Chapter Seventeen

Landscapes of Abundance and Scarcity

WILLIAM CRONON

Just after midnight on 24 March 1989, the Exxon Valdez ran aground on Bligh Reef in Alaska’s Prince William Sound. Its captain, his judgment clouded by alcohol, had maneuvered the supertanker out of ordinary shipping lanes in an effort to avoid icebergs floating south from the great Columbia Glacier. Accelerating into a mile-wide gap between the ice and the reef, and apparently forgetting that the ship (itself nearly one-fifth of a mile long) required over half a mile to turn, he had already left the bridge when the tanker shuddered to a halt, its hull ripped open as if by an enormous can-opener. So began the worst oil spill in American history.

Over the next two weeks, eleven million barrels of oil flooded into the sound while crews desperately worked to pump the tanker dry. If they had failed in this task, or if the ship had sunk before they completed their work, an additional forty-two million barrels might have spilled into the sea. As it was, the oil formed an enormous slick on the surface of the frigid waters and began to come ashore on islands and beaches in many parts of Prince William Sound. Ultimately, it would drift hundreds of miles to the southwest, traveling the same distance that separates Cape Cod and Cape Hatteras on the Atlantic seaboard. It would coat over twelve hundred miles of shoreline with a black, evil-smelling slime and kill hundreds of thousands of marine birds and mammals, in addition to countless fish and shellfish.

Responses to the catastrophe often seemed frustratingly incompetent. The contingency plans that oil corporations and government agencies had claimed would handle such an event proved grossly inadequate. What was worse, precious time was wasted in the hours immediately after the ship ran aground—the weather stayed calm and the oil dispersed little for almost three days—as officials worried about the legal and political liabilities they might incur by moving too aggressively and thereby perhaps acknowledging their responsibility for the spill. Those who acted first were the owners of small fishing vessels; they instantly realized that the oil threatened their very livelihoods, but they had none of the special equipment or training needed to handle the challenge. Only after the dimensions of the disaster had become clear and public outcry was beginning to swell nationwide were full-scale relief efforts finally mounted. In the end, over ten thousand workers labored for months to clean beaches, save animals, and wash rocky coastlines with heated seawater. Ironically, some of their efforts probably did more harm

The wreck of the Exxon Valdez on 24 March 1989, which sent 11 million barrels of oil into Prince William Sound, dramatically illustrated the environmental costs of the West’s extractive industries and underscored the fragility of the great wilderness landscapes of Alaska.

than good by disrupting fragile ecosystems even further. The final cost of the cleanup would be measured in the hundreds of millions of dollars, and Exxon’s legal liability would be more than one billion dollars. Many experts believed that coastal and marine ecosystems would need decades to recover.

The Exxon Valdez story is dramatic enough in its own right, but it can also stand as a symbol for much broader processes that have characterized the environmental history of the West as a whole. The oil spill in Prince William Sound came just three decades after Alaska entered the union as America’s forty-ninth state, and the calamity marked a turning point in Alaskan history. Before statehood, much of Alaska had been terra incognita, a vast expanse of land known mainly to its native inhabitants and only lightly touched by development. Like earlier Wests, its very obscurity tempted those who hoped to make a quick fortune from the untapped wealth of nature. Alaska held out the promise of great natural abundance, whether in the goldfields that brought tens of thousands to the Klondike in the 1890s, in the fisheries that annually produced millions of cases of canned salmon in the early decades of the new century, or in the oil fields that were first discovered near Cook Inlet just as Alaska became a state. During World War II, Anchorage emerged as a classic western booms-town; exploding in population as the federal government poured immense sums of money into its military bases and as would-be entrepreneurs began to speculate about the economic potential of its vast hinterland.

Then came the discovery of petroleum at Prudhoe Bay in 1968, and the entire state boomed in an orgy of real and anticipated oil revenues. Along the way, Alaskan natives negotiated the largest (albeit still problematic) land deal in American history, environmentalists mounted a losing but innovative legal battle against the pipeline that would carry North Slope oil to market, and Americans suddenly awoke to the fact that their northernmost state was rich not just in oil but also in wilderness. And so the development of the young state went hand in hand with its undevelopment; in 1979, President Jimmy Carter would set aside well over one hundred million acres of national parks, forests, and wildlife refuges in Alaska to make sure that its natural legacy would not be lost as oil lands were tapped. Only in this context can one see that the Exxon Valdez represented more than just an economic or ecological calamity; it also threatened the much less tangible spiritual values that America’s “last great wilderness” had come to represent.

