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Foundations: The Public Domain and Natural Resources Law 1785 - 1960

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CHAPTER ONE

Foundations: The Public Domain and Natural Resources Law 1785 - 1960

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Environmental law, although often described as a relatively new field that first emerged in the 1970s, is built on and borrows from the law which preceded it. The Clean Water Act, for instance, incorporated approaches found in the Rivers and Harbors Act of 1899. Old legal principles have been put to new uses and, as a consequence, become part of contemporary environmental law. The classic example is the public trust doctrine whose antecedents are found in English and Roman law and which was resurrected by environmentalists in the twentieth century. As stated by Richard Lazarus, “It is an oft-repeated fiction that environmental law spontaneously began in the late 1960s and early 1970s. Environmental law no doubt had its first, most formal, expression during that time, but its historical legal roots are far deeper and broader. They extend to the nation’s natural resource laws, which played such a dominant role in the country’s first 150 years.” RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* 44 (2004). Moreover, as this chapter demonstrates, the current law governing natural resources in particular retains rules devised in earlier eras that continue to affect the environment and environmental protection efforts today.

In a real sense, modern environmental lawyers are – at least in part – students of the past. Richard Andrews has rightly pointed out that laws affecting the U.S. are not only those originating in the last forty or so years.

In reality, American environmental policy has far older roots. It includes not only the recent burst of legislation intended to protect the environment, but *all* the policies by which Americans have used the powers of government to exploit, transform, or control their natural surroundings. These include nearly four hundred years’ worth of policies establishing private rights, public restrictions, and economic incentives shaping human use of the natural environment, from colonial precedents and constitutional principles to subsequent laws, regulations, and other policies. Some recent policies are genuinely new, but far more are attempts to change or offset policies already in effect that reflect the environmental priorities and political power structures of previous generations.

RICHARD N.L ANDREWS, *MANAGING THE ENVIRONMENT, MANAGING OURSELVES: A HISTORY OF AMERICAN ENVIRONMENTAL POLICY* ix (1999).

As for the American environment itself, most of it – over seventy-eight percent – was at one time part of the public domain, that is, owned by the United States government as a sovereign. The policies and laws governing these federal lands were critical determinants of the condition of the environment. For most of the country, land was the raw material which passed through the public domain “mill;” the product was an environment in varied ownerships, retaining much of its original form in some places, drastically reshaped in others. These two foundations – one legal, the other environmental – are integral parts of our topic. And since our focus is federal, that is national, environmental law it is appropriate to begin our exploration at the nation’s beginning.

The period examined in this chapter itself consists of four eras of public land law and policy: the acquisition of territory by conquest and purchase between 1785 and 1867; the

disposition of most of the land and other resources from 1803 to 1934; the emergence of the idea conservation beginning in 1864; and, lastly, retention and management of the remaining public domain from 1905 to the present. The specific dates for each era are somewhat arbitrary, although the years chosen each refer to a particular legal event. The eras cannot be neatly compartmentalized; one overlaps with another. And several policies were often pursued at the same time. Even today, the federal government is acquiring land (more precisely, re-acquiring) and disposing of resources – although not on the same scale as in our early history.

The legal developments which bookend this chapter are the *adoption of the Land Ordinance of 1785*, which provided an important foundation for the future expansion of the county, and *enactment of the Multiple-Use Sustained-Yield Act of 1960*. Although still in effect, this statute marks the end of the traditional view of federal land management that was dramatically changed by the emergence of modern environmentalism. As is true of the other chapters in this book, Chapter 1 presents *the current law* of the public lands and their resources – although a few references are made to laws now repealed and are clearly identified as such.

Section A. Acquisition of the Nation's Environment 1785 - 1867

1. Early Land Policies, Lasting Effects

The Land Ordinance of 1785

PAUL W. GATES, HISTORY OF PUBLIC LAND LAW DEVELOPMENT
61-65, 77, 80 (1968)

Although the desire for revenue had not been a strongly motivating force in shaping the land policies of the Colonies . . . it was anticipated from the first Continental Congress that revenues from the public domain, when acquired, would be used to discharge the national debt. Before anything could be done to capitalize on land in the Ohio country, the title to it had to be perfected. This involved prolonged discussions with the states, particularly Virginia and Georgia, concerning the conditions of their acts of cession. When these negotiations were successfully concluded the Congress of the Confederation could draft a plan for the management and sale of the land.

Thomas Jefferson, one of the few leaders in state and national affairs who had not been connected with any of the land companies, was a member of a committee to develop a plan for the government of the territory and management of the lands. His committee first reported a plan for the government of the Northwest Territory; it was adopted in 1784 but never went into effect; being displaced by the Northwest Ordinance of 1787. Its proposal for the survey and sale

of the lands north of the Ohio provided that after the Indian title had been extinguished, the lands were to be surveyed on the rectangular system with a base line crossed by meridians every 10 miles, which were to be extended north and south with due regard to the magnetic deflection. . . .

Jefferson was an agrarian who in 1776 had said that he was “against selling the lands at all. To make a charge for the public lands would fix upon poor settlers an obligation they could ill afford. There is no equity in fixing upon them the whole burthen of this war, or any other proportion than we bear ourselves. By selling the lands to them, you will disgust them, and cause an avulsion to them from the common union. They will settle the lands in spite of everybody.” The most often-quoted statement of Jefferson on public lands and the land policy of September 6, 1789, is equally forceful: “Whenever there is in any country uncultivated lands and unemployed poor, it is clear that the laws of property have been so far as to violate natural right. The small land holders are the most precious part of a state.” . . .

It must have been difficult for Jefferson, who was so sincerely devoted to agrarian democracy and who was, with Madison, critical of the activities of speculators, to have had a part in opening the public lands to them. Not only did his Ordinance of 1784 provide for the sale of public lands without naming the price and without restrictions on large purchases, but when President he took no steps to reduce the very high price of government land. Moreover, he signed an act authorizing the use of troops to expel persons who in the future should make any illegal settlement on public lands or who attempted to create any right in land by surveying it or even blazing trees upon it.

Jefferson’s proposal for a land ordinance to provide for the sale of the western lands received little support in 1784 and nothing was accomplished. In 1785, however, the country’s financial condition had changed for the worse. Congress had requested an impost and the states had failed to honor fully the requisitions made upon them. Interest on government securities was mounting, foreign obligations were not being met, the credit of the Nation had fallen to a low level, and its government was forced to get along on the smallest expenditures possible. The sale of western lands now seemed to be the last resort; Congress turned to plans for their disposal. . . .

Immediately a clash developed: on the one side were advocates of the Virginia method of indiscriminate location and subsequent survey, with all the heavy costs of filing caveats and the extensive litigation that followed; on the other side were proponents of the more orderly New England system with its township grants to proprietors, survey and sectioning of the townships before settlement, reserve lots for church, minister, and school. In the South, much of the better land was contained in large plantations wastefully worked by numerous slaves and servants; small farms were generally to be found on the poor land; population was thin, absentee ownership common, public schools lacking, and religious influences minimal. All this was in sharp contrast to the small farms, compact settlement, absence of large speculatively owned tracts, and the early presence of the church and school in New England. Jefferson had recognized the advantages of the New England system but other delegates from the South found it more difficult to give up their method of land management which offered protection to the squatter, tolerated the individualistic frontiersman with his inclination to go wherever the spirit

moved him, and permitted him to delay for years before filing his warrants and his survey of the lands he had taken up. Furthermore, in somewhat broken territory like much of southern Ohio, the artificial nature of farm units to be arbitrarily created by a rectangular system did appear to have faults, as contrasted with a system which conformed to the natural features of the country. . .

In New England, once the township was granted, responsibility for its survey, division into sections, and for the granting process was in the hands of the proprietors. Not having this responsibility, the state had no need of a land office and numerous administrative officers to handle questions of title. On the other hand, the southern way of migration westward was not by groups moving to a new township, but by individuals and families moving without direction, seeking a spot that suited them. The differences were resolved by a compromise that the rectangular system of survey made possible.

The rectangular system was one of the great features of the Land Ordinance of 1785 that has been retained in the national land system ever since. At the point where the Ohio River crosses the Pennsylvania border, a north-south line – a principal meridian – was to be run and a base line westward – the geographer’s line – was to be surveyed; parallel lines of longitude and latitude were to be surveyed, each to be 6 miles apart, making for townships of 36 square miles or 23,040 acres. Seven rows or ranges of townships running south from the base line and west of the principal meridian were to be surveyed. Each township was to be divided into lots of one mile square containing 640 acres. This made possible the great compromise whereby alternate townships were to be sold intact, as New England wished, and the other townships were to be subject to sale by sections.

Even before the Revolution some New England states had taken to offering townships at auction. The New England delegates, impressed with the results, succeeded in including in the Land Ordinance of 1785 a provision that public lands, when surveyed and ready for sale, should be put up at auction and sold to the highest bidder at \$1 per acre or more. Henceforth until 1841, newly surveyed land could not be bought from the government until first offered at public auction, except . . . under a limited number of preemption acts, beginning in 1830 . . .

Yet another victory of New England in shaping Federal land policy was the reservation of section 16 in every township “for the maintenance of public schools within the said township.” This, like the prior rectangular survey, the public auction, and the minimum price, was to be carried over into later legislation and to become a long-lasting feature of the land system. . . . Also, the ordinance reserved a “third part of all gold, silver, lead and copper mines, to be sold, or otherwise disposed of as Congress shall hereafter direct.”

In addition to the cession of territory by the original states, mentioned above, the United States government acquired land through purchase and conquest, and through “purchases” forced upon “owners” who were defeated in battle. European American settlers drove Native

Americans from their homelands and, despite determined resistance, the United States ultimately obtained title to most Indian lands through treaties which reserved only small areas to the tribes. A fortuitous convergence of events lead France to sell the entire 523 million acres of the Louisiana Territory to the U.S. for 3 cents an acre, doubling the size of the country in 1803. Almost the entire Southwest – the red rock expanses of Utah, the Grand Canyon, the lakes and summits of the high Sierra, and mineral and agricultural regions of enormous economic value – was added to the national area by the 1848 treaty ending the war with Mexico. With each acquisition, the public domain grew. The era of large acquisitions ended with the purchase of Alaska in 1867.

Thus, at one time or another, the federal government owned most of the land surface of the United States, which became known as the public domain. This area comprised thirty states, which are sometimes referred to as "public land states." Of course, the size of the public domain fluctuated greatly over time; but at any point in time, it is the land that has never left federal ownership since it was first acquired.

Notes and Questions

1. The Land Ordinance of 1785, of course, has been superceded by events as well as later laws. However, its survey was the basis of land description in Alabama, Florida, Mississippi and all states east of the Mississippi River and north of the Ohio River, in all states west of the Mississippi except Texas. (The great survey did not include the original Thirteen Colonies, Maine, Vermont, Kentucky, Tennessee, and West Virginia).

2. ***Control of the Non-terrestrial Environment.*** For most of the nation's history, the U.S. and other coastal nations generally controlled only a narrow three-mile wide band of "territorial seas" under international law. In the last thirty years, two important United Nations conventions (or treaties) have reshaped national jurisdiction over oceans. Although the U.S. has not ratified the 1982 United Nations Convention on the Law of the Sea (UNCLOS), it has claimed for itself the same regulatory zones through presidential proclamations. Under UNCLOS, the territorial sea extends to twelve *nautical* miles from shore. From twelve miles to twenty-four nautical miles offshore is the "contiguous zone," in which nations can enforce laws relating to activities in the expanded territorial seas.

Coastal nations also have control of the underlying continental shelf to a distance of 200 miles. Further, nations are permitted to establish an Exclusive Economic Zone (EEZ) extending 200 nautical miles from shore that carries the right to exploit and conserve natural resources in the waters, seabed, and subsoil.

Within U.S. waters, a further division allocates ocean resources between the federal

government and the states. Coastal states have title to the lands beneath waters from the average high tide to three miles out from shore, subject the federal governments' regulation of commerce, navigation, and national defense, under the Submerged Lands Act of 1953.

2. An American Landscape Then and Now

In environmental terms, what became the United States is so spectacularly varied and complex it defies any summary description. It consists of literally thousands of “places,” a few recognizable by many people, most others known well by only a few. By knowing places, we begin to understand the environment. Careful observation of place provides a baseline for measuring change and a case in point for considering the legal and other forces at work.

The classic description of a sizeable part of North America at the time it became part of the nation's environment is that by Meriwether Lewis and William Clark. President Thomas Jefferson began preparations for an expedition to the Pacific Ocean before the acquisition of Louisiana. Jefferson chose his private secretary, Captain Lewis, to command it and personally educated Lewis in geography, ethnology, botany and mineralogy. While the principal purpose of the expedition was commercial – thus placing it within the constitutional authority of the federal government – the President's instructions to Lewis encompassed scientific and geographical discovery as well. The instructions directed the explorers to observe “the animals of the country generally, and especially those not known in the U.S. . . . and to note “the face of the country, it's growth and vegetable productions.” While the two men were planning the expedition with great care, Jefferson sent Lewis to Philadelphia to study with the leading scientists of the day. Lewis learned to gather and protect botanical and zoological specimens and to write proper scientific descriptions. Already a careful observer of his surroundings from his experience as a soldier and outdoorsman, Lewis became an excellent naturalist. During the expedition – from May 1804 to September 1806 – he recorded 178 plants new to science and 122 species and subspecies of animals.

As Daniel Botkin has written, “Lewis and Clark saw the land as people of European descent would never see it again, traveling . . . 4,134 miles on their outward journey, 3,555 miles by a shorter route on their return. It was America's greatest odyssey, beginning in St. Louis, navigating up the Missouri River and through the prairies, enduring a winter with the Mandan Indians in North Dakota, reaching the summit of the Rocky Mountains and then going down to the Columbia River, and down that river to the Pacific. Their journey has been called America's national epic of exploration, conceived by Thomas Jefferson, wrought by Lewis and Clark.” DANIEL BOTKIN, *OUR NATURAL HISTORY: THE LESSONS OF LEWIS AND CLARK* xvii (1995).

As you read the following excerpt, consider the values of nature reflected in it. As

explained in the Introduction, “value” is used in this book – with one exception – used to denote a desirable quality, a characteristic of worth. However, most humans also recoil from some aspects of the environment and this shapes their actions toward it, hence the one exception. (Regarding the difference – and the connection – between “value” as worth and “value” as motives or preferences, see the Introduction.)

VALUES OF NATURE

Utilitarian Values

The utilitarian value emphasizes the many ways humans derive material benefit from the diversity of life. The term “utilitarian” represents something of a misnomer, however, as all the values have utility insofar as they reflect some benefit to people. The conventional idea of utilitarian used here reflects the traditional notion of material benefit derived from exploiting nature to satisfy various human needs and desires.

Many plant and animal species provide material benefits to people in the form of food, medicine, clothing, tools, and other products. Most people recognize this dependence in nonindustrial societies, particularly among preliterate tribal hunter-gatherers, pastoralists, and others. Yet many developing nations still derive most of their output from extracting and exploiting wild living resources. Even industrially advanced countries such as Japan secure much of their food from exploiting wild fish stocks, and nearly 5 percent of the American economy has been found to derive from utilizing wild living species.

Negativistic Value

. . . The natural world is also a powerful carrier of hostile and negative feelings: aversion, fear, and dislike, for example. Nature can evoke threatening and antagonistic sentiments to a degree as great as any encountered in the human experience. Certain animals and landscapes consistently provoke anxious reactions in many people under widely varying circumstances. Snakes, spiders, sharks, scorpions, large predators, strong winds, stagnant swamps, dark caves – all can precipitate acute passions and avoidance responses in many people. And once aroused, these feelings are hard to extinguish.

These sentiments of dread and dislike can provoke destructive actions toward the natural world. But such fears can also encourage a healthy distancing and even respect for nature. Since avoidance of injury constitutes one of the most ancient motives of the human animal, a realistic avoidance of threatening aspects of nature is to be expected and at times welcomed. The advantage of isolating and even destroying potential danger in nature can be easily comprehended, and negativistic attitudes, within reason, may reflect functional behavior.

The tendency to avoid certain species is reflected in some people’s reactions to large

predators, snakes, and arthropods, particularly spider and biting and stinging invertebrates. A predisposition seems apparent. Roger Ulrich notes: "Conditioning studies have shown nature settings containing snakes or spiders can elicit pronounced autonomic responses . . . even when presented subliminally." Other researchers have observed that "ugly, slimy, and erratic" animals, such as snakes and spiders, frequently precipitate withdrawal responses among young primates (including human infants) even in the absence of an obvious threat. These automatic reactions suggest a basic aspect of the human condition that might have conferred advantages during the long course of human evolution.

These fears can foster excessive, irrational, and extremely cruel behavior toward certain elements of the natural world. In some cases, negativistic sentiments can create an impulse to eradicate entire species. . . .

STEPHEN R. KELLERT, *THE VALUE OF LIFE: BIOLOGICAL DIVERSITY AND HUMAN SOCIETY* 10, 24-25 (1996).

The Missouri River and Northern Great Plains in 1804 and 1805
REUBEN GOLD TWAITES, ED., ORIGINAL JOURNALS OF THE LEWIS AND CLARK
EXPEDITION 1804-1806 (1904-05)

[On the Missouri River, the expedition traveled in a keel boat and two smaller craft called pirogues. The keel boat was actually a galley, the standard boat for use on inland waters at the time. It was fifty-five feet long with a shallow draft; it could be propelled by rowing or sailing, or by just pushing it upstream.]

[Clark]

May 24th Thursday 1804

Set out early. passed a verry bad part of the River Called the Deavels race ground, this is where the Current Sets against some projecting rocks for half a Mile on the Labd. Side, above this place is the Mouth of a Small Creek called *queever*, passed Several Islands, two Small Creeks on the Stbd. Side, and passed between a Isld. and the Lbd. Shore a narrow pass above this Isld. is a verry bad part of the river, We attempted to pass up under the Lbd. Bank which was falling in so fast that the evident danger obliged us to cross between the Starbd. Side and a Sand bar in the middle of the river, We *hove* up near the head of the Sand bar, the Same moveing & backing caused us to run on the sand. The Swiftness of the Current Wheeled the boat, Broke our *Toe* rope, and was nearly over Setting the boat, all hands jumped out on the upper Side and bore on that Side untill the Sand washed from under the boat and Wheeled on the next bank by the time She wheeled a 3rd Time got a rope fast to her Stern and by the means of swimmers was Carred to Shore and when her stern was down whilst in the act of Swinging a third time into Deep Water near the Shore, we returned, to the Island where we Set out and assended under the Bank which I have just mentioned, as falling in, here George Drewyer & Willard, two of our men who left us at St. Charles to come on by land joined us, we camped about I mile above where we were So nearly being lost, on the Labd. Side at a Plantation. all in Spirits. This place I

call the *retragrade* bend as we were obliged to fall back 2 miles

[Clark]

9th of June 1804 Satturday—

a fair morning, the River rise a little we got fast on a Snag Soon after we Set out which detained us a Short time passed the upper Point of the Island, Several Small Chanel's running out of the River below a Bluff & Prarie (Called the Prarie of Arrows) where the river is confined within the width of 300 yds. Passed a Creek of 8 yds. wide Called Creek of Arrows, this Creek is Short and heads in the Praries on the L. S. passed a Small Creek called Blackbird Creek S.S. and an Island below & a Prarie above on the L. S. a small Lake above the Prarie. opposit the Lower point of the 2d. Island on the S. S. we had like to have Stove our boat, in going round a Snag her Stern Struck a log under water & She Swung round on the Snag, with her broad Side to the Current expd. to the Drifting timber, by the active exertions of our party we got her off in a few Mint. without engerey [injury] and Crossed to the Island where we Campd. our hunters lay on the S. S. the Perogue crossed without Seeing them and the banks too uncertain to Send her over. Some wind from the S accompanied with rain this evening.

[Clark]

15th June, Friday 1804—

Set out early and had not proceeded far e'er we wheeled on a Sawyer which was near injuring us verry much, passed a plain on the L. S. a Small Isd. in the middle, the river rising, water verry swift Passed a Creek on the L. S. passed between two Islands, a verry bad place, moveing Sands, we were nearly being swallowed up by the rolling Sands over which the Current was so Strong that we could not Stem it with our Sales under a Stiff breese in addition to our ores, we were compelled to pass under a bank which was falling in, and use the Toe rope occasionally, Continued up pass two other Small Islands and Camped on the S. S. nearly opposit the *antient Village* of the *Little Osarges* and below the antt. *Village* of the *Missouries* both Situations in view and within three Ms. of each other,

[Clark]

27th August Monday 1804.—

We proceeded on about one and a half miles and inCamped on a bar makeing out from the S. S. the wind blew hard from the South. A cool and Pleasent evening, The river has fallen verry slowly and is now low.

[Lewis]

Monday September 17th 1804

Having for many days past confined myself to the boat, I determind to devote this day to amuse myself on shore with my gun and view the interior of the country lying between the river and the Corvus Creek — accordingly before sunrise I set out with six of my best hunters, two of whom I dispatched to the lower side of Corvus creek, two with orders. to hunt the bottoms and woodland on the river, while I retained two others to accompany me in the intermediate country. one quarter of a mile in rear of our camp which was situated in a fine open grove of cotton wood passed a grove of plumb trees loaded with fruit and now ripe. observed but little difference between this fruit and that of a similar kind common to the Atlantic States. the trees are smaller

and more thickly set. this Forrest of plumb trees garnish a plain about 20 feet more elevated than that on which we were encamped; this plain extends back about a mile to the foot of the hills one mile distant and to which it is gradually ascending this plane extends with the same breadth from the creek below to the distance of near three miles above parallel with the river, and is entirely occupied by the burrows of the *barking squirrel* heretofore described; this animal appears here in infinite numbers, and the shortness and verdure [verdure] of grass gave the plain the appearance throughout its whole extent of beautiful bowlinggreen in fine order. its aspect is S. E. a great number of wolves of the small kind, hawks and some pole-cats were to be seen. I presume that those animals feed on this squirrel.— found the country in every direction for about three miles intersected with deep ravines and steep irregular hills of 100 to 200 feet high; at the tops of these hills the country breaks off as usual into a fine level plain extending as far as the eye can reach. from this plane I had an extensive view of the river below, and the irregular hills which border the opposite sides of the river and creek. the surrounding country had been burnt about a month before and young grass had now sprung up to height of 4 inches presenting the live green of the spring. to the West a high range of hills, stretch across the country from N. to S and appeared distant about 20 miles; they are not very extensive as I could plainly observe their rise and termination no rock appeared on them and the sides were covered with verdure similar to that of the plains this scenery already rich pleasing and beautiful, was still farther heightened by immense herds of Buffalo deer Elk and Antelopes which we saw in every direction feeding on the hills and plains. I do not think I exaggerate when I estimate the number of Buffalo which could be comprehended at one view to amount to 3000 . . . my object was if possible to kill a female Antelope having already procured a male; . . . we had now after various windings in pursuit of several herds of antelopes which we had seen on our way made the distance of about eight miles from our camp. we found the Antelope extremely shy and watchful insomuch that we had been unable to get a shot at them; when at rest they generally select the most elevated point in the neighbourhood, and as they are watchful and extremely quick of sight and their sense of smelling very acute it is almost impossible to approach them within gunshot; in short they will frequently discover and flee from you at the distance of three miles. I had this day an opportunity of witnessing the agility and the superior fleetness of this animal which was to me really astonishing. I had pursued and twice surprised a small herd of seven, in the first instance they did not discover me distinctly and therefore did not run at full speed, tho' they took care before they rested to gain an elevated point. . . . I got within about 200 paces of them when they smelt me and fled; I gained the top of the eminence on which they stood, as soon as possible from whence I had an extensive view of the country the antelopes which had disappeared in a steep ravine now appeared at the distance of about three miles on the side of a ridge which passed obliquely across me and extended about four miles. so soon had these antelopes gained the distance at which they had again appeared to my view I doubted at first that they were the same that I had just surprised, but my doubts soon vanished when I beheld the rapidity of their flight along the ridge before me it appeared rather the rapid flight of birds than the motion of quadrupeds. I think I can safely venture the ascertainment that the speed of this animal is equal if not superior to that of the finest blooded courser. . . .

[In August 1804, the Lewis and Clark Expedition entered the High Plains, a semi-arid region then unknown to Anglo-Americans. On September 16 and 17, they paused a few miles north of the junction of the White and Missouri Rivers for two days of rest. In early October, the

expedition arrived at the villages of the Arikaras nation in what is now northern South Dakota.]

[Clark]

17th of Sepr. Monday 1804 above Whiteriver Dried all those articles which had got wet by the last rain, a fine day Capt Lewis went hunting with a vew to see the Countrey & its productions, he was out all Day Killed a Buffalow & a remarkable bird of the Spicies of Corvus, long tail of a Greenish Purple, Varigated a Beck like a Crow white round its neck coming to a point on its back, its belley white feet like a Hawk abt. the size of a large Pigeon Capt Lewis returned at Dark. I took the Meridian & equal altitudes to day made the Lattitude.

Colter Killed a Goat, & a Curious kind of Deer, a Darker grey than Common the hair longer & finer, the ears verry large & long a Small reseptical under its eye its tail round and white to near the end which is black & like a Cow in every other respect like a Deer, except it runs like a goat. large.

The hunters brought in 8 fallow Deer & 5 Common Deer to day, Great numbers of Buffalow in'the Praries, also a light Coloured wolf Covered with hair & corse fur, also a Small wolf with a large bushey tail – Some Goats of a Different Kind Seen to day, – Great many Plumbs, rabbits, Porcupines & barking Squirels, . . .

[Clark]

21st of September Friday 1804–

at half past one o'clock this morning the Sand bar on which we Camped began to under mind and give way which allarmed the Serjeant on Guard, the motion of the boat awakened me; I got up & by the light of the moon observed that the Sand had given away both above and below our Camp & was falling in fast. I ordered all hands on as quick as possible & pushed off, we had pushed off but a few minits before the bank under which the Boat & perogus lay give way, which would Certainly have Sunk both Perogues, by the time we made the opsd. Shore our Camp fell in, we made a 2d. Camp for the remainder of the night. . . .

[Clark]

19th October Friday 1804.

a fine morning wind (hard) from the S.E. we Set out early under a gentle Breeze and proceeded on verry well, more timber than Common on the banks on this part of the river – passed a large Pond on the S. S. – I walked out on the Hills & observed Great numbers of Buffalow feedeing on both Sides of the river. I counted 52 Gangues of Buffalow & 3 of Elk at one view, . . .

The Countrey is fine, the high hills at a Distanc with gradual assents, *I Kild 3 Deer* The Timber Confined to the bottoms as usial which is much larger than below. Great numbers of Buffalow Elk & Deer, Goats. our hunters killed 10 Deer & a Goat today and wounded a white Bear. I saw Several fresh track of those animals which is 3 times as large as a mans track – , The wind hard all Day from the N. E. & East, great numbers of buffalow Swiming the river

I observe near all large gangues of buffalow wolves and when the buffalow move those Anamals follow and feed on those that are killed by accident or those that are too pore or fat to Keep up with the gangue.

[The expedition spent a bitter Northern Plains winter near the Mandan and Hidatsa villages in west-central North Dakota, having constructed a stockaded log fort known as Fort Mandan. After five months at their fort, the permanent party set out again on April 7, 1805, up the Missouri River, and now entered an area where there had been no previous white exploration at all. The Lewis and Clark expedition spent the spring and summer of 1805 working toward the headwaters of the Missouri in eight canoes.]

[Lewis]

Monday April 22cd 1805.

. . . the broken hills of the Missouri about this place exhibit large irregular and broken masses of rocks and stones; some of which tho' 200 feet above the level of the water seem at some former period to have felt it's influence, for they appear smooth as if woarn by the agetation of the water. this collection consists of white & grey gannite, a brittle black rock, flint, limestone, freestone, some small specimens of an excellent pebble and occasionally broken stratas of a stone which appears to be petrefyed wood; it is of a black colour, and make excellent whetstones. Coal or carbonated wood pumice stone lava and other mineral apearances still continue. the coal appears to be of better quality; I exposed a specimen of it to the fire and found that it birnt tolerably well, it afforded but little flame or smoke, but produced a hot and lasting fire. . . . I ascended to the top of the cutt bluff this morning, from whence I had a most de-lightfull view of the country, the whole of which except the vally formed by the Missouri is void of timber or underbrush, exposing to the first glance of the spectator immense herds of Buffaloe, Elk, deer, & Antelopes feeding in one common and boundless pasture. we saw a number of bever feeding on the bark of the trees along the verge of the river, several of which we shot, found them large and fat. walking on shore this evening I met with a buffaloe calf which attatched itself to me and continued to follow close at my heels untill I embarked and left it. it appeared allarmed at my dog which was probably the cause of it's so readily attatching itself to me. Capt Clark informed me that he saw a large drove of buffaloe pursued by wolves today, that they at length caught a calf which was unable to keep up with the herd. the cows only defend their young so long as they are able to keep up with the herd, and seldom return any distance in surch of them. - . . .

[Lewis]

Thursday April 25th 1805.

The wind was more moderate this morning, tho'still hard; we set out at an early hour. the water friezed on the oars this morning as the men rowed. about 10 oclock A.M. the wind began to blow so violently that we were obliged to lye too. . . . accordingly I set out at 11 OCK. on the Lard. side, accompanied by four men. we proceeded about four miles, when falling in with some buffaloe I killed a yearling calf, which was in good order; we soon cooked and made a hearty meal of a part of it, and renewed our march our rout lay along the foot of the river hills. when we had proceeded about four miles, I ascended the hills from whence I had a most pleasing view of the country, perticularly of the wide and fertile vallies formed by the missourl

and the yellowstone rivers, which occasionally unmasked by the wood on their borders disclose their meanderings for many miles in their passage through these delightfull tracts of country. I could not discover the junction of the rivers immediately, they being concealed by the woods, however, sensible that it could not be distant I determined to encamp on the bank of the Yellow stone river which made it's appearance about 2 miles South of me. the whol face of the country was covered with herds of Buffaloe, Elk & Antelopes; deer are also abundant, but keep themselves more concealed in the woodland. the buffaloe Elk and Antelope are so gentle that we pass near them while feeding, without appearing to excite any alarm among them, and when we attract their attention, they frequently approach us more nearly to discover what we are, and in some instances pursue us a considerable distance apparenly with that view.— in our way to the place I had determined to encamp, we met with two large herds of buffaloe, of which we killed three cows and a calf. two of the former, wer but lean, we therefore took their tongues and a part of their marrow-bones only. . . .

[Lewis]

Monday April 29th 1805.

Set out this morning at the usual hour; the wind was moderate; I walked on shore with one man. about 8 A. M. we fell in with two brown or (yellow) [*White*] bear; both of which we wounded; one of them made his escape, the other after my firing on him pursued me seventy or eighty yards, but fortunately had been so badly wounded that he was unable to pursue so closely as to prevent my charging my gun; we again repeated our fir[e] and killed him. it was a male not fully grown, we estimated his weight at 300 lbs. not having the means of ascertaining it precisely. The legs of this bear are somewhat longer than those of the black, as are it's tallons and tusks incomparably larger and longer. the testicles, which in the black bear are placed pretty well back between the thyes and contained in one pouch like those of the dog and most quadrupeds, are in the yellow or brown bear placed much further forward, and are suspended in separate pouches from two to four inches asunder; it's colour is yellowish brown, the eyes small, black, and piercing; the front of the fore legs near the feet is usually black; the fur is finer thicker and deeper than that of the black bear. these are all the particulars in which this animal appeared to me to differ from the black bear; it is a much more furious and formidable anamal, and will frequently pursue the hunter when wounded. it is asstonishing to see the wounds they will bear before they can be put to death. the Indians may well fear this anamal equipped as they generally are with their bows and arrows or indifferent fuzees, but in the hands of skillfull riflemen they are by no means as formidable or dangerous as they have been represented. game is still very abundant we can scarcely cast our eyes in any direction without percieving deer Elk Buffaloe or Antelopes. The quantity of wolves appear to increase in the same proportion; they generally hunt in parties of six eight or ten; they kill a great number of the Antelopes at this season; the Antelopes are yet meagre and the females are big with young; the wolves take them most generally in attempting to swim the river; in this manner my dog caught one drowned it and brought it on shore; they are but clumsey swimmers, tho' on land when in good order, they are extremely fleet and dureable. we have frequently seen the wolves in pursuit of the Antelope in the plains; they appear to decoy a single one from a flock, and then pursue it, alternately relieving each other untill they take it. on joining Capt Clark he informed me that he had seen a female and faun of the big-horned anamal; that they ran for some distance with great apparent ease along the side of the river bluff where it was almost perpendicular; two of the party fired on

them while in motion without effect. . . .

[Lewis]

Saturday June 8th 1805

It continued to rain moderately all last night. this morning was cloudy untill about ten o'clock when it cleared off and became a fine day. we breakfasted and set out about sunrise and continued our rout down the river bottoms through the mud and water as yesterday, tho' the road was somewhat better than yesterday and we were not so often compelled to wade in the river. we passed some dangerous and difficult bluffs. The river bottoms affording all the timber which is to be seen in the country they are filled with innumerable little birds that resort thither either for shelter or to build their nests. when sun began to shine today these birds appeared to be very gay and sung most charmingly; I observed among them the brown thrush, Robbin, turtle dove, linnit goldfinch, the large and small blackbird, wren and several other birds of less note. some of the inhabitants of the praries also take reffuge in these woods at night or from a storm. The whole of my party to a man except myself were fully peswaided that this river was the Missouri, but being fully of opinion that it was neither the main stream or that which it would be advisable for us to take, I determined to give it a name and in honour of Miss Maria W-d. called it Maria's River. . . . it is a noble river; one destined to become in my opinion an object of contention between the two great powers of America and Great Britin with respect to the adjustment of the North westwardly boundary of the former; and that it will become one of the most interesting brances of the Missouri in a commercial point of view, I have but little doubt, as it abounds with anamals of the fur kind, and most probably furnishes a safe and direct communication to that productive country of valuable furs exclusively enjoyed at present by the subjects of his Britanic Majesty; in addition to which it passes through a rich fertile and one of the most beatifully picteresque countries that I ever beheld, through the wide expanse of which, innumerable herds of living anamals are seen, it's borders garnished with one continued garden of roses, while it's lofty and open forrests, are the habitation of miriads of the feathered tribes who salute the ear of the passing traveler with their wild and simple, yet s[w]eet and cheerfull melody. - . . .

[Lewis]

Thursday June 13th 1805.

This morning we set out about sunrise after taking breakfast off our venison and, fish. we again ascended the hills of the river . . . from the extremity of this roling country I overlooked a most beatifull and level plain of great extent or at least 50 or sixty miles; in this there were infinitely more buffaloe than I had ever before witnessed at a view. . . .

