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The Progressive Movement and Conservation (1890s - Present)

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chapter 9

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The Progressive movement of the 1890s to the 1920s was a seminal movement affecting U.S. policy in many areas. Specifically, the original conservation movement, part of the larger Progressive movement during this same time period (1890–1920), had a profound influence over natural resource policies that remain to this day. Perhaps best seen as a response to the changes brought by the modernization of life in the United States, key aspects of the Progressive movement were electoral reform to counter political corruption, the women's movement, fear of corporate power, and the need to control that power.

The conservation movement's ideas, philosophies, and resultant polices centered on a large role for the national government in managing the lands and other resources of the United States, primarily for their measured use by citizens. Progressive Era management would be accomplished by scientifically trained professionals, conversant in professions such as forestry and engineering. While most of the federal estate (the public lands) remains, today there is both less confidence in the expertise of natural resource professionals, indeed in expertise generally, and modern expectations that resources need protection as much as, if not more than, use. Newer scientifically based professions such as ecology and conservation biology align themselves more with protection than use, complicating the policy expertise environment. In addition, the growth of myriad interest groups, the passage of laws such as the 1960 Multiple-Use Sustained-Yield Act (MUSY), and an increase in scientists mixing science with advocacy have rendered the original vision of the conservation movement blurry.

LAND POLICY BEFORE THE PROGRESSIVE MOVEMENT

Before the Progressive movement fully developed, a slow but very important change in land policy would provide fertile ground on which the movement could plow. In 1864, Congress granted Yosemite Valley to the state of California for recreation. It became acknowledged as the first congressional act of reservation of public land in American history. Yellowstone National Park's creation in 1872 is considered by most the first major act of reservation. The earlier era of public land disposal was breached. Up until that time, it had been the policy of the United States to acquire, and then dispose of, public lands. For the first time, land was to be reserved.

A Lack of Direction

There was not much opposition to the creation of Yellowstone National Park. Alfred Runte suggests that a few members of Congress were concerned about the effects of the Yellowstone reservation on the use of natural resources.[1] National park scholar John Ise considered the reservation of the park possible in part because of what had not happened:

> Reservation was possible because most private interests were not looking so far west at this early date, for there were no railroads within hundreds of miles of Yellowstone. Lumbermen had moved into the Lake States and were too busy slashing the pine forests there to reach out for timber lands in this inaccessible region; the hunters and trappers were here, but were not an important political force; the cattlemen, who have been in recent years so powerful an influence against some conservation legislation, were not yet invading the Far West in large numbers; the water-power interests that have been among the most serious threats to a few larger parks were not interested here. With Indians still a lurking danger, the "poor settlers" had not ventured into this region in great numbers and were not calling for congressional consideration.[2]

There existed no considered management policy or guidance behind the creation of Yellowstone as a national

park. Runte, as mentioned above, has detailed a set of reasons why the park was created that dovetail nicely with Ise's argument. Yellowstone was a "wonder" worth holding up to the cathedrals of Europe, while at the same time thought "worthless" for much else in the way of resource extraction. In addition, Congress never passed additional clarifying management or protection authority or appropriated management funds for civilian management of Yellowstone, until finally, in 1886, the U.S. Army took over management. In other words, beyond the obvious reasons for protecting this specific area of land called "Yellowstone," any sort of overarching policy reason for creating other national parks had yet to develop. At the time, there was also no way to link the creation of Yellowstone with the theory of natural resource administration and specifically with the theory of public land management. Those theories had yet to be presented, or at least presented in their American context. Bryn Mawr professor Woodrow Wilson's famous and often-debated essay on public administration, "The Study of Administration," was not published until 1886 and would not have much influence until later. One could add that Congress did not choose to create another truly national park until 1890, adding Sequoia and Yosemite, further testimony to the notion that a national park system managed for any set of coordinated policy purposes was not on the minds of the members of Congress.