In the minds of many Americans, Alaska in the twentieth century moved from being a frontier of nearly unlimited natural abundance and exuberant economic promise to being a region that was both fragile ecologically and vulnerable economically. The same might be said of the West as a whole. America’s many “Wests” have all begun as frontiers of real or perceived abundance whose regional identities have eventually been shaped by the experience of emerging scarcity. Alaska’s identity flowed as much from the failure of the Klondike as from the initial golden dream, as much from the collapse of the canneries as from the early flood tide of salmon, as much from the wreck of Exxon’s supertanker as from the extraordinary boom years that followed the discoveries at Prudhoe Bay. In much the same way, most western communities were born in the promise of plenty but did not come into their own until westerners had tested the limits of that promise to forge a new way of life on the land.

In tracing the environmental history of the western landscape, one must carefully distinguish a number of competing narrative trajectories. The story of frontier migration
leads eventually to the story of emerging western regions, each with its particular cultural adaptations to the local environment. It is a long tale of people moving to frontier areas, seizing abundance, encountering scarcity, and remaking the land and themselves in the process. The result is the West as we know it today: not one single region but many smaller regions with distinctive environments and cultures. The Great Plains, Texas, the Rocky Mountains, the Colorado Plateau, the Basin and Range, the Desert Southwest, California, the Pacific Northwest, Alaska, and the Hawaiian Islands: each is a region in its own right, with its own smaller subregions like California’s Sierra Nevada, Central Valley, Coast Ranges, and the sprawling urban worlds of the Los Angeles Basin and San Francisco Bay. A full environmental history of the West would have to explore the special cultural and ecological landscapes of all these places.

Set against this narrative are stories about institutional forces that have undermined regional diversity and autonomy over the course of western history. Cities and hinterlands have become linked by common markets and have grown to be more like one another. Energy resources like oil and electricity have enabled westerners to ignore the scarcities of their local environments in order to build communities of apparent abundance even in the midst of former deserts. The managerial hierarchies of the modern corporation have brought their own brands of homogeneity to the West, as have the bureaucracies of federal, state, and local governments. These narratives are all about regional (and national) homogeneity, the ability of people to use their technologies and institutions to remake the lands around them so that deserts and forests, mountains and valleys, eventually come to share common cultural forms.

These different stories are all entangled, of course, as the Exxon Valdez itself demonstrates. The setting for its special drama was one of the most beautiful and challenging environments of the modern West, a landscape that requires all who live there to change their habits and assumptions to meet the expectations of the land. The ship cargo was profoundly tied to the resource economy that sustains not just Alaska but also the places for which that oil was originally destined. The owners and managers of the ship, even its troubled captain, perfectly represented the corporate institutions that called the ship into being. The legal context of the oil spill, and the political responses it evoked, embody a long tradition of government involvement with interstate commerce, environmental regulation, and western lands. And its effects on the Alaskan “wilderness” lie at the very heart of recent controversies about the future of the western environment. In the long dialectic between scarcity and abundance that has shaped the landscapes of the American West, the ship on Bligh Reef embodies most major themes of the region’s environmental history.

Fearing the End of Abundance

An environmental history of the modern West can begin, predictably enough, with the 1890 census pronouncement that Frederick Jackson Turner made famous in his 1893 essay “The Significance of the Frontier in American History.” By declaring that “free land” could no longer be the wellspring from which the nation drew its democratic promise, Turner articulated what many Americans were already beginning to fear. America’s frontier era was drawing to a close. Ideologues like Frederic Remington and Theodore Roosevelt joined Turner in worrying that the loss of the frontier would sap
the nation's virility, exacerbate its class tensions, and undermine the dominance of its white races. Democracy itself might be threatened as a result.

Such fears eventually proved to be mistaken or groundless, but they rested on an even deeper anxiety that has had more lasting consequences. As the historian David Potter has noted, Turner and his compatriots, in declaring that the frontier was coming to an end, were expressing a more general concern that American abundance was giving way to scarcity. Their fears that good farmland would no longer be so easily available for would-be homesteaders suggested that other resources might also disappear from the American landscape. The forests that put roofs over American heads might vanish. The rivers that brought water to American cities might run dry. The coal mines that fueled American factories and heated American homes might give out. If these things happened, the nation's prosperity would surely erode and, with it, the political and personal freedoms that depended on prosperity for their survival. To escape such a fate, Americans must take serious steps to preserve the natural abundance that from the start had been the foundation of their nation's greatness.

Fears about resource exhaustion became increasingly common during the second half of the nineteenth century. In 1864, George Perkins Marsh published *Man and Nature*, a sprawling survey of the role that forests and other resources had played in the rise and fall of civilization. In it, he argued that Greece, Rome, and other Mediterranean civilizations had grown to greatness on the products of the forest and had collapsed when deforestation led to fuel scarcity, soil erosion, and desertification. In particular, he believed that forests at the heads of large watersheds were critical to maintaining the flow of water in navigable rivers: without their regulating effect on runoff, floods and droughts would become more common. Casting his eye on the heavily lumbered forests of his beloved northern New England, he warned that the United States was following the same path as Rome and would reach the same tragic destination if its citizens did not curb their reckless destruction of the woodlands.

