence Values

In 1982 the United Nations General Assembly declared: “Every form of life is unique, warranting respect regardless of its worth to man.”⁶⁰ This sentiment expresses the idea of *intrinsic, existence, innate, or inherent* value. Thus, whether or not humans deem something worthy of a particular price or of exchange in a commercial context, has no bearing on a thing’s inherent worth. Philosopher, J. Baird Callicott made clear the distinction between existence values and use or utility values, asking: (a) “What is *x* good

for?” and (b) “What is *x*’s own good?”⁶¹ Holmes Rolston, III elucidates this idea by extending it to humans. For instance, for what is Susan good? Susan is a master of fine carpentry, capable of producing utility and beauty from natural materials. Alternatively, what is the good of Susan? She is sincere and loyal, honest and kind.⁶² Susan is akin to most human beings in that there are redeeming values to Susan independent of her value to others or of the good she can produce for others. And so, as human beings have inherent value (perhaps soul, goodness, love, unique traits), so do wild animals, ecological phenomena, and wild places. Certainly these natural things can *do* something useful for people. They can create inner peace, inspire, generate fond memories, facilitate human relationships, generate revenue, and more. Nonetheless, these same things are valuable independent of what they can do for humans.

Western Montana’s Big Blackfoot River holds intrinsic value. The Blackfoot serves humans in many useful ways. It provides recreation, extractive natural resources, agricultural sustenance, open space, and income for those in who harness its value. Important however, is the reality that the Big Blackfoot is valuable unto itself. There is no other river on earth that exhibits precisely the same meanders, riffles, runs, beaches, and natural assemblages of the Blackfoot. Others may be similar, but the Blackfoot retains its own character and spirit. In 2004 the citizens of Montana perhaps affirmed the unique character and value of the Blackfoot by passing a state-wide ban on cyanide heap leach mining based largely on a mine that threatened the Big Blackfoot.⁶³

The same inherent value is present in wild animals and the forces that moderate their existence. Though forest policy vilified wildland fire for a century, science today acknowledges its ecological import. Beyond its utility and alternately destructive and

restorative force, wildfire is perhaps a magical and unique phenomenon, outside of humankind's ability to control. Wildfire is valuable for its ecological importance and other reasons relating to both its human utility as a land management tool and its intrinsic values. With proper mindset, one may perceive inherent value in many things.

C. Intergenerational or Bequeath Values

Intergenerational values perhaps best illustrate the idea that human tenants of the land are not true owners no matter the arguments otherwise. This is so because the individual will cease to walk upon the land, while the land (organism) itself remains. And so, despite its political and social utility, the concept of private property is merely a human construct within the vast expanse of time. This being the case, the ecological legacy that a tenant of the land bequeaths to her heirs—be they public or private, progeny or polity—holds profound implications for successive tenants of the land.

Acknowledging the inter-temporal value of natural resources, retired wildlife manager Jim Posewitz writes of the unique intergenerational values hunting provides:

It is always someone's turn to prepare the North American hunting heritage for its transition to the next generation. Across this vast continent there are always... people about to take aim at a sparrow. As... hunters, we have feasted on a wild bounty born of sacrifice and accomplishment as deep as our nation's history. It is time to shoulder the responsibility that comes with the privileges that are ours. As hunters of the North American commons, we are bound to both the deeds of our predecessors and the expectations of our heirs. We must recover the common purpose that once existed...⁶⁴

Though Posewitz speaks of wildlife, he acknowledges the inherently public nature of the biotic community. Importantly, the *public commons* refers not only to the public of today, but also to the public of future generations.

Writer, Wendell Berry pays homage to land and place with the notion that each land owner should manage her land—her place—in light of the inevitable succession of

generations.⁶⁵ To this effect, Berry quotes the scriptures: “Thou shalt see thy children’s children, and peace upon Israel.”⁶⁶ Native American cultures express a similar consideration of future generations. Here, New Corn of the Pottawattamie people speaks to intergenerational obligation:

The heavens and earth are my heart. The rising sun is my mouth. My lips dare not lie to you. My friend, I ask the same from you. Do not deceive us. Be strong and preserve your word inviolate. I am old, but I shall never die. I shall always live in my children’s children.⁶⁷

Wendell Berry notes further, that by bequeathing to one’s heirs a healthy and functioning land and ecology, one also bequeaths a sense of place and meaning—both of which are intrinsic values.⁶⁸ Recognition and respect for natural, non-market values thus tends toward positive externalities or spillover effects. That is to say, managing for one sort of non-market value tends toward others. Conversely, neglecting one set of natural values (intrinsic values for example) will likely preclude honoring other natural values (such as bequeath values) and tend toward negative externalities.

In *Crossing the Next Meridian*, Charles Wilkinson illustrates the intergenerational loss of natural value in his chapter, *The Rancher’s Code*. Wilkinson discusses Camp Creek, a drainage in the Maury Mountains of Central Oregon. Camp Creek flows northward at an elevation of 4-5,000 feet, to its confluence with the Crooked River. The Camp Creek country is high desert, receiving a scant 12-14 inches of precipitation per year. In 1825, Peter Skene, a British fur trapper, observed that the banks of Camp Creek were “lined with willows” and that the soil was “remarkably rich,” while grasses in some places reached “7 feet high.”⁶⁹ Further, Skene noted that the beaver trapping potential was unequaled by any drainage in the territory. Later, in 1875, the Oregon survey noted

Camp Creek's meadows, marshes, and abundant bunchgrass. Enter domestic cattle beginning in the 1880s.⁷⁰

Wilkinson notes that since the 1880s, cattle have “worked over camp creek in almost incredible ways.”⁷¹ The creek, no longer runs through grassy meadows, but through a “hard-packed floor at the bottom of deep cut banks.”⁷² Few beaver and no willows remain. Furthermore, the hydrologic cycles have been thrown off. With little to no vegetation and water storage capacity, runoff is drastic in the spring, leaving the gully dry by summer.⁷³ In 1905, one generation later, Israel Russell of the U.S. Geological Survey noted:

Its surface is intersected by arroyos, or small canyons, through which water flows during the wet season. Joining the main trenches are several branches, each of which follows the longer axis of the valley, ranges from 60 to 100 feet in width, is approximately 25 feet deep, and has vertical walls throughout the greater portion of its course... The change... probably coincides with the introduction of domestic animals in such numbers that the surface covering of bunchgrass was largely destroyed and in consequence the run-off from the hills accelerated.⁷⁴

Today, notes Wilkinson, one sees a “‘trench’ 25 feet deep and 100 feet across... If you stand on the creek’s rocky bed..., you can visualize the immense amount of earth that was driven downstream during the last two decades of the nineteenth century.”⁷⁵