A Management and Policy Path Not Taken

At the time of Yellowstone's reservation, little was known about the western public land estate; hence, a number of scientific expeditions, the so-called Great Surveys, were undertaken to increase the knowledge of that estate. The surveys were led by Ferdinand Hayden, Clarence King, John Wesley Powell, and Lieutenant George M. Wheeler and took place between 1867 and 1879. Much attention has been paid to Powell, who was the first to notice and argue that water was the most important limiting factor for any proposed western development. Powell, as many have chronicled, called for rational planning, water development, decentralized land allocation, and communal governance on the arid western lands. Yet Powell did not envision a large and centralized federal government in charge: "And I say to the Government: Hands off! Furnish the people with institutions of justice, and let them do the work for themselves. The solution to be propounded then, is one of institutions to be organized for the establishment of justice, not of appropriations to be made and offices created by the Government."[3]

As to forests, Powell thought, "If the forests are to be guarded, the people directly interested should perform the task. An army of aliens set to watch the forests would need another army of aliens to watch them, and a forestry organization under the hands of the General Government would become a hotbed of corruption; for it would be impossible to fix responsibility and difficult to secure integrity of administration, because ill-defined values in great quantities are involved."[4]

Powell envisioned much of the nonirrigable land held in trust by the "General Government," but the laws and day-to-day management would be centered with citizens at the local level. Powell saw the new westerners almost as a new people: "Their love of liberty is unbounded, their obedience to law unparalleled and their reverence for justice profound; every man is a freeman king with power to rule himself and they may be trusted with their own interests."[5] Powell's decentralized and collaborative approach to watershed management would not come to pass.

THE CONSERVATION MOVEMENT: FOREST RESERVATIONS

In 1891, Congress passed the Forest Reserve Act, authorizing the president to proclaim national forest reserves. This action did not come without a good deal of background work about the movement to create professional forestry in the United States, which in turn had been influenced by a growing perception that American forests were being overcut, in need of public management, and ripe with fraud. Norman Wengert, Al Dyer, and John Deutsch have noted about the period between the 1860s and 1870s, "The increasing concern with timber depletion and the urging of some form of public response on the Federal level stimulated government attention to how Europe was dealing with its forest resources. It was generally known that European governments had public forest management programs in effect, and early advocates of American programs often used European systems as examples of forest management."[6]

By 1877, the secretary of interior had this perception too and warned that rapid timber deforestation should concern Americans.[7] The alarm was widespread and was echoed by, among others, the American Association for the Advancement of Science. The alarm reflected warnings that had continued since George Perkins Marsh's *Man and Nature* in 1864. Marsh warned of the dangers of forest overuse and called for the national government to become involved with organizing and planning the use of forest resources.[8] His observation was that human beings had major effects on the natural world. No longer could Americans think of the natural world as something that threatened them; instead, their activities could threaten the natural world. Proposals to withdraw forested land from sale or disposal began in the late 1870s and accelerated through the late 1880s. In 1891, Congress passed legislation giving the president the authority to create forest reserves.

The Forest Reserve Act

Historians have paid a great deal of attention to the intent of the Forest Reserve Act and the process that created it. The

process was irregular if not in violation of congressional rules. Section 24, which authorized the creation of forest reserves, was added in conference committee as part of a bill whose purpose was much broader, without opportunity for full debate on the provision. The conference committee bill was never referred back to the House and Senate as it should have been before being signed by President Benjamin Harrison (1889–1893). The process also appeared to be hurried. The language of Section 24 came in part from an unsuccessful bill of the previous session, but it was used in a grammatically incorrect way, as there is no clear subject as to what the president may set aside and reserve: "That the 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."[9]

President Harrison acted quickly with his new power, proclaiming the Yellowstone Park Timber Land Reserve on March 30, 1891. This action had a direct relationship to ongoing policy concerns about the protection of Yellowstone National Park. Since the 1872 act that created the first park, a number of people had expressed concern that the park boundaries were inadequate to protect park resources, primarily wildlife. When enlargement of the park became a political impossibility, the forest reserve power was seized upon as another vehicle for securing some of the same protections. The boundaries of this forest reserve had almost the same boundaries as earlier proposals to enlarge Yellowstone National Park.

The creation of this first forest reserve (now Shoshone National Forest) leads to a provocative question over whether the first forest reserves were different in the minds of members of Congress from the first national parks. While the first national parks were created in a piecemeal fashion, without attention to the notion of a park system or clear purposes for the parks, they were, most observers agree, the beginnings of a federal policy geared toward the retention of federal lands. Environmentalist and scholar Sally Fairfax has argued that, during part of this period of the development of national policies of land retention, Congress and much of the public viewed parks and forests as the same thing.[10] The emphasis, according to Fairfax, leaned toward preservation, not use. For example, when Congress created Yosemite and General Grant National Park (now Kings Canyon) in 1890, the lands were called *reserved forest lands.* The secretary of interior was authorized to make regulations to preserve timber, mineral deposits, natural curiosities, and so forth and retain them in their natural condition.[11] Fairfax argued that the influence of Gifford Pinchot would eventually change the purpose of the forest reserves, later named the national forests.