In the decades that followed, Marsh's plea would be echoed by growing numbers of scientists, politicians, and corporate leaders. In 1876, an obscure rider to a congressional appropriations bill called on the Department of Agriculture to survey the nation's timber resources to determine "the probable supply for future wants" and "the means best adapted for their preservation and renewal." The result was Franklin B. Hough's *Report upon Forestry*, published in 1878, which looked to Marsh's book for its inspiration. Following Hough's lead, the 1880 census included a massive volume, authored by Charles Sprague Sargent of Harvard, surveying the forestlands of the United States. Although its statistics were roundly attacked by the lumber press, they confirmed Marsh's warnings that deforestation was occurring in many parts of the United States. Partly in response, Congress in 1886 formally recognized the Division of Forestry in the Department of Agriculture, where the German-born forester Bernhard Eduard Fernow began to conduct systematic investigations of the nation's timber resources.

Concerns about resource exhaustion and environmental degradation were not limited to woodlands. In 1878, John Wesley Powell offered to Congress his prescient *Report on the Lands of the Arid Region of the United States*. In it, he argued that the original land survey and homestead laws were radically inappropriate west of the Mississippi
River and would lead to environmental degradation unless significantly modified. Arid land settlement, Powell said, would require either small irrigated farms or large ranches, neither of which could be successfully conducted in the 160-acre units that the Homestead Act mandated. Taking a lesson from Mormon settlements in Utah, Powell urged Congress to revise existing land laws to make western settlement a more collective and regulated process. His views were supported by a report of the Public Land Commission that same year, but Congress failed to act on either set of recommendations. Powell's report joined Marsh's book as a classic of nineteenth-century conservation thought, but half a century would pass before its viewpoint would be fully embodied in government land policy in the West.

Ironically, one of the most important early responses to fears about deforestation came not in the West but in upstate New York—which would in fact become a model for subsequent conservation efforts in the West. In 1883, the New York legislature forbade any new sales on three-quarters of a million acres of public woodland in the Adirondack Mountains. Two years later, all state lands in the Adirondacks were declared to be a "forest preserve," and in 1894 their protected status was written into the state constitution. Henceforth, New York declared, the Adirondacks should remain "forever wild." In making this decision, the legislature was responding to the appeals of wealthy hunters and tourists who had flocked to the mountains in the years following the Civil War, but it was also responding to Marsh's prophecies. Among the most effective arguments on behalf of the Adirondack forest preserve were Marshian claims that deforestation in the mountains would endanger the water supplies of New York City and the Erie Canal by promoting irregular seasonal runoff and altering regional climate patterns. New York might then go the way of Rome: floods and droughts, it was said, would ravage the state's economy if its citizens failed to look after their timbered watersheds.

Despite New York's pioneering role, concerns about deforestation—about the transformation of wooded abundance into treeless scarcity—would have their greatest effect in the American West. Responding to the same public pressures that had created the Adirondack forest preserve, the U.S. Congress in 1891 passed a new statute revising many of the nation's existing land laws. Section 24 of that act, added almost as an afterthought, authorized the president to withdraw from settlement any tract of public land "wholly or in part covered with timber or undergrowth, whether of commercial value or not, as public reservations." As in the case of the Adirondacks, the apparent intent was to protect the heads of navigable rivers, particularly those that flowed past major urban centers, from the disruptions that Marsh had predicted might follow deforestation. Over the next two years, President Benjamin Harrison responded by setting aside fifteen separate reserves totaling over thirteen million acres, all in the trans-Mississippi West. Several contained precious little woodland but were requested by towns and cities whose residents feared their water supplies were threatened by overgrazing.

The 1891 Forest Reserves Act marked a turning point in federal involvement with the American West. Henceforth, there would be a steady reduction in public lands that were still available for private sale and settlement and a corresponding increase in public
lands that were permanently reserved for government use. Moreover, the act laid the foundation for an entirely new federal relationship with the American environment. No one at the time had any way of knowing that Section 24 would have these consequences, and in fact it passed with little debate or public comment. But as the number of forest reserves grew, they posed a new problem for the government. Formerly, the chief task of government bureaucrats relative to the public domain had been to sell off land to yield large cash flows for the U.S. Treasury (which still had no income tax as a source of revenue) and for the rapid development of frontier areas in the American West. Now they faced an altogether different task: to oversee the proper use of land that would never pass into private hands and to make sure that government-owned resources were properly managed for the public good. This transition from public land disposal to public land management marked the real start of federal conservation efforts in the West and would become a dominant theme of the region’s environmental history for at least the next half century.