The erosion continues. Modern maps note that Severance Reservoir sits on Camp Creek seven miles from its confluence with the Crooked River. A farmer, one Ned Severance, created the reservoir by building a dam in 1952. Severance Reservoir was noted for its trout fishing. Today the reservoir is gone. By 1977, its full capacity had been occupied by earth eroded from the stream channel above. Millions of tons of sediment displaced the waters of Severance Reservoir—all due to “cattle and sheep or, much better put, to the poor management of cattle and sheep by human beings.”⁷⁶

Importantly, many might counter this anecdote of human-actuated intergenerational loss by citing to *natural* disturbances that burn forests, dump sediment into streams, and block fish passage. Their point being, that humankind is not much different in its effect on the landscape than *mother nature*. This argument, aside from its tenuous empirical footing, is hollow. It ignores the ethical component of life as a human being. The land steward has a choice as to how many cattle to graze, where and when to harvest timber, what products to consume, where to deposit refuse, what species of flora and fauna to foster, and whether she takes it upon herself to learn the basic needs and ecological function that exist on her land and will continue to exist on that land after her death. Though in certain situations humans are unlikely to act against their economic self-interest, one cannot ignore ethical components and freedom of choice as to the degree to which one impacts the land and its functions.

D. Ecological Function and Health Values

When Aldo Leopold spoke of human responsibility for the health of the land, he did so with an eye toward the systems and processes that allow for the maintenance of an ecological balance. Leopold spoke of cycles and patterns, of the energy of burnt oak reappearing as “red apples or the spirit of energy in some October squirrel.”⁷⁷ Leopold’s writing often commented upon the cycles and patterns that he observed on the landscape over time, whether manifest in the cycling of nutrients, the annual migrations of waterfowl, or the ecological interactions between rabbits and bog birch.⁷⁸ Much that is natural has obvious values evinced by aesthetics, hiking, hunting, fishing, real estate prices, and the dollars spent and taxes collected in pursuit of such things. Underlying all natural values, however, is the notion that natural systems react to human use of the land. In this way, a system’s ability to maintain its own balance, to remain stable in spite of

human activity is a good measure of a system's health, or capacity for self rejuvenation. An ecology that is healthy, *per se*, can produce the many natural values humans enjoy without much prodding. However, one must always consider the issue of temporal scale. That is to say, an unhealthy ecosystem may recover its natural balance after hundreds or thousands of years, but that natural system which is more resilient in the short term is perhaps more healthy.

Thus, there is greater human utility where natural systems—the land—can provide myriad natural values without the aid of costly and inefficient management inputs. For example, a mid to late-succession forest that produces timber for wood products, trails for recreation, habitat for many species of flora and fauna, water storage and filtering capacity, oxygen producing capacity, spiritual values, cultural traditions, and a sense of place provides these values at little cost to humans, except where humans have overdrawn from the ecological bank account. If such overdrafts occur—if humans extract too much timber, overuse trails, trample understory vegetation, use the forest as a waste repository—then the forest and its inherent systems lose the capacity to sustain themselves. The natural balance is lost. Consequently, humans must expend greater amounts of time, energy, and capital into management merely to attain some prior baseline of ecological health. The lesson being, with some sacrifice of short-term anthropogenic benefits, human users may maintain ecosystem health into the long-term. Achieving this manner of long-term sustainability should undergird the law and policy of natural resources and the environment. Punitive damages policy, if *perfected*, would see reactive policy and ecological restoration become obsolete. Appropriate deterrent

policies would require necessary short-term sacrifices be made so to fend off the long-term ecological debt that grows unwieldy under the burden of compounding interest.

E. Culture, Spirituality, and the Value of Place

Natural values that foster cultural identity, spirituality, and sense of place are ubiquitous, but difficult to quantify. The Mission Mountains Tribal Wilderness, for example, is a natural place that is protected from development and is to be preserved for the exclusive use of the Salish and Kootenai Tribes. The Tribal Wilderness is a place of spiritual and cultural import that ties tribal members to their ancestors by virtue of a common place, by virtue of the values that the Mission Mountains embody and nurture. These values are present on the land and all that derives sustenance from the land—the animals, trees, water, and intrinsic values that attach to these things.

Lands across the world hold a similar import for sundry cultures and communities. Many feel an ineffable connection to a certain place, perhaps one's birth place, or a place where one experienced catharsis or profound renewal. Perhaps the place where one's spirit is at rest offers no particularly striking qualities, except that it provides comfort to the soul. Norman Maclean wrote of the Big Blackfoot River of Western Montana in his semi-biographical novella, *A River Runs through It*.⁷⁹ The metaphorical waters of the Blackfoot "haunted" Maclean, symbolizing for him the mysterious bends, riffles, runs, and pools that bound his family to place and to one another.⁸⁰ Speaking of his father, the film adaptation's character of Norman Maclean notes,

In the afternoon we would walk with him while he unwound between services. He almost always chose a path along the Big Blackfoot, which we considered our family river. And it was there he felt his soul restored, and his imagination stirred.⁸¹

In the novella, Maclean wrote,

It is the river we knew best. My brother and I had fished the Big Blackfoot since nearly the beginning of the century—my father before then. We regarded it as a family river, as part of us, and I surrender it now only with great reluctance to dude ranches, the unselected residents of Great Falls, and the Moorish invaders from California.⁸²

Montana's Big Blackfoot was to Maclean as perhaps Massachusetts' Walden Pond was to Henry David Thoreau,⁸³ East Staffordshire's River Dove was to Sir Izaak Walton,⁸⁴ or *the Shack* in Sauk County, Wisconsin was to Aldo Leopold.⁸⁵ Though development and sale of such hallowed ground on the open market would provide one measure of value, the cultural and spiritual non-market values of such places are not readily monetized. Moreover, it is perhaps futile to attach market figures to the spiritual and cultural value of place—values that are largely inscrutable. What was the value of Reverend Maclean's reveries on the banks of the Blackfoot while fly fishing with his sons? Such values will always defy the experts, but should garner standing under the law nonetheless.

Wendell Berry writes of place with a passion and spiritual commitment tantamount to any who write of great peaks and mystical sands, yet Berry writes of a small rural community in Kentucky.⁸⁶ And so, there is no single formula which captures the spirit of place or quantifies the value of place or community. Nonetheless, none can challenge the existence of place-based values and their power to stir the human soul.

The importance of actively considering the spiritual and cultural values of place becomes critical when such values are threatened. This threat may come from environmental degradation, unwise or excessive human use, or from conventional modes of economic development. As far as Wendell Berry is concerned,

A community is, by definition, *placed*, its success cannot be divided from the success of its place, its natural setting and surroundings: its soils, forests, grasslands, plants and animals, water, light, and air. The two

economies, the natural and the human, support each other; each is the other's hope of a durable and livable life.⁸⁷

Here Berry reduces to words the idea that humans, land, ecological function, and all living things are integrated and inseparable. This bolsters the notion that the land ethic is an inescapable obligation that attaches to each human, that supercedes the individual right of a land tenant to live destructively on the land.