A Lack of Purpose

What remained unanswered by the 1891 act was the question of the "purpose" of the forest reservations, as well as their administration. It became clear early on that the reserves were quickly coming to be seen as different from the national parks of the era by many people. An 1892 Senate report on a bill dealing with these questions stated that forest reservations were not to be thought of as parks and were to be open for all public use purposes.[12]

First Attempts for a Coherent Policy

Other bills were offered, but prior to 1897, none were successful. In an attempt to break what some observers considered congressional deadlock, a forest commission under the auspices of the National Academy of Sciences was created. The commission debated whether more forest reserves or a coherent forest policy ought to be the first priority. More reserves won out, with its Chair, Professor C.S. Sargent, of Harvard, writing to President Grover Cleveland (1885–1889, 1893–1897) calling for the creation of more reserves. Cleveland responded by proclaiming thirteen new reserves suggested by the committee.

This action caused outrage in the western United States. It was reported that some of the reservations included towns and thousands of people. The committee did not even visit five of its recommended reserves. The new reserves did not sit well with many in the western United States because of the haphazard way they were chosen and delineated. One concern of several members of Congress from the West sounds similar to concerns expressed in the context of current debates over the need for even larger reserves in the West to protect biodiversity: "All of the reservations are made at the behest of these *scientific gentlemen* [author's italics]. . . . but they belong to that class of gentlemen who think more of the forest tree than they do of the roof tree, and we have a whole lot of people in the west who think as much of their roof tree as the people of any other part of this nation."[13] In fact, some in the western United States were wary of policies suggested by scientists.

It is clear, too, that there was still disagreement over the purposes of the reserves. Some saw the reserves and their resources providing local economic benefits; others saw the reserves remaining in a preserved state. There was debate over whether or not to define more clearly the administration of the reserves. Sargent wanted to proceed cautiously, but not all members of the forest commission felt this way. Gifford Pinchot, a member of the commission, urged instead that forest management objectives proceed first, to blunt the charge that the reservations would be perceived as "lock-ups."

The statement of objectives would come in the passage of what has come to be called the Forest Service Organic Act of 1897, as part of the Sundry Civil Appropriations Act of June 4. It is generally agreed that there were three purposes

for the forest reservations set forth in this act: the improvement and protection of the national forests, securing favorable water flow conditions, and furnishing a continuous supply of timber for U.S. citizens. The secretary of agriculture was authorized to make relevant rules and regulations related to the reservations.

THE CONSERVATION MOVEMENT AND FOREST MANAGEMENT

Observers of American natural resources and land management consider the period following the passage of the 1897 Act as the founding era of forest management. During this time, key ideas regarding the management of forests, and later, other public lands, gained sway, ideas that continue to influence today's debate over land management. It is also the period in the United States in which the notion of a self-reflective and professional public administration also begins. It is essential to pay attention to how these various forces and ideas interact with one another and influence this era of public management and, hence, public policy.

The early 1900s were at the center of the Progressive Era in U.S. politics. It was also the time of the development and growth of the conservation movement. Professor Samuel Hays described the key components of the movement this way:

> Conservationists were led by people who promoted the "rational" use of resources, with a focus on efficiency, planning for future use, and the application of expertise to broad national problems. But they also promoted a system of decision-making consistent with that spirit, a process by which the expert would decide in terms of the most efficient dovetailing of all competing resource users according to criteria which were considered to be objective, rational, and above the give-and-take of political conflict.[14]

The Deciding Expert

Hays described an administrative system of expert-centered decision making. The question of how to administer the policies of the U.S. government received a great deal of attention and commentary during the Progressive Era. Most observers of the intellectual history of public administration look to an essay by then Professor Woodrow Wilson, "The Study of Administration," as defining the beginning of public administration as a field of study and governance. Wilson sought to develop and prescribe a role for the public administrator in the United States. Larger constitutional principles, while important, were not as immediately important as the administration of the growing government and its policies.[15] One could apply this maxim to the forest reserves. The reserves were there; they had overarching purposes, but how they would actually be administered was the question, especially for people such as Gifford Pinchot. Wilson reminded his readers that most of what we knew about administration was not developed in the United States; the knowledge of what Wilson considered proper public administration came from abroad.[16] Americans, though, needed to look to their own peculiarities for guidance. One of the most important of those was the importance of popular sovereignty, or what Wilson also considered public opinion. The task of instructing a "ruler" called public opinion would be difficult. Wilson laid out the task this way:

> Whoever would effect a change in a modern constitutional government (by instituting good administration) must first educate his fellow-citizens to want some change. That done, he must persuade them to want the particular change he wants. He must first make public opinion willing to listen and then see to it that it listen to the right things. He must stir it up to search for an opinion, and then manage to put the right opinion in its way.[17]

The Importance of Public Opinion

Public opinion could be educated, said Wilson, about the need for public administration. This elite-led education very much describes the leaders of the conservation movement more generally. In his essay, Wilson made his famous assertion that public administration was closer to business than to politics, arguing that administration lay beyond the sphere of politics.[18] Wilson anticipated some of the criticism of this argument about the role of administration by urging the public administrator to adhere to the polices of the elected government[19] and remain connected with public opinion by watching election results and listening.[20] It is also now well understood that Wilson was referring to partisan politics. It is most intriguing to think of linking the good administrator with public opinion and matching that opinion specifically to the concurrent development of what might be termed "good forest administration." Here is where Gifford Pinchot enters.

During the postmortem over the perceived failure of the Yellowstone "vision" process of the early 1990s, a comment made by President Theodore Roosevelt (1901–1909) in 1908 received attention by those intimately involved with the writing of the vision document. The vision document outlined a more cooperative and coordinated set of land management principles for the greater Yellowstone area. The two major federal land management agencies in the Yellowstone Area, the Forest Service and the National Park Service, sought to manage the area in a way that was probably unfairly viewed by some as a large national park, thus weakening the notion of national forests as places for resource use. Many local people rebelled at the perception. The use of the quote just below suggested that the land managers were being self-reflective about the events surrounding the vision process and how their effort might have been perceived. Roosevelt remarked, "I want to go just as far in preserving the forests and preserving the game and wild

GLOBAL CONNECTIONS

European Influences on American Management

The Progressive Era and the conservation movement drew heavily on writings and institutions from the European continent. The creation of an administrative state, in a way a complex institution almost like a fourth branch of government, depended on models and institutions already developed. German scholar Max Weber described the characteristics of the bureaucratic form of organization from ancient times to those developing in Europe and America. Such characteristics were ideal, not normative. Characteristics such as hierarchy, specialization, job tenure, and the following of general rules are familiar to Americans today. One key, for Progressives, was to adapt the European systems of bureaucracy to American norms and values. This would require both removing partisan patronage systems and making sure that the administrators paid close attention to public opinion. Political patronage and incompetent administration led to calls for reform, which led to a professional civil service.

The Forest Service was the most significant conservation management bureau of the Progressive Era. German-trained foresters played a major role in early forestry as Bernard Fernow and Carl Schenck brought German forestry ideas to the United States. Germany and Prussia had developed professional forestry for more than one hundred years. The Prussian model was advocated in the United States by Baron Richard von Steuben; Fernow and the American Forestry Association helped von Steuben at several meetings.

Gifford Pinchot, the legendary, American-born first chief of the Forest Service, studied forestry in Europe on the recommendation of Fernow and others. Pinchot worked with one of his forestry professors, Dietrich Brandis, to develop a public forestry organization with specific organizational characteristics.

Yet the story is more complicated. As James Lewis commented in 1999 about Pinchot's reputation,

> That qualified honor, however, came at the expense of other eminent foresters, most notably Bernhard Fernow and Carl Schenck. The Pinchots' determination to establish a distinctly American style of forestry in the United States resulted in a dramatic struggle that divided and disrupted the profession in its early years. Firmly believing that the end justified the means, the Pinchots ultimately overwhelmed their German-born competitors by outspending, outwitting, and outmaneuvering them while working to establish their vision of scientific forestry in America.

Pinchot became an aggressive marketer of his vision of professional forestry in the United States. He astutely linked scientifically trained foresters to Progressive ideas of equal access to resources along with the antimonopoly strains of the era. The agency would develop its own internal management prescriptions to ensure voluntary compliance with forest policy directives from Washington that would allow for consistent decisions across the geographically widespread forests.

SOURCES: Herbert Kaufman, *The Forest Ranger: A Study in Administrative Behavior*, reprint (Washington, DC: Resources for the Future, 2006). Taylor Pepperman, *Our Limits Transgressed* (Lawrence: University Press of Kansas, 1992).

creatures as I can lead public sentiment. But if I try to drive public sentiment I shall fail, save in exceptional circumstances."[21]

The phrase "lead public sentiment" resonates. This phrase is close to Wilson's call to educate citizens to want a certain type of change. It is clear that Gifford Pinchot followed this approach and may have actually penned these words for Roosevelt. What Pinchot did was propose his version of forest administration and management, and then he constantly "educated" the American public to see things his way through a variety of means.