Over the next fifteen years, these implications of the 1891 act became abundantly clear to all Americans. The revolution in federal land policy was spearheaded by an elite cadre of professional bureaucrats that Theodore Roosevelt appointed to key posts in his administration. Among these, the most prominent and influential was Gifford Pinchot. Born into a wealthy New York family, Pinchot had been educated to a life of privilege at elite eastern schools, preparing himself for the unlikely career his father had helped him choose: forestry. In 1896, he served on the National Forest Commission of the National Academy of Sciences, which issued recommendations about how best to manage the new western forest reserves. The result was the Forest Management Act of 1897, which would serve for the next sixty years as the fundamental law governing forest policy in the United States. Partly as a result of his experience with the commission, the next year Pinchot succeeded Fernow as chief of the Department of Agriculture’s Division of Forestry, thus gaining the platform from which he would launch one of the most ambitious and successful careers in American conservation history.

The Division of Forestry initially seemed a rather unlikely place from which to direct a revolution. It had only eleven employees when Pinchot took office in 1898 and a budget of just $28,520. Worse, since the new reserves were all located in the Department of Interior, the division was without forests to manage. For these reasons, Pinchot’s immediate goal was to expand the size of his operation and ultimately wrest control of the reserves from the Interior Department. Within three years, his budget had increased fivefold and his staff more than fifteenfold. By 1902, 179 people were working for Pinchot, many of them young men serving apprenticeships as part of their forestry education.

This remarkable expansion was the indirect product of a tragedy that changed the course of history: on 6 September 1901, an assassin’s bullet killed William McKinley just half a year into his second term of office. His death catapulted Theodore Roosevelt into the presidency. Roosevelt had already revealed his fascination for America’s frontier past and feared that the “closing frontier” might endanger the nation’s democratic heritage. Now he was in a position to protect what he saw as the frontier legacy by conserving America’s natural resources and by preserving the remnants of a vanishing
Theodore Roosevelt and John Muir, both passionate outdoor men, represented different approaches to land management. Roosevelt believed in the efficient use of forest lands—for both commerce and recreation—through careful government management. Muir, who at first supported such federal control, later repudiated the government's utilitarian aims and turned his attention to promoting the spiritual value of the wilderness.


wilderness landscape where one could recover the “vigorous manhood” that the “rough riders” of an earlier day had enjoyed as their birthright. Pinchot immediately gravitated toward Roosevelt, and the two men found much in common with each other. Pinchot soon emerged as the master conservation strategist of the Roosevelt White House, wielding great influence in Washington despite his unexalted bureaucratic position.

The most striking proof of Pinchot’s influence came in 1905, when Roosevelt transferred sixty-three million acres of forest reserves—the great majority of them in the West—from the Interior Department to the Agriculture Department and placed them under Pinchot’s control as the head of the renamed U.S. Forest Service. But the more important innovation had less to do with who controlled those acres than with how they were managed. More than any other agency, the Forest Service epitomized Progressive Era conservation. Pinchot and his followers committed themselves to promoting professional management, believing that only those with scientific expertise should decide how best to use forest resources. A hunger for quick profits might tempt corporations and private landowners to cut the forest more rapidly than it could
replenish itself. Politicians might be wooed too easily by local constituencies eager for rapid development no matter what its cost. Only a scientific forester—so the argument ran—could know enough and be disinterested enough to look after the long-term interests of people and forests alike.

To produce this new style of government manager, Pinchot relied on the new schools of forestry—all more or less inspired by German traditions—that were appearing at Cornell, Ann Arbor, Biltmore, and Yale (the latter financed by a gift from Pinchot’s father). Young men—and they were all young men in the early years—who hoped to become foresters got their training from these schools and then made their way into the Forest Service to be inculcated with the values it represented. Energized by an elite esprit de corps and a vision of disinterested public service, the young foresters fanned out across the western landscape with a goal of managing public forests so that frontier abundance could be saved from scarcity and could last forever.

Like other progressives, Pinchot, Roosevelt, and their followers strongly believed in what the historian Samuel P. Hays has called “the gospel of efficiency.” For progressives, the greatest villain was the waste of resources, so that “the people” could not enjoy their fullest use. Pinchot liked to borrow and extend Jeremy Bentham’s famous utilitarian principle as the central goal of conservation: “the greatest good for the greatest number for the longest time.” To waste resources, to use them inefficiently, was to steal from future generations. The correctness of this principle seemed so self-evident that it was hard for conservationists to see their opponents as anything other than venal and corrupt. Short-sighted landowners, dishonest bureaucrats, domineering monopolies, and craven officeholders all had bad motives for putting their own interests above the public good.