F. Use Values

Values relating to humans' active use of the natural landscape are perhaps the values most readily applied to conventional economic markets. These values might be those relating to recreational use: hunting, recreational fishing, hiking, bird watching, transportation. Use values might also relate to extractive uses: commercial fish harvest timber, mining ore, harvesting plants, seeds, or fungi. It is not difficult, then, to acknowledge that where the natural landscape becomes imbalanced and unhealthy, such that it no longer produces these values—or produces them at a diminishing rate of return—that there will arise a direct economic effect.

The town of Butte, Montana was once the town of copper kings. In the 1920s, Butte's Anaconda Mining Company was the fourth largest company in the world, and owned much of the land and mining interests in the area.⁸⁸ The town flourished. Over the years however, few precautions were taken. For decades, mining operations placed tailings directly into the Clark Fork of the Columbia River. An ecological disaster that will not be fully mitigated for hundreds or thousands of years—if at all—now burdens today's generations of Montanans. Moreover, the landscape that was put to use in Butte lost the ability to produce the values it once produced. Many streams in the area that saw mining activity are now polluted by acid mine drainage and no longer support significant

biotic communities—much less recreational opportunities.⁸⁹ Furthermore, the environmental problems created by a past generation of humans in Butte are now burdening most communities downstream of the once-great copper town. Butte illustrates the delicate nature of use values. Should unfettered short-term use of the landscape occur, future generations will long bear the costs. Butte illustrates further, that abused landscapes may never recover ecological function. Without ecological function, the ability to produce many other values is lost.

Use values are perhaps those values most abused by humans, because they often offer the potential for short-term economic gain—whether in the form of guided fishing, mining, timber extraction, or hunting.

The notion that there is much overlap between all of the values here discussed is important. It can, for example, be said that for the loggers of old, there was something intrinsically valuable to a life among the trees and forest animals, all the while cutting one down and eating the other. Is this lifestyle not an example of both intrinsic and use values? There is glory and nostalgia in many of the old extractive cultures: the voyageurs, the trappers, the mountaineers, the miners. Thus it is unfair to simply characterize certain use values as right if they are non-intrusive and wrong if they exact a greater ecological toll. While such simplifications may sometimes be warranted, it is apparent that when ecologies have suffered most in the past, associated therewith may have been flourishing human communities and local economies—whether it was Butte of the early 1900s, Forks, Washington before the first growth was finally and completely harvested, or any other bygone extraction-based town. Thus, application of a land ethic to public policy—accounting for natural value—is a complex and confounding task.

Generalizations are dangerous. Most any ecological harm will have benefits and beneficiaries—both conspicuous and inconspicuous. This fact by no means celebrates damage to natural values, but merely elevates the obligation to incorporate a land ethic and consciousness of the ecological commons into law and policy. By doing so, humans may come to see their obligation to determine the benefits and costs of a certain course of action and to make appropriate ethical considerations—to determine whether *a thing is right*. Each must attempt to discern the costs and benefits of her actions not only with regard to herself, but also with regard to ecological communities, human communities, and future generations. Private and public entities alike should actively promulgate a land ethic in society at large as well as in the laws by which it is governed.

IV. The Case of the Exxon Valdez

If the consequences of one's actions are felt only by one's self, one will take optimal precautions to avoid accidents. Economists predict that a rational person will invest in accident avoidance just enough resources so that the marginal cost of accident avoidance equals the marginal benefit of accident avoidance. In the case of accidents that affect others, the individual's incentive to take precautions is not optimal unless the liability system acts to "internalize" the costs of the accidents.

-The Economics of a Disaster⁹⁰

The Exxon Valdez oil spill is an obvious target for criticism. It was a disaster in the literal sense of the word. The Valdez provides a crystalline example of the ilk environmental harm—in both magnitude and manner—that law and policy must actively deter. The disaster proves that reactive policy is inefficient; that cleanups and compensation, no matter how rigorous or voluminous, are never adequate. Arguably, the Exxon Corporation and its parent Alyeska failed to take necessary precautions with regard to their use of a single-hull tanker, their failure to ensure an adequately staffed crew, and their employment of an alcoholic sea captain. These problems stand atop the

chain of events leading to one of the worst oil spills in U.S. history—though the Valdez disaster is not even among the 50 worst spills globally.⁹¹

Ironically, it is not infamous disasters such as the Valdez that most detract from the ecological commons. It is the cumulative impact of smaller commercial endeavors. The National Research Council reports that on an annual basis (globally), offshore drilling activity dumps into the ocean the equivalent volume of 1.3 times that of the Valdez spill; major spills from tankers dump into the environment 3.3 times the volume of the Valdez spill; bilge cleaning and other ship operations dump into the environment the equivalent of 12.5 times the volume of the Valdez spill. Interestingly, the annual volume of engine oil road runoff equals 33 times the volume of the Exxon Valdez spill.⁹²

Law and policy must not only clarify that which is despicable about the Valdez disaster—that which is worthy of punitive damage assessments; public policy must also promulgate and codify the values underlying the Valdez damage assessments such that all industries and enterprises are placed on notice; so that individuals and entities may customize their precautionary measures to protect values instead of merely obeying narrowly-tailored rules. This is an important concept because punitive damages, in the case of a discrete economic activity such as transporting crude oil, send a deterrent message only to those engaged in comparable activities. Unfortunately, the message which states that *all* activity should actively protect public natural values from harm, is perhaps drowned in the particular context of a multi-million-gallon oil spill. Where public natural value is at risk, punitive damages should send a more pervasive and ubiquitous message to be applied to all human enterprise. A warning to those engaged in the transport of crude oil does little to send a deterrent message to other sorts of human

endeavors that might pose a tantamount ecological risk, albeit through a different vector of pollution or harm.

A. The Spill

As midnight passed on March 24, 1980, the oil tanker, Exxon Valdez, ran upon Prince William Sound's Bligh Reef. The ship's payload of crude oil spilled forth into the cold Alaskan waters and continued to do so for more than two days.⁹³ More than 11 million gallons of oil spilled into the maritime ecosystems of coastal Alaska. The discharged crude contaminated more than 1,100 miles of coastal ecologies and human communities in Prince William Sound, the Kenai Peninsula, the lower Cook Inlet, the Kodiak Archipelago, and the Alaskan Peninsula. The Chugach National Forest, four national wildlife refuges, three national parks, five Alaskan state parks, four Alaskan critical habitat areas, and an Alaskan game sanctuary were among areas absorbing the ecological and economic tolls.