Numerous observers have remarked on Pinchot's leadership ability. Natural resource scholar Marion Clawson noted that as head of the Department of Agriculture's Division of Forestry, he built the Forest Service into a successful bureaucratic empire[22] and that Pinchot did create an impressive federal bureau. [23]

Gifford Pinchot's Principles

Pinchot had clear views regarding forest management, learned in Europe and refined in the United States. He thought of forests as a "crop" that could be perpetuated, what would come to be called sustained yield. Put more simply, to Pinchot, as forests were to be used, he presented a set of "principles" to the American public. Scholar Gregg Cawley distills those principles by noting the following: (1) Resources should be used today; (2) resource uses should not be wasteful; and (3) resources should be used for the benefit of the many, not the few.[24] The principles defined the goals for forest management, and the goals could be accomplished through the science of forestry. Pinchot also said,

> The first great fact about conservation is that it stands for development. There has been a fundamental misconception that conservation means nothing but the husbanding of resources for future generations. . . . Conservation does mean provision for the future, but it means also and first of all the recognition of the right of the present generation to the fullest necessary use of all the resources of which this country is so abundantly blessed. Conservation demands the welfare of this generation first and afterward the welfare of generations to follow.[25]

Pinchot's genius was how he was able to link this view of conservation to larger ideas at play in progressivism at the

Theodore Roosevelt (left) and conservationist John Muir survey the breathtaking landscape at Glacier Point in Yosemite National Park in California. First protected in 1864, the nearly twelve hundred square-mile park is known for waterfalls, as well as deep valleys, vast meadows, and ancient giant sequoia trees.

SOURCE: Library of Congress, Prints & Photographs collection.

time. These ideas were centered on the democratic component of the federal land. Pinchot's forests were to be open and accessible to all and not simply the wealthy or the corporations, something that worried Pinchot and other Progressives. He was not merely about scientific management.[26]

Thoughts on Expertise

Many have come to conclude that the decision to define a problem as solvable by experts and expert-based methods is actually a political decision. Yet this conclusion cannot be the fault of Gifford Pinchot. Pinchot and his contemporaries were highly trained and educated, and it was only later that these forest experts, as David Clary tells it, became narrower and narrower through specialized education.[27] This specialized education would lead contemporary critics such as Michael Soule to remark that the philosophic center and bias of this emphasis within forestry was dominated by foresters' belief in the use of natural resources and thus, the foresters were likely to be resistant if public values moved toward preservation rather than use.[28]

Many observers of federal land policy have remarked on the decline of public belief and acceptance of scientific management. The conservation movement, however, was about more than scientific management. Clearly, Pinchot did not believe simply in scientific management for its own sake. It was linked to something else: a tool for bringing into being the Progressive vision of society. It clearly had an elite component to it: Roosevelt's "leading public sentiment." The vision had its bias, as all visions do, but its bias was to support the development of industrial society for the benefit of all.

This vision saw natural resources as things to be used, used wisely, used in a sustainable way, but used. That vision corresponded with that period's attitudes toward nature. One might consider this vision as the "Tree Farm" approach to nature and natural resources.[29] This approach saw nature as a place holding the resources needed for society to develop. Whether nature "out there" was really such a holding tank is of course a major point of discussion today, yet that is how it then was viewed. Most resources were material, and even parks and wilderness were seen as recreation resources for a time.

To return to Wilson, what Pinchot's principles did do is articulate a sense of the administrative purposes of the national forests, purposes that brought public agreement, an important idea. Most of the public seemed in agreement with Pinchot, at least when it came to the use and purposes of the national forests.

Pinchot's Shortcomings

Pinchot had his blind spots. He paid scant attention to outdoor recreation and found hardly any virtue in the national parks. Many observers noted his overzealousness about his ideas. It is not fair to say, however, that he was zealous about letting narrowly trained experts manage the forests. Thinking about modern issues such as ecosystem management or biodiversity protection might make this point more clearly. If a Gifford Pinchot were alive today, one would likely find him or her trying to articulate key principles of ecosystem management or biodiversity protection and then trying to convince, to lead, the American public toward acceptance of those principles. He or she might well be intolerant of those who saw things differently. A twenty-first-century Pinchot would not be in agreement with those who would simply turn the management of national forests over to experts, in this case perhaps ecologists and biologists. Indeed, as Char Miller has found, Pinchot's democratically based activism for the environment would contribute to the environmental movement's approach in the 1960s and 1970s toward such things as wilderness air and water pollution and the global environment.[30]

It is clear that, for a time, there was some consensus within the American public about the purposes and management of the national forests. Pinchot, along with others, helped develop that consensus among the American people. Over time, that consensus unraveled because of changes in American politics and values, in science, and in attitudes toward expert-centered management.