There was, inevitably, a darker side to this vision of scientific management. Despite their democratic rhetoric—their apparent defense of “the people” and “democracy” against “monopoly” and “corruption”—the progressive conservationists were suspicious of many democratic institutions. They tended to look more toward executive authority than toward the legislature to enact their reforms, and they saw the good of “the whole” (by which they often meant well-to-do middle-class easterners like themselves) as being more important than the special concerns of individual constituencies. Perhaps because of this, they were attracted to strong leaders who projected a slightly messianic air—Roosevelt and Pinchot being good examples of the type. Progressives preferred expert knowledge to the messier judgments of public debate. They generally preferred centralized authority and decision-making to local control. Pinchot’s Forest Service was notable for the decentralized organization of its district system but ultimately derived its authority from Washington rather than from local communities. In their pursuit of what they saw as democratic ends, the progressives sometimes thought it necessary to circumvent democratic means.

And so it was perhaps inevitable that Roosevelt and Pinchot should come into conflict with people who did not share their vision. Among those who opposed the expanding system of national forests were senators and representatives from the western states, who saw more and more of their local landscape being removed from development and placed under Forest Service control. The conflict came to a head in a famous
confrontation in 1907. Congress sought to limit Roosevelt’s ability to withdraw western
land from settlement by passing an appropriations bill that required the president to have
congressional permission before creating any new national forests in Colorado, Idaho,
Montana, Oregon, Washington, and Wyoming. The list included the most heavily
timbered states in the nation and the ones most hostile to Washington’s control; all were
in the West. Roosevelt had no choice but to sign the bill, but the night before doing so,
he ordered the creation of new national forests on sixteen million acres of western lands.
These “midnight forests” enraged western congressmen and perfectly express the
mingled idealism and arrogance that typified conservation during the Roosevelt years.

Federal conservation efforts at the turn of the century were by no means confined
to forests. As politicians identified new environmental problems, they created new laws
and bureaucratic institutions to address those problems. For instance, the first two
decades of the twentieth century saw significant efforts to diminish threats to key
dangered animal species by expanding government regulation of hunting. In 1906,
the Lacey Act banned the interstate transport of mammals and birds that had been killed
in violation of state law, thereby lending federal support to state efforts at wildlife
protection. Recognizing that the reproductive cycles of many species did not respect
state or national boundaries, the federal government declared, in the Migratory Bird Act
of 1913, that its own jurisdiction took precedence over state laws relating to migratory
game and insectivorous birds. This in turn paved the way for the landmark Migratory
Bird Treaty with Canada in 1916, establishing for the first time a durable framework
for regulating the critical flyways of North America. Free access to an unrestricted hunt,
which had been among the defining experiences of American frontier settlement since
at least the days of Daniel Boone, would all but vanish in the years ahead, giving way to
far more restricted hunting conducted under the watchful eyes of scientists and
managers working in the service of a regulatory state. Conflicts over who should have
access to traditional hunting grounds often erupted between local communities and
newly professionalized game wardens, with representatives of state and national
governments working to redefine and expand the concept of poaching. In the process,
Indians and other minority ethnic groups were often forced to retreat from hunting and
fishing grounds on which they had long depended, sometimes for generations.

Similar efforts at fish and game regulation occurred elsewhere in the government as
well. In 1905, the new Bureau of Biological Survey consolidated earlier federal programs
designed to research and regulate the effects of animals on agricultural crops. Starting
in 1915, it would lay the foundation for a systematic campaign to destroy predators and
other “vermin” species—coyotes, wolves, grizzly bears, mountain lions—to protect
livestock and to promote the increase of game species such as deer, elk, and moose, which
were highly prized by hunters. The Forest Service would also join these efforts. To
oversee animal species in less terrestrial environments, the Office of the U.S. Commiss-
ioner of Fish and Fisheries moved in 1903 to the Department of Commerce and Labor
and became the Bureau of Fisheries, bringing increasingly coordinated oversight to the
nation’s fish populations, many of the most important of which spawned in western
rivers and grew to adulthood off the west coast. Separate agencies overseeing Alaskan fish
and fur seal resources would be transferred to the new bureau over the next half decade.
At the same time, the United States joined Canada, Russia, and Japan in seeking to avert the extinction of Alaskan and Siberian seals, eventually signing the Fur Seal Treaty of 1911, which banned pelagic (open-sea) sealing and also tried to regulate hunting at key seal rookeries like Alaska’s Pribilof Islands.