Biologists estimate that the immediate effects of the spill included the death of 350,000 shore-nesting birds, several thousand sea otters and other marine mammals as well as significant damage to populations of herring, roe, and salmonids.⁹⁴ These figures do not account for loss to subsequent populations of species—avian, aquatic, and otherwise. To this effect, oil's toxicity lowers organisms' resistance to disease, lowers reproductive success rates, inhibits growth and development, and disrupts biochemical processes and behavioral patterns.⁹⁵ Further, the spill occurred in the season during which most biota are biologically active. Thus, the affected ecosystems and their complex webs of life will likely suffer ripple effects long after obvious signs of the spill have diminished.⁹⁶ Following the spill, a vicious cycle of interactive ecological disturbance occurred as tides, wind, and weather events re-suspended and transported the

oil to new areas. In the years since the spill, oil deposits have weathered and hardened, again facilitating distribution of toxins and further disturbance.⁹⁷ Observer Marybeth Holleman notes that a 2001 study found more than 100 tons of toxic oil remaining on dozens of Prince William Sound's beaches. Much of the remaining oil is cached in high concentrations, weathers slowly, and remains acutely toxic. Only six of the 26 species and habitats most injured by the spill have recovered. Orcas, harbor seals, harlequin ducks, herring, sea otter, and other species are declining.⁹⁸

Continued ecological damage is inevitable. Further, the damage to subsequent generations of biota is not easily quantified. As of 2002, Southeast Alaskan populations of the common loon, three species of cormorants, the harbor seal, the harlequin duck, the Pacific herring, and the pigeon guillemot are not recovering from the damage inflicted by the spill. While some species have recovered to prior population densities and distributions, the future viability of other species populations remains unknown. Those populations in question include: the cutthroat trout, the dolly varden trout, Kittlitz's murrelet, the rockfish, and many subtidal communities.⁹⁹ Alaska's Oil Spill Trustee Council notes of human uses that:

A sense of normalcy is returning to the spill region, but as of 2002 residents, fishermen, and the tourism/recreation industry have not fully recovered. "Human services" of commercial fishing, subsistence, recreation/tourism, and passive use will have recovered when the injured resources on which they depend are once again healthy and productive. Since that level of recovery has not been achieved, each of these services is considered to be *recovering* [italics added].¹⁰⁰

On a positive note, Alaska's state infrastructure for spill prevention and response is much improved over the past 15 years. The coastal habitat protection program is also thriving.¹⁰¹ Nonetheless, it is clear that no sum—no matter how voluminous—could

undo the ecological and socioeconomic damage within the next generations of human life.

B. Political Forces and Bureaucracy

Following the spill, it took the U.S. Coast Guard three weeks to approve a cleanup plan, with the pollution spreading, interacting with ecological systems, and growing further complex and unmanageable by the hour.¹⁰² Bureaucratic wrangling set in as Exxon's objective was to "environmentally stabilize" beaches rather than to remove as much oil as possible. Alaska's Department of Environmental Conservation argued for a more thorough cleaning of contaminated beaches, while it was Exxon's contention that: "We are not removing the oil, but removing enough so the environment can stabilize and restore itself. We want to leave the beaches not damaging to wildlife."¹⁰³ More than a month after the spill, Exxon had cleaned—according to its own standards—eight miles of shoreline. At this point, at least 364 miles of shoreline had been contaminated. By June, a revised cleanup plan expanded cleanup priorities to 700 miles of shoreline. The U.S. Coast Guard, at this juncture, was employing on a daily basis seven major vessels, more than 20 aircraft, several smaller vessels, and more than 1,000 personnel. Exxon had deployed approximately 70 miles of boom, 55 skimmers, 460 support vessels, and over 3,000 personnel.¹⁰⁴ The logistics, scale, and circumstances of the disaster were perhaps beyond the capacity of any entity to deal with in an efficient manner—beyond any entity's ability to contain. After the initial spill, the exacerbation of environmental harm in space and time was unavoidable.

Despite Alaska's stock and trade in oil since the discovery of vast deposits below the sands of the North Slope's tundra in 1968, observers criticized the polity's submissive

approach in dealing with Exxon following the spill. Art Davidson, former Natural Resources Planning Director for the state of Alaska noted:

Whether from inexperience, lack of confidence in its enforcement powers, or fear of compromising its claims against Exxon, it's clear that the state [of Alaska] didn't exercise its authority as forcefully as it could have. As a consequence of this policy decision, cleanup opportunities were lost. When the first cleanup plans were formulated in April and May, the state could have ordered Exxon to recover the oil, both on and under the surface of beaches, instead of pursuing the policy of removing gross contamination from the surface... It could have insisted that Exxon collect the pooled oil that appeared through May and June. It could have established shoreline cleanup standards as clear and unequivocal as the fishing industry's zero tolerance policy [for oil spills].¹⁰⁵

Michelle Brown, an attorney for Alaska's Department of Environmental Conservation noted further, that "DEC had authority to issue specific orders, but for some reason opted not to. To make an order effective, it would have to be very detailed..."¹⁰⁶ Douglas Mertz, an attorney in Alaska's Office of the Attorney General noted that for a large spill, "compliance orders just aren't very good tools." Mertz stated that a cooperative approach with Exxon was, at the time, deemed more practical.¹⁰⁷ In contrast, Alaskan attorney Patti Saunders—who was not involved in post-spill litigation—noted:

The state was simply afraid to direct Exxon through a series of compliance orders. It's outrageous that we had to sit around and wait for Exxon to agree to do things. All the agencies twiddled their thumbs, saying, 'We don't have the authority to make them clean up.' That's hogwash! They do have the authority. What they don't have explicitly, they have implicitly, and the state should just take it and use it... The state of Alaska could have told Exxon, 'Clean all the oil up, try all possible techniques, stay out there till it's done.' But the state was in over its head... If Alaska had a history of issuing compliance orders for oil polluters, it would have known how to handle this kind of situation. But when this big spill happened, the state simply didn't have the guts to stand up to Exxon and demand that the oil be cleaned up.¹⁰⁸

Perhaps the state did not take as forceful a stance as it could have. Legal complexities, in any case, gave state officials pause. The state faced a Hobson's choice¹⁰⁹ between

marshaling the whole of its powers to force Exxon to restore the environment, and protecting its own position with regard to Exxon's filing damage claims and counter claims. That is to say, if the state overstepped its authority—the bounds of which were not clear to officials—then Exxon would claim interference and thereby reduce its own liability for damages. For their part, state officials described this as being a salient preoccupation in their post-spill analysis.¹¹⁰

The political posturing and balancing acts wherein Exxon, the state of Alaska, the federal government, and other players temporized and equivocated while environmental conditions worsened are symptomatic of ineffective law and policy. This is true not only from a deterrent standpoint, but also from a responsive or reactive standpoint. The political and administrative fumbblings in response to the Valdez disaster bespeak the need for stronger policies. Such policies would entail laws that would not allow Exxon the luxury of legal strategizing in the face of unfathomable ecological, public, and private loss. Ideally, policy should have included incentives to take greater precaution before such a disaster occurred. Better laws would, in the case of a Valdez-type event, dictate steps to be taken by polluters while granting clear direction to regulatory agencies to enforce timely remedial action.