I altered my course nealy to the South leaving those insulated hills to my wright and proceeded through the plain; . . . I had proceded on this course about two miles with Goodrich at some distance behind me whin my ears were saluted with the agreeable sound of a fall of water and advancing a little further I saw the spray arrise above the plain like a collumn of smoke which would frequently dispear again in an instant caused I presume by the wind which blew pretty hard from the S. W. I did not however loose my direction to this point which soon began to make a roaring too tremendous to be mistaken for any cause short of the great falls of the Missouri. here I arrived about 12 OClock having traveled by estimate about 15 Miles. I hurried

down the hill which was about 200 feet high and difficult of access, to gaze on this sublimely grand spectacle. I took my position on the top of some rocks about 20 feet high opposite the center of the falls. this chain of rocks appear once to have formed a part of those over which the waters tumbled, but in the course of time has been separated from it to the distance of 150 yards lying parallel, to it and forming a butment against which the water after falling over the precipice beats with great fury; . . . between this abrupt extremity of the ledge of rocks and the perpendicular bluff the whole body of water passes with incredible swiftness. immediately at the cascade the river is about 300 yds. wide; about ninety or a hundred yards of this next the Lard. bluff is a smooth even sheet of water falling over a precipice of at least eighty feet, the remaining part of about 200 yards on my right forms the grandest sight I ever beheld, the height of the fall is the same of the other but the irregular and somewhat projecting rocks below receives the water in its passage down and brakes it into a perfect white foam which assumes a thousand forms in a moment sometimes flying up in jets of sparkling foam to the height of fifteen or twenty feet and are scarcely formed before large rolling bodies of the same beaten and foaming water is thrown over and conceals them. in short the rocks seem to be most happily fixed to present a sheet of the whitest beaten froath for 200 yards in length and about 80 feet perpendicular. the water after descending strikes against the butment before mentioned or that on which I stand and seems to reverberate and being met by the more impetuous current they roll and swell into half formed billows of great height which rise and again disappear in an instant. . . . I wished for the pencil of Salvator Rosa [*a Titian*] or the pen of Thompson, that I might be enabled to give to the enlightened world some just idea of this truly magnificent and sublimely grand object, which has from the commencement of time been concealed from the view of civilized man; but this was fruitless and vain. I most sincerely regreted that I had not brought a Crimea obscura with me by the assistance of which even I could have hoped to have done better but alas this was also out of my reach; I therefore with the assistance of my pen only endeavoured to trace some of the stronger features of this seen by the assistance of which and my recollection aided by some able pencil I hope still to give to the world some faint idea of an object which at this moment fills me with such pleasure and astonishment, and which of its kind I will venture to ascert is second to but one in the known world. . . .

I am induced to believe that the Brown, the white and the Grizzly bear of this country are the same species only differing in colour from age or more probably from the same natural cause that many other animals of the same family differ in colour. one of those which we killed yesterday was of a cream-coloured white while the other in company with it was of the common bay or reddish brown, which seems to be the most usual colour of them. the white one appeared from its talons and teeth to be the youngest; it was smaller than the other, and although a monstrous beast we supposed that it had not yet attained its growth and that it was a little upwards of two years old. the young cubs which we have killed have always been of a brownish white, but none of them as white as that we killed yesterday. . . .

[The Hidatsa Indians had only mentioned one water fall along this stretch of the Missouri, but Lewis discovered that five separate falls made up the Great Falls. He was now satisfied that the expedition was following the true Missouri River – no small comfort – but his pleasure was tempered by the realization that the expected portage would be much longer and difficult than he had anticipated.]

[Since there were many ravines on the north bank and the river curved to the southwest, a portage on the south side was selected. Even though shorter, this route was over nineteen miles long. Lewis directed some men to cut down a large cottonwood tree and saw it crosswise to make wooden wheels which then were affixed to axles and a frame to create wagons. These would transport the canoes and equipment. The small canoes were able to make it up a small creek (today known as Belt Creek) almost two miles, and the party then ascended to the top of the high plain where the wagons were assembled.]

[The portage began on June 22, 1805. The expedition encountered numerous problems: the axles broke, the wagon tongues broke, they passed through thickets of prickly pears which pierced the men's clothing; they were pounded by hail and battered by fierce winds. The portage was the most difficult part of the expedition thus far.]

[Lewis and several men went ahead to the end of the portage at White Bear Islands. Here he supervised the construction of an iron-frame boat called "The Experiment." July 4 was a work day for the Corps of Discovery, but they celebrated the nation's twenty-ninth birthday in the evening with music and the last of the stock of whiskey. On July 9, "The Experiment" failed because the elk skins that formed part of the hull of the craft separated and the boat leaked badly.]

[Finally, on July 15, the party resumed its voyage, but soon left the Missouri, entered the Rocky Mountains and headed toward the Continental Divide.]

Notes and Questions

1. Bernard DeVoto, a renowned historian of the American West, wrote of the Lewis and Clark expedition:

. . . [I]t gave not only Oregon [territory] but the entire West to the American people as something with which the mind could deal. . . . [T]he entire wilderness expanse, more than twice the size of the United States at the beginning of Jefferson's administration, was a blank, not only on the map but in human thought. It was an area of rumor, guess, and fantasy. Now it had been crossed by a large party who came back and told in assimilable and trustworthy detail what a large part of it was. Henceforth the mind could focus on reality. Here were not only the Indians but the land itself and its conditions: river systems valleys, mountain ranges, climates, flora, fauna, and a rich and varied membrane of detail relating them to one another and to familiar experience. It was the first report on the West, on the United States over the hill and beyond the sunset, on the province of the American future. There has never been another so excellent or so influential. . . .

BERNARD DeVOTO, ED., *THE JOURNALS OF LEWIS AND CLARK*, pages xlv-xlvi, lii (1953).

2. What in your view are the most notable characteristics of the environment described by Lewis and Clark in the preceding excerpts?

What natural relationships between species are described in the excerpt from their journals? Consider Lewis' entry of September 17, 1804, describing the "barking squirrel" and the shortness of the grass. This animal (what do we now call it?) thrives where grasslands have been grazed by bison. What do you think happened as a result of the bison's near extermination?

3. How are utilitarian and negativistic values reflected in the *Journals*? What other values of nature are reflected in the journals and in which specific passages? Consider not only the values Lewis and Clark seemed to recognize, but also those which you can find in the environment the journals describe.

4. ***The Historical Value of Nature.*** Is the landscape through which Lewis and Clark passed now imbued with another value, just because they were there? Consider the following:

Wildlands provide historical value in two ways, cultural and natural. Americans . . . have a recent heritage of self-development against a diverse and challenging environment, seen in pioneer, frontier, and cowboy motifs. New World cultures remained close to the memory of a primitive landscape. United States history goes back four hundred years; Greek history, four thousand years. The Americans' ancestral virtues were forged with the European invasion of a (so-called) empty continent, which it was their "manifest destiny" to develop. Even the Europeans have historical memories associated with nature: the British with the moors; Germans with the Black Forest; the Russians with the steppes; the Greeks with the sea. Every culture remains resident in some environment.

Forest, prairies, and ranges ought to be preserved as souvenir places for each generation of Americans learning (however secondarily or critically) their forefathers' moods, regained there quite as much as in the Minuteman Historical Park. Such places provide a lingering echo of what Americans once were, of a way we once past. It would be a pity not have accessible to youth in every state some area big enough to force a camp in crossing at, to get lost in, to face the discomforts and hazards of, if for no other reason than to arouse the spine-tingling that braced our forebears. There is nothing like the howl of a wolf to resurrect the ghost of Jim Bridger¹. . . .

¹ Jim Bridger joined his first fur-trapping expedition in 1822 at the age of eighteen. For the next twenty years, he explored a vast area east of the Missouri River, south of the Canadian border, and north of the Colorado-New Mexico border. He was among the first European-Americans to visit the Yellowstone Region. In 1843 he established Fort Bridger in south-western Wyoming as a fur-trading post and a resting stop for emigrants traveling westward on the Oregon Trail. Bridger Pass, Bridger Peak,

HOLMES ROLSTON III, ENVIRONMENTAL ETHICS: DUTIES TO AND VALUES IN THE NATURAL WORLD 13 (1988).

The following reading echoes Lewis and Clark's descriptions of the Missouri River – later nicknamed "The Big Muddy" – in their journals and discusses the river's transformation over the last century and a half.

The Missouri River Today
American Rivers, River Campaigns
www.amrivers.org/missouririver, visited June 11, 2003

Damming the Missouri

Few rivers have been as heavily altered by humans as the Missouri. Today, one third of the river is sequestered behind giant earthen dams and another third has been channelized, stabilized and cut off from the river by flood control levees. The remaining third is heavily influenced by dam operations, livestock and private bank stabilization.

People have been making "improvements" to the Missouri River since the first explorers removed snags to ease the passage of their keelboats. In addition to wide variations in depth and the ever-shifting nature of the river's channels, the Missouri's caving banks and steady supply of silt proved to be major problems for early travelers. Large trees in the river channel, fluctuating water levels and extensive channel shifting made early Missouri River navigation perilous. It was a common refrain that "the trouble with going up the Missouri River in a boat was that you have to take the boat along."

"No other river was ever so dead-set against being navigated," wrote Vestal.² "No other river was ever so determined on having its own way. It is as ruthless as it is unpredictable On that stream, the inevitable never happens. It is ready to try anything once."

Undeterred, the [U.S. Army] Corps [of Engineers], began removing snags – cottonwoods, willows and sycamores which had accumulated behind sand bars or in side channels – from the Missouri as early as 1832, launching a 130-year, \$6 billion effort to make the Missouri River reliably navigable. Improvements continued sporadically, extending less than 200 miles by the 1870s. After 1885, snagging intensified and became somewhat systematic. To better stabilize

and Bridger National Forest in Wyoming are named for him, as is the Bridger Range in Montana. – Ed.

² STANLEY VESTAL, THE MISSOURI (1945). – Ed.

the meandering Missouri, the Corps tried to line the river's banks with willow mats weighed down with stones. But the river failed to submit to the Corps' strong-arm tactics.

Unsatisfied, Congress ordered the Corps in 1910 to create a 6-foot deep channel between Kansas City and St. Louis, and the Corps now used rock and wooden pilings instead of willow mats to stabilize the river's banks and force the restless Missouri into a single, deeper channel. But flooding again destroyed the Corps' straightjacket of willow, rock and wood, and Congressional debate delayed additional funding. By the 1930s, portions of the river between Kansas City and St. Louis had been channelized but traffic levels remained low. Despite spending \$68 million on improvements, commercial tonnage in 1933 was one-third of that carried on the unimproved river in 1867.

During the same period, public and private levees were constructed to protect riverside lands from flooding. Many farmers were organizing levee or drainage districts – autonomous taxing entities – to build and maintain levees. Thousands of acres of floodplain forest were destroyed to make room for crops, and floodplain prairies were mowed, grazed and plowed. The federal government had no official role in the construction of levees along the Missouri River until the 1890s, when landowners began to demand protection from flooding and bank erosion as part of the Corps' efforts to support river traffic. . . .

[Lewis] Pick was the director of the Corps' Omaha office when floods in March, May and June of 1943 left large portions of Omaha and Kansas City navigable by boat. Said to have cried, "I want control of the Missouri River," Pick quickly dispatched a report on harnessing the Missouri to Congress.

Pick's plan was a dramatic extension of earlier Corps proposals. The plan included the construction of levees from Sioux City to St. Louis, a series of dams on the mainstem of the Missouri and a diversion canal in the Dakotas to irrigate crops. Five new dams, when combined with Fort Peck Dam, would make up the nation's largest reservoir system. One of the dams, Garrison Dam in North Dakota, would be the second largest structure in the world (after Fort Peck) and contain 25 times more material than the Great Pyramid at Cheops.

Glenn Sloan, an engineer with the Bureau of Reclamation, a federal agency dedicated to the "reclamation" of arid lands through irrigation, had nearly completed a basinwide plan for the Missouri River when flooding chased Pick from his Omaha office. At first, Sloan's plan called for a few dams high up on tributaries to the Missouri – places where hydropower revenue could help defray the cost of irrigation projects. But, facing competition from the Corps, the Sloan Plan was enlarged to include 90 dams and several hundred irrigation projects.

On the surface, the plans were incompatible. In Sloan's view, Pick's plan would inundate some of the Dakotas best rangelands to irrigate what the Bureau considered wastelands and spend millions on a barge canal with little traffic. In Pick's view, Sloan's plan ignored the need to bring Missouri River flooding under control.

Impatient with both agencies, President Roosevelt ordered the Corps and the Bureau to

develop a compromise plan or lose the projects to a regional authority like the Tennessee Valley Authority. FDR wanted to create jobs for soldiers returning from World War II in order to avoid the unemployment and unrest that had followed World War I.

Facing the proposition of a Missouri Valley Authority, Corps and Bureau officials locked themselves in a room for two days in October 1943 and emerged with a compromise: The Pick-Sloan Plan. In fact, the compromise was merely the adoption of both plans, with the exception of a single dam in South Dakota.

Unlike the reservoirs, which were delayed by controversy, the agricultural levees and navigation improvements were quickly constructed. Levee construction continued until 1954, when the Department of the Army ordered the Corps to once again reconsider whether a continuous string of agricultural levees below Sioux City made economic sense. The Corps ultimately concluded, almost a decade later, that only a fraction of the farmland between Sioux City and St. Louis deserved federal protection.

By then, the channelization of the Missouri River was complete. This time, the river acquiesced. Revetments – mattresses woven of willow brush, poles and lumber – were placed along the river's eroding banks and held in place with rocks. A series of pile dikes made of wooden logs were driven into the river's bed at a 90 degree angle to the bank, creating a rock jetty that would divert flow toward the center of the channel. Slackwater behind the dikes would naturally fill with suspended sediment. Later, rock dikes were constructed by filling existing pile dikes with rock. Because they were less permeable, the rock dikes accelerated the accumulation of sediment.

Following channelization, many farmers began constructing private levees to protect the new "land" created by the pile and rock dikes. Frequently, pile dikes were built across a channel separating the floodplain from an island, causing the chute to quickly fill with silt and linking the islands to the floodplain. As sediment filled the space between the dikes, new "land" was created, claimed by adjacent landowners and converted for agriculture. Farmers ultimately began to cultivate more than 100,000 acres of "land" that had been open water, side channels, islands or sandbars only a few years before. . . .

Losing Missouri River fish & wildlife

The forests, meadows and wetlands that once lined the river's banks have been nearly eliminated. In 1880, nearly three-fourths of the river's flood plain remained forested and less than 20 percent was cultivated by farmers growing corn and wheat. By 1980, more than 90% of the river's flood plain forests, prairies and wetlands had been converted for agricultural uses – primarily corn and soybeans.

Today, less than 10 percent of the river's flood plain is inundated when flood waters rise. Where flood plain forest remains, there is an increasing proportion of mature forest when compared to other successional stages. Mature stages of the flood plain forest once contained many species such as walnut, hackberry and oak that provided food for many species of wildlife.

Periods of high flows created a dynamic mix of flood plain plant species. Today, large portions of the river's flood plain are dominated by only a handful of species.

Before the river was channelized and impounded, the Missouri annually eroded 3.1 hectares per kilometer of its flood plain, introducing trees and other organic matter into the river. Sediment and debris were the raw materials for the development of sandbars, islands and other habitat. But, nearly all of the river's islands and sandbars were eliminated during the construction of the navigation channel– the number of islands was reduced from 161 in 1879 to 18 in 1954 – and channelization and current dam operations limit the creation of new islands and sandbars.

These improvements made the "Big Muddy" less muddy. As the river was plugged with dams and its banks armored, average annual suspended sediment loads have fallen anywhere from 67 to 99 percent, and mean annual turbidity at the river's mouth above the St. Louis has decreased fourfold since the 1930s.

Shallow, slow-moving water has been replaced by deeper, faster water. In order to create a deep, narrow channel to provide adequate tips for barge traffic, engineers reduced the average width of the Missouri below Sioux City from 2,363 ft. to 789 ft. and shortened the river by 127 miles. By forcing the wide Missouri into a space one-third as wide, the engineers used the river's corrosive power to dig a deep channel that does not require additional dredging.

Historically, the Missouri River was characterized by a wide variety of depths and speeds. For example, the river's velocity near Nebraska City was still less than 1 foot per second even when flows topped 30,000 feet per second. Today, river velocities for the same reach are more than twice as fast, forcing fish to use more energy. . . .

. . . As the river bed has deepened, many side channels and backwaters have become dewatered and inaccessible to river wildlife.

The loss of flood plain trees combined with a loss of standing water chutes where snags can accumulate as contributed to an 80 percent decline in the food consumed by aquatic life. Historically, cottonwoods, sycamores and other trees washed into the river during floods and collected in side channels, along inside bends or behind sandbars and islands. As the trees decomposed, they provided food for insects and other organisms consumed by fish and waterfowl.

A combination of factors – dam operations that eliminate high flows, levees that cut off the river from the flood plain, armoring of the river's banks and the absence of places where snags can collect – have eliminated the river's ability to wash trees into the river. Even when trees do fall into the river, there are few side channels and islands where they can accumulate. Most trees are simply washed quickly downstream. Consequently, areas suitable for invertebrate production between Sioux City and St. Louis have fallen by 67 percent, and invertebrate production has generally fallen by 54 percent. As this important food sources declined, fish and waterfowl populations have declined as well.

Although humans have never adapted to flooding, most of the plants and animals inhabiting the Missouri adapted to the river's "flood pulse"—the annual advance and retreat of the flood waters onto the flood plain. During periods of high water, fish would migrate out of the channel and onto the flood plain to use newly available habitat. Many fish species found in the Missouri are "flood plain spawners" that require temporary access to inundated portions of the flood plain in order to successfully reproduce.

High flows also acted [as] an important reproductive cue for big river species like walleye, sturgeon and paddlefish. Before dam construction, the Missouri experienced rising flows during March as snow melted in the Great Plains and a significantly greater rise in June when snow melted in the Rocky Mountains and rain fell throughout the basin. Those rises were followed by declining flows during the summer. . . .

Today, these natural variations in high of low flows have been replaced by stable flows from March through November to support commercial barge traffic. Spring flows are rarely high enough to trigger spawning or provide temporary access to the flood plain spawning habitat. Dams also acted as barriers to migration, blocking access to potential spawning habitat. . . .

Establishment of cottonwood only occurs during years of high flows or in the growing seasons immediately after significant floods. The alluvium deposited by floods provides an ideal substrate for the germination of cottonwood seedlings. Because cottonwoods are intolerant of shade and germinate poorly in plant litter, cottonwoods are unable to establish under an existing stand of trees. Young seedlings instead require a continuously moist substrate during at least the first week of growth. . . .

Alteration of the river's natural pattern of high and low flows in western Montana has reduced the frequency and duration of the soil-nourishing floods. The absence of floods which clear the river side land prior to see does personal eliminates the conditions cottonwood seeds need to germinate. . . .

Sharp reductions in flood plain forest and prairie, the elimination of most slow-moving shallow water habitat where trees collect and wildlife can feed, poorly timed dam releases, and changes in temperature, turbidity, depth diversity and velocity have placed many species native to the Missouri on the verge of extinction. The pallid sturgeon, a species that emerged 150 million years ago, has been nearly eliminated and the 50 years since World War II. Overall, more than 30 species native to the Missouri have been placed on state and federal watch lists.

The decline in the amount of sediment now carried by the river has eliminated the building materials for islands and sandbars where shorebirds can nest. Less sediment has also reduced the cloudiness of the river water, aiding exotic sight-feeding predators but hindering native species historically cloaked by the Missouri's heavy sediment load. Changes in water temperature favor introduced species like salmon but threaten the native, warm-water species that form the base of the river's food chain. . . .

The near-elimination of sandbars has sharply reduced nesting habitat for the least tern and piping plover, considered endangered and threatened, respectively, by the federal government. . . .

Nearly 60 other shore birds, water birds and wading birds that depend upon the Missouri's width's sandbars, islands and shallow water habitat— including great blue heron, killdeer, sora, rails, sandpipers and mountain plovers – have also experienced declines. . .

Notes and Questions

1. ***Litigation Along the Missouri.*** In the last decade, the Missouri River has been at the center of a controversy which pits environmentalists against the U.S. Army Corps of Engineers and barge companies that operate on the river, and the upper river states of Montana, North Dakota, and South Dakota against the down river states of Nebraska, Iowa and Missouri.

Under the Flood Control Act of 1944, Corps of Engineers manages the Missouri River Mainstem Reservoir System, the series of dams on the upper river. The act requires the Corps to adopt specific plans for managing the river known as the Master Manual that provides guidelines for determining minimum water flow. The 1979 Master Manual – still in effect in the 1990s – required the Corps to draft annual operating plans (AOP) each year. In response to persistent drought conditions, the agency began to revise its guidelines for operating the Missouri River reservoir system, intending to increase water flows on the river during the summer months in order to maintain sufficient water levels to permit barge traffic.

In November 2000, the U.S. Fish and Wildlife Service (FWS) – acting pursuant to the Endangered Species Act of 1973 (ESA), which is examined in depth in Chapter 6 – issued a Biological Opinion or "BiOp" on the Corps of Engineers' proposal. The FWS advised the Corps to implement a "spring rise-summer low" water flow regime in order to ensure the survival of two listed endangered species, the pallid sturgeon and the least turn, and one listed threatened species, the piping plover.

In May 2002, North Dakota filed suit to prevent the Corps from lowering water in Lake Sakakawea located in North Dakota; a state district court immediately issued a temporary restraining order. The next day, the State of Nebraska filed suit in a Nebraska district court which immediately issued a preliminary injunction compelling the Corps to operate the Missouri River according to the 1979 Master Plan and the 2002 AOP. Two days after North Dakota filed suit, the state of South Dakota sought a preliminary injunction barring the Corps from releasing water from Lake Oahe and Lake Francis, both located in South Dakota. In late May, the Corps of Engineers appealed to the federal Eighth Circuit Court of Appeals which granted a stay of the injunctions granted by all three state courts. In June 2003, the Eighth Circuit held that the Flood Control Act allows the Corps to balance flood control, navigation, and recreation with other

interests, and the requirements set forth in the Master Manual bind the Corps in its operation of the Missouri River Reservoir System. About a year later, the U.S. Supreme Court declined to review the decision.

The Corps in January 2003 released its final 2003 AOP. It did not implement the "spring rise-summer flow" regime outlined in the 2000 BiOp. A few days later, several environmental groups – American Rivers, the Izaak Walton League of America, the National Wildlife Federation, and the state Wildlife Federations of Iowa, Montana, Nebraska, North Dakota, and South Dakota – sued the Army Corps of Engineers in the federal District Court for the District of Columbia to prevent the Corps from implementing its 2003 AOP. In April 2003, the FWS – perhaps bowing to intense political pressure – issued a new Biological Opinion (the "2003 Supplemental BiOp") stating that the summer low flow requirements stated in the 2000 BiOp were not necessary for the survival of the three fish species during the summer of 2003.

In July 2003, the D.C. District Court ruled in favor of the environmental organizations and granted a preliminary injunction preventing the Corps from implementing the summer water flow provisions of the 2003 AOP, taking any action *consistent* with the 2003 Supplemental BiOp (the court finding that the plaintiffs were likely to succeed on their claim that this BiOp was arbitrary and capricious), or taking any action *inconsistent* with the 2000 BiOp. Later that month, the District Court found the Corps of Engineers and the Secretary of the Army conditionally in contempt for failing to comply with the court's preliminary injunction.

The Federal Judicial Panel on Multi-District Litigation (MDL) consolidated all litigation regarding operation of the Missouri River and stayed the conditional contempt order issued by the D.C. District Court.

Acting pursuant to the National Environmental Policy Act of 1969 (examined in detail in Chapter 2), the Corps in March 2004, issued its Final Environmental Impact Statement on the operation of the river, a revised 2004 Master Manual, and a 2004 AOP. These documents reflected the Corps' decisions to implement increased drought conservation, to define a method for unbalancing water stored in the three upper reservoirs of the Missouri River, and to provide for higher flows during non-navigation seasons. The MDL District Court upheld the Army Corps' decision in June 2004, the Eighth Circuit Court of Appeals affirmed the court's judgment in 2005, and the Supreme Court subsequently denied a petition for writ of certiorari.

Wildlife Declines Since the Early 1800s

The journals of Lewis and Clark describe 122 animals. Since that time, the populations of about forty percent of these have been dramatically reduced, and are now listed as endangered or threatened species by the federal or state governments, are candidates for such listings, or are

subject to special protections of other kinds.

The basic facts of the bison's decline are familiar. "Although the range of our estimates is great, the impression remains the same – there were huge numbers of buffalo the American West even as late as 1868 – numbering in the tens of millions and probably 50 million or more. . . Some say that many hunters believe that the buffalo could never be brought to extinction, because there were so many of them. . . ." DANIEL BOTKIN, *OUR NATURAL HISTORY: THE LESSONS OF LEWIS AND CLARK* 119 (1995). By 1900, the bison was nearly extinct, with only a few hundred surviving. Today there are approximately 300,000 animals.

It is believed 50,000 or more grizzlies inhabited the Western U.S. in 1800. Now about 1,000 bears occupy less than two percent of their original range. The grizzly bear was reintroduced in 2002 in the Bitterroot Mountains in western Montana and central Idaho. The project's goal is to reach a total population of 280 bears which will take between 50 to 110 years because of the grizzly's slow reproduction rate.

The "barking squirrels" mentioned by Lewis are estimated to have numbered about 5 million at the time of the expedition. Since then, their numbers have declined by 98%.

Wolves hold a unique place in the history of human interaction with wildlife:

Ever since man first began to wonder about wolves . . . he has made a regular business of killing them. At first glance the reasons are simple enough and justifiable. . . . But the wolf is fundamentally different because the history of killing wolves showed far less restraint and far more perversity. . . . Killing wolves has to do with fear based on superstitions. It has to do with duty. It has to do with proving manhood. . . . The most visible motive, and the one that best explains the excess of killing, is a type of fear: theriophobia. Fear of the beast. Fear of the beast as an irrational, violent, insatiable creature.

BARRY LOPEZ, *OF WOLVES AND MEN* 139 (1978). Wolves were eradicated in the Northern Rocky Mountains. The recovery of wolves in the West, described in the following reading, is a very different and especially notable chapter in that history.

Wolf Reintroduction
Heidi Ridgley, *Opening the Door to Wolf Recovery*,
DEFENDERS 6-10 (Fall 1999)

For thousands of years, wolves left their tracks from central Mexico to the Arctic. But when European settlers arrived to tame the continent, wolves were among the first wild creatures to go. Relentlessly pursued with rifles, traps and poisons – some were even burned alive – a population estimated at 200,000 in what is now the contiguous United States dwindled to a few hundred by the mid-1900s. . . .

Today more wolves inhabit the American wilderness than have in decades. Yellowstone is the place most famous for wolf recovery, but it is not the only area where wolves are making a comeback. Wolves have also recolonized the region around Glacier National Park in northwestern Montana and northern Idaho, pushed into the mountains of northern Washington State and spread through parts of three Great Lakes states. Red wolves, a separate species that once roamed the Southeast, have been successfully reintroduced in coastal North Carolina. Gray wolves reintroduced in central Idaho and Yellowstone are poised to disperse into surrounding states including Colorado, Oregon and Washington, and reintroduced Mexican wolves in Arizona are free to roam into New Mexico.

In fact, rising numbers have prompted the U.S. Fish and Wildlife Service (FWS) to consider lessening or removing the gray wolf's protection under the . . . Endangered Species Act (ESA). . . . Wolves are currently listed as endangered in the lower 48 states except in Minnesota, where they are considered threatened. Though wolves no longer exist in most states, FWS has indicated it plans to reclassify wolves currently deemed endangered to threatened in all states except California and Nevada, where for political reasons they will be removed entirely from the endangered species list. . . . [The wolves] reintroduced in Yellowstone Park, central Idaho and Arizona, along with the red wolves reintroduced in North Carolina . . . are classified as "nonessential, experimental" populations under the ESA, which allows landowners to kill wolves caught attacking livestock.

Yet wolves now roam only three to five percent of their historic range in the lower 48 states, with a total population estimated at slightly more than 3,000 – all but 600 in Minnesota. . . .

Nowhere is . . . progress [in wolf reintroduction] more visible than in the greater Yellowstone area. Wolves there have become the luminaries of the recovery effort, now numbering some 110 adults plus 45 to 50 pups born this spring.

The success did not come without a fight. Wolf expert Douglas Pimlott proposed wolf reintroduction into Yellowstone in a 1968 article In the following years, Defenders [of Wildlife, Inc.] battled on the wolf's behalf, conducting public education campaigns, promising to compensate ranchers for verified livestock losses to wolves, suing FWS to force reintroduction, fighting for federal funding, garnering public support and rewarding ranchers that allowed wolves to breed on their property. Nearly 70 years after federal hunters and trappers had shot the animals out of the park, 14 wolves reclaimed Yellowstone in 1995. The following year FWS and the National Park Service released 17 more. Another 35 were given a new home in central Idaho's two-million-acre Frank Church-River of No Return Wilderness during the same two years.

The transplants and their offspring have received overwhelming support from the American public. And as the packs continue to breed and grow, wolf-watching has become a Yellowstone obsession, especially in the park's Lamar Valley, where one particularly visible pack regularly enchants crowds – and boosts tourism in surrounding communities. Park officials estimate that about 30,000 visitors have spotted wolves in the wild. . . .

Should wolves prey on livestock – as happened in 1997 after a particularly hard winter reduced elk and deer populations in northwestern Montana – Defenders dips into its Wolf Compensation Trust, a fund set up in 1987 and credited as pivotal to public acceptance of wolves, to pay ranchers full-market value for verified losses to wolves. Thus far, Defenders has paid ranchers nearly \$85,000, “Wolves prefer wild prey, so they generally kill very few livestock,” says Defenders’ northern Rockies representative Hank Fischer. “The numbers pale in comparison to the losses ranchers take because of bad weather and disease.” Defenders also uses the fund to help ranchers with non-lethal methods for keeping wolves at bay – such as supplying them with livestock-guarding dogs and electric fencing or introducing taste-aversion strategies, which condition wolves into thinking livestock are unpalatable.

Notes and Questions

1. ***Changing Values.*** Of course, the values people find in nature change overtime. That in part (perhaps in large part) explains the advent of modern environmental law about 1970. There is perhaps no better example of a dramatic shift in values than the case of the wolf. How did that change come about?

2. Why were wolves picked for reintroduction, instead of another species that was similarly threatened?

3. ***Consequences of Wolf Reintroduction in Yellowstone.*** Biologists hoped the return of the gray wolf to the Northern Rockies would return the region closer to an earlier ecological state. For example, when wolves were absent, the elk population had flourished, reaching 20,000 animals in Yellowstone in the 1990s. Sixteen packs of wolves, comprised of about ten animals, each kill an average of one elk per day and the elk population has been reduced by one-half. This significant change was anticipated.

Other changes in Yellowstone due to the presence of wolves were unexpected. Fewer elk has spurred the regrowth of vegetation, including trees. In the Lamar Valley, a wolf release site, there are now only large aspen and willow trees and few very small ones. Almost no trees began to grow after the 1920s, when the last significant wolf populations were killed or driven away. Biologists believe no new trees grew from the 1930s to the 1990s, because elk numbers burgeoned without the wolf.

Without young trees, beavers had little or no food and had disappeared from the park by the 1950s. Without beaver dams and ponds, fewer succulents grew – plants which are critical food for grizzly bears when they emerge from hibernation.

Since the return of wolves, trees are growing back most noticeably in places where browsing elk do not have a 360° degree view, locations where elk are nervous about being

spotted by a wolf pack. Three beaver dams have been built on the Lamar River, the first documented there in the last fifty years. The number of coyotes in the park has fallen by fifty percent due to wolf predation. With fewer coyotes, their prey – voles, mice, and other rodents – have increased dramatically. In turn, the red fox and raptors have benefitted.

The cause-effect relationships suggested above have not been conclusively proven. Yet scientists “are confident that form and function of the Yellowstone ecosystem will change because of wolf recovery. . . . The resulting trophic cascade will reverberate through the ecosystem. From the complicated food web that exists in Yellowstone, it is not hard to imagine that indirect effects of wolf recovery will be substantial.” Douglas W. Smith, Rolf O. Peterson, and Douglas B. Houston, *Yellowstone after Wolves*, 53 *BIOSCIENCE* 330, 338-339 (April 2003).

Environmental Restoration

Wolf reintroduction and proposals for revitalizing the Missouri River are examples of a major element of modern environmental policy and law – restoring the environment. A prominent legal authority, Joseph Sax, has written that the “leading edge in environmental law has taken a turn Its centerpiece is biodiversity; its spotlight is on restoration, and its agenda is not directed at the individual factory, waste repository, or discharge pipe. . . . The idea is to move toward a more regionally-oriented management of land and water. The implications of this shift for law, and for governance, are dramatic and fundamental Joseph L. Sax, *The New Age of Environmental Restoration*, 41 *Washburn Law Journal* 1 (2001-2002).

The prevalence of restoration efforts, first, tells us much about the current state of the American environment and, second, poses fundamental questions for environmentalists and policymakers. Consider the following excerpts:

. . . Over the past two centuries, 53% of the wetlands in the contiguous United States have been destroyed, mostly through drainage for agriculture. That’s an average rate of about 1 acre per minute, for a total loss of over 116 million acres in 200 years. . . .

The most difficult question is *how* wetlands can be restored on a large scale. In some places it is a relatively simple matter of recreating the hydrology that allowed natural wetlands to develop. Drained farmlands can be restored to wetlands by filling ditches or breaking tiles so that runoff can accumulate and saturate the soil. . . .

In other places, restoration is more difficult. Southern California’s salt marsh restoration attempts may represent the greatest challenge. In the San Diego

area, 85% of the original salt marsh is gone, watersheds are greatly modified, streams are dammed, and degraded waters flow into each coastal wetland. Sites are surrounded by urban uses, with no buffer between the wetland and development. . . .

Considerable attention has been given to restoring nesting habitat for one bird on the U.S. endangered species list, the Light-footed Clapper Rail This bird is a year-round resident of southern California salt marshes. . . . [T]wo marshes have been created at San Diego Bay expressly for Clapper Rails. The first mitigation project was a 12-acre series of islands and channels constructed in 1984. In 1990, an additional 17-acre site was excavated from dredge spoil. To date, rails have not nested at either site.

Some of the inadequacies of these constructed salt marshes, as compared with natural reference marshes, include less abundant epibenthic invertebrates, shorter vegetation, and lower concentrations of soil organic matter and soil nitrogen. From the standpoint of the Clapper Rail, the short stature of the plants is the biggest problem: when the tide rises, the plant canopy is fully submerged, leaving no cover for rails, their nests, or their chicks.