More Than Just Forestry and Government

The discussion above captures the many themes and ideas of the conservation movement. There was more occurring, of course. The development of western water projects such as

ENVIRONMENTAL DEBATES

Tensions in the Conservation Movement

The conservation movement introduced the notion of scientifically trained professionals who would manage the natural resources of the United States. It made sense at the time, because until then, there was no public management of resources, given that the intent was to dispose of most of them. It was a growing worry over unchecked resource depletion that demanded a way to prevent concerns such as "timber famines" from occurring.

There seemed to be a hope that, somehow, trained professionals, or experts, would be able to discern the "right" or "correct" action to take in managing resources such as the national forests. Such action might be possible if the goal the experts were managing to meet was clear and fairly measurable and if there was widespread public agreement on the goal. Thus, using an example from later in American history, President John F. Kennedy (1961–1963) set a goal of landing a man on the moon, and the experts—the engineers, astronauts, and scientists—figured out a way to do it. That same decision process was the goal of the early conservationists, who, in the words of Samuel Hays, "sought to substitute one system of decision-making, that inherent in the spirit of modern science and technology, for another, that inherent in the give and take among lesser groupings of influence freely competing within the larger system."

The early goals for forest management did enjoy widespread public support. Forest managers were to prevent overuse of resources and produce those resources for the development and good of society. Over time, public values over the purpose and use of forests changed. For a time, the Forest Service was slow to adapt, clinging to the older purposes of the national forests and still believing that professional judgment ought to trump other concerns over how forests ought to be managed.

Today, we understand that the public, interest groups, scientists, and elected officials hold a number of different opinions on both the purposes of national forests (produce timber, recreational use, biodiversity, and so on) and how those uses ought to be allocated and by whom. The process to do so is time-consuming, complex, and fraught with procedural and legal delays and uncertainties. The Bureau of Land Management (BLM) captured this modern world of natural resource management in 2008 in *Science Strategy:*

> Science is useful for evaluating alternatives and estimating outcomes. However, it is not the sole factor in making decisions because the state of natural resource science is often insufficient to give definitive cause-effect predictions. Unknowns and uncertainties will always be associated with predictions of decision outcomes. Science may reduce but can never completely eliminate the uncertainty regarding future events. However, the use of the best-available science—along with a consideration of political, social, and economic information—will result in the best-informed decisions.

SOURCES: Samuel Hays, *Conservation and the Gospel of Efficiency* (Pittsburgh, PA: University of Pittsburgh Press, 1999). U.S. Bureau of Land Management, "The Role of Science in the Bureau of Land Management," *Science Strategy,* September 2, 2008, 4, http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources.Par.81244.File.dat/ScienceStrategyWEB%206–09Web.pdf.

dams and large aqueducts is perhaps the most noteworthy example. Here, the employment of copious federal resources and engineering talent coupled with policies favoring use and storage of water for agriculture and, later, urban needs allowed the West's economy to grow.[31]

Wildlife management, like forestry, became a profession influenced and developed through the conservation movement. States took a leadership role as they had primary responsibility for most fish and wildlife management. Individuals and groups also played key roles; Aldo Leopold was a founder of professional wildlife management whose musings on the role of man and nature in *A Sand County Almanac* became a counterpoint to the more utilitarian notions of Pinchot.[32] Groups such as the Audubon Society pushed for protection of wildlife (here: birds), while sportsmen and sportsmen's groups were active in conservation efforts from the beginning.[33]

POST-PROGRESSIVE ERA TRENDS

By the second decade of the 1900s, things were not working out as Progressives might have planned. Congress had begun to balk at some of the conservation initiatives of President Theodore Roosevelt, and Pinchot continued to turn to the general public for support. New and different interests began to enter the conversation. As Hays argues, up until 1908 or so, many interest groups concerned about resource development supported the Roosevelt/Pinchot policies.[34] These groups were worried about economic and resource development matters. Instead, the new interests questioned resource use and development.[35] These groups were called preservationists rather than conservationists.

Recall there had been a spirited debate between 1891 and 1897 over the purposes of the forest reserves, a debate even manifested in the Forest Commission of the National Academy of Sciences. After the 1908 period, what Hays termed "moralists" would concentrate more and more on the national parks and later, after the battle over Hetch Hetchy, the creation of the National Park Service. If the rhetoric of the time would still reflect the need of parks to be used (visited), it was to the preservationists, to be used in a recreational and somewhat contemplative sense, not in an economic development sense.