Importantly, punitive damages will not deter all environmental disasters. In the final analysis, the realization of billions of dollars in damage payments did not compel Exxon to spend any more than it did on preventative measures. It is, thus, clear that punitive damages must be coupled with regulatory measures, collaborative efforts, and other policy mechanisms as part of a comprehensive approach.

In the years since the Valdez disaster, Alaska has improved its oil shipping laws and policy dramatically. Other states, however, have lagged behind. Among policies Congress passed in the wake of Valdez is that which states that every company and individual involved in a spill can be held personally liable for damages.¹¹¹ States, however, are hindered by principles of federalism with regard to regulating interstate commerce. After the Valdez Disaster, the oil industry successfully challenged Alaska's stepped-up shipping regulations.¹¹² This suggests that the federal government must take the lead in guiding national policy that would protect natural values.

C. Ecological Damage Assessment

Importantly, it is physically impossible to account for all of the direct and interactive effects of an ecological disturbance of this magnitude. For example, it is not practical to count deceased fish at the bottom of the sea, which may or may not have been killed by spilled oil. Likewise, it is not feasible to monitor ecological effects on a representative sample of *all* biotic communities. Were it possible to accurately assess ecological impact of the spill, the costs of such an endeavor in human labor and equipment would prove to be prohibitively expensive. Nonetheless, in such cases of egregious anthropogenic disturbance, it must always be assumed that pervasive ecological damage occurs—even where it has not been tallied. Moreover, where compensation is implicated, the notion that any figure might approach the sum total of ecological harm is ill-conceived. Ironically, observers have noted that with the more than \$400 million spent on post-spill research, has come more ecological disturbance—this, in the form of water and aircraft, tent-camps, and intrusive sampling methods.¹¹³ This is but one of the unforeseen and uncompensated externalities catalyzed by such a disaster.

Without considering larger policy problems relating to deterrence and punitive damages, the National Transportation Safety Administration determined the following factors to have caused the grounding of the Valdez:

- The failure of the third mate to properly maneuver the vessel because of fatigue and excessive workload;
- The failure of the master (Captain Joseph Hazlewood) to provide a proper navigation watch because of impairment from alcohol;
- The failure of the Exxon Shipping Company to provide a fit master and a rested and sufficient crew for the Exxon Valdez;
- The lack of an effective vessel traffic service because of inadequate equipment and manning levels, inadequate personnel training, and deficient management oversight;
- The lack of effective pilotage services.¹¹⁴

D. Perspective and the Ecological Commons

It is clear on the basis of benefit-cost analysis, that Exxon should have invested more than it did into precautionary measures. Certainly this holds true from the public perspective, but it also holds true from an isolated consideration of Exxon's finances. Exxon suffered significant losses. Actual damage to the Valdez was estimated at \$25 million; the market value of the lost oil was estimated at \$3.4 million; through August 1991, Exxon had expended \$2.1 billion on cleanup activities and reimbursement to government entities. Because of a civil settlement between Exxon, the State of Alaska, and the federal government in 1991, Exxon agreed to pay more than \$900 million for injuries to natural resources and services.¹¹⁵ On top, Exxon must pay more than \$4.5 billion in punitive damages.¹¹⁶ Nonetheless, much of the ecological harm is permanent. The disaster altered the successional trajectories of innumerable communities of flora and fauna. As observers note, the signs of the spill are ever present. Some species may never

recover. To borrow Wallace Stegner's words as penned in his famous *Wilderness Letter* of 1960, something seems "to go out of us as a people"¹¹⁷ when such ecological tragedies occur, when last frontiers are conquered, when humans have unalterably left their mark upon a once-pristine place.

V. Punitive Damages Reform: Promulgating a Legal Land Ethic

Some observers consider punitive damages policy to be a tumorous growth on the legal system. Punitive damage rewards are often substantial, vary widely across jurisdictions, are highly unpredictable, and lack well-defined guidelines for their administration.¹¹⁸ Indeed, the 2004 presidential campaign saw "tort reform" touted as a primary campaign promise by President Bush.¹¹⁹ Justice Sandra Day O'Connor, in *Pacific Mutual Life Insurance Co. v. Haslip*, noted of punitive damage awards:

Punitive damages are a powerful weapon. Imposed wisely and with restraint, they have the potential to advance legitimate state interests. Imposed indiscriminately, however, they have a devastating potential for harm. Regrettably, common-law procedures for awarding punitive damages fall into the latter category. States routinely authorize civil juries to impose punitive damages without providing any meaningful instructions on how to do so. Rarely is a jury told anything more specific than 'do what you think best'... such instructions are so fraught with uncertainty, that they defy rational implementation. Instead, they encourage inconsistent and unpredictable results by inviting juries to rely on private beliefs and personal predilections. Juries are able to target unpopular defendants, penalize unorthodox or controversial views and redistribute wealth. Multimillion dollar losses are inflicted on a whim. While I do not question the general legitimacy of punitive damages, I see a strong need to provide juries with standards to constrain their discretion so that they may exercise their power wisely, not capriciously or maliciously. The Constitution requires as much.¹²⁰

Justice O'Connor iterates the idea that indiscriminate imposition of punitive damages defeats their purpose. The purpose of punitive damages policy is further defeated to the degree that bad actors are able to *forum shop* and predict the venues where their negligence will meet few repercussions. Nonetheless, the notion that bad actors are wary

of certain venues and would actively seek to avoid certain jurisdictions suggests that punitive damages can, in fact, serve a deterrent function. Justice O'Connor's concerns for consistency of application are widely held. In order to obtain such consistency of application, the values underlying punitive damage policies must come to the fore. The law must come to reflect the ecological commons and that which it represents to human communities. The law must come to reflect a land ethic in a holistic sense.

If punitive damages policy and law is to incorporate a holistic ecological consciousness, it must embrace and codify the notion that environmental injury is largely permanent. If they are to protect the greater public, deterrent policies should not only be applied consistently, but impose severe punishments.

Environmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, *i.e.*, irreparable. If such injury is sufficiently likely, therefore, the balance of harms will usually favor the issuance of an injunction to protect the environment.¹²¹

VI. Conclusion

Perhaps the most serious obstacle impeding the evolution of a land ethic is the fact that our education and economic system is headed away from, rather than toward, an intense consciousness of land... The 'key-log' which must be moved to release the evolutionary process for an ethic is simply this: quit thinking about decent land use as solely an economic problem. Examine each question in terms of what is ethically and esthetically right as well as what is economically expedient.

-Aldo Leopold¹²²

Of the voluntary acts of every man, the object is some good to himself.

-Thomas Hobbes¹²³

The care of the publique [sic] must oversway all private respects.

-John Winthrop¹²⁴

Any person who is so addicted to his private [interest], that he neglect[s] the common good... is void of the sense of piety and wisheth peace and happiness to himself in vain.