A chain of events explains the short plant canopies at these constructed marshes. The sandy sediments do not retain nutrients well, so nutrients do not accumulate. Nitrogen limits plant growth, especially height. Low organic matter concentrations further limit nitrogen fixation rates and perhaps the invertebrates that help recycle nutrients. Finally, the short vegetation appears to be inadequate for use by beetles that consume scale insects, which are native herbivores on the cordgrass vegetation. . . .

From the problems that have plagued restoration attempts in San Diego Bay, we conclude that we are not yet able to recreate self-sustaining salt marshes or to reestablish self-sustaining populations of our endangered salt marsh birds. It is not yet clear how to guarantee long-term success. . . .

Joy B. Zedler, *Restoring a Nation's Wetlands: Why, Where, and How?*, in GARY K. MEFFEE, ET AL., *PRINCIPLES OF CONSERVATION BIOLOGY* 487-488 (1997).

. . . The idea that humanity can restore or repair the natural environment has begun to play an important part in decisions regarding environmental policy. We are urged to plant trees to reverse the “greenhouse effect.” Real estate developers are obligated to restore previously damaged acreage in exchange for building permits. The U.S. National Park Service spends \$33 million to “rehabilitate” 39,000 acres of the Redwood Creek watershed. And the U.S. Forest Service is criticized for its “plantation” mentality: it is harvesting trees from old-growth forests rather than “redesigning” forests according to the sustainable principles of nature. “Restoration forestry is the only true forestry, “

claims an environmentally-conscious former employee of the Bureau of Land Management.

These policies present the message that humanity should repair the damage that human intervention has caused the natural environment. The message is an optimistic one, for it implies that we recognize the harm we have caused in the natural environment and that we possess the means and will to correct these harms. These policies also make us feel good; the prospect of restoration relieves the guilt that we feel about the destruction of nature. The wounds we have inflicted on the natural world are not permanent; nature can be made “whole” again. Our natural resource base and foundation for survival can be saved by the appropriate policies of restoration, regeneration, and redesign. . . .

. . . I question the environmentalists’ concern for the restoration of nature and argue against the optimistic view that humanity has the obligation and ability to repair or reconstruct damaged natural systems. This conception of environmental policy and environmental ethics is based on a misperception of natural reality and a misguided understanding of the human place in the natural environment. On a simple level, it is the same kind of “technological fix” that has engendered the environmental crisis. Human science and technology will fix, repair, and improve natural processes. On a deeper level, it is an expression of an anthropocentric world view, in which human interests shape and redesign a comfortable natural reality. A “restored” nature is an artifact created to meet human satisfactions and interests. Thus, on the most fundamental level, it is an unrecognized manifestation of the insidious dream of the human domination of nature. Once and for all, humanity will demonstrate its mastery of nature by “restoring” and repairing the degraded ecosystems of the biosphere. Cloaked in an environmental consciousness, human power will reign supreme. . . .

. . . Nothing I have said in this essay should be taken as an endorsement of actions that develop, exploit, or injure areas of the natural environment and leave them in a damaged state. I believe, for example, that Exxon should attempt to clean up and restore the Alaskan waterways and land that was harmed by its corporate negligence. The point of my argument here is that we must not misunderstand what we humans are doing when we attempt to restore or repair natural areas. We are not restoring nature; we are not making it whole and healthy again. Nature restoration is a compromise; it should not be a basic policy goal.

Eric Katz, *The Big Lie: Human Restoration of Nature*, 12 *TECHNOLOGY AND THE ENVIRONMENT* 231, 232, 240 (1992).

. . . [R]estorations do not fake so much as facilitate nature, help it along, mostly by undoing the damage that humans have introduced, and then letting

nature do for itself. As the restoration is completed, the wild processes take over. The sun shines, the rains fall, the forest grows. Birds survive on their own and build their nests. Hawks and owls catch rodents. Perhaps you returned some otters, locally extinct, and put them back in the rivers. But, after a few generations, the otters do not know they were once introduced

. . . In due course, lightning will strike and wildfire burn the forest again, after which it will regenerate itself. . . . If such things happened decades, centuries, millennia after some thoughtful humans had once facilitated the restoration, it would seem odd to label all these events as artifacts, lies, fakes. Perhaps the best way to think of it is that the naturalness of a restored area is time-bound. Any restoration is an artifact at the moment that it is deliberately arranged, but it gradually ceases to be so as spontaneous nature returns – but if, and only if, humans back off and let nature take its course.

HOLMES ROLSTON III, CONSERVING NATURAL VALUE 92-93 (1994).

Notes and Questions

1. To what point in time should we restore the environment? The early 1800s? Before European contact?

2. ***Pleistocene Rewilding.*** Near the end of the Pleistocene era – between roughly 10,000 to 13,000 years ago – nearly all of the large herbivores and their predator species died out in South, Central and North America. Forty years ago, Paul Martin of the University of Arizona theorized that human migrating from Eurasia over-hunted the megafauna so severely that the populations could not recover. Since much of the native flora and fauna of North America evolved under the influence of large mammals, Martin concluded that the present ecological communities do not function properly in the absence of megafauna. So Martin and others have proposed a "Pleistocene rewilding" to reintroduce large vertebrates to North America. See PAUL S. MARTIN, TWILIGHT OF THE MAMMOTHS: ICE AGE EXTINCTIONS AND THE REWILDING OF AMERICA (2005). Of course, the large animals that would be introduced under such a plan are modern species (such as Bolson tortoises, feral horses, elephants and Holarctic lions) which can simulate the functions of the long extinct mammals. See C. Josh Donlan, et al., *Plei Hall stocene Rewilding: An Optimistic Agenda for Twenty-first Century Conservation*, 168 THE AMERICAN NATURALIST 660 (2006). It would also require an "ecological park" encompassing thousands of square miles. Is this rewilding realistic? If not, why not?

3. Rolston approves of some restorations, but is it realistic to think that "humans [will] back off" as he stipulates?

Section B. The Saturnalia of Disposition 1803 - 1934

The official policy of the United States government for its first 150 years may be summarized as disposing of the public domain as fast as possible. The primary beneficiary of this policy was intended to be the individual pioneer farmer, but vast amounts of land were granted to states, the railroads, and miners. In all, well over one billion acres was transferred from federal ownership. Yet as recently as the 1970s, more than one-third of the United States was still owned by the national government.

1. Consequences of the Land Laws, Intended and Otherwise

As Jefferson said, settlers occupied the public domain “in spite of everybody” and Congress was forced to deal with the squatters through a series of preemption acts, discussed below. The very mixed experience with cash and credit sales of land, including the success of cash-rich speculators at the expense of yeoman farmers, generated pressure for public land reform. The result was the landmark Homestead Act of 1862, which authorized entry onto 160 acres of surveyed land subject to preemption, required establishment of actual residence within six months of application, and actual settlement and cultivation for five years. Except for filing fees, the land was free.

Settlers could also obtain a quarter-section of land under the Timber Culture Act of 1872 if they planted trees on 40 acres. The Timber and Stone Act of 1878 allowed the appropriation of lands chiefly valuable for timber or stone in certain western states for \$2.50 an acre. Other homesteading statutes included the Desert Lands Act of 1877, which required proof that the land had been irrigated. Even in the twentieth century, more acts were passed, such as the Enlarged Homestead Act of 1909 which allowed entry on 320 acres of non-mineral land unsuitable for irrigation and the Stock-Raising Homestead Act of 1916 which authorized entry on 640 acres of land designated as chiefly valuable for grazing (reserving to the United States the subsurface coal and mineral rights). Over 30 million acres were granted under the latter statute. Various homestead acts were repealed from time to time and the remaining statutes finally were repealed in 1976.

At the same time land was passing out of federal ownership, new states were being created. Thirty states, sometimes referred to as “public land states,” were carved from the public domain. The original 13 states, Kentucky, Tennessee, Vermont, Maine, Texas, and Hawaii were not public land states, since the federal government never owned significant amounts of land in those states. This difference between the 30 public land states and the other states caused the two groups to adopt markedly different positions on federal land policy – and thus some

environmental policies – which have persisted into the twenty-first century.

Beginning with the Ohio Settlement Act in 1803, the new states were themselves granted large portions of the public domain. Many states received sections numbered 6 and 36 in each township for the support of public schools and states later admitted to be in received four even-numbered sections in each township for this purpose. Other grants were made for internal improvements, public buildings, and a university. For education alone, the states received 98 million acres.

Preemption

PAUL W. GATES, HISTORY OF PUBLIC LAND LAW DEVELOPMENT
219, 237-24, 244 (1968)

Preemption, the preferential right of a settler on public lands to buy his claim at a modest price, had been generally conceded – except in New England – to persons on the outer edge of the frontier by the time of the American Revolution. This privilege had not always been won easily, and only by vigorously resisting ejectment and fiercely demanding the right to acquire the land for a small payment or free, in preference to all others, had the settlers been victorious. If, unluckily, they found themselves on absentee-owned land and ejectment proceedings were brought against them, they insisted on payment for the value of all improvements they had made. These two principles – the occupying settler’s preferential right to buy the public land he had squatted upon and the right to the value of the improvements inadvertently made on private land – were carried wherever land-seeking pioneers went and were incorporated into the land systems of colonies and states and later into that of the Federal government. . . .

Claims Associations

By the thirties, combinations of settlers – claim associations – had been formed to assure orderly buying at most public land sales and to prevent speculators from overbidding or claim jumpers from buying the land of settlers. (Sometimes, . . . combinations of speculators had been formed to prevent competitive bidding among the members.) It is doubtful whether any important sales of public lands were held between 1835 and 1860 at which such combinations did not function, and almost invariably they accomplished their objectives. . .

. . . [O]ne of the most important functions of the claim associations, which were commonly organized in advance of the establishment of local government, was to provide a title registration system. According to such a system titles of claims – both before and after the public sale and until county government had been created nearby – could safely be conveyed, accumulated, divided, and even mortgaged, though the government title had not yet been conveyed. Common interests involving land ownership drew people together as nothing else did. It made possible the easy conveying and reconveying of parts of quarter sections when the settlers had created farm boundaries that did not coincide with government surveys that were run later. . . .

Having won retrospective preemption in a series of measures between 1830 and 1840, the West's next objective was to gain permanent prospective preemption. Westerners had long felt that this was desirable as it would take the issue out of politics and would assure settlers moving on public lands that they would not have to wait for congressional action to protect them in their claims. Anything short of that goal was, like the measures of 1830 and 1838, a mere palliative. It was the western Democrats who sponsored preemption and who drew some support from Democrats of other sections; . . .

The Act of 1841

The Act of 1841 abandoned the view that all settlement on unoffered public land was illegal but sanctioned future settlement only on surveyed land. It was to take another decade before Congress was prepared to allow preemption on unsurveyed land and then it was permitted for a time in a few states only. The usual maximum of 160 acres could be claimed by settlers who inhabited and improved the land, erected a dwelling on it, and at the proper time paid \$1.25, an acre. Persons eligible for preemption were heads of families, widows, or single men over 21, who either were citizens or had filed a declaration of intention to take out citizenship. Persons owning 320 acres or more and anyone "who shall quit or abandon his residence on his own land to reside on the public land in the same State or Territory" were ineligible. No one could gain more than one preemption under the act. . . .

Although there was considerable talk about preemption replacing public sales, the act specifically stated that it was not intended to interfere with public offerings, which were to be continued as before.

It was the intention of Congress that settlers on the surveyed portions of the public lands would never again have to worry about the legality of moving upon land before it had been offered at auction, and that land office officials, no matter how strongly they were influenced by the revenue concept of the earlier days, should not have to face the unpleasant task of curbing intrusions on surveyed lands. However, the Act of 1841 was only prospective, and where settlement prior to its enactment had been excluded by the restricted provisions in the Acts of 1838 and 1840, settlers still could claim no right of preemption. More restrictive was the limitation of the act to surveyed lands. Because preemption was not extended to squatters on unsurveyed lands, Commissioner Shields feared that when the lands were surveyed others could anticipate them, file preemption entries, and thereby gain the advantage of their improvements. Actually, problems over squatting, intrusions, and the use of force to repel unlicensed settlement were to continue to annoy the West and to make difficulties for officialdom for two generations to come. . . .

Abuses and Problems of Preemption

By 1847 Commissioner Richard M. Young directed Congress' attention to an ominous development in the use of the preemption law which was not to be ended until its repeal in 1891. Many persons were taking advantage of the law by filing declaratory statements on land subject to private entry, which permitted them to hold it for a year without making any improvements.

During that time they might find a purchaser to whom they could sell a relinquishment, thereby anticipating later comers just as the larger capitalist speculators were doing. Actually, they were not allowed by law to file a second declaratory statement, but to enforce such prohibition was difficult. Possibly Young was a bit naive in suggesting an affidavit to indicate, when the declaratory statement was filed, that the claimant had made a bona fide settlement, and also “within thirty days after the commencement of such settlement, the requisite proof of such claimant’s right. . . .” The General Land Office was ultimately to learn that no matter what proof of settlement and improvement was required, the procedures of the local land offices and their numerous responsibilities did not permit them to check up on such documents. Individuals were seldom caught in infractions of the land laws and even less seldom punished, though it was generally known that the laws were being extensively abused. . . .

In addition to the many cases involving the rights of a preemptor as against a cash purchaser, or two contending settlers, were those of settlers who had been entitled to a preemption under the Acts of 1838, 1840, or even 1841, but who had not prepared the required affidavits concerning improvements before they died. Under the law the heirs had no rights in the absence of such affidavits. Still another type of case not easy to solve involved settlers who unknowingly located on section 16, land reserved for schools. Under the Act of 1840 they were allowed to locate on any other quarter section in the same district on which no other person had registered a preemption. Settlers in this predicament could, and some did, file on other tracts but others who had improved their claims failed to file entry forms in time or were found not to have made the specific improvements the law required and therefore did not qualify for their substitute selections. The list of suspended entries was growing and threatening to overwhelm the General Land Office

Unsurveyed Lands Opened

More important than all these measures – in that its provisions were to affect a much larger number of people – was the action of Congress in 1853 authorizing preemption on unsurveyed lands in California for one year. (The land commissioners had been recommending for years that preemption should extend to unsurveyed lands everywhere, but Congress took no step in this direction until 1853.) Another important provision in this act allowed persons who had preempted land before to enter a second claim in California. On March 1, 1854, preemption on unsurveyed land in California was extended for 2 additional years. Other newly developing territories and states were anxious to have the same privilege. On July 17, 1854, it was extended to Oregon and Washington Territories; on July 22, 1854, to Kansas and Nebraska Territories; and on August 4, 1854, to Minnesota Territory. Not until 1862 was the right of preemption extended to settlers on unsurveyed public land in all states and territories. In that year, with the newly adopted homestead privilege available only on surveyed land and with the government officials following a general policy of not offering arable land suitable for farming at public sale, preemption took a new lease on life because it was the only route to ownership on unsurveyed land. For the next 30 years preemption was to be a major factor in moving land from government to private ownership in the Great Plains, in California, and in timbered regions of the Lake States and the Far West.

The Homestead Act in Practice

WALLACE STEGNER, BEYOND THE 100TH MERIDIAN:

JOHN WESLEY POWELL AND THE SECOND OPENING OF THE WEST 220-222 (1954)

By the time the Homestead Act was passed in 1862, settlement was already at the edge of the subhumid belt. By the time the Timber Culture Act of 1873, the Desert Land Act of 1877, and the Timber and Stone Act of 1878 were piled upon the existing jumble of Pre-emption Act[s], public sales, railroad grants, Indian and soldiers' scrip, and Homestead Act, there seemed to be many avenues to opportunity for the yeoman, and yet every one tempted him into an enterprise with a sixty-six per cent chance of failure. . . .

Suppose a pioneer tired. Suppose he did (most couldn't) get together enough money to bring his family out to Dakota or Nebraska or Kansas or Colorado. Suppose he did (most couldn't) get a loan big enough to let him build the dwelling demanded by law, buy a team and a sodbuster plow and possibly a disk harrow and a seeder and perhaps a binder – whatever elements of the multiplying array of farm machinery he had to have. Suppose he managed to buy seed, and lay in supplies or establish credit for supplies during the first unproductive year. Suppose he and his family endured the sun and glare on their treeless prairie, and were not demolished by the cyclones that swept across the plains like great scythes. Suppose they found fuel in a fuelless country, possibly digging for it, . . . but more likely burning cow chips, and lasted into fall, and banked their shack to the window sills with dirt against the winter's cold, and sat out the blizzards and the loneliness of their tundra-like home. Suppose they resisted cabin fever, and their family affection withstood the hard fare and the isolation, and suppose they emerged into spring again. It would be like emerging from a cave. Spring would enchant them with crocus and primrose and prairies green as meadows. It might also break their hearts and spirits if it browned into summer drought. The possibilities of trouble, which increased in geometrical rasion beyond the 100th meridian, had a tendency to materialize in clusters. The brassy sky of drought might open to let across the fields winds lie the breath of blowtorch, or clouds of grasshoppers, or crawling armies of chinch bugs. Pests always seemed to thrive best in drought years. And if drought and insect plagues did not appear there was always a chance of cyclones, cloudbursts, hail.

It took a man to break and hold a homestead of 160 acres even in the subhumid zone. It took a superman to do it on the arid plains. I could hardly, in fact be done, though some heros tried it. . . .

Those who were defeated, and up to 1900 two thirds of those who tried it were, were by the normal course of events in peonage to the banks. A mortgage was more common on a western farm than a good team.

Later acts, though their passage indicated a dawning and confused awareness of he

existing system, helped the small farmer very little. . . . [T]he Desert Land Act and the Timber and Stone Act, could hardly have been devised to help speculators and land-grabbers if they had been written for that specific purpose. Even if the provisions of the laws had been honorably observed, which they were not, the net effect would have been to concentrate western grazing and timber land in the hands of large companies. The irrigation demanded before title could be obtained under the Desert Land Act was usually impossible for the single farmer. And those lands “unfit for settlement” which were open under the Timber and Stone Act were, like the desert land, transferable before final proof of title, unless fraud was provable. Fraud was never provable, but it was estimated that ninety-five per cent of final title proofs were fraudulent, nevertheless. For a fee, settlers filed, and then sold to some corporation and moved on.

VALUES OF NATURE

Dominionistic Value

Nature and wildlife have always confronted humans with significant challenges, physical and mental, testing and refining people’s capacities for enduring, even mastering, the chore of survival in the face of worthy opposition. People have long contested the wild and, in the process, honed their ability to subdue and control the unruly and threatening elements of their world. A dominionistic value can sometimes encourage an excessive urge to suppress nature, especially in our modern age of technology. Still, the relatively recent development of a frightening capacity to obliterate nature should not prevent us from recognizing the ancient and functional roots of this value.

Survival, even in the modern era, is still a tenuous enterprise necessitating some degree of human capacity for endurance and mastery. The ability to subdue, and the skills and prowess honed by an occasionally adversarial relationship with nature, remain essential ingredients in developing the human capability to survive. Perhaps this may explain why people often feel compelled to keep this aspect of the human spirit alive even when it seems superfluous. As Holmes Rolston suggests:

The pioneer, pilgrim, explorer, and settler loved the frontier for the challenge and discipline. . . . One reason we lament the passing of wilderness is that we do not want entirely to tame this aboriginal element. . . . Half the beauty of life comes out of it. . . . The cougar’s fang sharpens the deer’s sight, the deer’s fleet-footedness shapes a more supple lioness. . . . None of life’s heroic quality is possible without this dialectical stress.

The dominionistic experience of nature can sharpen mental and physical competence through testing various abilities and capacities. By successfully challenging nature and wildlife, people derive feelings of self-reliance that are hard to achieve in an untested relationship or by

simply experiencing nature as a spectator. The predator appreciates its prey to a degree no other creature can, and this may be as true for the human hunter of ducks and mushrooms as for the wolf stalking its deer or the deer seeking its browse. Although the dominionistic value may be less directly relevant today than in the human past, it would be a mistake to deny its legitimacy or reject the continuing desire to exercise mastery over nature. Like all the values, the dominionistic possess both the potential for functional as well as exaggerated and self-defeating expression.

STEPHEN R. KELLERT, *THE VALUE OF LIFE: BIOLOGICAL DIVERSITY AND HUMAN SOCIETY* 20-21 (1996).

Notes and Questions

1. The references in the land disposition laws to townships, sections, 160 acres (a quarter-section), and similar measures of area are reminders of the great and lasting influence of the rectangular survey system adopted in the Land Ordinance of 1785. What was the fate of another key feature of the Land Ordinance, that public lands be surveyed before sale?

2. Stegner further noted that neither the Homestead Act nor other laws provided for government loans to aid the settlers, and did not require that abandoned claims be returned to the public domain for homesteading by others. When a yeoman farmer finally gave up, the banks foreclosed its mortgage and sold the land, often to speculators or large ranching companies. “In the end, the Homestead Act stimulated the monopolizing of land that its advocates had intended to prevent.” Wallace Stegner, *supra* at 221.

3. Congress created the General Land Office in 1812 to oversee the disposition of the public domain. The Taylor Grazing Act of 1934 – studied in Section C of this chapter – established the U.S. Grazing Service to manage the public rangelands. In 1946, the Grazing Service was merged with the General Land Office to form the Bureau of Land Management (BLM) in the Department of the Interior. The BLM was finally given modern authorities and direction in the Federal Land Policy and Management Act of 1976 (FLPMA). FLPMA is described in Chapter 4, Section A. 3, and some provisions of the statute are considered in Chapter 2, Sections B. 3 and 4. In fact, as of October 21, 1976 – the date of FLPMA’s enactment – the “public domain” ceased to exist. The act declared the national policy to be retention and management of the lands remaining in federal ownership.

2. A Disposition Era Legacy: Obstacles to Resource Development and Protection

In the mid-1800s, railroads were considered necessary to spur the settlement and economic development of the West. As an incentive to extend their lines, railroads in Illinois, Mississippi, and Alabama received even-numbered sections of public land within six miles of their tracks, creating a pattern of intermixed public and private lands. (After 1850, railroads were granted *odd-numbered* sections.) Congress passed statutes granting land to eight railroads being built beyond the Mississippi River, most notably the first transcontinental railway. In all, railroad companies obtained ninety million acres of the public domain and the states received another forty million acres to be used by the railroads.

The Unlawful Inclosures Act of 1885. During the last half of the Nineteenth Century, cattlemen had entered Kansas, Nebraska, and the Dakota Territory before other settlers, and they grazed their herds freely on public lands with the federal government's acquiescence. To maintain their dominion over the ranges, cattlemen used homestead and preemption laws to gain control of water sources in the range lands. With monopoly control of just the sources, the cattlemen found that ownership of a small area could yield effective control of thousands of acres of grassland.

Another exclusionary technique was the fencing of public lands. The "checkerboard" pattern of railroad grants often provided a disguise for the ranchers: by placing fences near the borders of their private parts of the checkerboard, cattlemen could fence in thousands of acres of public lands, to the consternation of later arriving farmers. Reports by the Secretary of the Interior indicated that vast areas of public grazing land had been preempted by such fencing patterns. In response, Congress passed the Unlawful Inclosures Act.

Since 1885, the UIA has provided in part:

§ 1061. Inclosure of an assertion of right to public lands without title

All inclosures of any public lands in any State or Territory of the United States, heretofore or to be hereafter made, erected or constructed by any person, party, association, or corporation, to any of which land included within the inclosure the person, party, association, or corporation making or controlling the inclosure had no claim or color of title made or acquired in good faith . . . are hereby declared to be unlawful, and the maintenance, erection, construction, or control of any such inclosure is hereby forbidden and prohibited;

§ 1063. Obstruction of settlement on or transit over public lands

No person, by force, threats, intimidation, or by any fencing or inclosing, or any other unlawful means, shall prevent or obstruct, or shall combine and confederate with others to prevent or obstruct, any person from peaceably entering upon or establishing a settlement or residence on any tract of public land subject to settlement or entry under the public land laws of the United States, or shall prevent or obstruct free passage or transit over or through the public lands.

§ 1065. Summary removal of inclosures

The President is hereby authorized to take such measures as shall be necessary to remove and destroy any unlawful inclosure of any of said lands, and to employ civil or military force as may be necessary for that purpose.

Leo Sheep Co. v. United States
440 U.S. 668 (1979)

Justice REHNQUIST delivered the opinion of the Court.

This is one of those rare cases evoking episodes in this country's history that, if not forgotten, are remembered as dry facts and not as adventure. Admittedly the issue is mundane: Whether the Government has an implied easement to build a road across land that was originally granted to the Union Pacific Railroad under the Union Pacific Act of 1862 – a grant that was part of a governmental scheme to subsidize the construction of the transcontinental railroad. But that issue is posed against the backdrop of a fascinating chapter in our history.

The idea of a transcontinental railroad predated the California gold rush. . . . [A]nimating it all was the desire of the Federal Government that the West be settled. This desire was intensified by the need to provide a logistical link with California in the heat of the Civil War. That the venture was much too risky and much too expensive for private capital alone was evident in the years of fruitless exhortation; private investors would not move without tangible governmental inducement.

In the mid-Nineteenth Century there was serious disagreement as to the forms that inducement could take. Justice Story, in his Commentaries on the Constitution, described one extant school of thought which argued that “internal improvements,” such as railroads, were not within the enumerated constitutional powers of Congress. Under such a theory, the direct subsidy of a transcontinental railroad was constitutionally suspect – an uneasiness aggravated by President Andrew Jackson’s 1830 veto of a bill appropriating funds to construct a road from Maysville to Lexington within the State of Kentucky.

The response to this constitutional “gray” area, and source of political controversy, was the “checkerboard” land grant scheme. The Union Pacific Act of 1862 granted public land to the Union Pacific Railroad for each mile of track that it laid. Land surrounding the railway right-of-way was divided into “checkerboard” blocks. Odd-numbered lots were granted to the Union Pacific; even-numbered lots were reserved by the Government. As a result, Union Pacific land in the area of the right-of-way was usually surrounded by public land, and vice versa. The historical explanation for this peculiar disposition is that it was apparently an attempt to disarm the “internal improvement” opponents by establishing a grant scheme with “demonstrable”

benefits. . . .³

. . . As is often the case, war spurs technological development, and Congress enacted the Union Pacific Act in May 1862. Perhaps not coincidentally, the Homestead Act was passed the same month.

The land grants made by the 1862 Act included all the odd numbered lots within 10 miles on either side of the track. When the Union Pacific's original subscription drive for private investment proved a failure, the land grant was doubled by extending the checkerboard grants to 20 miles on either side of the track. Private investment was still sluggish, and construction did not begin until July 1865, three months after the cessation of Civil War hostilities. Thus began a race with the Central Pacific Railroad, which was laying track eastward from Sacramento, for the government land grants which went with each mile of track laid. The race culminated in the driving of the golden spike at Promontory Point, Utah, on May 10, 1869.

This case is the modern legacy of these early grants. Petitioners, the Leo Sheep Company and the Palm Livestock Company, are the Union Pacific Railroad's successors in fee to specific odd-numbered sections of land in Carbon County, Wyo. These sections lie to the east and south of the Seminoe Reservoir,⁴ an area that is used by the public for fishing and hunting. Because of the checkerboard configuration, it is physically impossible to enter the Seminoe Reservoir sector from this direction without some minimum physical intrusion upon private land. In the years immediately preceding this litigation, the Government had received complaints that private owners were denying access over their lands to the reservoir area or requiring the payment of access fees. After negotiation with these owners failed, the Government cleared a dirt road extending from a local county road to the Reservoir across both public domain lands and fee lands of the Leo Sheep Company. It also erected signs inviting the public to use the road as a route to the Reservoir.⁵

Petitioners initiated this action . . . to quiet title against the United States. The District

³ Government grants to aid the development of transportation facilities gained momentum during the administration of John Quincy Adams, who did not share Madison's and Monroe's reservations about the constitutionality of the Government's involvement in such activities. Checkerboard land grants achieved currency during the canal era. Apparently the first such grant was to aid construction of the Wabash and Erie Canal in Indiana. See P. Gates, *History of Public Land Law Development* 341-356 (1968).

⁴ The reservoir was constructed by the U.S. Bureau of Reclamation in 1938 and is still owned and operated by the federal government. – Ed.

⁵ The relocated dirt road crossed the south-east corner of section 15 approximately 30 feet from the section corner and crossed the south-west corner of the same section approximately 4 feet from the section corner. These were the only incursions onto the petitioners' land. The Court of Appeals noted that the Bureau of Land Management located the road "to minimize any possible trespass to plaintiffs' lands." 570 F. 2d 881, 884 (10th Cir. 1977). – Ed.

Court granted petitioners' motion for summary judgment, but was reversed on appeal by the Court of Appeals for the Tenth Circuit. . . . Because this holding affects property rights in 150 million acres of land in the Western United States, we granted certiorari and now reverse.

[The Court then addressed the argument of the United States that it held an implied easement due to necessity.] It is possible that Congress gave the problem of access little thought; but it is at least as likely that the thought which was given focused on negotiation, reciprocity considerations, and the power of eminent domain as obvious devices for ameliorating disputes. So both as matter of common-law doctrine and as a matter of construing congressional intent, we are unwilling to imply rights of way, with the substantial impact that such implication would have on property rights granted over 100 years ago, in the absence of a stronger case for their implication than the Government makes here.

Nor do we find the Unlawful Inclosures of Public Lands Act of 1885 of any significance in this controversy. . . .

The Government argues that the prohibitions of this Act should somehow be read to include the Leo Sheep Company's refusal to acquiesce in a public road over its property, and that such a conclusion is supported by this Court's opinion in *Camfield v. United States*, 167 U.S. 518 (1897). We find, however, that *Camfield* does not afford the support that the Government seeks. That case involved a fence that was constructed on odd-numbered lots so as to enclose 20,000 acres of public land, thereby appropriating it to the exclusive use of Camfield and his associates. This Court analyzed the fence from the perspective of nuisance law, and concluded that the Unlawful Inclosures Act was an appropriate exercise of the police power.

There is nothing, however, in the *Camfield* opinion to suggest that the Government has the authority asserted here. In fact, the Court affirmed the grantee's right to fence completely his own land.

“So long as the individual proprietor confines his enclosure to his own land, the Government has no right to complain, since he is entitled to the complete and exclusive enjoyment of it, regardless of any detriment to his neighbor; but when, under the guise of enclosing his own land, he builds a fence which is useless for that purpose, and can only have been intended to enclose the lands of the Government, he is plainly within the statute, and is guilty of an unwarrantable appropriation of that which belongs to the public at large.” 167 U.S., at 528.

Obviously if odd-numbered lots are individually fenced, the access to even-numbered lots is obstructed. Yet the *Camfield* Court found that this was not a violation of the Unlawful Inclosures Act. In that light we cannot see how the Leo Sheep Company's unwillingness to entertain a public road without compensation can be a violation of that Act. It is certainly true that the problem we confront today was not a matter of great concern during the time the 1862 railroad grants were made. The order of the day was the open range – barbed wire had not made its presence felt – and the type of incursions on private property necessary to reach public land was not such an interference that litigation would serve any motive other than spite. Congress

obviously believed that when development came, it would occur in a parallel fashion on adjoining public and private lands and that the process of subdivision, organization of a polity and the ordinary pressures of commercial and social intercourse would work itself into a pattern of access roads.⁶ . . .

. . . [T]he present times are litigious ones and the 37th Congress did not anticipate our plight. Generations of land patents have issued without any express reservation of the right now claimed by the Government. Nor has a similar right been asserted before. When the Secretary of Interior has discussed access rights, his discussion has been colored by the assumption that those rights had to be purchased. This Court has traditionally recognized the special need for certainty and predictability where land titles are concerned, and we are unwilling to upset settled expectations to accommodate some ill-defined power to construct public thoroughfares without compensation. The judgment of the Court of Appeals of the Tenth Circuit is accordingly

Reversed.

Notes and Questions

1. Why did Congress deliberately create the “checkerboard” land grant pattern?
2. The grants for the first transcontinental railroad were not the only ones to create “checkerboards” or even the largest such grants. Similar grants of alternating sections were made to the Southern Pacific Railroad (in Washington, Oregon, and California), the Sante Fe Railroad (in Kansas), and the Atlantic and Pacific Railroad (in Arizona and New Mexico). The largest checkerboard resulted from the grant to the Northern Pacific Railroad, 40 million acres in a 100-wide mile band 2700 miles long (in North Dakota, Montana, Idaho, and Washington).
2. What do you suppose the petitioners in *Leo Sheep* were attempting to do? Does it help you to know that in 1965 Leo Sheep Co. had joined with several neighbors, together controlling one-third of a million acres, to form Elk Mountain Safari, Inc.?
3. In *Leo Sheep*, Justice Rehnquist relies heavily on a critical passage from *Camfield* that begins: “So long as the individual proprietor confines his enclosure to his own land, the

⁶ This expectation was fostered by the general land grants scheme. Each block in the checkerboard was a square mile – 640 acres. The public lots were open to homesteading, with 160 acres the maximum allowable claim under the Homestead Act. Act of May 20, 1862, ch. 75, 12 Stat. 392. The Union Pacific was required by the 1862 Act to sell or otherwise dispose of the land granted to it in three years after completion of the entire road, with lands not so disposed of within that period subject to homesteading and pre-emption. Thus in 1862 the process of subdivision was perceived, to a great degree, as inevitable.

Government has no right to complain” But what exactly does this mean? Although the fence was “confined . . . to his own land,” the Supreme Court found the fence “certainly within the letter” of the Unlawful Inclosure Act, 167 U.S. at 522, and upheld the convictions of Camfield and his associates.

In light of this, isn’t Justice Rehnquist’s reading of the critical passage suspect? Moreover, is the practical effect of the *Leo Sheep* decision any different than that of the unlawful fence in *Camfield*?

4. What practical consequences will likely follow from the decision in *Leo Sheep*? For example, can hunters or fishermen walk across the private section corners to reach the Seminole Reservoir? Does it create obstacles to building electrical transmission lines to meet the country’s increasing demand for energy?

With regard to the first question, consider the following legal opinion provided by the Assistant Regional Solicitor of the BLM’s Rocky Mountain Region to a Realty Specialist in the Wyoming State Office of the BLM:

In your July 7, 1997, memorandum to me you ask two questions regarding the public’s right of access to public lands in the “checkerboard” area of Wyoming. Your first question is:

Can a person legally step over a checkerboard corner, going from one piece of public land to another, without trespassing on the adjoining private lands?

This question is asked frequently since the Supreme Court ruled, in *Leo Sheep Company v. United States* . . . that the Government [public] does not have an implied right-of-way to cross privately owned sections of “checkerboard” lands to get to the Government-owned sections of those lands. It is based upon the idea that, because one can move diagonally across the common corner of four sections of land in the “checkerboard” area from one section of public land to another section of public land without putting one’s foot on the ground within the opposite, privately owned, sections of lands, one has not physically trespassed on the private land.

The answer to the question is no. Assuming one can find the precise location of the common corner, and assuming further one can step across that corner from public land to public land, one has, nevertheless, trespassed upon the property of the owner of the opposite, private, land.