Readers may wonder where the term *environmentalism* fits in. A newer concept, environmentalism came to prominence in the 1960s and 1970s. Much of its focus

centered on concerns over air and water pollution, waste, and fears of environmental degradation and possible catastrophe. New legislation—such as the National Environmental Policy Act (NEPA), the Clean Air Act, and the Clean Water Act—reflects those concerns. These worries over environmental health and sustainability mixed with older public land issues, such as the Wilderness Act, which was passed in 1964. Ecology, discussed more below, brought different sciences into play; while expertise and professional management remained vital, they were to be employed to protect resources rather than develop them wisely.[36]

The Rise of the Interest Group State

The principles of conservation masked, for a time, an inherent conflict between resource users, which was about to end the era. Concrete interests developed specific resource development concerns. What happened in part was that particular localities were more concerned with their own mixes of resource use. This led, of course, to pork—resource development projects based on local and regional demands and votes, not on expert-centered plans. It also led to organized groups seeking benefits. As noted by James Morone, "Progressive democracy mirrored Progressive administration. Each disaggregated American politics into a multiplicity of fragmented groups organized around private interests and their public-sector allies. The nineteenth-century party state was superseded by twentieth-century interest-group liberalism."[37] What happened in the United States in many policy areas was a rapidly accelerating rush into this interest group liberalism. In the case of the public lands, user groups argued and fought for primacy for their uses and tried to block other uses, while the state accepted all their claims as legitimate.

This interest group momentum of the 1950s led to the passage of the Multiple-Use Sustained Yield Act in 1960, which called for "multiple-use" land management:

> 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.[38]

The resources included were recreation, range, timber, watershed, wildlife, and fish and were added to the original purposes of the national forests, which were improving and protecting the forest, securing favorable conditions of water flows, and furnishing a continuous supply of timber for the use of Americans.[39] The general public's acceptance of multiple use lasted for about thirty years. In 1992, the Congressional Research Service (CRS) issued a report that noted a "growing sense of dissatisfaction . . . not only over individual uses of Federal lands and resources, but also over the fundamental operating principles of multiple use and sustained yield."[40] The long-standing administrative regime that had governed much of the land use of the federal estate outside the national parks since at least the 1950s had unraveled.

Problems with Expert-Centered Management

David Clary's comment about the United States Forest Service's (USFS) decision makers becoming more narrow through specialized education is a good place to begin looking at the problems, and many observers of the USFS have confirmed it. Frederick Mosher showed how two professions with the agency, forester and engineer, basically dominated line management, even though there was no evidence that those two professions produced better managers.[41] Today, the critique is that scientific management of public resources has not worked out as envisioned by the early Progressives.

Robert Nelson offered one of the most cogent of those critiques in his book *Public Land and Private Rights: The Failure of Scientific Management.*[42] Nelson referred to an observation by Theodore Roosevelt that society's problems should be solved, not through power by experts but through scientific study. Yet to Nelson, the planning role theorized by proponents of scientific management was much harder to accomplish than they thought.

One can move from talking about experts to talking about expert-centered bureaus, or agencies, such as the original Forest Service was envisioned to be. Barbara Romzek and Melvin Dubnick provided a useful way to examine this in their discussion of accountability within different types of agencies or bureaus. In certain agencies, public officials "must rely on skilled and expert employees to provide appropriate solutions" to "technically difficult and complex problems."[43] What is important for agencies like the Forest Service is whether public officials must rely on expert employees for decisions because the problems are less technically complex than politically complex. In the case of landing a man on the moon, for example, NASA (the original subject of the Romzek and Dubnick analysis) fits accountability criteria quite nicely. In the case of managing national forests, however, does USFS fit the criteria?

USFS fits only if it can define its land management "problems," make a claim on having the relevant expertise, and get societal and officials' deference to its definitions. In

fact, that is what happened in the beginning of the agency's history. As noted earlier, there was awareness by the leaders of the time, such as Pinchot and Roosevelt, that the *public* had to be accepting of the claim. That claim was linked to broader questions of democratic access, public agreement with large-scale goals, and so forth. The claim would break down, however, if the public began to disagree on the fundamental purposes of the national forests of other public lands, of water management, and so on or disagree with whether experts really "knew best" how to manage natural resources.