-William Laud¹²⁵

Regulatory measures are merely one aspect of what should be a comprehensive environmental policy. Certainly, citizen suit and strict liability provisions are auspicious, but an ecosystem-based environmental policy should entail a host of measures. In addition to regulatory measures, comprehensive environmental policy should include education, collaboration, tax-based incentives, subsidization of conservation-based activity, conservation-based marketing—and yes, the foreboding sentinel of punitive damages. The economic law which holds that actors will pollute, poach, or pilfer from the ecological commons when a profit can be made by doing so is apropos. Violations of federal environmental statutes occur regularly, and publicly-funded lawsuits regularly follow—further detracting from public coffers and judicial efficiency.¹²⁶ Punitive damages policy should be clarified, bolstered, normalized across jurisdictions, and not passed by the wayside in circumstances where it seems that large damage awards will harm private stockholders or otherwise create an economic inefficiency. When economic criteria are the default measures of deterrence and punishment, natural values—public values—will always lose.

Some liability systems beget too much precaution on the part of the actor; some beget too little precaution. An excessively cautious individual will reduce the likelihood of damage to natural values to zero by remaining in bed all day. Likewise, the manufacturer that is forced to produce the *risk-free oil tanker* would sell few vessels, as they would never leave port. Eliminating all risk is thus a naïve concept; nonetheless, a system wielding no punitive measures would see careless, self-interested behavior taken to extremes.¹²⁷ As with all issues of public policy, appropriate balance is the ever elusive end. Concepts such as optimality and efficiency—whereby harm to public natural values

is offset or balanced by market-based gains—comprise primary influences on public policy. This is so because money is scarce, while human needs are many. In light of the relative scarcity of monetary resources, policy analysts must always perform benefit-cost calculations. Under these traditional calculations, policy analysts tend to discount the loss of or harm to ecology-based values under circumstances wherein the harmful incident has little or no effect on market criteria, such as commodity prices or demand for goods and services. And so, policy does not typically account for all of the public natural values which market signals tend to ignore.

Economists suggest that the solution lies in accurately accounting for the cost of ecological harm; that if a liability system over-estimates or under-estimates the magnitude of costs, then non-optimal investment in accident avoidance will result.¹²⁸ Hence, economists conclude that estimation of costs/harm is the key to deterring harm. To be sure, this line of reasoning is the arcane product of ivory towers. Though valuable in many contexts, public policy cannot rely solely on such theories, precisely because the many natural values described here and elsewhere defy accurate and plenary estimation of costs, harm, or value. So, despite the rarefied economic theory, one is left again with the prospect of untying the Gordian knot¹²⁹ of cost/damage valuation for harm to natural values. The persistence of ecological harm at the hands of commonplace human enterprise suggests that an *Alexandrian*—a more heavy handed—solution is needed. Though doctrines such as *parens patriae* and public trust move toward the reactive protection of public values,¹³⁰ they do not force actors to prospectively account for the great public auspices that rest upon intact ecologies. A strong punitive damages policy must truly punish untenable acts or omissions, and it must do so precisely because a

consistent punitive damages policy gives all actors the fair warning they might require: *an ounce of prevention is worth a pound of cure*. Strong and consistently applied punitive damages policies are necessary if law, policy, and society are to act upon a land ethic and to reflect the comprehensive value of the ecological commons to generations of today as well as those of tomorrow.

Somehow the watercourse is to [the land] what the face is to human beauty. Mutilate it and the whole is gone. The rest of the organism may survive and even do useful work. The economist, the engineer, or the forester may feel there has been no great loss and adduce statistics of production to prove it. But there are those who know, nevertheless, that a great wrong has been committed—perhaps the greatest of all wrongs, and the sadder because both unintentional and irretrievable.¹³¹

Leopold penned these words in 1937. They were prescient, holding true today as much as when he wrote them. To decry the loss of ecological components and the mutilation of the ecological commons is not to indict economic progress. The message is not that of the Luddites; for technology, development, and economic progress—used in concert with deterrent policy—is the road ahead. Nonetheless, society must acknowledge and interpret the feedback loops that nature perpetually sends. Perhaps Hobbes was accurate in his assessment of human nature. Perhaps Hardin was more right than wrong in predicting the prevalence of self-interest where public natural values—the ecological commons—bears the risk of use. Thus, if punitive damages are to be applied as a policy tool, they must prevent the regularly-occurring, uncompensated, unpunished takings from the ecological commons. Punitive damages policy should be clear in its application, placing all actors on notice that degradation of natural values is unacceptable, except where law explicitly indicates otherwise. Punitive damage policy should thus provide fair warning that negligent or willful acts or omissions may beget dire consequences.

This essay does not indict traditional policy tools: liability, taxation and monetary incentives, education, technology transfer, subsidization, and collaboration between conflicting interests. Rather, this essay exhorts the integration of a land ethic—an accounting of public natural values—into the law and policy of natural resources and the collective conscience of public and private sector decision makers. Objective and stolid application of punitive damages policy as *one* component of a policy suite discouraging the destruction of natural values is necessary. This policy would punish misdeeds in spite of ostensible net-social losses or market inefficiencies that may result. After all, one cannot argue that social losses born of extensive punitive damages outweigh ecological harm, when there is never a true accounting of that harm and its translation to diminished public welfare. Moreover, punitive damages, if administered to account for public natural values, can help foster the protection of those values by individuals and entities. In this way, humans may better understand and maintain complex and inscrutable, intrinsically valuable ecologies. This is, of course, *the first precaution of intelligent tinkering*. We need not adhere to Robert Frost’s admonition that *nothing gold can stay*.¹³²

¹ Presidential Management Fellow, U.S. Forest Service, Ph.D. University of Montana College of Forestry & Conservation 2005, J.D. University of Montana School of Law 2005, M.P.A. University of Washington Daniel J. Evans School of Public Affairs 2002, B.A. University of Pennsylvania 1997.

² Aldo Leopold, *A Sand County Almanac with Essays from Round River* 279 (Ballantine Books 1970).

³ PK Rao, *International Environmental Law and Economics* 1 (Blackwell 2002).

⁴ James Peck, *Measuring Justice for Nature: Issues in Evaluating and Litigating Natural Resource Damages*, 14 *J. Land Use & Envtl. L.* 275, 275 (1999).

⁵ Eric Higgs, *Nature by Design: People, Natural Process, and Ecological Restoration* 78 (Massachusetts Institute of Technology 2003).

⁶ Aldo Leopold, *A Sand County Almanac and Sketches Here and There* 201-226 (Oxford University Press 1987 (1949)).

⁷ Aldo Leopold, *Round River: from the Journals of Aldo Leopold* 146-47 (Oxford University Press 1993).

⁸ See Jack Ward Thomas Dale Toweil, *The Elk of North America: Ecology and Management* 85-113 (Smithsonian Institution Press 2002).