Under common law, the one who owns the surface of the ground has the exclusive right to everything which is above it. This common law rule has been codified as follows in Wyoming:

The ownership of the space above the lands and waters of this state is declared to be vested in the several owners of the surface beneath subject to the right of flight described in W.S. 10-4-303.

W.S. [Wyoming Statutes] § 10-4-302.

Accordingly, when one steps across the point at which the four sections converge, which, “like a point in mathematics, [is] without length or width,” *Mackay v. Uinta Development Co.*, 219 F. 116, 118 (8th cir. 1914), one trespasses on the airspace of the owner of the private lands which converge at that place.

It is of no consequence that there may not be any physical harm to the private land. “An action for trespass is an action for injury to a possessory *right*.” *TZ Land & Cattle Co. V. Condict*, 795 P.2d 1204, 1207 (Wyo. 1990). (Emphasis added.)

Specifically, trespass is the physical intrusion upon property of another without the permission of the person lawfully entitled to the possession of the real estate. . . . “One is subject to liability to another for trespass irrespective of whether he thereby causes harm to any legally protected interest of the other, if he intentionally * * * enters land in the possession of the other, or causes a thing or a third person to do so * * *”

Burt v. Beautiful Savior Luth. Church, 809 P.2d 1064, 1067 (Colo. App. 1990).

Some individuals have suggested that stiles constructed across the common corner of four “checkerboard” sections, with both ends of the stile resting on public lands, would provide trespass-free access from one section of public land to another. Such is not the case. The stile would invade the airspace of the owner of the cornering private lands and constitute a trespass.

Memorandum from Lowell L. Madsen, Assistant Regional Solicitor, Rocky Mountain Division, to Jim Paugh, Realty Specialist, Wyoming State Office, Bureau of Land Management, *Opinion re the Unlawful Inclosures of Public Lands Act* (May 20, 2004).

Is this result compelled by *Leo Sheep*? Can you make the contrary argument?

The checkerboard patterns of railroad land grants give rise to issues other than access to public land for recreational users and government employees, as the following case illustrates.

United States ex rel. Bergen v. Lawrence
U.S. District Court
620 F. Supp. 1414 (D. Wyo. 1985)

BRIMMER, Chief Judge.

This case arises from the contentions of the United States and plaintiff-intervenors Wyoming Wildlife Federation and National Wildlife Federation (Wildlife Federations), that defendant has wrongfully fenced in federal land in violation of the Unlawful Inclosures of Public Lands Act.

Defendant owns a cattle ranch in the vicinity of Rawlins, Wyoming, and in the spring and summer months for about 60 days grazes his cattle on a combination of private, federal and state lands in the area of south central Wyoming known as Red Rim. Red Rim is an escarpment and uplifting plateau of approximately 22,000 acres, fifteen miles southwest of Rawlins, Wyoming, which lies just south of the railroad right-of-way granted to the Union Pacific Railroad in 1862. Red Rim contains an abundance of Wyoming big sagebrush, which, as testified to by Mr. Moody and Dr. Alldredge, is not eaten by cattle, but constitutes the major part of an antelope's diet, especially during winter. Due to Red Rim's geological features, winter winds blow the snow off this sagebrush, allowing the antelope to find food here when their other grazing areas are covered with deep snow. The Wyoming Game and Fish Department has declared that portions of Red Rim constitute critical winter habitat for pronghorn antelope. The Baggs antelope herd which uses Red Rim for winter range is estimated to number 2,000 or more, and those 2,000 antelope have virtually no other alternative winter feeding grounds.

Red Rim, and defendant's Daley Ranch, are the legacy of a checkerboard ownership plan arising from the Union Pacific Railroad Act of July 1, 1862. Pursuant to the Union Pacific Act, Congress transferred fee ownership of odd-numbered sections of land along the railroad lines to the Union Pacific, and retained Federal ownership in the even-numbered sections. Defendant now has fee title or permission to fence from the title owner, to the Union Pacific sections in question, and has grazing permits on the odd-numbered⁷ federal and state sections. Defendant's fence, which covers 28 miles, is physically located on private land, except where it crosses at the common corners of state and federal sections

The matter in issue is quite simple. Defendant Lawrence contends that since the fence is located on his land, and that he can construct it in any manner he chooses, without having to comply with Bureau of Land Management (BLM) requirements. Plaintiff-intervenors counter that since the fence encloses public lands, it violates the Unlawful Inclosures Act, unless the fence conforms with BLM standards promulgated pursuant to the Taylor Grazing Act. Those BLM standards require that fences for cattle operations provide a gap of at least sixteen inches at the bottom, with a bottom strand of smooth wire, so that antelope can crawl underneath, and with a top wire only thirty-eight inches high, to allow antelope to jump the fence when snow drifts

⁷ Here the judge should have said even-numbered. – Ed.

block passage beneath the bottom strand. Defendant's fence on the other hand, is made of woven wire with no gap at the bottom, and is topped off with barbed wire at a height of five feet, making it, as defendant admits, antelope-proof.

In 1897 the United States Supreme Court dealt with an identical situation in *Camfield v. United States*, 167 U.S. 518 (1897). Camfield acquired from Union Pacific the rights to several odd-numbered private sections of land, and

in building the fence complained of, the defendants had constructed it entirely on odd-numbered sections . . . so as to completely enclose all of the government lands aforesaid, but without locating the fence on any part of the public domain so included. *Id.* at 519.

The Supreme Court considered Camfield's argument that he could do whatever he wished on his own land, and soundly rejected it. The Court found that the Unlawful Inclosures Act had been promulgated just to avoid such an outcome.

If the act be construed as applying only to fences actually erected upon public lands, it was manifestly unnecessary, since the Government as an ordinary proprietor would have the right to prosecute for such a trespass. It is only by treating it as prohibiting all "enclosures" of public lands, by whatever means, that the act becomes of any avail. *Id.* at 525.

Finally, the Court concluded that defendant's intent, whether to irrigate the public lands or use them for pasturage, was unimportant. The only matter at issue was whether or not the fence violated the statute.

The device to which defendants resorted was certainly an ingenious one, but it is too clearly an invasion (sic) to permit our regard for the private rights of defendants as landed proprietors to stand in the way of an enforcement of the statute. . . . Considering the obvious purposes of this structure, and the necessities of preventing the enclosure of public lands, we think the fence is clearly a nuisance, and that it is within the constitutional power of Congress to order its abatement, notwithstanding such action may involve an entry upon the lands of a private individual. *Camfield* at 525.

The situation in this matter is virtually identical to that dealt with by the Supreme Court in *Camfield*. Although written in 1897, *Camfield* is still good law

Because the UIA says no person shall "prevent or obstruct any person", defendant says that the act only applies to humans, and that it is permissible for him to prevent antelope from crossing his fence. This argument might be valid except for the second clause of § 1063, which continues "or shall prevent or obstruct free passage or transit over or through the public lands." That clause does not contain the word "person", and neither does the Court believe that "person" from the preceding clause should be read into it. Had Congress intended only to protect people,

the first clause would have accomplished that purpose without necessity of the second clause.

In *Mackay v. Uinta Development Co.*, 219 F. 116 (1914), a Wyoming case decided by the Eighth Circuit Court of Appeals before the Tenth Circuit was created, the court held that there must be reasonable access for livestock to reach enclosed federal lands. Moreover, in *Stoddard v. United States*, 214 F. 566 (8th Cir. 1914), the Eighth Circuit specifically rejected the argument that defendant now presses this Court to embrace. In holding that the UIA did not apply only to humans, the Court held that the act

was intended to prevent the obstruction of free passage or transit for any or all lawful purposes over public lands. *Id.* at 568-69.

Surely, the free passage of hunters and their quarry is a lawful purpose for which the public may seek access to public lands. In light of these precedents the Court is hard-pressed to understand how the UIA could apply to cattle, but not to antelope.

In the years since the 1885 passage of the UIA, the then-pressing concerns of settlement and range wars have faded. But, new present-day concerns have arisen. In the Federal Land Policy and Management Act (FLPMA) [of 1976], 43 U.S.C. § 1701 et seq., Congress set out new goals for the public lands, one of which is that

the public lands be managed in a manner . . . that will provide food and habitat for fish and wildlife and domestic animals. . . . 43 U.S.C. § 1701 (a)(8).

Although FLPMA was promulgated long after passage of the UIA, it is certainly proper to consider FLPMA statute in light of UIA, especially since Congress as recently as 1984 considered and amended the UIA. . . . [D]efendant has agreed that if allowed to stand, his fence might cause an increase in the winter kill of the Baggs antelope herd. At the Hearing on Preliminary Injunction the Court was thoroughly convinced by the undisputed testimony of Mr. Moody and Dr. Alldredge that not only is the enclosed portion of Red Rim critical winter range for the Baggs antelope herd, but that if the fence remains standing, the herd may very probably be decimated by winter starvation. The Court cannot accept as the intent of Congress that the UIA would allow that outcome, when it is clear that defendant could not build his fence to prevent humans from undertaking mere recreational pastimes, such as hiking or fishing.

Neither is the fact that the fence is broken by 28 gates, 19 of which are unlocked, enough to take defendant's fence outside the scope of the UIA. Some of the locked gates have "No Trespassing" signs on them; and certainly none of the gates invite the public to come in. The Court is not entirely convinced that all of these gates provide adequate access for humans. However, the question at issue here is access by antelope. The testimony of Mr. Moody and Dr. Alldredge convinces the Court that gates, even if left open, make little or no difference to the antelope, which are creatures of habit that encounter a fence and will trail along it, totally missing small openings such as gates. It is not the fence itself, but its effect which constitutes the UIA violation. *McKelvey v. United States*, 260 U.S. 353 (1922). The clear, admitted, and intended effect of this fence is to exclude antelope. The presence of gates in it is unimportant.

Finally, defendant contends that *Camfield* and the UIA do not outlaw his fence because of the Supreme Court's decision in *Leo Sheep Co. v. United States*, 440 U.S. 668 (1979), which involved a BLM effort to build a road crossing from one public section to another, usually but not always (because of terrain) at the common corner. There the Government contended, *inter alia*, that the Unlawful Inclosures Act prevented the Leo Sheep Company from contesting the Government's right to build a road across its land to provide public access to a reservoir area. The Supreme Court held that in order to build the road, which was in part on private land and invite the public to use it, the Government had to compensate the Leo Sheep Company for use of its land. But, in the opinion, the Court stated:

Nor do we find the Unlawful Inclosures of 1885 of any significance in this controversy. That Act was a response to the "range wars," the legendary struggle between cattlemen and farmers during the last half of the 19th century. *Leo Sheep* at 683.

Defendant concludes that the Supreme Court held by this language that the UIA's purpose was to prevent the continuation of "range wars", and that it should not be extended beyond this purpose. That is not what the Court meant. The UIA indeed was a response to the range wars, but nothing in the act or its history limits its application in such a manner. If the UIA was only meant for such a limited purpose, the Court would have said so in *Camfield*, and Congress should have repealed it in 1934 when the Taylor Grazing Act was passed to end public lands disputes. Certainly Congress would not have amended the UIA in 1984 if the act was now useless.

Because *Leo Sheep* involved the Government's claim to an implied easement at the common corners of a checkerboard tract, the Court only concluded that *Camfield* and the UIA did not "suggest that the Government had the authority asserted here." *Leo Sheep* at 683. That does not mean that *Camfield* now has no applicability in this matter. As the *Leo Sheep* Court stated, "that case [*Camfield*] involved a fence that was constructed on odd-numbered lots so as to enclose 20,000 acres of public land. . . ." *Id.* at 683. Defendant has erected the same type of fence. Certainly *Camfield* is not applicable to a road question, but it clearly has much to say on the subject of defendant's fence. The Court finds that while *Leo Sheep* has no applicability in this matter, *Camfield* is dispositive of it.

Thus, the Court concludes that this matter was decided by the Supreme Court in 1897 in *Camfield v. United States*. Defendant cannot maintain a fence which encloses public lands and prevents the lawful purpose of antelope access to their winter feeding range. The fence clearly constitutes a serious nuisance which must be abated in order to avoid disastrous consequences to the antelope which use Red Rim as winter range. The fence was built ostensibly to protect defendant's crop of crested wheat grass; but, in eight years the defendant has never planted that crop. The Court believes that he does not intend to, either. The fence has an ulterior purpose, and since the parties assured the Court that the mineral rights of that area were not involved, the only reason left for it is the exclusion of antelope from their winter range, which will result in decimation of that herd. The antelope grazed on the Wyoming big sagebrush at Red Rim long before the Daley Ranch was ever built, and unless driven to extinction, will graze there long

after it is gone. The Court agrees with the Wildlife Federations that the Unlawful Inclosures Act must be read to avoid such an occurrence and to protect a unique wildlife resource like the Baggs antelope herd. Therefore, it is

ORDERED that the Defendant, Taylor Lawrence, shall within 10 days from and after October 29, 1985 remove the 48" woven wire from the fence at the places in the fence where it has been removed and laid down in the past two winters, in accord with the Order of this Court dated October 29, 1985. It is

FURTHER ORDERED that defendant Lawrence, within 60 days from the date of this Order, shall remove the 48" woven wire from all 28 miles of his Red Rim fence and conform the fence to BLM standards, for enclosure of cattle, or remove it altogether. It is further

ORDERED that if defendant fails to comply with this Order and modify or remove the fence, he shall be in contempt of Court, and subject, from the sixty-first day on until compliance, to a fine of \$1,000⁸ per day. It is further

ORDERED that in the event defendant desires to appeal this decision, this Order may be stayed upon his filing of a supersedeas bond, cash or surety, in the amount of \$120,000,⁹ but that if the defendant demonstrates to the Court that he has complied, and will continue to comply with the October 29, 1985 Order in Preliminary Injunction instructing him to remove the woven wire from those sections of the fence he has laid down in past years in agreement with the State of Wyoming, then this Order may be stayed upon filing of a supersedeas bond, cash or surety, in the amount of \$1,000.

Notes and Questions

1. The Lawrence case is one of many which offers an important lesson for environmental lawyers. In the words of the Professor Zygmunt Plater, "The point is, environmental law is where you find it." ZYGMUNT J. B. PLATER, ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 232 (2d ed. 1998).

2. The District Court's decision in the Lawrence case was affirmed by the 10th Circuit in an opinion which adopted essentially all of the trial court's reasoning. *Lawrence v. United States*, 848 F.2d 1502 (10th Cir. 1988). Following the Court of Appeals decision, Judge Brimmer again ordered Lawrence to modify or remove his fence. The fence was still standing

⁸ Based on an estimate of 2000 antelope in the Baggs herd, at \$.50 per head per day.

⁹ Based on the median of \$60 per head determined from the \$15 charged for an in-state antelope hunting permit and the \$105 charged for an out-of-state antelope hunting permit by the Wyoming Game and Fish Department.

when Lawrence appealed to the Supreme Court which declined to hear the case. *Lawrence v. U.S.*, 488 U.S. 980 (1988)(cert. denied).

3. Note the remedy ordered by the District Court judge in *Lawrence*. Typically, courts do not include in their initial judgments provisions regarding noncompliance, but one is included here. What does that suggest?

Judge Brimmer also calculated the amount of the possible fine and bond on appeal based on monetary values of antelope. Is an antelope worth \$60? How should this be determined?

4. Should a statute enacted in one century for certain purposes be applied in the next century for very different purposes? Is Judge Brimmer's reasoning in this regard persuasive to you?

5. ***What the Opinions in the Lawrence Case Don't Tell Us.*** The Lawrence case is more than a simple conflict between ranching and wildlife with the federal government as arbiter. The interests of the Red Rim's owners at the time of the lawsuit were rather complex. Lawrence owned some of the sections in fee, he leased other privately owned sections for grazing, and he had permits to graze his cattle on publicly owned sections, primarily the federal government's but a few owned by this State of Wyoming. But on the Red Rim, Lawrence held only surface rights. All of the mineral rights to the odd-numbered sections were owned by Rocky Mountain Energy Corp., a subsidiary of none other than the Union Pacific Railroad Co. The even-numbered sections, including the mineral rights, were still owned by the U.S. In addition, rancher Lawrence owned mineral rights in an area just south of the Red Rim known as China Butte.

Following a moratorium on the leasing of federal coal reserves in the mid-1970s, the Department of the Interior chose three areas in northwest Colorado and south central Wyoming for possible development. Interior asked for expressions of interest in surface mining 531 million tons of coal in this region. One of the three specific locations under consideration was 33,700 acres in the Red Rim-China Butte area. *Interior moving to reopen coal reserves leasing*, OIL & GAS JOURNAL 125 (July 30, 1979).

But neither the federal sections nor the private sections in the checkerboard are large enough by themselves to be strip-mined economically. Therefore, Interior developed a proposal for "cooperative leasing" of the coal in mixed ownerships in order to form logical mining units for competitive lease sales. By early 1980, the Department had selected the Red Rim-China Butte area as a test of this concept. Combining China Butte with the Red Rim for purposes of coal production significantly changes the situation for someone who was only a surface owner on Red Rim – especially if that owner also held mineral rights in the China Butte area.

The federal government's coal leasing plans concerned the National Wildlife Federation because the Red Rim provides critical winter range for thousands of pronghorn antelope. In 1982, the NWF formally petitioned both the State of Wyoming and the Interior Department to designate the Red Ran as unsuitable for mining, in part because the area's poor soil and low

rainfall prevented its restoration for use by the antelope. Ultimately, both NWF petitions were denied.

Rancher Lawrence's 28 mile-long fence – which cost \$150,000 to build – completely surrounded the Red Rim. Lawrence reportedly said the fence was installed to prevent the antelope herd from destroying the land he used to graze cattle. Wyoming officials – as well as the witness at the trial in Lawrence's lawsuit – said cattle and antelope eat different plants.

In the winter of 1983, in the midst of a blizzard, more than 1600 pronghorn antelopes pressed against Lawrence's fence. For two weeks in fierce wind and snow, the antelope searched for a way over or around the five foot high fence topped with barbed wire to reach their food. A Wyoming Department of Fish and Game official described the situation as "really grim. There are 1650 of them stacked up along that fence, walking around, trying to get in. We're not seeing unusual mortality yet, but they are beginning to look a little bit gaunt. The fawns, especially, are looking bad." Cass Peterson, *Rancher's Private Fence Deprives Antelope Herd of Winter Food, Shelter*, THE WASHINGTON POST, Dec. 9, 1983, at A21.

The calamity on Lawrence's ranch generated national publicity. The Washington Post reported that "the Interior Department is under siege and frantically passing the buck. In Wyoming, the governor's telephone is ringing off the hook, and hundreds of irate citizens are calling wildlife protection groups to volunteer their services with a bulldozer, a battering ram, or a set of wire snippers." On December 9, after a meeting with Wyoming's governor, Lawrence agreed to let workmen immediately lay down 100- to 200-foot sections of the fence until spring. *Gaps to Be Made in Fence in Wyoming So Antelopes Can Eat*, THE NEW YORK TIMES, Dec. 12, 1983, at B17. According to wildlife officials, at least 700 antelopes died on Lawrence's ranch that winter.

3. The Longevity of Nineteenth Century Statutes

The Miner's Law

CHARLES F. WILKINSON, *CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST* 33, 40-54 (1992)

The Rise of the Hardrock Mining Law

Yet even though almost all mining took place on federal public lands, by the mid-1860s there was no general federal mining law for hardrock mining in the West. A leasing system applicable only to lead had been adopted in 1807 but abandoned in 1846. A few special statutes provided for sales of mineral lands in designated geographic areas in the East, but they had no force in the western mining districts.

This vacuum in the federal legal system created a variety of problems for the mining industry. There had been some early confusion as to who owned the great mineral deposits in the West: in 1853, the California Supreme Court suggested that the mines belonged to the state. It soon became clear, however, that minerals underlying the federal public lands, like the lands themselves, were owned by the United States. Since no federal statute authorized entry, the miners were trespassers.

To be sure, there was an implicit understanding that miners were welcome on the public lands. The few federal lawmen in the West – fully cognizant of the lifeblood of the region and presumably solicitous of their own skins – took no action to prosecute these technical trespassers. . . .

Nevertheless, the miners' disquiet steadily increased. Mining in easily accessible placers – loose deposits of ore in soil or gravel – began to play out by the 1860s. Work focused increasingly on the more labor-intensive lode deposits – minerals embedded in quartz or other rock. The role of small miners began to decline. The higher capital requirements for lode mining, which usually required deep tunnels brought in eastern and foreign investors, and these sophisticated capitalists held concerns about the security of their operations. . . .

The miners also were frustrated by the lack of a mechanism for obtaining title to the land, since homesteading was not allowed on mineral-bearing lands. . . .

Today, we commonly refer to the General Mining Law of 1872 as the dominant law on hardrock mining. The 1872 act, however, is an amalgam of mining laws enacted in 1866 and 1870 plus several refinements of the ideas legislated by those earlier Congresses. . . .

The champion of the Mining Act of 1866 was William M. Stewart, Nevada's first United States senator. . . an original forty-niner who had been a successful mining lawyer in the camps of California and Nevada

Stewart's 1866 mining bill was partly an affirmative thrust to codify the miners' wishes and partly a defensive measure. Congressman George Julian of Indiana, with the backing of other eastern and Midwestern lawmakers, had introduced legislation providing for the sale of mineral lands at public auction. Julian, supported by the secretary of the treasury, argued that the proceeds would help retire the debt incurred by the Civil War and that orderly sale by the federal government would best promote permanent settlement. There also was considerable agitation for a 3 percent or 5 percent federal tax on the proceeds of mining operations.

Stewart was able to fend off those proposals. . . . Among other things, Stewart was able to bypass Julian's mining committee in the House by striking the entire text and inserting his provisions on mining, in a bill entitled "An Act Granting the Right of Way to Ditch and Canal Owners Over the Public Lands, and Other Purposes," which became the official title of the Mining Law of 1866. Instead of the easterners' provisions, he passionately and successfully argued for "the miner's law":

The Legislature of California . . . in 1851 . . . after full and careful investigation wisely concluded to declare that the rules and regulations of the miners themselves might be offered in evidence in all controversies respecting mining claims, and when not in conflict with the constitution or laws of the State or of the United States should govern the decision of the action. A series of wise judicial decisions molded these regulations and customs into a comprehensive system of common law The same system has spread over all the interior States and Territories where mines have been found as far east as the Missouri river. The miner's law is a part of the miner's nature. He made it. It is his own bantling, and he loves it, trusts it, and obeys it. He has given the honest toil of his life to discover wealth which when found is protected by no higher law than that enacted by himself under the implied sanction of a just and generous Government.

The 1866 act applied to lode, not placer, claims and covered only gold, silver, cinnabar, and copper. Yet [it has been] . . . aptly described the law as “the miner's Magna Carta.” First, it removed all doubts as to the status of miners as trespassers by ratifying past entries and by announcing the rallying cry that in the future, “the mineral lands of the public domain, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and occupation by all citizens. . . .” Almost incredibly by today's standards, the 1866 act zoned a billion acres – nearly all of the American West – for mining of lode deposits. Placer deposits would be added four years later.

Second, the 1866 act may have been a federal statute, but it was in large part an empty vessel to be filled by state law and local custom: mining would proceed “subject . . . to the local customs or rules of miners in the several mining districts,” when not in conflict with the scant body of federal law. Third, a miner who had expended \$1000 in labor and improvements was entitled to purchase, at the rate of \$5 per acre, a patent (the terminology for a deed of public land or minerals from the United States) to the lode or vein and the surface overlying it. Thus, miners obtained the desired security: they could enter and mine at will and, if they made a discovery, obtain title to the deposit.

The principles of the 1866 act were extended to placer deposits in 1870. The General Mining Law was then passed on May 10, 1872. The act did not depart from the essential principles of the 1866 and 1870 laws, but even though Congressman Aaron Sargent of California assured his colleagues that “[t]his bill simply oils the machinery a little,” the General Mining Law of 1872 supplemented the workings of the earlier laws in several respects. Western lawmakers were now firmly in the driver's seat – the legislative discussions are replete with statements by easterners who disclaimed any expertise on this body of western law and policy. The 1872 act was a faithful reflection of the needs of the western mining industry. One writer, comparing England's mining advance into British Columbia with early American procedures in Idaho, Montana, Oregon, and eastern Washington, captured the essence of United States mining policy by contrasting it with the British system:

[W]e see, on the one hand, [British] government concentrated largely in the hands of an efficient executive, who made laws and organized administration on

summary methods; on the other, [American] representative government, under hampering conditions, working tardily and painfully towards order, and meeting local or occasional reinforcement. Under the former society was from the first under control, and there was a tendency to restrain individuals for the benefit of society – a restraint at times verging to over repression; under the latter individualism was feebly controlled from above, but had to generate within itself forces of order, and it tended to undue license hurtful to society. The American system developed a country the more swiftly, the British the more safely.

The Machinery of the Hardrock Law

The 1872 act remains on the books almost exactly as originally written. It may be helpful to summarize the essentials of hardrock mining law. . . .

The Hardrock Act provides that the federal public lands are “free and open” to mineral exploration. This right of free access, or self-initiation, should be thought of as Article I of the “miner’s Magna Carta.” . . . [T]his prerogative no longer applies to all federal acres – some lands have been withdrawn by presidents or Congress and set aside for special purposes, such as military bases or recreation lands, thought to be inconsistent with mineral development. But some 400 million acres, well more than half of the public lands, including most national forests, remain open for mining today. The statute requires no permit, lease, or other form of federal approval prior to entry. It is up to hardrock miners to decide whether an area should be mined. The miners, pick-and-shovel and corporate, have a “right to mine.”

The 1872 act, which multiplied several times over the 1866 act’s listing of covered minerals, applies to “all valuable mineral deposits.” Congress has since removed several classes of minerals from the sweeping terms of the original law. Most fuel minerals (such as oil, gas, oil shale, and coal, but not uranium), commonly occurring fertilizer minerals (such as sodium, sulfur, and phosphates), and “common varieties” (such as ordinary gravel, sand, and cinders) have been placed under systems calling for lease or sale. Nevertheless, dozens of minerals are subject to the right of self-initiation guaranteed by the 1872 act: the major hardrock minerals include gold, silver, uranium, copper, molybdenum, iron, lead, aluminum, and the gemstones.

The 1872 law, of course, kept in place the deference to state and local law. It provided generally that hardrock miners would proceed “according to the local customs or rules of miners in the several mining districts, so far as the same are applicable and not inconsistent with the laws of the United States.” Several other provisions made reference to the applicability of state and territorial law on the federal mineral lands.

State and federal courts came to recognize certain rights of miners while prospecting, before a strike is made. During this period, a miner is protected by the doctrine of *pedis possessio*, which gives a miner exclusive possessio of the ground in the area where the prospecting is being conducted. It allows a miner “room for work and to prevent probable breaches of the peace.”

Miners commonly make a location, which must “be distinctly marked on the ground so that its boundaries can be readily traced,” when they begin exploration. Although the act provides that “no location of a mining-claim shall be made” until a valuable mineral is actively discovered, the courts have upheld pre-discovery locations on the pragmatic ground that such a practice sets with some precision the extent of *pedis possessio* rights. Thus, early location – “staking a claim” – can prevent disputes over the area subject to exclusive prospecting rights of the miner first to begin work.

Importantly, although *pedis possessio* rights protect a miner from other miners, they do not comprise constitutionally vested property rights as against the United States. The federal government, therefore, can unilaterally terminate the tenure of a miner in the exploration process without being required to pay any compensation to the miner. Thus, for example, Congress can place an area within a national park or wilderness area and prohibit mining without incurring any financial obligation to prospecting miners who have not yet made strikes.

All of these rules change in fundamental and remarkable ways when exploration rights mature into an unpatented mining claim at the moment a discovery of a valuable hardrock mineral is made. This bears careful attention, since the creation of an unpatented mining claim is the heart of the Hardrock Mining Act and one of the crucial aspects of property law in the American West.

The discovery of a valuable hardrock mineral – I will return to the definition of discovery shortly – transmutes the fragile *pedis possessio* prerogative into a sturdy vested property right, good against the United States and all other users. Each unpatented mining claim is 20 acres in size, except that as many as eight individuals may join together to form an “association” claim, which can total 160 acres. There is no limit to the number of claims a miner can obtain.

An unpatented mining claim gives the miner, in the words of the 1872 act, “the exclusive right of possession and enjoyment of all the surface included within the lines of their locations.” The courts have underscored the breadth of this unique real property interest:

The law is well settled by innumerable decisions that when a mining claim has been perfected under the law, it is in effect a grant from the United States of the exclusive right of possession to the same. It constitutes property to its fullest extent, and is real property subject to be sold, transferred, mortgaged, taxed, and inherited without infringing any right or title of the United States.¹⁰

The miner can use the property fully so long as the activities are “reasonably incident to mining.” This includes constructing a home, cutting timber, grazing cattle, and diverting water. The rights inherent in an unpatented mining claim do not properly include, as enterprising miners have found, the operation of hotels, saloons, or brothels.

¹⁰ . . . *United States v. Etcheverry*, 230 F.2d 193, 195 (10th Cir. 1956).

I said earlier that an unpatented mining claim, a constitutionally protected property right, is created “at the moment” a miner makes “a discovery.” Appreciate the full beauty of this legerdemain. Discovery is almost necessarily a solitary, anonymous event unattended by any formal recording or evaluation procedures. A lone miner makes a find, whether in an Arizona back canyon or in Alaskan bush, and precarious *pedis possessio* instantaneously becomes an unpatented mining claim. Just as important, a miner can say that a find has been made and tie up the land as against other miners, public users, and the United States. In actual practice, therefore, the initial pounding of stakes in the ground, whether or not a valid discovery has been made, often becomes the critical event. Bare locations, merely *pedis possessio* as a matter of law, are customarily referred to as “unpatented mining claims.” On the ground, the stakes – and the fences and “no trespassing” signs that regularly accompany them – often take precedence over the legal requirement of a discovery. . . .

. . . In the late nineteenth century, the Interior Department developed the so-called prudent person test to determine whether the magic moment of discovery had been reached. Under this test, a valuable mineral deposit has been discovered if “a person of ordinary prudence would be justified in the further expenditure of his labor and means, with reasonable prospect of success in developing a valuable mine.” In other words, a miner has made a discovery if there is a reasonable prospect of future success. This version of the “prudent person” test thus called for subjective judgments as to future events. Miners tend to be optimists, especially in formal judicial proceedings. . . .

There is . . . plenty of room for miners . . . to prove a discovery. The miner need not actually take the ore to market. The only requirement is that it *could* be marketed at a profit. If it could be, a discovery has been made. A reminder of the difficulty of administrative oversight: there are 1.1 million alleged unpatented mining claims, 25 million acres in all, scattered across the West, and the Bureau of Land Management (BLM) receives 90,000 new claims each year.

It is not hard to keep this extraordinary property right alive. To protect an unpatented mining claim, the 1872 act requires a miner to locate the claim and conduct annual “assessment work”; in addition, since 1976, miners must also file annual reports with the Bureau of Land Management. The first requirement, location, may well have been completed by the time of a discovery: as noted earlier, miners usually stake out their claims on the ground at the time of initial entry in order to gain *pedis possessio* protection during prospecting. If not, the miner must then stake the claim and file documents with the county recorder. This routine task proceeds according to particulars set by state law, which are minimal. The federal filing requirement involves filling out a one-page form. . . .

There are powerful consequences for public land and minerals when miners claim a discovery, make a location, perform the annual assessment work, and file the documents with the county recorder and the BLM.

After a discovery, serious miners – the American Barricks and hundreds of other large and midsize companies – have their “right to mine,” the near-absolute right to remove the minerals under the claims. They need make no payment to the United States. Indeed, if the

United States wants to put the unpatented mining claim to another use, the federal government must compensate the claimant for the value of the minerals and the land. . . .

Holders of unpatented mining claims are not required to obtain full title to the land and minerals through the patent process, but the option is open to them. A miner who has made a discovery and put in \$500 worth of assessment work in labor or improvements can acquire a patent. (The federal government has always used the term “patent” to describe the legal document transferring land out of public ownership; a patent has exactly the same meaning and function as a deed.) The fee is \$5.00 per acre for lode claims, \$2.50 per acre for placer claims. A miner who can “prove up” the claim receives not just the subsurface mineral estate but the overlying 20 acres of land, 160 acres for association claims. As is the case with unpatented claims, there is no limit on the number of patents per individual or company. A miner obtaining a patent is also entitled to an additional 5 acres of nonmineral land for use as a mill site.

The issuance of patents has slowed since the 1920s and 1930s due to increased administrative scrutiny. In all, the government has issued about 65,000 mining patents, totaling nearly 3 million acres, but fewer patents have been obtained in recent years. The amount of patenting, however, is still significant: in 1990, the BLM issued 448 patents covering 7324 acres. . . .

The final distinctive quality of the General Mining Law is its utter lack of any provision for environmental protection. The lands and waters have paid dearly, and the legacy continues long after mines have been abandoned. Approximately 50 billion tons of mining and processing waste have been left behind at mining sites. At highest risk are waters – rivers, lakes, and aquifers. A U.S. Bureau of Mines researcher estimates that 12,000 miles of rivers and streams and 180,000 acres of lakes and reservoirs have been adversely affected. The Western Interstate Energy Board has found that 1298 river miles in Colorado alone have been contaminated by mining wastes. Among the fifty mining sites included on the EPA’s highest-priority list of hazardous waste sites is the largest Superfund site in the country, resulting from several large mines near the headwaters of the Clark Fork River basin in western Montana, where copper mining began in 1879 and continues today. The listed area covers the entire river, 120 miles long, and its floodplain from Butte to Missoula.

Notes and Questions

1. Clearly, the General Mining Law of 1872 (GML) recognizes only one (or a few at most) value of nature. What features of the GML demonstrate this?
2. What do the homestead statutes and the General Mining Law (as well as western law, discussed in Chapter 8) have in common? Is this more than a coincidence?

3. In 1997, on the 125th anniversary of the General Mining Law, Secretary of the Interior Bruce Babbitt called a press conference to demonstrate the need to amend or repeal the outdated statute. There, as he was required to do by the law, Babbitt signed patents granting a gold mining company title to federal land containing up to \$100 million dollars in gold in exchange for the price specified in the GML – \$620.

4. ***Limits on the Scope of the General Mining Law.*** In the excerpt above, Charles Wilkinson mentions that several classes of minerals on federal lands are no longer governed by the General Mining Law of 1872. The Mineral Leasing Act of 1920 withdrew from location all fossil fuel minerals (such as oil, gas, and coal) and certain fertilizer minerals (such as sulfur and phosphates) and established a leasing system for public lands known to contain such deposits. (Coal had been subject to a sale system since 1864.) Generally, the 1920 act and other mineral leasing statutes require private developers to obtain permission from the federal government to prospect for or extract minerals and award leases after some form of competitive bidding. Leases typically contain provisions concerning protection of the environment and require the developer to pay royalties or rents. Another statute – the Common Varieties Act of 1955 – provides that stone, sand, gravel, cinders, and pumice are not subject to the 1872 law and may be purchased from the federal government.