Although efforts such as these did not often succeed in stabilizing animal populations at former levels, they did establish the principle that government had an essential role to play in trying to protect—or, in the case of predators, exterminate—wild animal species. More important from the point of view of western environmental history, these early efforts at federal regulation also furnish a classic example of the early abundance of a natural resource giving way to real scarcity, indeed, nearly to extinction. Attempts to respond to such changes created new regulatory institutions that helped alter not just western regional attitudes toward the environment but national ones as well. Increasingly, natural areas and animal populations would be seen not as landscapes of freedom, not as frontiers of endless natural abundance, but as endangered landscapes of scarcity, so fragile in the face of human destructiveness that only careful management could ensure their survival.

This sense of fragility lay behind the Antiquities Act of 1906, which enabled the president to establish national monuments to protect areas of special archaeological, historical, or scientific importance. Despite its apparent emphasis on antiquities—by which its authors generally meant endangered Indian ruins—the act soon became a tool for Roosevelt and his successors to set aside any area of natural or historical value. Thus, within a few years Roosevelt was able to use the act not only to protect places like Montezuma Castle in Arizona and El Morro in New Mexico—both legitimate "antiquities"—but also Arizona’s Grand Canyon and a large section of Washington’s Olympic peninsula, whose claims to protection clearly rested on their unusual scenic beauty. Roosevelt had already in 1904 stretched the meaning of the 1891 Forest Reserves Act to set aside the first federal wildlife reservation at Florida’s Pelican Island—a wetland nesting area whose chief value had far more to do with birds than with trees. It was soon followed by more than fifty other such bird reservations—most of them not especially forested—from Florida to Alaska. When it came to scenic wonders and nesting grounds, at least, the days of limitless abundance, easy exploitation, and unregulated hunting were apparently at an end.

It is important not to misunderstand Roosevelt’s interest in protecting game species and areas of extraordinary natural beauty. The goal of setting aside tens of millions of western acres as national forests, of withdrawing them from sale under the public land laws, was not to protect them as permanent natural areas; rather, it was to prevent their destruction so that they could be managed and harvested in perpetuity as a resource for future generations of Americans. The same was true of game refuges and protected nesting grounds: even though hunting was illegal within their boundaries, their purpose was not to abolish hunting but to ensure its perpetuation by protecting the reproductive cycles of key game species. What Roosevelt saw as the uncontrolled freedom of earlier frontier landscapes might have to be abandoned, but the consequence would be to protect the way of life and cultural values that the frontier had supposedly nurtured in America. The progressive conservationists saw no conflict between intelligent exploitation of natural resources and the long-term survival of those resources. Despite their
sometimes apocalyptic rhetoric about what might happen if Americans failed to conserve natural resources, conservationists like Roosevelt and Pinchot were fundamentally optimistic about the ability of their own reform agenda to set the country on a course that would ensure permanent national prosperity.

The Reclamation Dream

Nowhere was this optimism more obvious—or more important to the West—than in water policy. By the time Roosevelt became president, westerners had for more than two decades been working on their own and seeking federal support to promote the construction of dams and irrigation systems on rivers and streams throughout the region. The classic dilemma of the western environment was that much of the terrain received far too little rain or snow to permit successful farming. Annual precipitation of much less than twenty inches was the norm almost everywhere except in the mountains and in the Pacific Northwest; in many areas—including the San Joaquin and the Imperial valleys of California—annual precipitation fell below ten inches. No ordinary crop could survive such conditions, though westerners did show considerable ingenuity in pushing the limits of certain crops, notably wheat, in what came to be called “dryland farming.” Worse, when rain did fall or the winter snows melted, the resulting floodwaters too often raced down canyons and arroyos in muddy torrents that left little but destruction in their wake. If only these floods could be stayed in their journey and delivered to an otherwise parched earth, then natural scarcity could give way to artificial abundance.

It would be hard to exaggerate the compelling power of this bountiful vision for most Americans during the late nineteenth and early twentieth centuries. The ability of water to transform the arid West seemed wondrous, an unambiguous blessing that tempted irrigationists into flights of impassioned rhetoric that resorted sooner or later to biblical metaphors. “Irrigation,” wrote the indefatigable booster William Ellsworth Smythe, “is a miracle.” Just as the Nile had once watered ancient Egypt, just as “a river went out of Eden to water the Garden,” so might the dry soils of the West burst into flower if the rivers could be made to share their liquid bounty with the land. Anyone who doubted this fact had only to look at what the Mormons had accomplished in Utah since the 1850s. With only the simplest of tools, their own skill, and a powerful religious hierarchy to aid them, they had captured the waters of the Wasatch Range and had turned the valley of the Great Salt Lake into astonishingly fertile farmland. Powell had appealed to the Mormon example in his Report on the Lands of the Arid Region, and other irrigationists did likewise. The Rio Grande Western Railroad even went so far as to produce a bird’s-eye map of Mormon Utah, which drew direct parallels between its geography and that of the Holy Land. In this striking if rather distorted piece of cartography, Utah’s Jordan River flowed toward the Great Salt Lake to water the Mormon Zion in much the same way that Palestine’s Jordan River flowed toward the Dead Sea to water the land of Canaan. The title of the map suggests how powerfully its prophetic vision resonated with the American imagination: water would make of the West a “promised land.”