⁹ See Robert J. Behnke, *Trout and Salmon of North America* 276-277 (Free Press 2002).

-
- ¹⁰ Jack Ward Thomas et al., *The Relationship between Science and Democracy: Public Land Policies, Regulation and Management*, 26 Pub. Land and Resources L. Rev. (Spring 2005).
- ¹¹ Aldo Leopold, "Land Pathology," in *The River of the Mother of God and Other Essays by Aldo Leopold*, ed. Susan L. Flader and J. Baird Callicott 212-217 (University of Wisconsin Press 1991).
- ¹² Aldo Leopold, "The Ecological Conscience," in *The River of the Mother of God and Other Essays by Aldo Leopold*, ed. Susan L. Flader and J. Baird Callicott 338-346 (University of Wisconsin Press 1991).
- ¹³ See Kevin M. Ward and John W. Duffield, *Natural Resource Damages: Law and Economics* 11 (John Wiley and Sons 2002).
- ¹⁴ Avery Wiener, *The Option Element in Contracting*, 90 VALR 2187 (December 2004).
- ¹⁵ Roger D. Masters, *The Political Philosophy of Rousseau* 313-317 (Princeton University Press 1976).
- ¹⁶ See Dan Walker, *Oil in the Sea* (National Academy of Sciences 2005). (available at: <http://www4.nationalacademies.org/onpi/webextra.nsf/web/oil?OpenDocument>). See also Bill McKibben, *The End of Nature* (Random House 1989).
- ¹⁷ W. Kip Viscusi, *The Social Costs of Punitive Damages against Corporations in Environmental and Safety Torts*, 87 Geo. L.J. 285, 287 (November 1998).
- ¹⁸ Alexander Volokh, *Punitive Damages and Environmental Law Rethinking the Issues*, Reason Public Policy Institute Policy Study 213 (September 1996).
- ¹⁹ Thomas Hobbes, *Leviathan* 68-115 (W.W. Norton 1997).
- ²⁰ *Id.*
- ²¹ Norman and John N. Maclean, *On the Big Blackfoot* (audio recording) (Highbridge 2000).
- ²² See Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Oxford University Press 1993).
- ²³ Ward and Duffield, *Natural Resource Damages* at 2.
- ²⁴ *Id.* at 3.
- ²⁵ See: Umpqua Watersheds, Inc. (2004) available at: <http://www.umpqua-watersheds.org/unf/pinestrip.html>.
- ²⁶ *Id.*
- ²⁷ 6 Northwest Flyfishing 4, 40 (2005).
- ²⁸ James Prosek, *Trout* 98 (Knopf 1996). See also <http://www.earthjustice.org/urgent/display.html?ID=51> See also <http://www.roaringfork.org/images/other/Colorado%20River%20cutthroat%20trout.pdf>.
- ²⁹ Sarah F. Bates, David H. Getches, Lawrence J. Macdonnell, Charles F. Wilkinson, *Searching Out the Headwaters Change and Rediscovery in Western Water Policy* 146 (Island Press 1993).
- ³⁰ Leopold, *A Sand County Almanac with Essays from Round River* at 226-227.
- ³¹ Jack Ward Thomas, "Thoughts on Ownership of America's Public Lands," speech before the Outdoor Writers Association of America, Chattanooga, TN, June 26, 1995. (Available at: http://www.lib.duke.edu/forest/Research/usfscoll/policy/States'_Rights/1995_ThomasSpeech.html).
- ³² See: Susan R. Fletcher, *Global Climate Change the Kyoto Protocol* RL30692 (Congressional Research Service 2001) (available at <http://www.csa.com/hottopics/ern/01jul/1-kyoto.html>).
- ³³ Rao, *International Law and Economics* at 1.
- ³⁴ *Id.* at 7.
- ³⁵ *Id.* at 7-8.
- ³⁶ Ward and Duffield, *Natural Resource Damages* at ix.
- ³⁷ *Id.* at x.
- ³⁸ See Garret Hardin, *Tragedy of the Commons*, 162 Science, 1243-1248 (1968).
- ³⁹ *Id.* at 1243-1248 (1968).
- ⁴⁰ Bruce Owen et al., *The Economics of a Disaster* 1 (Quorum 1995).
- ⁴¹ John C. Cruden and Bruce S. Gelber, *Federal Civil Environmental Enforcement: Process, Actors, and Trends* 18 SPG Nat. Resources & Env't 10, 10 (2004).
- ⁴² *Id.*
- ⁴³ *Id.*
- ⁴⁴ *Id.*
- ⁴⁵ Ward and Duffield, *Natural Resource Damages* at 25.
- ⁴⁶ *Restatement (Second) of Torts* § 929 (1979).

-
- ⁴⁷ *Restatement (Second) of Torts* § 929 (1979).
- ⁴⁸ For a thorough treatment of restoration see Higgs, *supra*.
- ⁴⁹ *City of Milwaukee v. Illinois*, 451 US 304, 319-24 (1981).
- ⁵⁰ Ward and Duffield, *Natural Resource Damages* at 30.
- ⁵¹ *Erie RR v. Tompkins*, 304 US 64, 78 (1938).
- ⁵² Ward and Duffield, *Natural Resource Damages* at 26.
- ⁵³ Ward and Duffield, *Natural Resource Damages* at 30.
- ⁵⁴ *Id.*
- ⁵⁵ Ward and Duffield, *Natural Resource Damages* at 62.
- ⁵⁶ *Id.*
- ⁵⁷ *Id.*
- ⁵⁸ Leopold, *A Sand County Almanac with Essays on Conservation from Round River* at 262.
- ⁵⁹ *Id.*
- ⁶⁰ Holmes Rolston III, *Conserving Natural Value* 167 (Columbia University Press 1994).
- ⁶¹ *Id.* at 172-173.
- ⁶² *Id.*
- ⁶³ Jennifer McKee, *Canyon President Steps Down*, *Missoulian* (Jan. 13, 2005) (available at: <<http://www.missoulian.com/articles/2005/01/13/news/mtregional/news06.txt>>).
- ⁶⁴ Jim Posewitz, *Inherit the Hunt* 116 (Falcon 1999).
- ⁶⁵ Wendell Berry, *What Are People For?* 160 (North Point Press 1990).
- ⁶⁶ *Id.*
- ⁶⁷ Paul VanDevelder, *Coyote Warrior: One Man, Three Tribes, and the Trial that Forged a Nation* 183 (Little Brown 2004).
- ⁶⁸ Berry, *What Are People For?* at 160.
- ⁶⁹ Charles F. Wilkinson, *Crossing the Next Meridian* 75 (Island Press 1992).
- ⁷⁰ *Id.*
- ⁷¹ *Id.*
- ⁷² *Id.*
- ⁷³ *Id.*
- ⁷⁴ *Id.* at 77.
- ⁷⁵ *Id.*
- ⁷⁶ *Id.* at 76-77.
- ⁷⁷ Leopold, *A Sand County Almanac with Essays on Conservation from Round River* at 19.
- ⁷⁸ Aldo Leopold, "The Farmer as Conservationist," in *The River of the Mother of God and Other Essays by Aldo Leopold*, ed. Susan L. Flader and J. Baird Callicott 261 (University of Wisconsin Press 1991).
- ⁷⁹ Norman Maclean, *A River Runs Through It and Other Stories* (University of Chicago Press 1967).
- ⁸⁰ Maclean and Maclean, *On the Big Blackfoot*.
- ⁸¹ See film/screenplay Norman Maclean, *A River Runs through it and Other Stories*. (See also <http://www.ransomfellowship.org/M_River.html>)
- ⁸² Maclean, *A River Runs Through It and Other Stories* at 13.
- ⁸³ See Henry David Thoreau, *Walden and "Civil Disobedience"* (Airmont 1965).
- ⁸⁴ See Isaak Walton and Charles Cotton, *The Compleat Angler or the Contemplative Man's Recreation: Being a Discourse of Rivers, Fishponds, Fish and Fishing Not Unworthy the Perusal of Most Anglers* (Weathervane Books 1975) (See also <http://www.bbc.co.uk/stoke/local_heroes/t_z/walton.shtml>).
- ⁸⁵ See Curt Meine, *Aldo Leopold: His Life and Work* 341 (University of Wisconsin Press 1988)
- ⁸⁶ Wendell Berry, *Home Economics* 192 (Farrar, Straus and Giroux 1987).
- ⁸⁷ *Id.* at 179-192.
- ⁸⁸ Big Sky Fishing, (available at: <http://www.bigskyfishing.com/Montana-Info/butte_mt-2.shtm#berkeley>).
- ⁸⁹ Carlos D. Da Rosa, *Golden Dreams Poisoned Streams* 167-192 (Mineral Policy Center 1997).
- ⁹⁰ Bruce M. Owen et al., *The Economics of a Disaster: the Exxon Valdez Oil Spill* 1 (Quorum 1995).
- ⁹¹ State of Alaska, (available at: <<http://www.evostc.state.ak.us/facts/qanda.html>>).