5. ***Mining Law Reform.*** Since the basic procedures for locating mining claims and the rights of the mining industry have remained unchanged since 1872, many observers think reform is long overdue. In Congress, efforts to change the hardrock law began in 1989, with legislation introduced by Senator Dale Bumpers (D-Ark.) and Representative Mick Joe Rahall (D-Va.). The bills would have done away with patenting rights, imposed a production royalty, established federal reclamation standards, allowed agencies to prohibit mining in certain areas through land planning, and authorized citizens suits to enforce their provisions. Similar legislation has been introduced regularly since then, but none have passed. It seems that mining law reform is an issue with political implications large enough to cause Congress not to act during election years, but also not an issue with enough national significance for Congress to pass legislation in non-election years. Strenuous opposition by the mining industry and their supporters in Congress has also stymied reform.

The difficulty of changing the General Mining Law of 1972 legislatively has prompted administrative reform efforts. Beginning in 1992, Secretary of Interior Bruce Babbitt and his Solicitor, John Leshy, sought to alter how the GML was administered. These attempts included a moratorium on patents, limiting the use of millsites, and revision of surface mining regulations. Each prompted lawsuits by the mining industry and action by Congress to reverse or limit the agency's reforms. For an overview of the administrative attempts, see John D. Leshy, *Mining Law Reform Redux, Once More*, 42 NATURAL RESOURCES JOURNAL 461 (2002) (also noting that hard rock mining on federal lands has dramatically *increased* in recent years.)

5. ***Environmental Regulation of Unpatented Mining Claims.*** Although the GML itself makes no provision for environmental protection, other statutes today do. The Clean Air Act (CAA) and the Clean Water Act (CWA) both apply to hardrock mining, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or the "Superfund")

statute) makes mining companies liable for the cleanup of hazardous to mining wastes. Also, under authority provided by the Federal Land Policy and Management Act of 1976, federal land management agencies have issued regulations governing mining claims and related activities under the GML that include significant environmental protection requirements. The CAA, CWA, and CERCLA are described in Chapter 4, Section A. 3.

4. The Lands Disposed Of: An Example from the Great Plains

Later in this book we will devote considerable attention to the lands retained by the United States – the federal public lands. But what about the lands disposed of? For example, what happened to the land in the region through which the Lewis and Clark expedition passed in after leaving Fort Mandan in the spring of 1805? This area became part of the State of North Dakota in 1889. Much of the land did pass into private ownership and much of this was eventually used for wheat farming. Also recall Meriwether Lewis's journal entry of April 22, 1805, set forth early in this chapter: "Coal or carbonated wood . . . and other mineral appearances still continue. The coal appears to be of better quality; I exposed a specimen of it to the fire and found it . . . produced a hot and lasting fire."

It is important to keep in mind that neither the 1872 or 1920 mineral acts apply to private land, such as that involved in the next principal case, *Olson v. Dillerud*, a decision of the North Dakota Supreme Court. Also, *Olson* is better understood if we have some sense of the environmental and human consequences of coal mining. The forceful description which follows is by Harry M. Caudill, a practicing lawyer for 30 years and an author whose writings documented the role of coal and timber companies in ravaging Appalachia's resources

In *Watson v. Kenlick Coal Co., Inc.*, 422 U.S. 1012 (1975), Justice William O. Douglas in his dissented from the denial of certiorari:

Petitioners are landowners in Magoffin County, Ky. Seventy years ago, their predecessors in ownership deeded away all rights to the minerals in and under their land, retaining only the surface rights; respondents are the present holders of the mineral rights, and have strip-mined much of the coal which underlies the land. Petitioners brought this action under 42 U.S.C. § 1983, seeking injunctive relief and damages for the destruction of the land surface through respondents' strip-mining operations. The Court of Appeals affirmed the dismissal of the complaint, holding that there was no state action involved and that petitioners had not been deprived of any federal constitutional right. . . .

This case is unfortunately no more than a mere footnote in a continuing tragedy of environmental and human despoliation. The rape of Appalachia for its

precious coal has been a dark and dismal chapter in our Nation's history, moving one observer to lament:

“Coal has always cursed the land in which it lies. When men begin to wrest it from the earth it leaves a legacy of foul streams, hideous slag heaps and polluted air. It peoples this transformed land with blind and crippled men and with widows and orphans. It is an extractive industry which takes all away and restores nothing. It mars but never beautifies. It corrupts but never purifies.”¹¹

. . . [M]ost coal buyers escaped with a stack of “broad-form” deeds which left nominal title to the land surface in the landowner, but which conveyed to the grantee the right to excavate and remove all minerals and, in the course of such removal, to divert and pollute the water and to dump mining refuse on the surface. Against the backdrop of then current mining technology, the prospects and hazards of such actions must have seemed remote and insignificant. With the advance of technology, however, the stakes increased; each successive innovation was visited upon the mountaineers with the approval of the courts, which found these new and unforeseen techniques to fall within the scope of the aged and yellowing deeds. Judicial decisions gave virtually untrammelled powers to the coal companies, so long as they acted without malice:

“With impunity [the companies] could kill the fish in the streams, render the water in the farmer's well unpotable and, by corrupting the stream from which his livestock drank, compel him to get rid of his milk cows and other beasts. They were authorized to pile mining refuse wherever they desired, even if the chosen sites destroyed the homes of farmers and bestowed no substantial advantage on the corporations. The companies which held ‘longform’ mineral deeds were empowered to withdraw subjacent supports, thereby causing the surface to subside and fracture. They could build roads wherever they desired, even through lawns and fertile vegetable gardens. They could sluice poisonous water from the pits onto crop lands. With impunity they could hurl out from their washeries clouds of coal grit which settled on fields of corn, alfalfa and clover and rendered them worthless as fodder. Fumes from burning slate dumps peeled paint from houses, but the companies were absolved from damages.

“. . . The companies, which had bought their coal rights at prices ranging from fifty cents to a few dollars per acre, were, in

¹¹ H. CAUDILL, NIGHT COMES TO THE CUMBERLANDS x (1963).

effect, left free to do as they saw fit, restrained only by the shallow consciences of their officials.”¹²

Olson v. Dillerud
North Dakota Supreme Court
226 N.W.2d 363 (1975)

ERICKSTAD, Chief Justice.

This action was brought by the surface owners, Dean L. Olson and his wife, May L. Olson, to quiet title to the coal located upon or under 240 acres of land located in Burke County, North Dakota, and to establish right to any and all proceeds and profits from that coal including royalties The Burke County District Court ordered judgment in favor of the defendant, Pauline Dillerud, awarding to her all coal located upon or under the property in question together with all rights to the royalty funds derived from the mining of coal thereon.

This coal lies upon or under the Southeast Quarter (SE1/4) and the South Half of the Northeast Quarter (S1/2NE1/4) of Section Nine (9) in Township One Hundred Sixty-two (162) North of Range Ninety-four (94) West of the Fifth Principal Meridian, to which Ole Dillerud received a patent from the United States on January 6, 1908.

Ole subsequently married the appellee, Pauline. On March 22, 1954, Ole and Pauline conveyed the above described property to Dean L. Olson by warranty deed. Contained in that deed was the following reservation and exception:

“(Excepting and reserving to the parties of the first part, their heirs and assigns, one hundred percent (100%) of all right and title in and to any and all oil, gas and other minerals in or under the foregoing described land with such easement for ingress, egress and use of surface as may be incidental or necessary to use such rights.)”

On December 6, 1956, Ole and Pauline leased the property to Baukol-Noonan, Inc., for coal mining purposes.

Ole died on October 21, 1968, leaving his wife Pauline and five children surviving him. All of the children subsequently quit-claimed their interest in the property to their mother Pauline.

On May 19, 1970, Dean and May Olson leased the same property to Baukol-Noonan, Inc., for coal mining purposes.

Baukol-Noonan commenced active mining operations on this property in 1972. . . .

¹² H. CAUDILL, *supra* at 306-307.

Concluding that this case did not differ materially from *Christman v. Emineth*, 212 N.W.2d 543 (N.D. 1973), the district court held that Pauline was entitled to the coal. . . .

It is Dean's contention that *Christman* can be distinguished from this case and that it should not be expanded to apply to the parties herein. . . . [The Court rejected this argument.]

Dean further suggests that as the purchaser of farm land he would deem it reasonable and proper for the seller to reserve oil and gas which can be removed without disrupting farming operations, but that he would deem it unreasonable for the seller to reserve coal, the mining of which would destroy the surface and make it useless for farming purposes. From this he contends that we must assume that the parties entered into the purchase and sale of these premises with the understanding that the coal went with the surface rights.

The fact that agricultural land may be destroyed by mining was also an element in *Christman* and therefore does not serve to distinguish the instant case from that decision.

The word "use" is employed as both verb and noun in the reservation construed in *Christman* and in the reservation in the present case. We held in *Christman* that the word "use" in 1943, when the Christman reservation was made, contemplated strip mining. We also noted that 1969 legislation, by requiring reclamation for productive use, including the planting of crops for harvest, regrading to original contour, or rolling topography or a different topography required for an intended higher use, and replacing two feet of topsoil "should result in restoration of surfaces temporarily disrupted by strip mining" and that the legislation "dealt with" the objections that strip mining destroyed the land and could not be found to be within the intention of the parties.

Recent events have raised doubts in the minds of some as to whether strip-mined lands have been, or can be, restored to productive use. If a case should come before us in the future, based on factual data in evidence, as to whether strip mining constitutes "use," as distinguished from destruction of, or permanent damage to, the surface, it may be necessary to reexamine the language of *Christman*, 212 N.W.2d 543 at 550-551 (N.D. 1973). There is no basis in the record in the instant case for reexamining what we said in *Christman*.

Because of possible consequences of inadequate restoration of the surface following strip mining of coal, we urge the Legislature to take whatever steps may be reasonably necessary to insure that the surface is restored for agricultural and ranching purposes.

We do not write the contracts, deeds, or leases that come to us for our consideration, and we cannot rewrite them to suit our view of justice in each case when there is no evidence of fraud, duress or undue influence; but the Legislature can ease the hardship that may be presented by legislation enacted under the police power. We hope that in this day of advanced technology when men can be sent to the moon and returned safely, that means can be devised for restoring the topsoil and that legislation can be enacted to require that it be done if it is not now being satisfactorily restored. . . .

The judgment of the district court is affirmed.

Notes and Questions

1. *Olson v. Dillerud* is quite typical of natural resources cases. What are the salient characteristics of *Olson* and, by inference, of natural resources law?

2. ***The Surface Mining Control and Reclamation Act of 1977***. Although it was widely recognized for decades that coal mining caused widespread and serious environmental damage, states had been extremely reluctant to regulate such an important industry within their borders. Some states had coal mining laws, but not all; witness the court in *Olson* in 1975 urging legislative action to require restoration of the surface. There was no federal regulation of coal mining at that time.

Congress began to consider the issue in 1965 and hearings were held in 1968. In 1972, one Representative Saylor, from the coal mining state of Pennsylvania, told Congress:

“Our domestic coal reserves are estimated to be in excess of 3 trillion tons. Approximately 128 billion tons of this 3 trillion tons is in 27 states and can be stripped mined and 750 billion tons can be deep mined. If strip or surface mining of coal is left uncontrolled or unregulated, and the cumulative past production of stripped coal lands is the criteria, then the removal of the remaining recoverable resources of 128 billion tons could result in the destruction of 71,000 square miles of land – an area larger than the combined areas of the States of Pennsylvania and West Virginia.” 118 Cong. Rec. 35,039 (1972).

Although President Gerald Ford twice vetoed coal mining legislation, in 1977 President Jimmy Carter signed the Surface Mining Control and Reclamation Act (SMCRA) which applies to public *and private* lands. The act was described by Judge Thomas Flannery in *National Wildlife Federation v. Lujan*, 21 Env'tl. L. Rep. 20, 143 (D.D.C. 1990):

A key SMCRA feature [is] . . . to create a “federalist” regulatory regime assigning certain roles to the federal government and others to state agencies. Principally, Congress gave to the Secretary of the Interior, through the Office of Surface Mining Reclamation and Enforcement (OSMRE), the power to set national standards for carrying out the Act. To accommodate the widely varying conditions of coal mining throughout the country, and particularly between the eastern and western parts of the U.S., Congress gave individual states the power, if they chose, to create state agencies charged with implementing the Act and enforcing it locally. . . .

The statutory regulatory scheme contains four key features: first, anyone intending to conduct a surface coal mining operation must apply for and obtain a permit to do so. SMCRA §507. SMCRA defines surface coal mining operations broadly. The definition goes beyond just the site of a strip mine. For example, it reaches activities such as underground mining with surface impacts and coal processing. In addition to covering activities, the definition encompasses the areas where those activities take place. SMCRA §701 (28). The Act requires anyone seeking a permit for any of these to submit a large amount of information in the application, including a detailed plan to reclaim the area of the mining operation. Requirements of the reclamation plan are spelled out at SMCRA §508.

Second, the Act also requires mine operators to post a bond or to indemnify the regulatory authority in the amount of the cost of reclaiming the operation to the full extent that SMCRA requires. SMCRA §509. The bond must remain in place for the time necessary to reclaim the operation.

Third, perhaps most important, the Act spells out highly detailed performance standards governing how the operation must be conducted and to what degree reclamation must take place. SMCRA §515 contains 25 performance standards, many with several sub-parts, for surface mining operations generally, and others for special kinds of surface operations, such as steep-slope mining. Underground mining performance standards almost as numerous are spelled out at SMCRA §516.

Fourth, the Act gives the Secretary and state regulatory authorities the power to enforce the Act's provisions through inspections and orders to cease operations. SMCRA §521.

. . . [S]tates had the option of submitting their own programs to the Secretary to be implemented in lieu of the permanent program of direct federal regulation. . . . While the state programs may differ from the federal one, the Secretary may not approve a state program unless he determines that the state effort meets all of the federal minimum standards. SMCRA §503. Some 35 states have their own programs. In the other states, and on certain federal lands, the direct federal permanent program is in effect.

2. ***More on the Land Disposed Of.*** The following is a contemporary description of the region traversed by Lewis and Clark in the excerpts from their journals reproduced above.

In writing the obituary of the Great Plains, social historians have looked out at the abandoned ranches, collapsed homesteads and dying towns huddled against the wind in a sea of grass and seen an epic failure.

And the numbers do tell a compelling story. More than 60 percent of the counties in the Great Plains lost population in the last 10 years. An area equal to

the size of the original Louisiana Purchase, nearly 900,000 square miles, now has so few people that it meets the 19th century Census Bureau definition of frontier, with six people or fewer per square mile. And a large swath of land has slipped even further, to a category the government once defined as vacant.

But something else is underway from the Badlands of the Dakotas to the tall grass fields of Oklahoma: a restoration of lost landscape and forgotten people, suggesting that European agricultural settlement of big parts of the prairie may have been an accident of history, or perhaps only a chapter.

As the nearly all-white counties of the Great Plains empty out, American Indians are coming home, generating the only significant population gains in a wide stretch of the American mid section. At the same time, the frontier, as it was called when it was assumed that the land would soon be spotted with towns and farms, is actually larger than it has been since the twentieth century.

These changes have been under way for decades. But they have reached a point – 108 years after Frederick Jackson Turner suggested that the American frontier was closed, with the buffalo herds wiped out and native populations down to a few tribes – that there are now more Indians and bison on the Plains than any time since the late 1870's. . . .

Timothy Egan, *As Others Abandon Plains, Indians and Bison Come Back*, THE NEW YORK TIMES (May 27, 2001) at 1, 18.

Section C. The Emergence of Conservation 1864-1934

A seminal work in American environmentalism was *Man and Nature*. When first published in 1864, it was an immediate popular success; within a decade it was an internationally recognized as a landmark study. “Without question . . . , George Perkins Marsh’s classic work . . . is the earliest known comprehensive scientific examination of human activity degrading the earth’s ecosystems.” RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* 5 (2004). The book also has been described as having the “force of a revelation,” “epoch-making,” and “the fountainhead of the conservation movement.” Importantly for our purposes, *Man and Nature* had a direct effect on governmental policy and the law.

“Man is Everywhere a Disturbing Agent”
 GEORGE PERKINS MARSH, *MAN AND NATURE*
 29-30, 36-37, 42, 107-108 (1864)

Stability of Nature

Nature, left undisturbed, so fashions her territory as to give it almost unchanging permanence of form, outline, and proportion, except when shattered by geologic convulsions; and in these comparatively rare cases of derangement, she sets herself at once to repair the superficial damage, and to restore as nearly as practicable, the former aspect of her dominion. In new countries, the natural inclination of the ground, the self-formed slopes and levels, are generally such as best secure the stability of the soil. They have been graded and lowered or elevated by frost and chemical forces and gravitation and the flow of water and vegetable deposit and the action of the winds, until, by a general compensation of conflicting forces, a condition of equilibrium has been reached which, without the action of man, would remain, with little fluctuation, for countless ages.

We need not go far back to reach a period when, in all that portion of the North American continent which has been occupied by British colonization, the geographical elements very nearly balanced and compensated each other. At the commencement of the seventeenth century the soil, with insignificant exceptions, was covered with forests; and whenever the Indian, in consequence of war or the exhaustion of the beasts of the chase, abandoned the narrow fields he had planted and the woods he had burned over, they speedily returned, by a succession of herbaceous, arborescent, and arboreal growths, to their original state. Even a single generation sufficed to restore them almost to their primitive luxuriance of forest vegetation. The unbroken forests had attained to their maximum density and strength of growth, and, as the older trees decayed and fell, they were succeeded by new shoots or seedlings, so that from century to century no perceptible change seems to have occurred in the wood, except the slow spontaneous succession of crops. This succession involved no interruption of growth, and but little break in the "boundless contiguity of shade;" for, in the husbandry of nature, there are no fallows. . . .

Destructiveness of Man

Man has too long forgotten that the earth was given to him for usufruct alone, not for consumption, still less for profligate waste. Nature has provided against the absolute destruction of any of her elementary matter, the raw material of her works; the thunderbolt and the tornado, the most convulsive throes of even the volcano and the earthquake, being only phenomena of decomposition and decomposition. But she has left it within the power of man irreparably to damage the combination of inorganic matter and of organic life, which through the night of æons she had been proportioning and balancing, to prepare the earth for his habitation, when in the fulness of time his Creator should call him forth to enter into its possession.

Apart from the hostile influence of man, the organic and the inorganic world are, as I have remarked, bound together by such mutual relations and adaptations as secure, if not the absolute permanence and equilibrium of both, a long continuance of the established conditions of each at any given time and place, or at least, a very slow and gradual succession of changes in those conditions. But man is everywhere a disturbing agent. Wherever he plants his foot, the harmonies of nature are turned to discords. The proportions and accommodations which insured

the stability of existing arrangements are overthrown. Indigenous vegetable and animal species are extirpated, and supplanted by others of foreign origin, spontaneous production is forbidden or restricted, and the face of the earth is either laid bare or covered with a new and reluctant growth of vegetable forms, and with alien tribes of animal life. . . .

There are, indeed, brute destroyers, beasts and birds and insects of prey – all animal life feeds upon, and, of course destroys other life, – but this destruction is balanced by compensations. It is, in fact, the very means by which the existence of one tribe of animals or of vegetables is secured against being smothered by the encroachments of another; and the reproductive powers of species, which serve as the food of others, are always proportioned to the demand they are destined to supply. Man pursues his victims with reckless destructiveness; and, while the sacrifice of life by the lower animals is limited by the cravings of appetite, he unsparingly persecutes, even to extirpation, thousands of organic forms which he cannot consume. . . .

The ravages committed by man subvert the relations and destroy the balance which nature had established between her organized and her inorganic creations, and she avenges herself upon the intruder. . . . When the forest is gone, the great reservoir of moisture stored up in its vegetable mould is evaporated, and returns only in deluges of rain to wash away the parched dust into which that mould has been converted. The well-wooded and humid hills are turned to ridges of dry rock, which encumbers the low grounds and chokes the watercourses with its debris, and – except in countries favored with an equable distribution of rain through the seasons, and a moderate and regular inclination of surface – the whole earth, unless rescued by human art from the physical degradation to which it tends, becomes an assemblage of bald mountains, of barren, turfless hills, and of swampy and malarious plains. There are parts of Asia Minor, of Northern Africa, of Greece, and even of Alpine Europe, where the operation of causes set in action by man has brought the face of the earth to a desolation, almost as complete as that of the moon; . . . The earth is fast becoming an unfit home for its noblest inhabitant, and another era of equal human crime and human improvidence, and of like duration with that through which traces of that crime and that improvidence extend, would reduce it to such a condition of impoverished productiveness, of shattered surface, of climatic excess, as to threaten the depravation, barbarianism, and perhaps even extinction of the species.

Notes and Questions

1. George Perkins Marsh (1801-1882) was a renaissance man. He bred sheep in his native Vermont, ran a woollen mill and a marble quarry, edited a newspaper, and read and spoke twenty languages by the age of 30. Marsh was a teacher, a lawyer, and in 1843 was elected to Congress where he served for eight years. For many years he was the United States ambassador to Turkey and was appointed by President Lincoln as minister plenipotentiary to Italy, a post he held for twenty years.

2. Was Marsh an early ecologist? How would you describe his view of nature? What characteristics does he see in nature? Ecology is “the scientific study of the interactions that determine the distribution and abundance of organisms.” CHARLES J. KREBS, *ECOLOGY: THE EXPERIMENTAL ANALYSIS OF DISTRIBUTION AND ABUNDANCE* (5th ed. 2001).

In the late twentieth century, the science of ecology "shifted away from the 'classical paradigm' Guided by a model of nature as the undisturbed climax state of a given community, the ecologist traditionally focused on systems that were relatively homogenous and close to equilibrium. Scientists now believe this view is wrong, and that change is 'intrinsic and natural at many scales of time and space' on Earth. In some cases, change is even necessary for the continuation of life. Recent studies of ecological processes have revealed identifiable patterns of disturbance and recovery in dynamic processes such as fires, volcanism, earth movements, droughts, and flooding. Disturbance patterns, as well as processes of plant succession, cause changes in the habitat patches that often define ecosystems today. The new paradigm in ecology emphasizes processes rather than end points; it views natural systems as open and seeks to understand them in their context." Richard J. Fink [now Finkmoore], *The National Wildlife Refuges: Theory, Practice and Prospect*, 18 HARVARD ENV'T'L L. REV. 95 (1994).

1. The National Park Idea

The foremost historian of the national parks, Alfred Runte, has written, “No institution is more symbolic of the conservation movement in the United States than the national parks.” Americans pioneered this new idea in the mid-Nineteenth Century – Yellowstone, established in 1872, is nearly always referred to as the first national park – and the idea has since spread to countries around the world. From their beginning, the parks have been a source of national pride, emblematic of a special appreciation of nature and the foresight to preserve environmental wonders for future generations. The U.S. national parks are regularly described as “one of our most magnificent achievements.”

The following reading, like the Lewis and Clark journals, is a description of a part of the public domain as it once was and, in particular, of a unique area which became the first national park.

“The Range of Light”

JOHN MUIR, *THE YOSEMITE* 3-9 (1912)

When I set out on the long excursion that finally led to California I wandered afoot and alone, from Indiana to the Gulf of Mexico, with a plant-press on my back, holding a generally southward course, like the birds when they are going from summer to winter. From the west

coast of Florida I crossed the gulf to Cuba, enjoyed the rich tropical flora there for a few months, intending to go thence to the north end of South America, make my way through the woods to the headwaters of the Amazon, and float down that grand river to the ocean. But I was unable to find a ship bound for South America – fortunately perhaps, for I had incredibly little money for so long a trip and had not yet fully recovered from a fever caught in the Florida swamps. Therefore I decided to visit California for a year or two to see its wonderful flora and the famous Yosemite Valley. . . .

So on the first of April, 1868, I set out afoot for Yosemite. It was the bloom-time of the year over the lowlands and coast ranges; the landscapes of the Santa Clara Valley were fairly drenched with sunshine, all the air was quivering with the songs of the meadow-larks, and the hills were so covered with flowers that they seemed to be painted. Slow indeed was my progress through these glorious gardens, the first of the California flora I had seen. Cattle and cultivation were making few scars as yet, and I wandered enchanted in long wavering curves, knowing by my pocket map that Yosemite Valley lay to the east and that I should surely find it. . . .

Looking eastward from the summit of the Pacheco Pass one shining morning, a landscape was displayed that after all my wanderings still appears as the most beautiful that I have ever beheld. At my feet lay the Great Central Valley of California, level and flowery, like a lake of pure sunshine, forty or fifty miles wide, five hundred miles long, one rich furred garden of yellow *Compositae*. And from the eastern boundary of this vast golden flower-bed rose the mighty Sierra, miles in height, and so gloriously colored and so radiant, it seemed not clothed with light, but wholly composed of it, like the wall of some celestial city. Along the top and extending a good way down, was a rich pearl-gray belt of snow; below it a belt of blue and dark purple, marking the extension of the forests; and stretching along the base of the range a broad belt of rose-purple; all these colors, from the blue sky to the yellow valley smoothly blending as they do in a rainbow, making a wall of light ineffably fine. Then it seemed to me that the Sierra should be called, not the Nevada or Snowy Range, but the Range of Light. . . .

In general views no mark of man is visible upon it, nor anything to suggest the wonderful depth and grandeur of its sculpture. None of its magnificent forest-crowned ridges seems to rise much above the general level to publish its wealth. No great valley or river is seen, or group of well-marked features of any kind standing out as distinct pictures. Even the summit peaks, marshaled in glorious array so high in the sky, seem comparatively regular in form. Nevertheless the whole range five hundred miles long is furrowed with cañons 2,000 to 5,000 feet deep, in which once flowed majestic glaciers, and in which now flow and sing the bright rejoicing rivers. . . .

Though of such stupendous depth, these cañons are not gloomy gorges, savage and inaccessible. With rough passages here and there they are flower pathways conducting to the snowy, icy fountains; mountain streets full of life and light, graded and sculptured by the ancient glaciers, and presenting throughout all their courses a rich variety of novel and attractive scenery – the most attractive that has yet been discovered in the mountain ranges of the world. In many places, especially in the middle region of the western flank, the main cañons widen into spacious valleys or parks diversified like landscape gardens with meadows and groves and thickets of

blooming bushes, while the lofty walls, infinitely varied in form, are fringed with ferns, flowering plants, shrubs of many species, and tall evergreens and oaks that find footholds on small benches and tables, all enlivened and made glorious with rejoicing streams that come chanting in chorus over the cliffs and through side cañons in falls of every conceivable form, to join the river that flowers in tranquil, shining beauty down the middle of each one of them. . . .

The most famous and accessible of these cañon valleys, and also the one that presents their most striking and sublime features on the grandest scale, is the Yosemite, situated in the basin of the Merced River at an elevation of 4000 feet above the level of the sea. It is about seven miles long, half a mile to a mile wide, and nearly a mile deep in the solid granite flank of the range. The walls are made up of rocks, mountains in size, partly separated from each other by side cañons, and they are so sheer in front, and so compactly and harmoniously arranged on a level floor, that the Valley, comprehensively seen, looks like an immense hall or temple lighted from above.

But no temple made with hands can compare with Yosemite. Every rock in its walls seems to glow with life. Some lean back in majestic repose; others, absolutely sheer or nearly so for thousands of feet, advance beyond their companions in thoughtful attitudes, giving welcome to storms and calms alike, seemingly aware, yet heedless, of everything going on about them. Awful in stern, immovable majesty, how softly these rocks are adorned, and how fine and reassuring the company they keep: their feet among beautiful groves and meadows, their brows in the sky, a thousand flowers leaning confidingly against their feet, bathed in floods of water, floods of light, while the snow and waterfalls, the winds and avalanches and clouds shine and sing and wreath about them as the years go by, and myriads of small winged creatures – birds, bees, butterflies – give glad animation and help to make all the air into music. Down through the middle of the Valley flows the crystal Merced, River of Mercy, peacefully quiet, reflecting lilies and trees and the onlooking rocks; things frail and fleeting and types of endurance meeting here and blending in countless forms, as if into this one mountain mansion Nature had gathered her choicest treasures, to draw her lovers into close and confiding communion with her.

Creation of the Parks

ALFRED RUNTE, NATIONAL PARKS: THE AMERICAN EXPERIENCE
26-30 (2d ed. Rev. 1987)

A spirited exchange between English and American botanists over the proper classification for the Sierra redwoods was more indicative of the type of catalyst needed to effect scenic preservation in the United States. Once the British realized that the trees were not a hoax, their search for a scientific name appropriate to the giants led to the adoption of *Wellingtonia gigantea*, after England's revered statesman and war hero, the Duke of Wellington. To say that American nationalists opposed the commemoration of an Englishman with a New World wonder would be an understatement. . . . Regardless, the debate is further evidence of the degree of

cultural importance the United States ascribed to the wonders of the West during the 19th century. Well after 1900 American botanists still chided British correspondents for occasionally lapsing into use of *Wellingtonia gigantea* to identify the big trees. In what might be considered a compromise, the Sierra redwoods are now generally called *Sequoia gigantea*, after the Indian chief Sequoyah, inventor of the Cherokee alphabet.

Given America's defense of its right to name the Sierra redwoods, it followed their impending destruction would precipitate a cry of protest. The fate of the "Mother of the Forest," among the largest specimens in the Calaveras Grove, was a dramatic case in point. In 1854 promoters stripped the tree of its bark to a height of 116 feet, then cut the shell into sections and shipped it to New York for exhibit. Later it made its way to England where, until 1866, the mammoth bedazzled thousands at the Crystal Palace. . . .

Further incentive to turn from the appreciation of landscapes to their preservation appeared as Yosemite Valley itself seemed destined to fall victim to the whims of private individuals. Some entrepreneurs already claimed portions of the gorge in anticipation of the thousands of visitors sure to follow in their footsteps. The situation posed a dilemma. If the exploiters were allowed to confiscate Yosemite Valley as well as the Sierra redwoods, whatever cultural symbolism they lent the nation might soon become meaningless. Niagara Falls already demonstrated the absurdity of taking cultural refuge in wonders whose uniqueness had been sacrificed to individual gain; again the United States risked the charge that its claim to an identity through landscape was totally ridiculous.

The crystallization of cultural anxiety into realization of the national park idea may be traced to the winter of 1864. Moved by concern for the Sierra redwoods and Yosemite Valley, a small group of Californians persuaded their junior United States senator, John Conness, to propose legislation protecting both marvels from further private abuse. Precisely who conceived the campaign itself remains largely a mystery. The known advocate is Israel Ward Raymond, the state representative of the Central American Steamship Transit Company of New York. On February 20, 1864, he addressed a letter to Senator Conness, urging preservation of Yosemite and a grove of the big trees "for public use, resort and recreation." Raymond was equally insistent that the wonders be "inalienable forever." Perhaps this wording was suggested to him by Frederick Law Olmsted, then managing the nearby Mariposa Estate, although there is no evidence the landscape architect played a direct role in the park movement. In any event, Conness was more than cooperative. He forwarded Raymond's letter to the commissioner of the General Land Office with the request that a bill be prepared, and, significantly, he repeated Raymond's words: "Let the grant be inalienable."

Raymond's insistence on the terminology suggests that he and his associates had considered how the park would reflect on the credibility of the United States from the outset. Especially from a cultural perspective, preservation without permanence would be no real test of the nation's sincerity. As if in accord with that interpretation, in the Senate John Conness justified the clause as a patriotic duty that already was long overdue. The heart of his speech recalled that the British once had derided the Sierra redwoods in particular as nothing but "a Yankee invention," a fabrication "made from beginning to end; that it was an utter untruth that

such trees grew in this country; that it could not be.” Whether or not Conness himself seriously endorsed his statement, or whether he merely considered his appeal to national pride and patriotism as good strategy, his reliance on the argument substantiates its popularity and importance. The Congress was also receptive, and on June 30, 1864, President Abraham Lincoln signed the bill into law.

The purpose of the park, as indicated by the placement of its boundaries, was strictly scenic. Only Yosemite Valley and its encircling peaks, an area of approximately forty square miles, comprised the northern unit. A similar restriction applied to the southern section of the park, the Mariposa Grove of Sierra redwoods, where a maximum of four square miles of the public domain might be protected. Obviously such limitations ignored the ecological framework of the region, especially its watersheds; indeed, the term ecology was not even known. Monumentalism, not environmentalism, was the driving impetus behind the 1864 Yosemite Act.

Senator Conness’s drawn-out reminder that Great Britain initially debunked the existence of the Sierra redwoods substantiates the cultural overtones to his legislation. Indeed, its provisions prove that Congress intended the park to be in the national interest all along. Although Yosemite Valley and the Mariposa Grove were to be turned over to California for administration, the federal government clearly spelled out beforehand what management by the state must embody. These conditions of acceptance included the retention of the park for “public use, resort and recreation”; similarly, both the valley and big trees must be held “inalienable for all time.” Nor did this rhetoric merely mask a state-inspired project divorced of nationalistic overtones; two years elapsed before California even agreed to take over the park.

In fact, therefore, if not in name, Yosemite was the first national park. Although Congress never enforced the restrictions imposed on California’s acceptance of the grant (at least not until 1905, when the state ceded the valley and big trees back to the federal government), their presence indicates that Congress had acted with the national interest in mind. The consensus that national parks had to be permanent was also recognized as early as 1864. The concept itself had cultural significance; in landscape, no less than in art and architecture, the certainty of permanence was essential for preserving any sense of continuity between the present and past. Indeed, if Congress had simply intended to satisfy the public’s urge for outdoor recreation, it should hardly have looked as far afield as California for an appropriate site. By any stretch of the imagination, the realization of Yosemite’s potential as a tourist retreat was still many years distant in 1864.

Notes and Questions

1. John Muir (1838-1914) stayed in California longer than “a year or two.” He was a shepherd naturalist, mountain climber, explorer, and writer who arguably contributed more than any other person to the development of environmentalism in the United States. Although he

traveled to every continent, after he landing in San Francisco in 1868, California became his home. He lived for six years in the High Sierra, building a cabin in Yosemite Valley. Later in life he turned to writing, publishing personally involved in the creation of five national parks. Muir never held a government post and the only official position he held was as the first president of the Sierra Club, which he helped to found in 1892. Yet primarily through the cogency of his ideas and by the example of his life, Muir had a remarkable influence that continues today.

As reflected in the brief excerpt above, what values did Muir see in nature?

2. Does it strike you as surprising that America began setting aside land as national parks while the saturnalia of land disposition was near its peak? What values of nature prompted the establishment of the early national parks?