Early federal efforts to help fulfill this vision tended, like most nineteenth-century resource policies, to rely on the public land laws. In 1877, Congress passed the Desert Land Act, which was modeled on an experimental effort two years earlier to promote
irrigated farming in Lassen County, California. Under the act, which applied to all western states except Colorado, individuals could purchase up to 640 acres of land (one square mile, four times the amount available under the Homestead Act) at a price of $1.25 per acre. They were required to pay only 25¢ per acre at the time they filed and then had three years to “make satisfactory proof of reclamation” before paying the balance of their debt to obtain clear title. Land was to go only to those individuals who genuinely intended to settle and improve their land; it was not intended for speculators...
whose only goal was to resell it after its price had risen. The act’s basic intent was to promote irrigation not by direct federal investment but by making land available at relatively low prices to individuals who promised to make private investments in water technology.

Like most such land laws, the Desert Land Act was loosely drafted and poorly enforced, so that abuses of its original intentions were soon common. Would-be owners poured a few buckets of water onto their land and swore they had irrigated it. Dummy entrymen were used by large investors to amass much more than the intended square mile of land. To control water and land for their cattle, ranchers claimed narrow snake-like strips along the banks of streams or dug irrigation ditches that were promptly abandoned as soon as clear title had been obtained. The Desert Land Act undoubtedly encouraged a modest increase in irrigated acreage in parts of the West, but not on anything like the scale that its promoters had hoped.

More important, the Desert Land Act helped identify two questions that would bedevil western water policy until at least the 1920s. The first had to do with who should benefit from federal efforts to promote irrigation. Should irrigation laws, like the Homestead Act before them, encourage the development of a Jeffersonian landscape dominated by small farmers? Or should they permit farms of whatever size, no matter how large, as long as the owners could successfully irrigate the land? Even in this 1877 act, the twentieth-century tension between family farm and agribusiness was implicit. The second question was a corollary of the first: Who should provide the capital that would make irrigation possible? Immediately after the Desert Land Act was passed, early critics (including Powell in his Report on the Lands of the Arid Region) were arguing that most irrigation districts could not be successfully organized without capital investments of one million dollars or more. From this perspective, it seemed naïve to expect individuals who owned only a single square mile to be able to afford the investments in dams, canals, and other water-handling technologies without which farming would be impossible. Wealthy individuals and large corporations would have to supply the needed capital—in which case the limit of 640 acres would almost surely have to be abandoned—or else the government itself would have to make the basic investment. How to resolve these two questions in actual law and practice would be the major challenge of water policy for the next half century.

Not until Roosevelt became president would the federal government abandon its general policy of avoiding direct investment in western irrigation. In the meantime, water policy was left largely to the states and to private individuals. During the second half of the nineteenth century, western water law at the state level acquired the foundations it retains to this day. Under English common law, the use of water in a river or stream was attached as a right of ownership to the land along its banks. One could do whatever one wanted with that water as long as one did not diminish its flow, alter its course, or degrade its purity. Yet this common-law practice had already begun to change in eastern parts of the United States as the owners of canals and water-powered factories began to build dams that flooded riparian lands and fundamentally altered the flow of rivers. So long as such changes constituted “productive use,” the courts were willing to tolerate them even though they violated traditional riparian rights. A new body of “appropriative rights” therefore began to emerge in American law.
The arid West posed an even greater challenge to common-law traditions. In desert areas, it was simply not possible to withdraw water from a river, use it for irrigation or other purposes, and then return it without diminishing its quantity or quality. And so westerners, starting with miners who needed water for sluicing gravel in the California goldfields, began to embrace the doctrine that whoever first put water to productive use acquired a permanent right to it. That right was not absolute, since one would lose it if one did not continue "beneficial use," but the divergence from common-law riparian rights was still very great indeed. During the 1880s, Colorado gave its name to this new water doctrine by laying claim to all surface waters within its boundaries, nullifying riparian rights to their use, and taking upon itself the task of enforcing water rights acquired by prior appropriation. If early settlers used up all the water in a stream that flowed through their lands, then later settlers had no claim whatsoever to water for their own use. And so the principle of prior appropriation came to be known as the Colorado Doctrine, which was quickly adopted by most states in the Rocky Mountain region.