-
- ⁹² People for Puget Sound, (available at: <http://www.pugetsound.org/pdf/publications/2001_valdez_12yrs_later.pdf>).
- ⁹³ James Peck, *Measuring Justice for Nature: Issues in Evaluating and Litigating Natural Resource Damages*, 14 J. Land Use & Envtl. L. 275, 275 (1999).
- ⁹⁴ *Id.*
- ⁹⁵ Art Davidson, *In the Wake of the Exxon Valdez: The Devastating Impact of the Alaska Oil Spill* 179 (Sierra Club 1990).
- ⁹⁶ *Id.*
- ⁹⁷ Davidson, *In the Wake of the Exxon Valdez* at 179.
- ⁹⁸ Marybeth Holleman, *The Lingering Lessons of the Exxon Valdez*, *The Ecologist* 12 (May 2004).
- ⁹⁹ State of Alaska, (available at: <<http://www.evostc.state.ak.us/facts/status.html>>).
- ¹⁰⁰ State of Alaska, (available at: <http://www.evostc.state.ak.us/facts/status_human.html>).
- ¹⁰¹ Holleman, *The Lingering Lessons of the Exxon Valdez* at 12.
- ¹⁰² Davidson, *In the Wake of the Exxon Valdez* at 184.
- ¹⁰³ *Id.* at 185.
- ¹⁰⁴ *Id.* at 185-186.
- ¹⁰⁵ Davidson, *In the Wake of the Exxon Valdez* at 215
- ¹⁰⁶ *Id.* at 214.
- ¹⁰⁷ *Id.*
- ¹⁰⁸ *Id.*
- ¹⁰⁹ A Hobson's choice is no choice at all. One must take that which is offered or nothing. The phrase derives from Thomas Hobson (1544-1631) of Cambridge, England. Hobson rented horses, giving customers one choice, that of the horse nearest the stable door.
- ¹¹⁰ Davidson, *In the Wake of the Exxon Valdez* at 215.
- ¹¹¹ Robert McClure, *15 years after Exxon Valdez, oil spill prevention efforts still lagging*, *Seattle Post Intelligencer* (March 24, 2004).
- ¹¹² *Id.*
- ¹¹³ Holleman, *The Lingering Lessons of the Exxon Valdez* at 12.
- ¹¹⁴ People for Puget Sound 2001, *supra*.
- ¹¹⁵ *Id.*
- ¹¹⁶ Aspen Publishers, *Exxon Mobil Faces Revised Damages for Exxon Valdez*, 27 *Oil Spill Intelligence Report* 6 (Feb. 5 2004).
- ¹¹⁷ Wallace Stegner, *Marking the Sparrow's Fall: The Making of the American West* 111 (Henry Holt 1998).
- ¹¹⁸ W. Kip Viscusi, *The Social Cost of Punitive Damages against Corporations in Environmental and Safety Torts*, 87 *Geo. L.J.* 285 (1988).
- ¹¹⁹ Associated Press, *Bush Urges Cap on Legal Awards for Malpractice* (Jan. 5, 2005), (available at: <<http://www.msnbc.msn.com/id/6789233/>>).
- ¹²⁰ *Pacific Mutual Life Insurance Co. v. Haslip*, 499 U.S. 1, 45-46 (1991) (O'Connor, J., dissenting).
- ¹²¹ *Amoco Production Co. v. Village of Gambell, AK*, 480 U.S. 531, 545, 107 S.Ct. 1396, 1404 (1987).
- ¹²² Leopold, *A Sand County Almanac and Sketches Here and There* at 224-5.
- ¹²³ Hobbes, *Leviathan* at 74.
- ¹²⁴ Peter N. Carroll, *Puritanism and the Wilderness* 132 (Columbia University Press 1969).
- ¹²⁵ *Id.*
- ¹²⁶ Cruden and Gelber, *Federal Civil Environmental Enforcement: Process, Actors, and Trends* at 10.
- ¹²⁷ Owen et al., *The Economics of a Disaster* at 1.
- ¹²⁸ *Id.* at 3.
- ¹²⁹ According to legend, Gordius, King of Phrygia, intricately tied a knotted rope—the Gordian Knot—to secure the yoke to the shaft of his chariot. Oracles pronounced its untying to be possible only by the man destined to conquer Asia. When Alexander the Great failed to undo the Gordian Knot, he drew his sword and cut it swiftly. Hence, severing the Gordian knot; a bold, decisive action—when regular measures fail.
- ¹³⁰ Ward and Duffield, *Natural Resources Damages* at 11-16.
- ¹³¹ Aldo Leopold, *Conservationist in Mexico* (American Forests) (March 1937).
- ¹³² *See*: Robert Frost, *Complete Poems of Robert Frost* (Henry Holt 1962).