3. *Climate Change and the National Parks*. According to the National Parks Conservation Association,

Alaska and its national parks are feeling dramatic effects from climate change. Permafrost — ground that stays frozen for a minimum of two years — is now melting because the temperatures do not stay cold enough to keep the ground permanently frozen; polar bears that rely on ice floes to hunt and feed are drowning because the polar ice cap is retreating; and migratory birds and fish that feed off Alaska's bounty are returning earlier at times that may not coincide with the availability of their food sources. . . . If we do not take action to slow or halt climate change now the future of our national parks will include the accelerated loss of glaciers at Mount Rainier National Park; the loss of Joshua trees at Joshua Tree National Park; and the submersion from sea level rise of Everglades National Park, as well as portions of historic sites such as Colonial National Historical Park, site of the first permanent English settlement at Jamestown.

NATIONAL PARKS CONSERVATION ASSOCIATION, *UNNATURAL DISASTER: GLOBAL WARMING AND OUR NATIONAL PARKS* 5 (2007).

VALUES OF NATURE

Naturalistic Value

The naturalistic value emphasizes the many satisfactions people obtain from the direct experience of nature and wildlife. This value reflects the pleasure we get from exploring and discovering nature's complexity and variety. Indeed, the satisfactions people derive from contact with living diversity may be among the most ancient pleasures obtained from interacting

with the natural world – particularly the more vivid plants and animals.

Today the naturalistic experience often takes expression through formally organized recreation: birding, fishing, hunting, whalewatching, wildlife tourism, visiting zoos, and the like. People also derive naturalistic satisfaction from wandering the various woods, prairies, beaches, wetlands, and other natural areas. Living diversity is still an unrivaled context for engaging the human spirit of curiosity, exploration, and discovery, in an almost childlike manner, independent of age. A sense of permanence, simplicity, and pleasure often stems from experiencing unspoiled nature, directly observing wildlife, and participating in ancient rhythms.

Various studies have documented the many rewards of the naturalistic experience, among them relaxation, calm, and peace of mind. Additional benefits may include enhanced intellectual growth, creativity, and imagination. As Seilstad suggests: “The surest way to enrich the knowledge pool that will keep the flywheel of cultural evolution turning is to nourish the human spirit of curiosity.” Certainly immersion in nature can heighten a sense of vividness and widen the opportunity for discovery. These physical, emotional, and intellectual benefits have been revealed in studies of the outdoor recreation experience – for example, investigations have noted diminished tension, greater peace of mind, and an enhanced capacity for creativity from observing and discovering diversity in nature. Summarizing this research, Roger Ulrich concludes: “A consistent finding in well over 100 studies of recreation experiences in wilderness and urban nature areas has been that stress mitigation is one of the most important verbally expressed and perceived benefits.”

The naturalistic experience can also sharpen one’s sensitivity to detail as the senses become more attuned to the moment – instilling a sense of living in time rather than passing through it. Moreover, a sharpened vitality and awareness can derive from a profound involvement in nature. Intellectual stimulation, physical fitness, enhanced creativity – all may result from these encounters with the natural world.

Aesthetic Value

Nature and living diversity also exert an extraordinary aesthetic impact on people. Few characteristics of life so consistently arouse such strong emotions in people under so many circumstances. The complexity and power of the aesthetic response to nature are suggested by its wide-ranging expression from the contours of a mountain landscape to the ambient colors of a setting sun to the fleeting vitality of a breaching whale. Each aesthetic experience evokes a strong, primarily emotional, register in most people, providing feelings of intense pleasure, even awe, at the physical splendor of the natural world.

Many people view the aesthetic response to nature as reflecting one’s individual preference, as if each person and every culture cultivated its own unique sensibility. But the universal character of most aesthetic responses to living diversity suggests otherwise. Indeed, certain animals and landscapes appear to elicit consistent aesthetic responses in people under

widely varying cultural and geographical circumstances. Few people dispute the beauty of a flowering rose, the majesty of a conical mountain, the grace of a flock of waterfowl in flight, any more than they differ about the aesthetic repugnance of a naked mole rat, a cold damp cave, or a fetid swamp. Moreover, certain aspects of nature appear to be key elements of the aesthetic response: vista, prospect, color, light, contrast, texture, movements, and others. These aesthetic elements seem to be associated with feelings of harmony, order, and an almost striving after an ideal.

The importance of the aesthetic value of nature is suggested by the inadequacy of artificial substitutes. Preference for natural design and natural pattern appears to be a deeply ingrained bias in the human animal. Ulrich, for example, after reviewing the research literature, reports: "One of the most clean-cut findings . . . is the consistent tendency to prefer natural scenes over built views, especially when the latter lack vegetation or water features. Several studies have [revealed that] even unspectacular or subpar natural views elicit higher aesthetic preference . . . than do all but a very small percentage of [manufactured] views." Cross-cultural studies suggest similarly shared aesthetic preferences among people in different societies, although the research literature remains sketchy.

What is the advantage of the aesthetic experience of nature? It may reflect an intuitive recognition of an ideal modeled in nature: the magnificent stag, the mountain monarch, the brilliant butterfly, all suggest a striving after integrity, harmony, and balance in nature. Aesthetic attraction provides not only encouragement but templates of action for humans struggling to impose meaning and order on an existence filled with challenge and the potential for chaos. The aesthetic experience may point the way toward refinement and the possibility of unity and purposeful design in the animal and landscape in its idealized form. . . .

STEPHEN R. KELLERT, *THE VALUE OF LIFE: BIOLOGICAL DIVERSITY AND HUMAN SOCIETY* 11-13, 14-17 (1996).

Notes and Questions

1. Have you ever experienced the naturalistic and aesthetic values of nature? If so, where and when did these occur? Were these experiences consistent with the foregoing descriptions by Stephen Kellert or different in some ways? What is the connection between such experiences and your interest in environmental issues?

2. Protection of the Public's Forests

“Any Fool Can Destroy Trees”

John Muir, *The American Forests*,

THE ATLANTIC MONTHLY 145-157 (August 1897)

The forests of America, however slighted by man, must have been a great delight to God; for they were the best he ever planted. The whole continent was a garden, and from the beginning it seemed to be favored above all the other wild parks and gardens of the globe. . . . Bright seas made its border with wave embroidery and icebergs; gray deserts were outspread in the middle of it, mossy tundras on the north, savannas on the south, and blooming prairies and plains; while lakes and rivers shone through all the vast forests and openings, and happy birds and beasts gave delightful animation. Everywhere, everywhere over all the blessed continent, there were beauty, and melody and kindly, wholesome, foodful abundance.

These forests were composed of about five hundred species of trees, all of them in some way useful to man, ranging in size from twenty-five feet in height and less than one foot in diameter at the ground to four hundred feet in height and more than twenty feet in diameter, – lordly monarchs proclaiming the gospel of beauty like apostles. . . .

So they appeared a few centuries ago when they were rejoicing in wildness. The Indians with stone axes could do them no more harm than could gnawing beavers and browsing moose. Even the fires of the Indians and the fierce shattering lightning seemed to work together only for good in clearing spots here and there for smooth garden prairies, and openings for sunflowers seeking the light. But when the steel axe of the white man rang out on the startled air their doom was sealed. Every tree heard the bodeful sound, and pillars of smoke gave the sign in the sky.

. . . In the settlement and civilization of the country, bread more than timber or beauty was wanted; and in the blindness of hunger, the early settlers, claiming Heaven as their guide, regarded God’s trees as only a larger kind of pernicious weeds, extremely hard to get rid of. Accordingly, with no eye to the future, these pious destroyers waged interminable forest wars; chips flew thick and fast; trees in their beauty fell crashing by millions, smashed to confusion, and the smoke of their burning has been rising to heaven more than two hundred years. After the Atlantic coast from Maine to Georgia had been mostly cleared and scorched into melancholy ruins, the overflowing multitude of bread and money seekers poured over the Alleghanies and into the fertile middle West, spreading ruthless devastation ever wider and farther over the rich valley of the Mississippi and the vast shadowy pine region about the Great Lakes. Thence still westward, the invading horde of destroyers called settlers made its fiery way over the broad Rocky Mountains, felling and burning more fiercely than ever, until at last it has reached the wild side of the continent, and entered the last of the great aboriginal forests on the shores of the Pacific. . . .

So far our government has done nothing effective with its forests, though the best in the world, but is like a rich and foolish spendthrift who has inherited a magnificent estate in perfect order, and then has left his fields and meadows, forests and parks, to be sold and plundered and

wasted at will, depending on their inexhaustible abundance. Now it is plain that the forests are not inexhaustible, and that quick measures must be taken if ruin is to be avoided. Year by year the remnant is growing smaller before the axe and fire, while the laws in existence provide neither for the protection of the timber from destruction nor for its use where it is most needed. .

By the act of June 3, 1878, timber can be taken from public lands not subject to entry under any existing laws except for minerals, by *bona fide* residents of the Rocky Mountain states and territories and the Dakotas. Under the timber and stone act, of the same date, land in the Pacific States and Nevada, valuable mainly for timber, and unfit for cultivation if the timber is removed, can be purchased for two dollars and a half an acre, under certain restrictions. By the act of March 3, 1875, all land-grant and right-of-way railroads are authorized to take timber from the public lands adjacent to their lines for construction purposes; and they have taken it with a vengeance, destroying a hundred times more than they have used, mostly by allowing fires to run in the woods. The settlement laws, under which a settler may enter lands valuable for timber as well as for agriculture, furnish another means of obtaining title to public timber.

With the exception of the timber culture act, under which, in consideration of planting a few acres of seedlings, settlers on the treeless plains got 160 acres each, the above is the only legislation aiming to protect and promote the planting of forests. In no other way than under some one of these laws can a citizen of the United States make any use of the public forests. To show the results of the timber-planting act, it need only be stated that of the 38,000,000 acres entered under it, less than 1,000,000 acres have been patented. This means that less than 50,000 acres have been planted with stunted, woebegone, almost hopeless sprouts of trees, while at the same time the government has allowed millions of acres of the grandest forest trees to be stolen, or destroyed, or sold for nothing. Under the act of June 3, 1878, settlers in Colorado and the Territories were allowed to cut timber for mining and agricultural purposes from mineral land, which in the practical West means both cutting and burning anywhere and everywhere, for any purpose, on any sort of public land. Thus, the prospector, the miner, and mining and railroad companies are allowed by law to take all the timber they like for their mines and roads, and the forbidden settler, if there are no mineral lands near his farm or stock-ranch, or none that he knows of, can hardly be expected to forbear taking what he needs wherever he can find it. Timber is as necessary as bread, and no scheme of management failing to recognize and properly provide for this want can possibly be maintained. In any case, it will be hard to teach the pioneers that it is wrong to steal government timber. Taking from the government is with them the same as taking from nature, and their consciences flinch no more in cutting timber from the wild forests than in drawing water from a lake or river. As for reservation and protection of forests, it seems as silly and needless to them as protection and reservation of the ocean would be; both appearing to be boundless and inexhaustible.

The special land agents employed by the General Land Office to protect the public domain from timber depredations are supposed to collect testimony to sustain prosecution, and to superintend such prosecution on behalf of the government, which is represented by the district attorneys. But timber-thieves of the Western class are seldom convicted, for the good reason that most of the jurors who try such cases are themselves as guilty as those on trial. The effect of

the present confused, discriminating, and unjust system has been to place almost the whole population in opposition to the government; and as conclusive of its futility, as shown by Mr. Bowers [an Inspector for the Public Land Service, a very small and weak agency], we need only state that during the seven years from 1881 to 1887 inclusive the value of the timber reported stolen from the government lands was \$36,719,935, and the amount recovered was \$478,073, while the cost of the services of special agents alone was \$455,000, to which must be added the expense of the trials. Thus for nearly \$37,000,000 worth of timber the government got less than nothing; and the value of that consumed by running fires during the same period, without benefit even to thieves, was probably over two hundred millions of dollars. Land commissioners and Secretaries of the Interior have repeatedly called attention to this ruinous state of affairs, and asked Congress to enact the requisite legislation for reasonable reform. But, busied with tariffs, etc., Congress has given no heed to these or other appeals, and our forests, the most valuable and the most destructible of all the natural resources of the country, are being robbed and burned more rapidly than ever. The annual appropriation for so-called "protection service" is hardly sufficient to keep twenty-five timber agents in the field, and as far as any efficient protection of timber is concerned these agents themselves might as well be timber. . . .

Of all the magnificent coniferous forests around the Great Lakes, once the property of the United States, scarcely any belong to it now. They have disappeared in lumber and smoke, mostly smoke, and the government got not one cent for them; only the land they were growing on was considered valuable, and two and a half dollars an acre was charged for it. Here and there in the Southern States there are still considerable areas of timbered government land, but these are comparatively unimportant. Only the forests of the West are significant in size and value, and these, although still great, are rapidly vanishing. Last summer, of the unrivaled redwood forests of the Pacific Coast Range the United States Forestry Commission could not find a single quarter-section that remained in the hands of the government.

Under the timber and stone act of 1878, which might well have been called the "dust and ashes act," any citizen of the United States could take up one hundred and sixty acres of timber land, and by paying two dollars and a half an acre for it obtain title. There was some virtuous effort made with a view to limit the operations of the act by requiring that the purchaser should make affidavit that he was entering the land exclusively for his own use, and by not allowing any association to enter more than one hundred and sixty acres. Nevertheless, under this act wealthy corporations have fraudulently obtained title to from ten thousand to twenty thousand acres or more. The plan was usually as follows: A mill company desirous of getting title to a large body of redwood or sugar-pine land first blurred the eyes and ears of the land agents, and then hired men to enter the land they wanted, and immediately deed it to the company after a nominal compliance with the law; false swearing in the wilderness against the government being held of no account. In one case which came under the observation of Mr. Bowers, it was the practice of a lumber company to hire the entire crew of every vessel which might happen to touch at any port in the redwood belt, to enter one hundred and sixty acres each and immediately deed the land to the company, in consideration of the company's paying all expenses and giving the jolly sailors fifty dollars apiece for their trouble.

By such methods have our magnificent redwoods and much of the sugar-pine forests of

the Sierra Nevada been absorbed by foreign and resident capitalists. Uncle Sam is not often called a fool in business matters, yet he has sold millions of acres of timber land at two dollars and a half an acre on which a single tree was worth more than a hundred dollars. . . .

As timber the redwood is too good to live. The largest sawmills ever built are busy along its seaward border, "with all the modern improvements," but so immense is the yield per acre it will be long ere the supply is exhausted. The big tree is also to some extent being made into lumber. Though far less abundant than the redwood, it is, fortunately, less accessible, extending along the western flank of the Sierra in a partially interrupted belt about two hundred and fifty miles long, at a height of from four to eight thousand feet above the sea. The enormous logs, too heavy to handle, are blasted into manageable dimensions with gunpowder. A large portion of the best timber is shattered and destroyed, and, with the huge knotty tops, is left in ruins for tremendous fires that kill every tree within their range, great and small. Still, the species is not in danger of extinction. It has been planted and is flourishing over a great part of Europe, and magnificent sections of the aboriginal forests have been reserved as national and State parks, – the Mariposa Sequoia Grove, near Yosemite, managed by the State of California, and the General Grant and Sequoia national parks on the King's, Kaweah, and Tule rivers, efficiently guarded by a small troop of United States cavalry under the direction of the Secretary of the Interior. But there is not a single specimen of the redwood in any national park. Only by gift or purchase, so far as I know, can the government get back into its possession a single acre of this wonderful forest. . . .

It is not generally known that, notwithstanding the immense quantities of timber cut every year for foreign and home markets and mines, from five to ten times as much is destroyed as is used, chiefly by running forest fires that only the federal government can stop. Travelers through the West in summer are not likely to forget the fire-work displayed along the various railway tracks. Thoreau, when contemplating the destruction of the forests on the east side of the continent, said that soon the country would be so bald that every man would have to grow whiskers to hide its nakedness, but he thanked God that at least the sky was safe. Had he gone West he would have found out that the sky was not safe; for all through the summer months, over most of the mountain regions, the smoke of mill and forest fires is so thick and black that no sunbeam can pierce it. The whole sky, with clouds, sun, moon, and stars, is simply blotted out. There is no real sky and no scenery. Not a mountain is left in the landscape. At least none is in sight from the lowlands, and they all might as well be on the moon, as far as scenery is concerned.

Notwithstanding all the waste and use which have been going on unchecked like a storm for more than two centuries, it is not yet too late, though it is high time, for the government to begin a rational administration of its forests. About seventy million acres it still owns, – enough for all the country, if wisely used. These residual forests are generally on mountain slopes, just where they are doing the most good, and where their removal would be followed by the greatest number of evils; the lands they cover are too rocky and high for agriculture, and can never be made as valuable for any other crop as for the present crop of trees. It has been shown over and over again that if these mountains were to be stripped of their trees and underbrush, and kept bare and sodless by hordes of sheep and the innumerable fires the shepherds set, besides those of

the millmen, prospectors, shake-makers, and all sorts of adventurers, both lowlands and mountains would speedily become little better than deserts, compared with their present beneficent fertility. During heavy rainfalls and while the winter accumulations of snow were melting, the larger streams would swell into destructive torrents; cutting deep, rugged-edged gullies, carrying away the fertile humus and soil as well as sand and rocks, filling up and overflowing their lower channels, and covering the lowland fields with raw detritus. Drought and barrenness would follow.

In their natural condition, or under wise management, keeping out destructive sheep, preventing fires, selecting the trees that should be cut for lumber, and preserving the young ones and the shrubs and sod of herbaceous vegetation, these forests would be a never failing fountain of wealth and beauty. The cool shades of the forest give rise to moist beds and currents of air, and the sod of grasses and the various flowering plants and shrubs thus fostered, together with the network and sponge of tree roots, absorb and hold back the rain and the waters from melting snow, compelling them to ooze and percolate and flow gently through the soil in streams that never dry. All the pine needles and rootlets and blades of grass, and the fallen decaying trunks of trees, are dams, storing the bounty of the clouds and dispensing it in perennial life-giving streams, instead of allowing it to gather suddenly and rush headlong in short-lived devastating floods. Everybody on the dry side of the continent is beginning to find this out, and, in view of the waste going on, is growing more and more anxious for government protection. The outcries we hear against forest reservations come mostly from thieves who are wealthy and steal timber by wholesale. They have so long been allowed to steal and destroy in peace that any impediment to forest robbery is denounced as a cruel and irreligious interference with "vested rights," likely to endanger the repose of all ungodly welfare. . . .

Even in Congress, a sizeable chunk of gold, carefully concealed, will outtalk and outfight all the nation on a subject like forestry, well smothered in ignorance, and in which the money interests of only a few are conspicuously involved. Under these circumstances, the bawling, blethering oratorical stuff drowns the voice of God himself. Yet the dawn of a new day in forestry is breaking. Honest citizens see that only the rights of the government are being trampled, not those of the settlers. Merely what belongs to all alike is reserved, and every acre that is left should be held together under the federal government as a basis for a general policy of administration for the public good. The people will not always be deceived by selfish opposition, whether from lumber and mining corporations or from sheepmen and prospectors, however cunningly brought forward underneath fables and gold. . . .

The United States government has always been proud of the welcome it has extended to good men of every nation, seeking freedom and homes and bread. Let them be welcomed still as nature welcomes them, to the woods as well as to the prairies and plains. No place is too good for good men, and still there is room. They are invited to heaven, and may well be allowed in America. Every place is made better by them. Let them be as free to pick gold and gems from the hills, to cut and hew, dig and plant for homes and bread, as the birds are to pick berries from the wild bushes, and moss and leaves for nests. The ground will be glad to feed them, and the pine will come down from the mountains for their homes as willingly as the cedars came from Lebanon for Solomon's temple. Nor will the woods be the worse for this use, or their benign

influences be diminished any more than the sun is diminished by shining. Mere destroyers, however, tree-killers, spreading death and confusion in the fairest groves and gardens ever planted, let the government hasten to cast them out and make an end of them. For it must be told again and again, and be burningly borne in mind, that just now, while protective measures are being deliberated languidly, destruction and use are speeding on faster and farther every day. The axe and saw are insanely busy, chips are flying thick as snowflakes, and every summer thousands of acres of priceless forests, with their underbrush, soil, springs, climate, scenery, and religion, are vanishing away in clouds of smoke, while, except in the national parks, not one forest guard is employed.

All sorts of local laws and regulations have been tried and found wanting, and the costly lessons of our own experience, as well as that of every civilized nation, show conclusively that the fate of the remnant of our forests is in the hands of the federal government, and that if the remnant is to be saved at all, it must be saved quickly.

Any fool can destroy trees. They cannot run away; and if they could, they would still be destroyed, – chased and hunted down as long as fun or a dollar could be got out of their bark hides, branching horns, or magnificent bole backbones. Few that fell trees plant them; nor would planting avail much towards getting back anything like the noble primeval forests. During a man's life only saplings can be grown, in the place of the old trees – tens of centuries old – that have been destroyed. It took more than three thousand years to make some of the trees in these Western woods, – trees that are still standing in perfect strength and beauty, waving and singing in the mighty forests of the Sierra. Through all the wonderful, eventful centuries since Christ's time – and long before that – God has cared for these trees, saved them from drought, disease, avalanches, and a thousand straining, leveling tempests and floods; but he cannot save them from fools, – only Uncle Sam can do that.

The Forest Reserves

Muir's *Atlantic Monthly* article described long-standing problems of the forests on the public domain. Such concerns were shared by others and, as a result, critically important legal developments occurred during the decade preceding the publication of Muir's 1897 article.

The first chief of the Forestry Division in the Department of Agriculture was appointed in 1876. Franklin B. Hough was strongly influenced by *Man and Nature*, and his successor, N. H. Egleston, said Marsh's book marked "the awakening of attention . . . to our destructive treatment of the forests, and the necessity of adopting a different course." Annual reports by both the Interior and Agriculture Departments documenting the poor state of the forests frequently referred to the conservation message of Marsh and others. But Westerners were strongly opposed to any government regulation of the public lands.

Hough was also a member of the American Forestry Association, as was Egleston and Egleston's successor as chief forester, Bernard Fernow. In April 1887, the law committee of the Association, including Egleston and Fernow, met with President Benjamin Harrison to present the case for adoption of a new forest policy. The same committee later met with Secretary of the Interior John W. Noble, who personally intervened with a congressional conference committee at the very end of the legislative session. As a result, a section 24 was added to the General Revision Act of 1891:

. . . [T]he President of the United States may, from time to time, set apart and reserve, in any State or Territory having public land bearing forests, in any part of the public lands wholly or in part covered with timber or undergrowth, whether of commercial value or not, as public reservations, and the President shall, by public proclamation, declare the establishment of such reservations and the limits thereof. [26 Stat. 1103 (March 3, 1891), formerly codified at 16 U.S.C. § 471.]

President Harrison promptly exercised his new authority, creating the first forest reserve adjacent to Yellowstone National Park in the same month that section 24 became law. By the end of his term, the Harrison had established fifteen reserves containing over thirteen million acres. In 1893, President Grover Cleveland reserved an additional five million acres, but refused to set aside any more forest lands because no funds had appropriated to protect and manage the new reserves. The Division of Forestry in the Agriculture Department had no jurisdiction over public forests, and the General Land Office in the Interior Department was unable to effectively control the many abuses. Legislation was introduced in Congress to remedy the situation, but it was defeated due to Western opposition to any restrictions on mining, grazing, or allowing settlers to take timber without payment. On the other hand, others were against the opening of the reserves to logging, which would jeopardize water supplies.

In the 1870s, John Muir had proposed the creation of a commission to recommend measures to protect the forests, but no action was taken. In 1896, with millions of acres in forest reserves but no legislation directing their management, the National Academy of Sciences did create a such a commission. Despite recommendations by Fernow and the American Forestry Association to pursue a gradual expansion of the reserves, the commission recommended to the immediate creation of thirteen new forest reserves totaling twenty-one million acres. President Cleveland, who had returned to the White House after four years out of office, agreed and in a symbolic move, issued the proclamations on Washington's birthday, 1897.

The "Washington Birthday Reserves" doubled the size of the federal forest system and set off a furor in the West. Fernow said Cleveland's action "stirred up such an antagonism as we have never had before." Congress responded quickly, passing an amendment to the Sundry Civil Bill restoring the entire area to the public domain. Cleveland pocket vetoed this appropriations bill on this last day in office.

Ultimately, compromise legislation was signed by President McKinley on June 4 of the same year. The Organic Act of 1897 remained the primary basis for federal forest management for almost eighty years. The statute – with citations to the current location of its provisions –

provided in part:

No public forest reservation shall be established, except to improve and protect the forest within the reservation, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States [16 U.S.C. § 475.]

The Secretary of the Interior shall make provisions for the protection against destruction by fire and depredations upon the public forests in forest reservations . . . ; and he may make such rules and regulations . . . as will ensure the objects of such reservations, namely, to regulate their occupancy and use and to preserve the forests thereon from destruction; . . . [16 U.S.C. § 551.]

For the purpose of preserving the living and growing timber and promoting the undergrowth on forest reservations, the Secretary of the Interior, under such rules and regulations as he shall prescribe, may cause to be designated and appraised so much of the dead, matured, or large growth of trees found upon such forest reservations as may be compatible with the utilization of the forest thereon Such timber, before being sold, shall be marked and designated, and shall be cut and removed under the supervision of some person appointed for that purpose by the Secretary of the Interior, not interested in the purchase or removal of such timber nor in the employment of the purchaser thereof. . . . [16 U.S.C. § 476, repealed Oct. 22, 1976.]

All waters on such reservations may be used for domestic, mining, milling, or irrigation purposes, under the laws of the State wherein such forest reservations are situated

And any mineral lands in any forest reservation which have been or which may be shown to be such, and subject to entry under the existing mining laws of the United States . . . shall continue to be subject to such location and entry, notwithstanding any provisions herein contained. [16 U.S.C. § 478.]

As one historian has written, “Two of the most important legislative events in the history of the Forest Service, the laws of 1891 and 1897, took place during the decade of the [eighteen] nineties. The nation now had forest reserves and the means to protect and manage them. More adjustments would take place, but the basic elements of federal forestry now were intact. . . .” HAROLD K. STEEN, *THE U.S. FOREST SERVICE, A HISTORY* 36 (1976).

Notes and Questions

1. What appears to be the purpose of the provision of the Organic Act of 1897 now codified at 16 U.S.C. § 475? How would you interpret the language authorizing the Secretary “to make such rules and regulations . . . to regulate their occupancy and use”?

2. The 1897 act is still of considerable importance. More than a century after enactment of the General Mining Law of 1872, the Forest Service relied upon the Organic Act as authority for the first environmental regulation of hardrock mining in the national forests. The regulations require mining companies to file a notice with the local district ranger before causing surface disturbance. If the district ranger finds there will likely be “significant disturbance of surface resources” from mining operations, the company must file a plan of mining operations. The final plan of operations must include protection of the surface environment and require reclamation. 36 C.F.R. §§ 228.1 *et seq.*

The mining industry vigorously challenged the regulations. Does the Organic Act grant the authority to adopt such regulations? See *United States v. Goldfield Deep Mines Co. Of Nevada*, 644 F.2d 1307 (9th Cir. 1981), cert. denied, 455 U.S. 907 (1982). Can the Forest Service *prohibit* mining activities on its lands?

3. Firmer Control of the Federal Lands

The public grazing lands were abused by overgrazing for decades. Drought in the early 1930s brought the situation to the point of crisis. As Congress was considering legislative action to address the issue in May 1934, storms in the West carried dust and sand to New York and Washington, D.C., helping to ensure passage of the Taylor Grazing Act of that year. The following case is yet another example of the modern relevance of nineteenth century disposition era statutes as well as an early twentieth century conservation era statute which is still “on the books.”

Andrus v. Utah
U.S. Supreme Court
446 U.S. 500 (1980)

Justice STEVENS delivered the opinion of the Court.

The State of Utah claims the right to select extremely valuable oil shale lands located within federal grazing districts in lieu of and as indemnification for original school land grants of significantly lesser value that were frustrated by federal preemption, or private entry, prior to survey. The question presented is whether the Secretary of the Interior is obliged to accept Utah’s selections of substitute tracts of the same size as the originally designated sections even

though there is a gross disparity between the value of the original grants and the selected substitutes. We hold that the Secretary's "grossly disparate value" policy is a lawful exercise of the broad discretion vested in him by § 7 of the Taylor Grazing Act of 1934, as amended in 1936, 43 U.S.C. § 315f, and is a valid ground for refusing to accept Utah's selections.

Utah became a State in 1896. In the Utah Enabling Act of 1894, Congress granted Utah, upon admission, four numbered sections in each township for the support of public schools [specifically, sections 2, 16, 32 and 36]. . . . The statute provided that if the designated sections had already "been sold or otherwise disposed of" pursuant to another act of Congress, "other lands equivalent thereto . . . are hereby granted." The substitute grants, denominated "indemnity lands" were "to be selected within the State in such manner as [its] legislature may provide with the approval of the Secretary of the Interior."

Because much of the State was not surveyed until long after its admission to the Union, its indemnity or "in lieu" selections were not made promptly. On September 10, 1965, Utah filed the first of 194 selection lists with the Bureau of Land Management of the Department of the Interior covering the land in dispute in this litigation. The 194 indemnity selections include 157,255.90 acres in Uintah County, Utah, all of which are located within federal grazing districts created pursuant to the Taylor Grazing Act.

In January 1974, before Utah's selection lists had been approved or disapproved, the Governor of Utah agreed that the Secretary of the Interior could include two tracts comprising 10,240 acres of selected indemnity lands in an oil shale leasing program, on the understanding that the rental proceeds would ultimately be paid to the State if its selections were approved. The proceeds of the leases are of substantial value.¹³

In February 1974, . . . Secretary [of the Interior Stewart L. Udall] advised the Governor that he would not approve any indemnity applications that involved "grossly disparate values."¹⁴ He wrote:

. . . In January 1967, the then Secretary of the Interior adopted the policy that in the exercise of his discretion under, *inter alia*, Section 7 of the Taylor Grazing Act, he would refuse to approve indemnify applications that involve grossly disparate values. That policy remains in effect.

In the present case, although the land values are not precisely determined, it

¹³ The District Court found that as of May 25, 1976, \$48,291,840 had been accumulated. It should be noted that proceeds were derived from only 10,240 acres out of the total area selected comprising over 157,000 acres.

¹⁴ Suggested guidelines of the Department of the Interior provide that the policy will not be applied unless the estimated value of the selected lands exceeds that of the base lands by more than \$100 per acre or 25%, whichever is greater. If the values are grossly disparate using those criteria, the case will be submitted to the Washington office for evaluation of all the circumstances.

appears that the selections involve lands of grossly disparate values, within the meaning of the Department's policy. While the Department is not yet prepared to adjudicate the State's applications, I feel it is appropriate at this time to advise you that we will apply the above-mentioned policy in that adjudication.

[Utah challenged Interior's policy in federal court and was successful in the lower courts.]

Because the dispute between the parties involves a significant issue regarding the disposition of vast amounts of public lands,¹⁵ we granted certiorari. We believe that the Court of Appeals and the District Court failed to give proper effect to the congressional policy underlying the provision for indemnity selection, and specifically misconstrued § 7 of the Taylor Grazing Act as amended in 1936. We therefore reverse.

I

The Enabling Act of each of the public land States admitted into the Union since 1802 has included grants of designated sections of federal lands for the purpose of supporting public schools. Whether the Enabling Act contained words of present or future grant, title to the numbered sections did not vest in the State until completion of an official survey. Prior to survey, the Federal Government remained free to dispose of the designated lands "in any manner and for any purpose consistent with applicable federal statutes." In recognition of the fact that the essentially random grants in place might therefore be unavailable at the time of survey for a variety of reasons, Congress authorized grants of indemnity or "lieu" lands of equal acreage.

As Utah correctly emphasizes, the school land grant was a "solemn agreement" which in some ways may be analogized to a contract between private parties. The United States agreed to cede some of its land to the State in exchange for a commitment by the State to use the revenues derived from the land to educate the citizenry.

The State's right to select indemnity lands may be viewed as the remedy stipulated by the parties for the Federal Government's failure to perform entirely its promise to grant the specific numbered sections. The fact that the Utah Enabling Act used the phrase "lands equivalent thereto" and described the substituted land as "indemnity lands" implies that the purpose of the substitute selections was to provide the State with roughly the same resources with which to support its schools as it would have had had it actually received all of the granted sections in

¹⁵ "Because the western states are the ones most recently admitted to the Union and because Utah and Arizona are two of the three states that received particularly large grants, the remaining indemnity selection rights are concentrated in seven western states. Utah and Arizona alone hold nearly 70% of the outstanding indemnity rights. The approximate number of acres still to be selected in each state (and thus the approximate number of acres potentially affected by this lawsuit) is as follows: Arizona, 170,000 acres; California, 108,000 acres; Colorado, 17,000 acres; Idaho, 27,000 acres; Montana, 22,900 acres; Utah, 225,000 acres; and Wyoming, 1,100 acres." Brief for Petitioner 4-5, n. 2.

place. Thus, as is typical of private contract remedies, the purpose of the right to make indemnity selections was to give the State the benefit of the bargain.¹⁶

The history of the general statutes relating to land grants for school purposes confirms this view. Thus, for example, in 1859, when confronted with the fact that many settlers had occupied unsurveyed lands that had been included in school grants, Congress confirmed the settlers' claims and granted to the States "other lands of like quantity." 11 Stat. 385. The substitution of an equal quantity of land provided the States a rough measure of equal value.

The school land grants gave the States a random selection of public lands subject, however, to one important exception. The original school land grants in general, and Utah's in particular, did not include any numbered sections known to be mineral in character by the time of survey. *United States v. Sweet*, 245 U.S. 563. This Court so held even though the Utah Enabling Act "neither expressly includes mineral lands nor expressly excludes them." The Court's opinion stressed "the practice of Congress to make a distinction between mineral lands and other lands, to deal with them along different lines, and to withhold mineral lands from disposal save under laws specially including them." Mineral lands were thus excluded not only from the original grants in place but also from the indemnity selections.¹⁷ Since mineral resources provide both the most significant potential source of value and the greatest potential for variation in value in the generally and western lands, the total exclusion of mineral lands from the school land grants is consistent with an intent that the States' indemnity selections of equal acreage approximate the value of the numbered sections lost.

In 1927, some nine years after the decision in *United States v. Sweet*, supra, Congress changed its policy to allow grants of school lands to embrace numbered sections that were mineral in character. But the 1927 statute did not expand the kinds of land available for indemnity selections. Thus, after 1927 even if the lost school lands were mineral in character, a State was prohibited from selecting mineral lands as indemnity. It was not until 1958 that Congress gave the States the right to select mineral lands to replace lost school lands, and that right was expressly conditioned on a determination that the lost lands were also mineral in character. 43 U.S.C.A. § 852. For 30 years, then, States were not even permitted to select lands roughly equivalent in value to replace lost mineral lands. The condition in the 1958 statute, that the lost lands be mineral in character before mineral lands could be selected as indemnity, rather clearly reflects an intention to restore the character of the indemnity selection as a substitute of roughly equal value.