Elsewhere, the triumph of appropriative rights was less complete. In California, the famous *Luc v. Haggin* court decision of 1886 held that riparian rights to water did indeed accompany the government sale of lands along a river unless that river's water was already being used by some other landowner at the time the original sale occurred. Under this "California Doctrine," the balance between appropriative and riparian rights depended on which came first, water use or land sale. Riparian rights tended to be favored by large cattle ranchers, whose use of water was relatively passive, whereas appropriative rights were favored by miners, irrigators, and factory owners, whose water use was more active and interventionist. *Luc v. Haggin*, although not a popular decision with the many Californians who believed that riparian rights favored large landowners, did establish the not unreasonable principle that different users of water had different needs, which might in turn entail different ways of conceiving legal property rights to the resource. This principle was in some ways carried to its logical extreme in yet a third body of water law, the Wyoming Doctrine, in which the Wyoming constitution claimed title to all water within the state's boundaries and retained the power to alter any existing private rights or appropriations that did not serve the public interest. This more collectivist definition of water use became the basis for water law in most of the Great Plains states.

In a region where water was at once extremely scarce and absolutely essential for most development, it is hardly surprising that none of these doctrines prevented persistent conflict—and endless litigation—over who should have the right to use this most precious of resources. And yet however problematic these doctrines might be, they did begin to establish the legal framework that made it possible for westerners to exploit the water on which regional economic growth depended. Scarce water was the key that could unlock the hidden abundance of an arid land. Throughout the West, water law rested on the utilitarian premise that both the unused water and the land through which it flowed would be "wasted" unless people intervened to ensure their "reclamation." This usage of the word *reclamation* was fairly new at the time, having appeared in the English language only in the middle decades of the nineteenth century. In England, John Stuart Mill spoke of "the reclamation of waste lands"; in the United States, lands worthy of reclamation were labeled "waste," or "alkali," or "arid," or "new." Whatever the adjective applied to them, they all existed in a state of nature that prevented their exploitation until
human ingenuity could “reclaim” their potential—a potential that people tended to see as “natural” even though it served human desires and cultural values far more than the needs of existing ecosystems. So powerful was this sense of a “wasted” “natural” potential waiting to be “reclaimed”—as if a prior unwasted landscape had once been lost, Eden-like, and now needed to be claimed again—that by the 1890s virtually all discussion of irrigation and watershed manipulation occurred under the heading of “reclamation.” Congress had a Committee on Irrigation and Reclamation of Arid Lands, and the federal agency that would be given responsibility for promoting irrigation would eventually be known simply as the Bureau of Reclamation.

The creation of that agency could not occur until the federal government was willing to embrace the mission of reclamation in a more direct way. That did not happen until it seemed clear that state and private irrigation efforts had reached an impasse. In 1887, California had implemented the Wright Act, creating new irrigation districts that could take collective control of their water rights wherever two-thirds of the electorate so voted; bond issues could then be underwritten by the tax revenues of the district and used to support investments in irrigation. Although the act helped double irrigated acreage in California by the end of the century, and although such districts would play an increasingly important role in promoting the growth of agribusiness in the early twentieth century (after large landowners gained greater control over the bonding process), their initial successes were relatively modest. The same was true in other parts of the West as well. By the 1890s, roughly seven million acres had been “reclaimed” with irrigation, an amount that seemed low relative to the “wasted” potential. Moreover, a large number of the private irrigation enterprises already under way were hardly prospering; by the start of the new century, the majority would be in or near bankruptcy.

And so westerners began to lobby for greater federal intervention. Starting in 1891, a series of “Irrigation Congresses” organized by William E. Smythe brought together engineers, lawyers, journalists, corporate leaders, government representatives, and others interested in promoting irrigation. Their initial goal was to persuade the federal government to extract from the remaining public domain all irrigable land so that it could be turned over to the states for improvement—a policy known as “cession.” Washington was not ready for such a dramatic gesture, but in 1894 the Carey Act made available to each western state a grant of one million acres that could be developed by irrigation companies and then sold to farmers. Although this new act encouraged irrigation in some states—most notably Wyoming and Idaho—it shared with the 1877 act a failure to identify adequate sources of capital to “reclaim” the millions of acres it contemplated developing. Neither private corporations nor the states were willing to risk large sums on such risky investments, and so by the end of the century less than twelve thousand acres had been patented under the Carey Act. The facts that it was passed in the midst of a major economic depression and that states differed widely in their ability and willingness to take advantage of it also help explain its apparent failure.

By the time Roosevelt became president in 1901, the modest progress achieved by state, local, and private efforts to develop western irrigation seemed incommensurate with the grand prophetic vision that the word reclamation conjured in the minds of westerners and most other Americans. In his first State of the Union message in 1901, Roosevelt made clear his belief that only the federal government was up to the task at