¹⁶ See *Heydenfeldt v. Daney Gold and Silver Mining Co.*, 93 U.S. 634, 639-640: "Until the status of the lands was fixed by a survey, and they were capable of identification, Congress reserved absolute power over them; and if in exercising it the whole or any part of a 16th or 36th section had been disposed of, the State was to be compensated by other lands equal in quantity, and *as near as may be in quality*." (Emphasis added.)

¹⁷ Under the 1891 general indemnity selection statute then in effect, selections were limited to "unappropriated, surveyed public lands, not mineral in character." 26 Stat. 796-797.

Throughout the history of congressional consideration of school land grants and related subjects – a history discussed at great length in the voluminous briefs submitted to us – we find no evidence whatever of any congressional desire to have the right to select indemnity lands do anything more than make the States whole for the loss of value resulting from the unavailability of the originally designated cross section of lands within the State. There is certainly no suggestion of a purpose at any time, including 1958, to allow the States to obtain substantially greater values through the process of selecting indemnity land.

Thus, viewing the program in this broad historical perspective, it is difficult to identify any sensible justification for Utah's position that it is entitled to select any mineral lands it chooses regardless of the value of the school sections lost. Nevertheless, Utah is quite correct in arguing that the Secretary has no power to reject its selections unless Congress has given it to him. We have no doubt that it has.

II

Prior to the 1930's, cases in this Court had made it perfectly clear that the Federal Government retained the power to appropriate public lands embraced within school grants for other purposes if it acted in a timely fashion. On the other hand, it was equally clear that the States' title to unappropriated land in designated sections could not be defeated after survey, and that their right to indemnity selections could not be rejected if they satisfied the statutory criteria when made, and if the selections were filed before the lands were appropriated for other purposes. The authority of the Secretary of the Interior was limited to determining whether the States' indemnity selections met the relevant statutory criteria. See *Wyoming v. United States*, 255 U.S. 489; *Payne v. New Mexico*, 255 U.S. 367, 371.

In the 1930's . . . dissatisfaction with the rather loose regime governing use and disposition of unappropriated federal lands, prompted mostly by the waste caused by unregulated stock grazing, led to a series of congressional and executive actions that are critical to this case. By means of these actions, all unappropriated federal lands were withdrawn from every form of entry or selection. The withdrawal did not affect the original school land grants in place, whether or not surveyed, but did include all lands then available for school indemnity selections. The lands thus withdrawn were thereafter available for indemnity selections only as permitted by the Secretary of the Interior in the exercise of his discretion.

The sequence of events was as follows. In 1934, Congress enacted the Taylor Grazing Act “[t]o stop injury to the public grazing lands by preventing overgrazing and soil deterioration, to provide for their orderly use, improvement, and development, to stabilize the livestock industry dependent upon the public range, and for other purposes.” 48 Stat. 1269. Section 1 authorized the Secretary of the Interior to establish grazing districts in up to 80 million acres of unappropriated federal lands; the establishment of such a district had the effect of withdrawing all lands within its boundaries “from all forms of entry or settlement.” That section also expressly provided that “Nothing in this Act shall be construed in any way . . . to affect any land heretofore or hereafter surveyed which, except for the provisions of this Act, would be a part of any grant to any State” Thus, § 1 preserved the original school land grants, whether or not

the designated sections had already been identified by survey, but the statute made no provision for school indemnity selections.

Because the Taylor Grazing Act as originally passed in 1934 applied to less than half of the federal lands in need of more orderly regulation, President Roosevelt promptly issued Executive Order 6910 withdrawing all of the unappropriated and unreserved public lands in 12 western States, including Utah, from “settlement, location, sale or entry” pending a determination of the best use of the land. The withdrawal affected the land covered by the Taylor Grazing Act as well as land not covered by the statute. The President’s authority to issue Executive Order 6910 was expressly conferred by the Pickett Act [of 1910].

Congress responded to Executive Order No. 6910 by amending the Taylor Grazing Act in 1936 in two respects that are relevant to this case. First, it expanded the acreage subject to the Act. Second, it revised § 7 of the Act, to give the Secretary the authority, in his discretion, to classify both lands within grazing districts and lands withdrawn by the recent Executive order as proper not only for homesteading, but also, for the first time, for satisfaction of any outstanding “lieu” rights, and to open such lands to “selection.” The section [currently 43 U.S.C. § 315f], thus amended, provided in pertinent part:

The Secretary of the Interior is authorized, in his discretion, to examine and classify any lands withdrawn or reserved by Executive order . . . or within a grazing district, which are . . . proper for acquisition in satisfaction of any outstanding lieu, exchange or script rights or land grant, and to open such lands to entry, selection or location for disposal in accordance with . . . applicable public-land laws. . . . Such lands shall not be subject to disposition . . . until after the same have been classified

The changes in this section were apparently prompted in part by the fact that while the Taylor Grazing Act withdrawal preserved the States’ school grants in place, no provision had been made in the 1934 version for the States’ indemnity selections from land within grazing districts even though the States had expressed the concern that “the establishment of a grazing district would restrict the State in its indemnity selections.” While this omission may not have been critical in 1934 when the Act was passed – since only about half of the unappropriated federal land was then affected – by 1936, as a consequence of Executive Order No. 6910, no land at all was available in the public domain for indemnity selections. It is therefore reasonable to infer that the amendments to § 7 were at least in part a response to the complaint expressed in congressional hearings in 1935, that there was no land available under current law for indemnity selections.

The 1936 amendment to § 7 rectified that problem, but did not give the States a completely free choice in making indemnity selections. Rather, Congress decided to route the States’ selections through § 7, and thereby to condition their acceptance on the Secretary’s discretion. That decision was consistent with the dominant purpose of both the Act and Executive Order No. 6910, to exert firm control over the Nation’s land resources through the Department of the Interior. In sum, the Taylor Grazing Act, coupled with the withdrawals by Executive order, “locked up” all of the federal lands in the western States pending further action

by Congress or the President, except as otherwise permitted in the discretion of the Secretary of the Interior for the limited purposes specified in § 7.

This was Congress' understanding of the Taylor Grazing Act in 1958 when it amended the school land indemnity selection statute to permit selection of mineral lands. . . . Since Congress was specifically dealing with school indemnity selections, the reports make it perfectly clear that Congress deemed school indemnity selections to be subject to § 7 of the Taylor Grazing Act. And since the congressional decision in 1958 to allow school land indemnity selections to embrace mineral lands was expressly conditioned on a determination that the lost school lands were also mineral in character, it is manifest that Congress did not intend to grant the States any windfall. It only intended to restore to the States a rough approximation of what was lost.

We therefore hold that the 1936 amendment to the Taylor Grazing Act conferred on the Secretary the authority in his discretion to classify lands within a federal grazing district as proper for school indemnity selection. And we find no merit in the argument that the Secretary's "grossly disparate value" policy constitutes an abuse of the broad discretion thus conferred. On the contrary, that policy is wholly faithful to Congress' consistent purpose in providing for indemnity selections, to give the States a rough equivalent of the school land grants in place that were lost through preemption or private entry prior to survey. Accordingly, the judgment of the Court of Appeals is reversed.

Mr. Justice POWELL, with whom THE CHIEF JUSTICE, Mr. Justice BLACKMUN, and Mr. Justice REHNQUIST join, dissenting.

Notes and Questions

1. Why were indemnity grants necessary at all? Why might states not obtain their "in-place" grants?
2. Trace the legal developments relating to federal land grants to the states for public schools, as set out in the majority's opinion in *Andrus v. Utah*. What is the lesson in statutory interpretation here?
3. What was the important effect of the Taylor Grazing Act and the 1934 Executive Order on federal land disposition?
4. What is the difference between a "withdrawal" of land, such as that made by Executive Order No. 6910, and a "reservation" of public land, such as those subject to the Organic Act of 1897?
5. **State Trust Lands.** In *Andrus v. Utah*, the Court points out that the United States

made school land grants “in exchange for a commitment by the State to use the revenues derived from the land to educate the citizenry.” Over time, this “commitment” developed into a trust obligation under which the common schools are the beneficiary. The U.S. Supreme Court has strictly enforced the restrictions contained in federal land grants. See, e.g., *Lassen v. Arizona*, 385 U.S. 458 (1967) (permitting the state to dispose of common school lands only for “full value”). Furthermore, all revenue from the sale or lease of such lands by the state must be devoted to public education. See *United States v. Erwin*, 246 F. 277 (8th Cir. 1917), *aff’d*, 251 U.S. 41 (1919). Some statehood enabling acts, such as those for Oklahoma and Alaska, required the state to put in its constitution the same restrictions found in that state’s federal land grants. As a result, there are a number of state Supreme Court decisions on the terms of the “trust;” these cases also strictly enforce such provisions.

Importantly, the fiduciary duties of state managers of trust lands have been held to include a duty to maximize revenue from the lands. See, e.g., *National Parks & Conservation Ass’n v. Board of State Lands*, 869 P.2d 909 (Utah 1993). Does this mean states may not keep their school lands in a natural state, for example, to conserve wildlife? Must states develop their trust lands for mining or timber harvesting to produce income for the public schools even when these lands are scattered “in holdings” within a national park?

Section D. “Scientific Management” of the Public Lands 1905-1960

1. Guiding Principles

The governmental institutions which currently manage these lands and waters are in significant measure a product of the ideologies which prevailed at the end of the nineteenth century and beginning of the twentieth. The dominant philosophy of the time favored largely unrestrained capitalism and embodied both confidence in a free market for the allocation of resources and a distrust of government. Government was to some extent feared and its capabilities were questioned. The Progressive movement offered an alternative vision.

Progressivism introduced to government the methods of modern management developed by large corporations which were emerging at that time. Government was necessary, the Progressives thought, to break up large concentrations of power in the private sector and even to regulate private enterprise to some extent. One consequence of this philosophy was the creation of independent regulatory agencies in the federal government. These agencies and commissions were intended to promote “the public interest,” not “special interests.” To do so, Progressives believed that government administrators must be protected from political interference and, further, be prevented from imposing their own personal values in the exercise of governmental

power. This would be accomplished through the application of science to questions of public policy. The correct answer to each problem would be revealed to the experts in government through science and technology. And government, in the Progressive view, could become as efficient as big business through scientific management.

Faith in the powers of science was widespread in the late 1800s and early 1900s. In the realm of natural resources – which today is subsumed within the modern term “environment” – the conservation movement of that time was in actuality “a scientific movement,” according to historian Samuel Hays:

Conservation leaders sprang from such fields as hydrology, forestry, . . . geology, and anthropology. Vigorously actively in professional circles in the national capital, these leaders brought the ideals and practices of their crafts into federal resource policy. Loyalty to these professional ideals, not close association with the grass-roots public, set the tone of the Theodore Roosevelt conservation movement. Its essence was rational planning to promote efficient development and use of all natural resources.

SAMUEL P. HAYS, *CONSERVATION AND THE GOSPEL OF EFFICIENCY: THE PROGRESSIVE CONSERVATION MOVEMENT, 1890-1920* (1959).

The most visible and durable successes of the Progressive brand of conservation were in forestry, and in forestry the dominant figure of the era was Gifford Pinchot. Described as “brilliant, patrician, knowledgeable, manipulating, charismatic, arrogant, and savvy,” Pinchot wielded extraordinary influence on federal public land policy from 1898 to 1910. Moreover, the agency he created – the U.S. Forest Service – and, to a surprising extent, his philosophy still govern the federal forests today.

Creation of the National Forests
GIFFORD PINCHOT, *BREAKING NEW GROUND*
256-262 (1947)

And so at length, thanks to the long struggle we had made for it, . . . , H.R. 8460, the Transfer Act, passed easily through both Houses of Congress. It reached the President [Theodore Roosevelt] on February 1, 1905, and was signed by him on that day.¹⁸

What I had been hoping for and working for, from the moment I came into the old Forestry Division nearly seven long years before, had finally arrived. It had been a long pull, and, as it turned out, a strong pull. Now it had to be a pull all together, if we were to make good

¹⁸ The Transfer Act of 1905 moved the forest reserves (then totaling 63 million acres) from the Interior Department to the Agriculture Department. Interior retained authority to manage the mineral estate of these forest lands. – Ed.

use of the chance which perseverance, common sense, T.R., and the American Forest Congress¹⁹ had given us.

Beginning in 1898, the Division of Forestry, and then the Bureau, had pushed its field investigations of forests, forest uses, and forest users all over the West. Our studies of the Reserves had at last come good, as the saying is – studies of their boundaries and their timber; their forage and their mines; their streams, their agricultural land, and their other natural resources; studies of the men who used them and the men who ran them; of the laws which applied to them and the public opinion which controlled their destinies. When our chance came, we were ready to take it.

In my experience, progress in Government work, and doubtless in other work also, commonly comes by fits and starts. Often for months, sometimes for years, hard work for sound objectives gets you exactly nowhere. The solid wall of obstacles is solid still.

Then suddenly comes the break, the dam gives way, what you had hoped and striven for falls into your lap, and your cup is full and brimming over. However mixed these metaphors may be, you have your reward. . . . When at last it came, much else came with it. And whatever else came, you may be well assured, did not just happen. We planned and worked for what we got.

The Transfer Act itself contained a clause without which our handling of the Forest Reserves, soon to be renamed National Forests, would have been badly cramped. Section 5 provided that all money received from the sale of any products or the use of any land or resources of the Forest Reserves should be available for five years from the passage of the Act as a special fund for the protection, administration, improvement, and extension of the Reserves.

That section gave us, in a way, the power to make our own appropriations. We had already, under the Act of June 4, 1897, the right to sell timber, and now we had the timber to sell. But what was even more important, Section 5 was to play the hero's part in getting us, through the Attorney General's opinion of May 31, 1905, the right to make a charge, "in connection with the use and occupation of the National Forests." Which meant revenue from grazing and water power and much besides, as will later appear. The value of that it would be hard to overstate.

Another brimming cup was a clause in the Agricultural Appropriation Act of March 3, 1905, which gave all Forest Service men "authority to make arrests for the violation of laws and regulations relating to the forest reserves and national parks." Without the power this clause gave us our men in the field would have been handicapped indeed. And the same bill gave us a

¹⁹ This group was similar to the American Forestry Association, mentioned in Section C of this Chapter. In 1882, the two organizations merged and adopted the name of the Association, which has remained in use. Pinchot's references here to the American Forestry Congress are to the American Forestry Association. – Ed.

hand “in the enforcement of the laws of the States or Territories in the prevention and extinguishment of forest fires and the protection of fish and game.”

Consideration of the Agricultural Appropriation Bill in the Senate, immediately after the Transfer Bill became law, brought to the surface no little opposition to the Forest Reserves and the Bureau of Forestry. Two driving forces were behind it – the states’ rights fetish and the Western hunger for development at any cost. . . .

One more change gave me great personal satisfaction. I never liked the name “Bureau,” and I had had something to do with getting the Reclamation “Service” called by that better name. So when “Bureau of Forestry” disappeared from the Agricultural Appropriation Bill and “Forest Service” took its place, no one was more pleased than I.

For us in the Forest Service the transfer meant a revolutionary change. Before the Forest Reserves came into our hands, all we could say to whoever controlled a forest, public or private, was “Please.” That we said it to some effect was proved by the number of applications from timberland owners for forest working plans for millions of acres of their private lands, from the Interior Department for many more millions of Forest Reserves, from the State of New York for lands in the Adirondack State Forest Preserve, from the War Department for military reservations, and more besides.

Before the transfer, we were limited to peaceful penetration. While many still regarded Forestry as pernicious nonsense, comparatively few people were sore at us because nobody was compelled to do as we said.

After the transfer the situation was radically changed. While we could still say nothing but “Please” to private forest owners, on the national Forest Reserves we could say, and we did say, “Do this,” and “Don’t do that.” We had the power, as we had the duty, to protect the Reserves for the use of the people, and that meant stepping on the toes of the biggest interests in the West. From that time on it was fight, fight, fight.

We who took over the Forest Reserves preferred the small man before the big man, because his need was greater. We preferred him in honor and in privilege, in principle and in practice. No wonder we had trouble.

To appreciate what follows, you must remember that the Forest Service was the first Government organization not only to assert that the small man had the first right to natural resources of the West, but actually to make it stick. “Better help a poor man make a living for his family than help a rich man get richer still.” That was our battle cry and our rule of life.

It was true, and it was right, and no one could openly attack it. And that was one more reason why it aroused the big men to fury. Because of it came most of the really dangerous opposition to the Service and the National Forests.

At first the small men, for whom we were risking our official necks and the very life of

the Service, could not believe that we meant what we said and did. Many of them had lived under Land Office administration or had seen the Indian Office at work, and at first they could not realize that their Government was actually for them. Many settlers fought us in the beginning who afterward became our steadfast friends.

The big men changed more slowly, and small wonder. For in word and deed the Forest Service struck straight at the desire and expectation, the habit and intention, of the special interests to go on creating baronies for themselves out of the resources that belonged to all the people. We denied and opposed their profound conviction that money and profits are all-important and must control, and thereby we hurt both their pockets and their feelings.

But in spite of their vast power, pecuniary and political, in spite of the railroads, the stock interests, mining interests, water-power interests, and most of the big timber interests, in spite of all their proprietary politicians, in the long run our purpose was too obviously right to be defeated. And moreover, T.R. was for it, horse, foot, and dragoons. He said and he believed that the public good comes first, and he practiced his belief. Without T.R. our enemies would have found us easy pickings while the Service was still young.

Now let's get on with the story.

After the transfer, all matters affecting the surveying, prospecting, locating, appropriating, entering, relinquishing, reconveying, certifying, or patenting of lands, and all questions of title and easement remained with the Department of the Interior. All questions of management came to us.

Upon the day of the transfer the Bureau of Forestry, which had never had authority over so much as a square foot of Government land, was given full administrative control of an area about as large as the States of New York, New Jersey, and Pennsylvania combined, 86,000,000 acres of public forest Reserves, with all the business that went with them.

With the reserves came the Land Office field force of about 570 and the personnel in the Washington office, except for a few undesirables whom we managed to lose on the way, and also the unexpended appropriation. Our problem was to amalgamate two organizations, one very good and the other very bad.

That, however, was only the beginning. The transfer was made for a far more vital purpose. It was made in order that the national Forest Reserves might be handled under the principles of practical Forestry in the light of local facts and local needs, and so be given their fullest usefulness, now and hereafter.

The guide and charter of the new policy was a letter of instruction from Tama Jim²⁰ to me, dated the day of the transfer.

²⁰ "Tama Jim" was the nickname of Secretary of Agriculture James Wilson. – Ed.

That letter, it goes without saying, I had brought to the Secretary for his signature. Being a Departmental letter it had been prepared with care in Departmental style. It began: "The Forester, Forest Service. Sir:" and went on to quote in full the Transfer Act, whose provisions, it said, "will be carried out through the Forest Service, under your immediate supervision."

The letter instructed me to recommend at the earliest practicable date whatever changes might be necessary in the rules and regulations, dealt with the framework of the new job, and quoted the President's recent order which classified under the Civil Service Law all persons employed in the protection and administration of the Forest Reserves.

The Secretary's letter then proceeded to crystallize the purpose and spirit of the new enterprise in terms that are as valid today as they were forty years ago:

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people, and not for the temporary benefit of individuals or companies. All the resources of forest reserves are for *use*, and this use must be brought about in a thoroughly prompt and businesslike manner, under such restrictions only as will insure the permanence of these resources. The vital importance of forest reserves to the great industries of the Western States will be largely increased in the near future by the continued steady advance in settlement and development. The permanence of the resources of the reserves is therefore indispensable to continued prosperity, and the policy of this department for their protection and use will invariably be guided by this fact, always bearing in mind that the *conservative use* of these resources is no way conflicts with their permanent value.

You will see to it that the water, wood, and forage of the reserves are conserved and wisely used for the benefit of the home builder first of all, upon whom depends the best permanent use of lands and resources alike. The continued prosperity of the agricultural, lumbering, mining, and livestock interests is directly dependent upon a permanent and accessible supply of water, wood, and forage, as well as upon the present and future use of their resources under businesslike regulations, enforced with promptness, effectiveness, and common sense. In the management of each reserve local questions will be decided upon local grounds; the dominant industry will be considered first, but with as little restriction to minor industries as may be possible; sudden changes in industrial conditions will be avoided by gradual adjustment after due notice; and where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

These general principles will govern in the protection and use of the water supply, in the disposal of timber and wood, in the use of the range, and in all other matters connected with the management of the reserves. They can be successfully applied only when the administration of each reserve is left very largely in the hands of the local officers, under the eye of thoroughly

trained and competent inspectors.

Very respectfully,
James Wilson
Secretary

In the four decades between, this letter has set the standard for the Service, and it is still being quoted as the essence of Forest Service policy.

2. New Demands

In the national forests, the period from 1910 to 1940 has been called “the quiet years.” There was little demand for federal timber. Citizens in the rural West became supporters of the Forest Service because it determinedly and effectively fought wildfires. The Service “built an image, nearly a mystique, that has no real parallel in any other federal agency;” “it enjoyed a honeymoon with the public of more than half a century, from Pinchot’s day well into the 1950s.” CHARLES F. WILKINSON, *CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST*, 131, 135 (1992).

Recreation and Timber Production After WWII

SAMUEL TRASK DANA AND SALLY K. FAIRFAX, *FOREST AND RANGE POLICY: ITS DEVELOPMENT IN THE UNITED STATES 190-191, 193-194, 199-201* (2d ed. 1980)

Recreation Boom of the 1950s

Recreation stands out among post-World War II developments in forest and range policy as one which is characterized by spontaneous public activity. Obviously the concern was not entirely new. There had been a long-standing group articulately interested in developing recreation opportunities But the movement was aimed at preserving areas of outstanding scenic grandeur as pleasuring grounds for the wealthy adventurers who could afford to travel to such extravagant facilities as Yellowstone’s Old Faithful Inn. Recreation in the 1950s was significantly different. By the end of the Second World War, expanding population combined with rising disposable income, longer paid vacations, retirement programs, and increased mobility ushered in an era of *mass* recreation.

This new emphasis had at least two significant components. The first and most important was sheer numbers of people involved. Demand for recreation facilities in every category expanded dramatically at the end of the Second World War and continued to grow at an increasing rate for nearly two decades. Mass recreation implied, first and foremost, a literally overwhelming number of bodies. Second, the new users demanded motorized access and developed facilities in the recreation areas. Mass recreationists do not extoll the virtues of

spartan wilderness travel. They want ski resorts tramways, scenic highways, and developed water-based recreation. In the 1950s, we developed a national system of freeways, throughways, and highways. Gas rationing ended, cars were readily available, and they began to flood into parks and recreation areas.

Recreation management had been up until that time a relatively casual undertaking. The emphasis of the National Park Service and its supporters was on extending a protective administrative status category to particular pieces of especially cherished land. Insofar as it was necessary to be concerned with visitors, much of the pre-World War II effort focused on luring enough users to a site to justify the designation and the expenditure for administration. The Forest Service was less inclined to consider recreation users as part of their management task. Until the war, there was plenty of Forest Service land for every use. There were occasional skirmishes over a piece of ground particularly coveted by competing user groups; but there was land enough for all, and the recreationists were generally satisfied with their allocation.

In the 1950's, demand increased dramatically for all categories of forested land use. Cities and towns sprawled into the countryside. Timber was needed to build the cities and towns. The pressure for recreation lands became intense. Recreationists were no longer satisfied with being a residual use. Moreover, they themselves began to require management in an explicit and unprecedented fashion. As they came in droves, they trampled the vegetation; jammed the transportation, parking, and sanitary facilities; and began to get in each others' way. Providing for the hunter and the hiker; the swimmer, the fisherman, the canoeist, and the motorboater; the motorist, the skier, and the wilderness buff became management concerns of pressing importance.

The major response to this burgeoning new aspect of wild land management was administrative rather than legislative. Generally this was not a period of great congressional leadership regarding outdoor recreation. Public pressure was beginning to organize effectively, but the major responses to that pressure came from the executive agencies. The activities of the Park Service, the Forest Service, the BLM, and the Corps of Engineers were obviously motivated by rational calculation as a new source of support and funds which they could tap. The agencies moved to fill the gap. That they did so largely on their own traditionally defined terms is not surprising; this is period of transition rather than revolution, but the change quite clearly had begun. . . .

Forest Service Recreation in the Postwar Period

The recreation user pressure experienced in the national parks occurred with equal severity in the national forests. The national forests have always constituted a much larger component of federal recreation opportunities than have the parks in terms of user days. This intense recreational use occurs in spite of considerable agency bias against it. Although many people within the agency have long struggled to secure recognition of and appropriations for recreation use of the forests, the program was a residual one. Foresters were not opposed to forest recreation; however, the forester was less likely than other people to see recreation as incompatible with timber production and more likely to view recreation as a less important use

of forest lands. Recreation was always encouraged by the Forest Service if it harmonized with overall management plans. In that spirit, the agency repeatedly sought money and specific authorization for its recreation programs. These efforts were thwarted by three major forces. The National Park Service, engaged as it was in trying to acquire extensive Forest Service acreage for recreation management, fought very hard to deny money and recognition to Forest Service recreation programs. Many preservation groups that accused the Forest service of being too timber oriented in the 1960s and 1970s supported the park Service in this effort. Second, the diversity of the agency mission, frequently referred to . . . as a source of strength and security, in the present context is seen as a bit of disadvantage. Traditional user groups are not going to welcome another “mouth to feed” at the Forest Service table. Grazing interests were as threatened by the recreationists as they had been by the homesteaders. Any Forest Service move to welcome the recreationists to what the permittees considered to be their own land was not encouraged. The timber industry responded to the recreation issue in a more sophisticated way. Many of the industrial landowners were making a public spirited public relations effort to open their own lands to recreationists. However, the industry did not support the diversion of funds, land, or effort from timber management. As shall be discussed below, the timber industry was engaged in a vigorous program to gain greater recognition of its own needs.

Third, support from the preservation and recreation groups was not forthcoming to the extent which one might expect. Although traditional conservation groups continued to support the same “wise uses” conservation concept championed by the Forest Service, other newer groups found the agency’s approach to conservation antithetical to their own goals. Conservation to them meant not wise use but, in many instances, no use. In the 1950s the long fight for legislative recognition of the wilderness concept was beginning. The preservationists were therefore pitted against the Forest Service at two very significant points. First, continuing Park Service drives of the 1920s and 1930s, they initiated and spearheaded numerous efforts, frequently successful, to have land management responsibilities for extensive acreage transferred from the Forest Service to the Park Service. Second, they were engaged in a serious attempt to secure passage of a wilderness bill. These efforts obliged them to assert that Forest Service management of recreation and wilderness areas was inadequate, so they were in no position to support the agency’s recreation efforts. . . .

The Postwar Forest Products Industry

It is a surprise to many to learn that the forest products industry, practitioners of industrial forestry, did not emerge as a major political force until after the Second World War. When it did reach lift-off in the postwar boom, it confronted the new groups’ values and assumptions, which were contending for a place in public land management. Although the Forest Service neither harvests nor processes timber, its position as the manager of the largest area of commercial forest land and standing timber inventory makes the agency a major factor in private timber management. During the war, a number of significant developments occurred which radically altered the timber industry and its relationship to the federal holdings.

The most obvious change was the increased demand for forest products. From the stock market crash in 1929 to the end of World War II, consumption was at a low ebb. The forest

products industry generally pressured the Forest Service to withhold public timber from market to avoid competing with the struggling private enterprise. In the postwar years, pent-up consumer demand was released in a period of unparalleled prosperity and population expansion. All of this translated into an increased demand for wood products, especially for housing. A less obvious but more important change in the timber industry was that investment in long-range forest management became viable economically. This development is attributable to improved fire control, new taxation methods, and technological innovations.

Fire control is the most dramatic contribution to economically viable forestry. Until an adequate system of fire control existed, it was literally gambling to invest money in forests. In 1941, 30 million acres burned in 208,000 fires. By 1954, if 2 or 3 million acres burned, it was considered a bad year. A nationwide fire control system evolved to the point that investing in reforestation was a reasonable undertaking.

In 1944, a small but critical amendment was made in the Internal Revenue Code. Before the amendment, timber had to be sold unprocessed in order to qualify for the capital gains taxation rate. The amendment allowed all increases in value over the timber purchase price to be taxed as capital gains, rather than at the higher personal income rate. The timber industry points to a rapid increase in forest management investments after the amendment passed to support their contention that capital gains taxation is a prerequisite to investment in forest management.

Finally, long-range investment in forest management became attractive because of innovations in the technology of timber management and utilization. Equipment and processes developed to increase the efficiency of the wood products industry; heavy harvesting and roading equipment such as skidders, tractors, crawler tractors, and chain saws were adapted from military equipment. New processes enable the industry to use more and more of what was previously considered waste materials to create such new products as particle board, Kraft paper, and insulation. New management techniques also contributed to greater efficiency; and industrial integration began, so that a saw mill, veneer, or plywood operation could be coordinated with a pulp or particle board mill in order to reduce waste and increase returns on investment. Forest management, as opposed to harvesting standing timber, became profitable in the years after the Second World War. The huge amounts of capital required inevitably committed the industry to intensive sustained yield forestry which would supply sufficient wood and fiber to permit amortization of investment in equipment and processing plants.

Understandably, the industry became increasingly interested in the management of the national forests. Industry encouraged the Forest Service to sell timber on the open market and to manage its lands for timber production. These were new positions for industry, since during and after the Depression industry had urged the Forest Service not to compete with the private sector by selling timber. After the war, as demand for forest products grew, many processing plants were established without any land base or timber ownership at all; and many businesses became largely or totally dependent on federal timber. . . .

It is quite clear that the recreationists and wilderness advocates were but one of the new groups demanding that their special requirements be met by the Forest Service. The timber

industry pressed diligently for more intensive national forest timber management. None of the demands were new, but the Forest Service could no longer meet the increasing demands on the available land. Before the war, management of the national forests had been a matter of careful but relatively simple allocation of benefits. In the postwar boom, it became necessary for the agency to assess, weigh, and balance the competing interests.

The agency's difficulties were exacerbated by the constant marauding of the National Park Service, which continued to seek management authority over Forest Service administered lands. The Park Service often promoted public discontent with Forest Service policies. Given that situation, the Forest Service was especially anxious to meet the needs of the vociferous recreationist groups.

The Legislative Solution

Confronted by the timber industry pressures, the stock operators, the recreationists, the wilderness advocates, and the specter of Park Service land takeovers, the Forest Service decided to request a congressional clarification of its mission. It hoped to strengthen its hand in attempting to balance the various single-use advocates and clearly to establish its legislative authority in the recreation area. The Forest Service wrote the bill and lobbied for it. Congress acceded to the agency request without any evidence of grass-roots interest in the bill.

3. The Multiple Use Mandate in Law and Practice

Multiple-Use Sustained-Yield Act of 1960 16 U.S.C. §§ 528 to 531

§ 528. Development and administration of renewable surface resources for multiple use and sustained yield of products and services; Congressional declaration of policy and purpose

It is the policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. The purposes of sections 528 to 531 of this title are declared to be supplemental to, but not in derogation of, the purposes for which the national forests were established as set forth in section 475 of this title [part of the Organic Act of 1897]. Nothing herein shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish on the national forests. Nothing herein shall be construed so as to affect the use or administration of the mineral resources of national forest lands or to affect the use or administration of Federal lands not within national forests.

§ 529. Authorization of development and administration; consideration to relative values of resources; areas of wilderness

The Secretary of Agriculture is authorized and directed to develop and administer the renewable surface resources of the national forests for multiple use and sustained yield of the several products and services obtained therefrom. In the administration of the national forests due consideration shall be given to the relative values of the various resources in particular areas. The establishment and maintenance of areas of wilderness are consistent with the purposes and provisions of sections 528 to 531 of this title.

§ 530. Cooperation for purposes of development and administration with State and local governmental agencies and others

In the effectuation of sections 528 to 531 of this title the Secretary of Agriculture is authorized to cooperate with interested State and local governmental agencies and others in the development and management of the national forests.

§ 531. Definitions

As used in sections 528 to 531 of this title the following terms shall have the following meanings:

(a) "Multiple use" means: The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

(b) "Sustained yield of the several products and services" means the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land.

Notes and Questions

1. What language in the MUSY Act reflects the forest management philosophy of Gifford Pinchot?

2. Can you make an argument that some language in the MUSY Act *does* constrain Forest Service discretion?

Alaska's Forests

Acquisition of the public domain continued until 1867 when the United States purchased Alaska from Russia. In several respects, the evolution of public land law and policy in Alaska differed from that of federal lands in the continental U.S. Alaska Natives had not lost their lands by conquest and did not cede their lands to the federal government in treaties. Nineteenth century disposition statutes had much less impact on Alaska; the region was remote and its climate not hospitable for homesteaders.

Some withdrawal and reservation of public lands did occur in Alaska, including establishment of the Tongass National Forest by President Theodore Roosevelt in 1907. The Tongass is located in the far southeastern portion of the state on the Alaska Panhandle, and now sits between Glacier Bay National Park on its northern boundary and the Misty Fjords National Monument to the south. It is a part of the largest remaining contiguous temperate – as contrasted with tropical – rain forest in the world. Its vegetative communities are muskeg, alpine scrub, and conifer rain forest, sitting atop a maze of islands. At seventeen million acres, the Tongass is by far the largest national forest.

Despite its concerted efforts over decades, the US Forest Service was unable to establish a timber industry in southeastern Alaska. The Tongass Timber Act of 1947 authorized the agency to enter into long-term timber contracts and attempted to address unresolved Alaska Native land claims, which had been an obstacle to corporate investment in the region. Following passage of the 1947 act, the Forest Service commenced serious negotiations for the development of pulp mills in the Tongass.

In 1951, the Forest Service contracted with two U.S. companies to build a pulp mill near Ketchikan and in return the agency agreed to supply the mill with 8.25 billion board feet of Tongass timber over fifty years. The mill opened in 1954 and produced dissolving pulp, which is used in the manufacture of rayon, cellophane and disposable diapers. In 1957, the Forest Service entered into a contract for a second pulp mill to be built near Sitka by a Japanese consortium. In the agreement the agency promised to sell another 5.25 billion board feet of timber from the Tongass National Forest over a 55-year period.

The Forest Service hoped to induce yet other timber companies to build more pulp mills in the Alaskan Panhandle. Its 1964 Multiple Use Plan for the Tongass National Forest provided for annual timber harvests from the forest sufficient to supply four pulp mills or other large manufacturing plants plus an amount for independent timber operators. The plan stated, "About 95 percent of the commercial forest land of Southeastern Alaska is occupied by overmature [sic]

stands of hemlock, spruce, and cedar. Silviculturally, these decadent stands should be removed by clear-cutting methods as soon as possible to make way for new stands of fast-growing second-growth timber.” This policy resulted in another 50-year contract in 1965 to sell timber from a vast area of the Tongass – the entire west side of Admiralty Island, portions of the mainland, and an area in the far northern portion of the forest. The contract was ultimately sold to U.S. Plywood-Champion Papers, Inc., one of the defendants in the following case.

Sierra Club v. Hardin
U.S. District Court
325 F. Supp. 99 (D. Alaska 1971)

PLUMMER, Chief Judge.

This action was brought to enjoin the sale of timber located in the Tongass National Forest and the patent of national forest land for use in the processing of timber harvested pursuant to an agreement between the United States and U. S. Plywood-Champion Papers, Inc. (hereinafter referred to as U.S.P.). . . .

III. Events leading to the institution of this action.

On or about September 20, 1965, defendant W. R. Johnson, Regional Forester for Region 10 of the United States Forest Service, published in a Juneau newspaper of general circulation public notice of sale of an estimated 8,740,000,000 undesignated board feet of North Tongass National Forest timber.²¹ The notice of sale and related sale documents contained a requirement that the successful bidder install a mill within or adjacent to the sale area for the manufacture of pulp which, together with associated, facilities for the manufacture of wood products, should have an annual log requirement of at least 175,000,000 board feet over a fifty year period.

The public sale was held as advertised on December 17, 1965. St. Regis Paper Company was declared the successful bidder . . .

On April 6, 1967, St. Regis Paper Company advised the federal defendants that it would not complete the actions necessary to be granted final award of the contract. Thereafter, on August 17, 1967, the federal defendants made the first of several private offers of the sale contract to U.S.P. . . .

During the period following the execution of the sale agreement, U.S.P. executed a contract with Kanzaki Paper Manufacturing Company, Ltd., of Tokyo, Japan, dated February 18, 1969, which commits U.S.P. to sell, and Kanzaki to buy, all of the output of the pulp mill and sawmill for a period of 15 years from the date of commencement of production. . . .

²¹ The sale is the largest ever conducted by the Forest Service and covers an estimated 1,090,000 acres of land.

On February 10, 1970, plaintiffs brought this action to enjoin all further performance under the timber sale contract and for a declaration that the contract is in violation of law, and therefore null and void. . . .

VII. Exhaustion of remedies.

Plaintiffs admit that they had contemporaneous knowledge of all major actions taken pursuant to the timber sale, including the 1965 sale to St. Regis, the Forest Service decision to offer the contract to U.S.P. and U.S.P.'s acceptance in 1968 and U.S.P.'s selection of the Echo Cove mill site in 1969. The Sierra Club is acquainted with Forest Service protest and administrative review procedures, having previously employed them in cases similar to the one at bar. No satisfactory explanation has been offered for the plaintiffs' failure to file an administrative protest prior to instituting this action on February 10, 1970.

The policies underlying the doctrine of exhaustion of administrative remedies were recently set forth by the Supreme Court in *McKart v. United States*, 395 U.S. 185, 194-195, (1969):

“ . . . The administrative agency is created as a separate entity and invested with certain powers and duties. The courts ordinarily should not interfere with an agency until it has completed its action, or else has clearly exceeded its jurisdiction. As Professor Jaffe puts it, ‘[t]he exhaustion doctrine is, therefore, an expression of executive and administrative autonomy.’ This reason is particularly pertinent where the function of the agency and the particular decision sought to be reviewed involve exercise of discretionary powers granted the agency by Congress, or require application of special expertise.

“ . . . Particularly, judicial review may be hindered by the failure of the litigant to allow the agency to make a factual record, or to exercise its discretion or apply its expertise. In addition, other justifications for requiring exhaustion in cases of this sort have nothing to do with the dangers of interruption of the administrative process. Certain very practical notions of judicial efficiency come into play as well. A complaining party may be successful in vindicating his rights in the administrative process. If he is required to pursue his administrative remedies, the courts may never have to intervene. And notions of administrative autonomy require that the agency be given a chance to discover and correct its own errors. Finally, it is possible that frequent and deliberate flouting of administrative processes could weaken the effectiveness of an agency by encouraging people to ignore its procedures.”

. . . The Ninth Circuit has held that failure to seek an administrative remedy prior to filing an action for judicial review deprives the district court of jurisdiction, presumably on the theory

that the administrative agency had primary jurisdiction.²² *United States v. Hart*, 433 F.2d 950 (9th Cir. 1970); *Hills v. Eisenhart*, 256 F.2d 609, 611 (9th Cir. 1958). The potential for litigious interruption of orderly administrative procedures is certainly greater where plaintiff has not even bothered to obtain an initial determination by the administrative agency.

Plaintiffs contend that where the administrative remedy is clearly inadequate they should not be obliged to exhaust it. Although they had a right to appeal any of the above mentioned Forest Service actions to the Secretary, they argue that such an appeal would be meaningless because the Secretary need not order a hearing, 36 C.F.R. § 211.28 (c) (1970), and in any event discovery would not be available even if a hearing were held. 36 C.F.R. § 211.101 (1970).²³ Plaintiff's argument places too much emphasis upon the first function of the exhaustion doctrine – I. e. articulation of a coherent administrative record as a foundation for judicial review. It ignores the equally important function of preserving the integrity of the administrative process by giving the administrative agency an opportunity to consider objections in the first instance and by giving the Secretary an opportunity to overturn an erroneous decision of his subordinates. In any event, this court is not at liberty to speculate as to probable actions of the Secretary in an appeal that was never taken. . . .

Plaintiffs have completely ignored established administrative procedures which could have obviated the need for review by this court, or which in the alternative could have provided a meaningful record that would have vastly simplified this proceeding. Their claims, with the exception of the cause of action based upon violations of the National Environmental Policy Act of 1969, are accordingly barred. . . .

XI. The Multiple Use-Sustained Yield Act.

The Tongass National Forest constitutes the bulk of the land area of Southeastern Alaska. There are 16,016,000 acres in the Tongass National Forest of which approximately 4,555,000 are commercial forest lands. As of February 6, 1958, only 6/10ths of 1% of these commercial forest

²² The concept of “primary jurisdiction” is closely related to the exhaustion doctrine. The Supreme Court described the doctrine in *Aircraft and Diesel Equipment Corp. v. Hirsch*, 331 U.S. 752, 767 (1947): “The very purpose of providing either an exclusive or an initial and preliminary administrative determination is to secure the administrative judgment either, in the one case, in substitution for judicial decision or, in the other, as foundation for or perchance to make unnecessary later judicial proceedings.”

²³ The Secretary's regulations create three classes of appeals. 36 C.F.R. 211.20 (1970). The first two involve government actions which breach a contract or interfere with existing contractual rights. In these cases appeal to the Board of Forest Appeals is a matter of right and subpart C makes provision for formal hearings. Appeals from all other decisions are classed as “Class Three” appeals which go directly to the Secretary, who must make a written decision based upon the record supplied by the Chief of the Forest Service. 36 C.F.R. §§ 211.27(c), 211.28 (c). 36 C.F.R. § 211.101 exempts Class Three appeals from the safeguards of Subpart C, and the Secretary is under no obligation to hold a public hearing, 36 C.F.R. § 211.28(c), although he may do so in his discretion.

lands were reserved from logging. The Multiple Use Management Guide for the Alaska Region, April 1964, ¶ 213.1 states:

“About 95% of the commercial forest land of Southeastern Alaska is occupied by overmature stands of hemlock, spruce and cedar. Silviculturally, these decadent stands should be removed by clear-cutting methods as soon as possible to make way for new stands of fast growing second growth timber.”

As part of the policy of liquidation of the old-growth forests in Southeastern Alaska, the Juneau Unit Sale was made.

The Multiple Use-Sustained Yield Act, 16 U.S.C. §§ 528-531 (Supp. 1970) provides five basic purposes for which the national forests are to be administered

Plaintiffs introduced substantial testimony as well as documentary evidence, much of it in the form of offers of proof, to show that the Tongass National Forest is being administered predominantly for timber production. While the material undoubtedly shows the overwhelming commitment of the Tongass National Forest to timber harvest objectives in preference to other multiple use values, Congress has given no indication as to the weight to be assigned each value and it must be assumed that the decision as to the proper mix of uses within any particular area is left to the sound discretion and expertise of the Forest Service. Accordingly, evidence was admitted only for the purpose of showing that the Forest Service failed to give consideration²⁴ to any of the competing uses or that it took into consideration irrelevant matters which it should not have considered. Plaintiff’s parade of expert witnesses might have swayed the decision of the Forest Service or influenced the result in this case had it been properly presented at an administrative proceeding. Introduced as non-record evidence in this proceeding, however, it utterly fails to impeach the record provided by the Forest Service by showing that the administrative decision makers either lacked actual knowledge or failed to consider the myriad reports and studies available to them. The court must presume, therefore, that the Forest Service did give due consideration to the various values specified in the Multiple Use-Sustained Yield Act. Having investigated the framework in which the decision was made, the court is forbidden to go further and substitute its decision in a discretionary matter for that of the Secretary. . . .

XIII. The National Environmental Policy Act of 1969.

Plaintiffs challenge the action of the Secretary in approving the Echo Cove mill site on

²⁴ The Act requires that the Forest Service give “due” consideration to the various competing uses. Plaintiffs argue that “due” could only mean “equal.” This interpretation would seem to be precluded by the language of § 531, which clearly contemplates that some areas may be unsuited to utilization of all resources. “Due” is impossible to define and merely indicates that Congress intended the Forest Service to apply their expertise to the problem after consideration of all relevant values. In the absence of a more satisfactory or objective standard the court considered that evidence in the record of “some” consideration was sufficient to satisfy the Act absent a showing that no actual consideration was given to other uses. . . .

the ground that he failed to comply with the mandatory reporting provisions of the National Environmental Policy Act of 1969 (hereinafter referred to as N.E.P.A.). N.E.P.A. requires federal agencies to submit detailed environmental impact statements prior to the initiation of major actions which may have a significant impact on the human environment. . . .

However, it appears under the circumstances the Act was complied with “to the fullest extent possible.” See 42 U.S.C. § 4332. Prior to the enactment of N.E.P.A., U.S.P. had expended substantial sums to insure that the impact of the mill would be minimized by comprehensive site planning and the most advanced technology available. The mill site selection was supervised by a blue-ribbon panel of conservationists selected from universities in the United States and Canada. A specially commissioned field study sponsored by U.S.P. resulted in a seventy page technical report published in November of 1969 by the Institute of Marine Science of the University of Alaska. It seems unlikely that an investigation by federal experts would have been more comprehensive or unbiased.

Considering the impressive credentials of the U.S.P. panel of environmental experts assigned to the project, the high quality of its research product, the advanced stage of planning as of January 1, 1970, and the exorbitant cost of any further delay, the Forest Service was justified in its reliance upon U.S.P.’s environmental studies. Nothing in this opinion should be construed as implying that the procedures followed by the Forest Service in its efforts to comply with N.E.P.A. in this case will be found acceptable in the future under circumstances where it is fair to impute notice of the Act’s provisions to all parties at or before the time a major federal project is conceived.

[Judgment for the defendants.]

Sierra Club v. Butz
U.S. Court of Appeals
3 Env’tl. L. Rptr. 20292 (9th Cir. 1973)

MERRILL, J.

Plaintiffs-appellants have moved this court to remand the cause to the District Court of the District of Alaska to enable the filing of a motion for new trial upon the ground of newly discovered evidence.

The evidence to which reference is made is a report by A. Starker Leopold and Reginald H. Barrett to U.S. Plywood-Champion Papers, Inc., respecting the manner in which the sales contract should be carried out, with due consideration given to social values other than the economic yield of pulp or lumber. It was the view of this team of experts that “the basic precepts on which the original timber sale contract were based are not today acceptable.” It

recommended “that the company explore with the Forest Service the possibility of revising the cutting plan to provide more adequate protection for the wide spectrum of ecologic values that is characteristic of Southeastern Alaska.” Two alternative cutting plans were proposed, and the report recommended renegotiation of the contract to provide for reduced cutting.

The report thus primarily addresses itself to matters of administrative judgment: whether cutting plans should be modified and the contract renegotiated.

In our judgment, however, it may bear as well on one of the issues presented by this case: whether the contract violated the terms of the Multiple Use-Sustained Yield Act. This issue was considered by the District Court in its opinion in this case. The question it discussed was whether the Forest Service had given "due" consideration to the various purposes (other than timber) for which the national forests are to be administered under the Act. The court discussed what should be regarded as “due” consideration under the Act and concluded that what was intended was that the Forest Service should “apply their expertise to the problem after consideration of all relevant values.” It concluded that “some” consideration was sufficient. (For the purposes of this order we accept this interpretation, with the caution that “due consideration” to us requires that the values in question be informedly and rationally taken into balance. The requirement can hardly be satisfied by a showing of knowledge of the consequences and a decision to ignore them.) . . .

In our judgment the report tendered upon this motion may be found to bear upon the stated issues: Whether the Forest Service in truth had knowledge of the ecological consequences of the contract and cutting plan to which it agreed; whether in reaching its decision it failed to consider the available material (the report appends a 10-page list of material cited in the report in existence at the time the contract was entered into); further, a relevant question may be whether consideration was given to alternatives (such as those recommended by the report), which, while giving prime consideration to timber values, would still afford protection to the other values to which due consideration must be given.

We conclude that the motion should be granted. We intimate no view as to the manner of disposition of such motion or the extent to which hearing should be granted. We hold only that what is here at stake is of such import as to call for the consideration of the District Court.

On remand. District Court Judge Plummer did not take any action on the case for a year following the 9th Circuit’s decision. U.S. Plywood-Champion Papers, Inc., then withdrew from its contract with the Forest Service, forfeiting its \$100,000 deposit. The Sierra Club’s lawsuit was subsequently dismissed.

Notes and Questions

1. *Sierra Club v. Hardin* sets forth the current interpretation of the Multiple-Use Sustained-Yield Act of 1960 (MUSY Act). What is the legal force of the statute?

The courts' interpretation of the National Environmental Policy Act of 1969 (NEPA) in the *Hardin* litigation is most definitely not followed today. See Chapter 2, Section D, for a thorough examination of NEPA.

2. ***Agency Appeals Processes.*** As the *Hardin* case suggests, standard administrative law doctrines play a large role in environmental litigation. Most federal agencies have a process for internal appeals of some, if not most, initial agency decisions. These processes, however, differ widely among agencies and even within a single agency.

For example, within the Interior Department, some decisions of the Bureau of the Land Management may be appealed to the Office of Hearings and Appeals which is staffed by administrative law judges. Other BLM decisions may be appealed only “up the chain of command” to higher level agency officials.

The U.S. Forest Service has been embroiled in controversy over its internal appeals processes for most of the last two decades. In the 1980s, the Forest Service limited appeal rights. After the agency proposed to eliminate entirely the right to appeal some project-level decisions, such as timber sales, Congress enacted the Appeals Reform Act of 1992 (16 U.S.C. § 1612 note). This statute for the first time mandated an administrative appeal process for the Forest Service for one category of decisions. But preexisting appeals avenues remained for other decisions, so currently the Forest Service has four separate appeals processes.

The Tongass National Forest
Kathie Durbin, *Sawdust Memories*,
THE AMICUS JOURNAL 21-26 (Fall 1997)

. . . [The 1951 and 1957] contracts turned southeastern Alaska into a vast pulping colony. For four decades, public timber was liquidated at huge tax payer expense to subsidize the [Ketchikan and Sitka] mills, which in turn provided jobs to several hundred millworkers, loggers, and Forest Service employees in southeastern Alaska.

In the 1970s, a few Alaska conservationists and commercial fishermen, alarmed by the march of clearcuts across their islands, began trying to limit the damage. Local groups banded together as the Southeast Alaska Conservation Council. They tried to attract the notice of the national conservation groups and the American public. But not until the late 1980s, after congressional investigators uncovered rampant waste and abuse in the Forest Service's

administration of the pulp contracts, did the fate of the Tongass truly catch the attention of the nation.

The waste was largely the result of language that had been added to the 1980 Alaska National Interest Land and Conservation Act. This landmark law protected 100 million acres of Alaska as wilderness, parks, wildlife refuges and national monuments, and the Alaska congressional delegates had vehemently opposed it. As their consolation prize, Congress threw in a directive to the Forest Service to supply the timber industry in Alaska with 4.5 billion board feet of timber over the next ten years.) For comparison, credible current estimates peg the “sustainable” yield of the Tongass at 75 to 150 million board feet annually.) It also created a fund of at least \$40 million annually to help the agency put up timber sales on the Tongass, and it exempted this money from the review that would normally take place when future Congresses appropriated the funds every year.

An orgy of spending ensued as the Forest Service rushed to punch roads into wilderness and auction timber for which there was no market. In 1988 the U.S. General Accounting Office (GAO) revealed that the agency had spent \$247 million between 1981 and 1986 preparing timber sales on the Tongass – and that half of these sales had gone begging. That year the Forest Service spent \$58 million to put up Tongass timber, but took in only \$3.3 million in receipts. The GAO report also revealed that the Forest Service, awash in money, had built numerous “roads to nowhere” and had constructed elaborate facilities, including a \$6.4 million complex that featured an employee ball field turfed with sod barged in from Seattle. And in May of 1989, when the *New York Times* reported in a front-page story that the Forest Service was selling massive Sitka spruce trees from the Tongass for about \$2 a tree, public outrage was instantaneous.

In 1990 Congress passed the Tongass Timber Reform Act, which eliminated the mandatory timber sale targets and did away with the \$40 million annual subsidy. It was a significant victory for environmentalists. But the long-term contracts survived, the clearcutting continued, and by 1992 biologists had begun sounding the alarm over the gradual loss of productive habitat for key forest species such as the Queen Charlotte goshawk, the Alexander Archipelago wolf, and the Sitka black-tailed deer. At about the same time, the pulp mills faced a series of new challenges, including the high cost of bringing their outdated plants into compliance with environmental laws and intense competition in the global pulp market.

Alaska Pulp Corporation’s mill in Sitka closed in 1994, a victim of poor market conditions, changing public attitudes, bitter relations with its workforce, and repeated violations of state and federal environmental laws. The Alaska Rainforest Campaign, a coalition of national and local environmental groups, hastened the closure through litigation against and pressure on the Clinton Administration.²⁵

²⁵ In 1994, the U.S. government cancelled the remaining 17 years on the contract, claiming the Alaska Pulp was in breach. – Ed.

By the summer of 1996 the world pulp market was in free-fall, and the imminent closure of the Ketchikan mill was widely rumored. In the end, the sprawling, belching dinosaur, completed in 1954, succumbed to the same forces that had doomed the Sitka mill, and to the consequences of its own mismanagement. Louisiana Pacific Corporation, Ketchikan Pulp's parent company, had failed to invest in urgently needed mill maintenance and had delayed installing required pollution control equipment. Instead, the company had gambled that the Alaska congressional delegation would come to its rescue by winning a fifteen-year contract extension, which would allow the mill to hold on to its subsidies and its preferential access to Tongass timber through the year 2019. Only with that guaranteed supply of cheap timber, said Louisiana Pacific Chief Executive Officer Mark Suwyn, could the company afford to invest millions in repairs and retooling. This time, however, the company lost the gamble. The Clinton Administration stood firm against intense pressure from the Alaska delegation. There was to be no contract extension.

Last October, Suwyn announced that Louisiana Pacific would close the Ketchikan mill [in 1997]. In February, the company and the Justice Department reached agreement over legal issues stemming from changes to the fifty-year contract. The settlement gave Louisiana Pacific \$140 million and permission to log 300 million board feet of timber it had previously contracted to buy – enough to keep its two Ketchikan sawmills operating for three more years. After that, if the company wants to stay in Alaska, it will have to bid for timber at auction and pay market value for logs – like any other federal purchaser. The settlement also affirmed the company's responsibility to clean up the heavily polluted mill site.

Some people have criticized the settlement as yet another huge taxpayer subsidy for Ketchikan Pulp. But Representative George Miller (D-CA), a longtime friend of timber reform for the Tongass, called it a bargain for taxpayers. "If you look at how much it cost to maintain the longterm contract," he said, "the settlement pays off in very short order." . . .

Even to those familiar with clearcuts, the logging here looks brutal. Clearcuts extend from ridgetop to streambank to the edges of the muskeg. Roads cut deep into mountainsides and carve river valleys that once held magical kingdoms of plants and animals. Here and there remnants of the old-growth rainforest, shaggy-limbed and wind-battered, weave an uneven canopy. Along the steams, in narrow bands, feathery plum-brown willows are budding. . . . [On] land held by Alaska Natives, . . . the heaviest of the logging, unencumbered by federal restrictions, has occurred.

Prince of Wales Island, or POW . . . is southeastern Alaska's sacrifice zone. For forty-three years, timber from the Tongass National Forest lands on POW went to feed Ketchikan Pulp. And since 1980, millions of unprocessed logs from Alaska Native lands here have been exported to Japan. . . . [It is] . . . a massive logging operation that will reap 220 million board feet of timber from 300,000 acres by the end of 1997. . . . [T]he clearcuts are smaller on federal land than on Native land. . . .

At Labouchere Bay on the northwest coast, . . . [t]he Forest Service plans a huge new logging project here; it was conceived before Ketchikan Pulp closed down but is still in the

works, although it is no longer clear where the timber will go.

The heavy clearcutting on POW has fragmented entire watersheds, with obvious impacts on fish and wildlife habitat. Only recently, however, has it become clear that the damage extends even beneath the ground. Northern Prince of Wales island is a region of karst – limestone topography riddled with sinkholes, underground streams, and world-class caves that contain strange and beautiful formations. Recreational cavers discovered the caves in the late 1980s and brought them to the attention of the Forest Service, which belatedly developed a cave management plan for the area.

Karst and clearcuts are not compatible. When trees growing on karst are cut, loosened soil can sift through cracks in the earth's surface and cover rare cave formations. Two-thirds of the Forest growing on the karst of central POW has been clearcut, and no one knows how many caves were damaged before the cave plan was implemented, how many artifacts lost forever. A marmot tooth 44,500 years old was found in one cave; last year a cave in the vicinity of Labouchere Bay yielded a bone from a 9,800-year-old man. . . .

The massive timber sale planned for nearby Labouchere Bay would carve up the already fragmented forest with an additional 30 miles of logging roads. . . .

Residents of Point Baker fear that logging on the scale the Forest Service has planned for northern Prince of Wales Island will make game even more scarce than it already is. . . . And the families that live here and depend on the deer have already seen their food supply dwindle. . . .

The closing of the Ketchikan mill leaves a huge hole in the market for Tongass timber. Yet even as the mill prepared to shut down, Tongass forest managers were busily laying out huge new timber sale projects that will send logging roads and clearcuts into untouched watersheds. "This is their perfect opportunity to change, but they don't want to change," said Becky Knight, a commercial fisher and forest activist in Petersburg, Alaska.

The long-awaited much-delayed Tongass Land Management Plan should be the perfect vehicle for ushering in a new era of sustainable forestry in southeastern Alaska. But the plan, released by the Forest Service in May [1997], calls for a maximum annual timber sale quantity of 267 million board feet – double the volume sold last year, and far more than had been sold in any recent year.

To its credit, the Forest Service did revise its original draft to set aside additional habitat for wolves, deer, and other wildlife in the new plan, though only because it was backed into a corner by its own scientists and by litigation-minded environmentalists. The plan now includes 1.1 million acres of new habitat conservation areas. Yet it also calls for clearcutting 670,000 acres of highly productive forest over the next century. . . .

Critics such as Andy Stahl, executive director of the watchdog group Forest Service Employees for Environmental Ethics, say the Tongass managers don't know what to do with themselves if they're not plowing roads and clearcuts into virgin rainforest. In a letter to the

Clinton Administration, Stahl said, “The Forest Service desperately subscribes to the ‘Field of Dreams’ model of timber supply: If we offer it, they will buy it.”

Forest Service Chief Michael Dombeck counters that 267 million board feet is not a target. “We won’t be selling timber beyond the demand,” he insisted. “The allowable sale quantity is based on watershed, ecological, and other kinds of measures that work within the limits of the land. But if the demand isn’t there, no one will buy it. The demand is the cap.” Once road systems penetrate these unprotected wildernesses, however, the damage is done.

Notes and Questions

1. ***Continuing Controversy Over the Tongass.*** In the preceding selection from *Sawdust Memories*, Kathie Durbin observes that the Forest Service's "long-awaited much-delayed" 1997 Tongass Land Management Plan should be "the perfect vehicle" to bring sustainable forestry to southeastern Alaska. That was not to be, at least not soon: the planning process that was started in 1987 did not result in a final Forest Plan until 2008.

Under the National Forest Management Act of 1976 (NMFA), the Secretary of Agriculture is required to "develop, maintain, and, as appropriate, revise land and resource management plans" for each unit of the National Forest System. 16 U.S.C. § 1604(a). In 1979, the Tongass National Forest was the first such unit to complete a forest plan under NFMA. As required by the act's implementing regulations at that time, the U.S. Forest Service completed a five-year review of the plan in 1984, which led to an amendment of the Forest Plan that was completed in 1986. The agency began work to revise the Forest Plan in 1987. The Tongass Timber Reform Act – mentioned in Kathie Durbin's article – became law in November 1990, which resulted in a second amendment to the plan in 1991.

The Revised Land and Resources Management Plan for the forest was approved in 1997. However, thirty-three parties, including several environmental organizations, appealed the plan within the agency. In 1999, the Under Secretary of Agriculture affirmed the 1997 plan, but also issued a Record of Decision (ROD) that modified the Tongass plan in some respects. (A ROD is a legally-required document that explains in detail the basis for and rationale of an agency's decision.)

The 1997 and 1999 RODs were challenged in two lawsuits filed in the U.S. District Court of Alaska, one by the Alaska Forest Association, a timber industry group, the other by the Sierra Club and other environmental organizations. The latter claimed that wilderness was not properly considered in the 1997 Environmental Impact Statement (EIS) supporting the forest plan. The Forest Service began another EIS process which in 2003 resulted in a recommendation that no new wilderness be designated in the Tongas National Forest.

In 2003 and 2004, the Natural Resources Defense Council filed three lawsuits challenging the Tongass Forest Plan and eight individual timber sales. The cases were consolidated and eventually led to a decision by the Ninth Circuit Court of Appeals in *Natural Resources Defense Council v. U.S. Forest Service*, 421 F.3d 797 (9th Cir. 2005). The court found that the agency had erroneously nearly doubled the market demand for timber from the Tongass projected by Forest Service economists, and that this error influenced the decision to adopt the 1997 plan.

In response to the court's decision, the U.S. Forest Service produced a Forest Plan Amendment and associated EIS, both of which were approved in January 2008.

4. The Modern Federal Land Systems

Today, much of the original public domain remains in U.S. government ownership; it now constitutes 25 percent of the land area of the United States. The government has acquired other land through purchase, condemnation, and exchange, so that now just under 28 percent of the country consists of federal lands. These lands are distributed unevenly throughout the country; most are located in the twelve Western states. For example, 48 percent of Wyoming (30 million acres), 65 percent of Alaska (237 million acres), 64 percent of Utah (34 million acres), and 83 percent of Nevada (58 million acres) are federally owned. Many mid-western and southern states have between 3 and 5 percent federal lands; some eastern states have less than one percent.²⁶

The history traced in this chapter shows that most all of this land was placed under the jurisdiction of one of three federal agencies and as a result became part of one of the federal lands systems. Numerous subcategories exist, however, so the details of land classification can be confusing. For instance, within the National Park System there are National Battlefields, National Battlefield Parks, National Military Parks, National Memorials, National Historic Sites, National Monuments, National Seashores, National Lakeshores, and National Recreation Areas.

The four modern federal land systems are briefly described below, ordered according to size; most of the land in all four systems is located in Alaska.

The BLM Public Lands. When the BLM was created in 1946 over 2000 unrelated and often conflicting laws applied to land within its jurisdiction. Many of these statutes have since been repealed, although the public land laws are still a jumble. In 1976, the Federal Land Policy and Management Act finally gave the BLM a unified legislative mandate. 43 U.S.C. §§ 1701 - 1784. The statute provides that the BLM public lands are to be managed according to multiple-

²⁶ BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR, PUBLIC LANDS STATISTICS, 2006, Table 1-3 (as of 1999).

use principles, as are the national forests. In recent years, however, some BLM lands have been dedicated to various conservation purposes and therefore are dominant use lands.

The Bureau of Land Management has jurisdiction over 262 million acres, or about one-eighth of the land area of the U.S.; of this, 86 million acres are located in Alaska. The agency also manages the subsurface mineral estate in 380 million acres of land under the jurisdiction of the U.S. Forest Service, the U.S. Fish and Wildlife Service, the National Park Service, and the Defense Department. (As a part of its trust responsibilities for Indian tribes, the BLM oversees mineral operations on an additional 56 million acres.)

The National Forest System. Today the national forests comprise approximately 192 million acres. Since the creation of the original forest reserves, there have been a number of adjustments to the lands under Forest Service jurisdiction. Some forest reservations were returned to the public domain, other national forest lands were transferred to the Department of the Interior, and in the early twentieth century land was purchased from private owners. The Weeks Act authorized the Forest Service to purchase several million acres of agriculturally marginal or abandoned land east of the Mississippi between 1912 and World War II. During the Great Depression, the agency purchased land from bankrupt farmers which became the National Grasslands.

In addition to the Organic Act of 1897 and the Multiple-Use Sustained-Yield Act of 1960, this federal land system is today governed by the National Forest Management Act of 1976.²⁷ 16 U.S.C. §§ 1600 - 1614. The NFMA requires that land and resource management plans be developed for each unit of the system and imposes substantive limitations on timber production. The act is examined in Chapter 7, Sections A, B and C.

The National Wildlife Refuge System. The first refuge was created in 1903 when President Theodore Roosevelt reserved Pelican Island in Florida to protect herons and egrets from over-hunting. During the next several decades, other presidents and the Congress established scores of refuges, many as “inviolable sanctuaries” where wildlife could not be hunted or otherwise disturbed. Refuges have been established for a variety of purposes, in some instances to protect a single species, in others to protect particular groups of animals, and sometimes for very general purposes. Many refuges were created to conserve migratory waterfowl, and in the mid-1900s a significant number of refuges were opened to hunting.

The National Wildlife Refuge System Administration Act of 1966 was enacted to create a system from the rather haphazard network of refuges by consolidating them under the jurisdiction of the Interior Department’s U.S. Fish and Wildlife Service. The statute permitted any uses of refuge lands that were “compatible” with the purposes of individual refuges. Under the 1966 statute, many refuges suffered from uses that were harmful to wildlife, such as farming, livestock grazing, recreational activities, and in some instances even oil and gas production and military training exercises. See Richard J. Fink [now Finkmoore], *The National Wildlife*

²⁷ The forest reserves provision of the General Revision Act of 1891 was repealed in 1976.

Refuges: Theory, Practice and Prospect, 18 HARVARD J. ENVTL. L. 1 (1994). Environmentalists and others urged that the refuges be given greater protection from such abuses and that conservation of the nation's wildlife be declared the first priority of the refuge system. At the same time, some hunting groups sought greater access to more refuges.

Congress responded in 1997 by passing the National Wildlife Refuge System Improvement Act, which significantly amended the 1996 act. 16 U.S.C. §§ 668dd - 668ee. The new statute sets forth for the first time one mission for all refuges: "to administer a national network of lands for the conservation, management, and . . . restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of future generations." The act also establishes a hierarchy of uses allowed on refuges; the dominant use is wildlife conservation and the priority public uses are recreational, such as hunting, fishing, wildlife observation, and environmental education. Uses that are "compatible" with wildlife conservation are still permitted on refuges, but the act specifies standards and procedures intended to prevent uses that are harmful to wildlife. Finally, the 1997 legislation requires the Secretary of the Interior to prepare comprehensive conservation plans for all refuges through a process that ensures public participation. See ROBERT L. FISCHMAN, *THE NATIONAL WILDLIFE REFUGES: COORDINATING A CONSERVATION SYSTEM THROUGH LAW* (2003).

Today, the NWRS comprises over 95 million acres, of which 75 million acres are located in Alaska. The system consists of 538 national wildlife refuges, located in all 50 states, and over 3000 small waterfowl nesting and breeding areas.

The National Park System. This system comprises over 83 million acres, including about 53 million acres in Alaska. Currently, the National Park Service in the Department of the Interior administers fifty-nine National Parks and, as noted above, scores of other sites having various designations.

Units of the park system are generally considered dominant use lands, managed primarily for preservation and recreation, sometimes including very intensive recreation. The principal statute guiding the national parks, the National Park Service Organic Act of 1916, provides for their "enjoyment . . . in such manner and by such means as will leave them unimpaired for future generations." 16 U.S.C. § 1. Many parks and other areas within the system were created by other Congressional acts or executive orders and, as a result, have individualized authorizations.

The Public Lands Today

RICHARD N.L. ANDREWS, *MANAGING THE ENVIRONMENT, MANAGING OURSELVES: A HISTORY OF AMERICAN ENVIRONMENTAL POLICY* ix (1999)

. . . [T]oday, the two-century legacy of policies promoting the extraction and use of environmental resources for economic gain is a dominant force in American environmental policy. The logging and pulp and paper industries, the mining industry, and others still obtain much of their raw materials from the public lands. The aluminum industry obtains much of its

energy, and California's huge farms their water, at cheap rates from federally financed dams. Ski resorts and other recreational businesses make their profits on inexpensively leased public lands, oil companies extract petroleum at low royalties from the public lands of Alaska and the outer continental shelf, and western cattle and sheep businesses graze their animals at costs far below those of their eastern competitors, who must pay for and maintain their own land. If this is the "rugged individualism" of free-market capitalism, it could just as accurately be described as individualism by government subsidy, socialism with a capitalist face. In reality the United States has always had an intricately mixed rather than a pure market economy, in which government policies promoting the extraction of marketable commodities from the environment have played a central role.

Many of the important issues of current American environmental policy arise from the continuing legacy of the public lands. In the Pacific Northwest, continued logging of public lands threatens to destroy the last 10 percent of the remaining old-growth forests, and with them fisheries, wildlife habitat, endangered species such as the northern spotted owl, and their ecosystems. Mining policies, largely unchanged since the 1870s, allow business to extract valuable minerals from public lands for a small fraction of their market values, and leave the resulting environmental damage for the taxpayers to clean up. Throughout the millions of acres of public lands, conflicts among uses and users dominate the agenda of American environmental policy: logging and mining companies versus tourists, ranchers versus wildlife lovers, motorcycle racers versus soil conservationists, resort developers and motorized visitors versus hikers and fisherman, and simply the congestion of *too many* users seeking to enjoy the most popular national parks and recreation areas. . . .

The presence of the public lands therefore has been a central and distinctive element in the history of American environmental policy. . . .

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