The first behavior that may have been called into question after 1920 was whether or not USFS was actually operating under principles of scientific management as outlined by Roosevelt and Pinchot. The issue would be fire. Ashley Schiff documented the story of USFS's disregard for its own and others' evidence, including practices of Native Americans and rural Southerners, that fire was actually beneficial to some forest types.[44] USFS did not employ the results of scientific investigation, because those results challenged a core belief in the agency that all fire was to be suppressed. Organizational imperatives and belief systems overwhelmed evidence that the organization needed to change policy. For the Forest Service, the problem was actually twofold. It had to change its core belief about fire, and it had to show that it would actually use scientific information even when it contradicted its core beliefs. Newer scholarship has revealed even more evidence that expert-centered scientific management disregarded rural and Native American practices and cultural use of resources through activities such as hunting. As Karl Jacoby has argued, this disregard can be traced as far back as the work of George Perkins Marsh. Jacoby quotes the Havasupai Chickapanyegi's poignant lament of being excluded from traditional hunting around the Grand Canyon: "Indians, deer, here first. White man no here. Now white man makes law."[45]

The second factor was changing public values and beliefs as to the fundamental purposes of the national forests of the United States. Wilderness is perhaps the best example. The wilderness story is about bringing noncommodity values to the fore of forest policy. Forests were no longer viewed simply as storehouses for the wise development of resources for the good of industrial society. Instead, parts of them were places to keep undeveloped for the good of society.

A Power Struggle

It has been well established by scholars that the USFS began to see wilderness as a way to fend off the growing power of the National Park Service. After all, new national parks were being created on USFS land. What better way to fend off a national park proposal than by setting aside some of the same area administratively as a "primitive area" (which became congressionally designated wilderness) where most multiple-use activities would not be permitted. This is not to diminish the aesthetic and moral calls for wilderness protection by such icons as Aldo Leopold and Robert Marshall but to suggest that the Forest Service saw real opportunity in wilderness to protect itself, its land, and its mission. However, this new land use, over time, would make national forest administration more problematic, as the agency would have a new and different type of user to contend with. Those users, more often than not, would see forests in nonconsumptive terms.

The Rise of Ecology

The Congressional Research Service report documented a litany of concerns about multiple use as well as discussed other approaches federal land management. One of those, an ecosystem-based approach, or ecosystem management, would become a major focus of federal land management for the next twenty years. This approach was experimented with in a number of large, landscape-level, multiagency management efforts. Ecology, and ecological concerns, first arose at the same time President Franklin Roosevelt was ramping up his own version of conservation through such programs as the Civilian Conservation Corps (CCC), the Tennessee Valley Authority (TVA), and other programs to "improve" nature. Tension was bound to occur. Others, such as Leopold, spoke in terms of a land ethic and a more nuanced and protective approach to land management.[46]

The first large-scale experiment with ecosystem management was tried in the Yellowstone area, the area of the first national park and first forest reserve, in what had come to be called the Greater Yellowstone Ecosystem. This experiment was widely followed, widely written about, and clearly represented the large, landscape-level, multiparty approach that most people would consider a real-world example of "ecosystem management." What started with optimism ended in vague promises to better coordinate land management because of intense political disagreements over management direction.

Larger ecosystem management efforts were undertaken in the Pacific Northwest—one dubbed the Interior Columbia Ecosystem Management Project (ICEBEMP), the other the Northwest Forest Plan. ICEBEMP, a nearly ten-year effort that former Forest Service Chief Jack Ward Thomas once deemed the largest regional assessment ever attempted, ended in a way similar to the Yellowstone effort in February 2003. The Northwest Forest Plan appeared to result in more success, but it is more difficult to assess how much as yet. Thomas and others involved with the plan recently claimed that "it has proven more successful in stopping actions harmful to conservation of old-growth forests and aquatic systems than in achieving restoration goals and economic and social goals."[47] The question of whether these

efforts actually reflected a new approach to land management remains unanswered.

Ecosystem management was developed as the federal land agencies became much more diverse both demographically and, probably more important, professionally. Foresters and engineers now worked alongside ecologists and wildlife biologists. Perhaps more deeply, the growth of ecological protection as a worldview and the ecological disciplines were creating a partial challenge to the professions and worldview of the older conservation movement. If the foresters, engineers, and so on valued the production and wise management of the natural resources needed for the development of industrial society, ecologists, environmental groups, and some of the of the public saw things differently. Most Americans moved from a view of natural resources as "Tree Farms" to a view of them as part of "Mother Earth."[48]

This alternative view of resources certainly complicated questions and policies regarding land management. Ecology and related sciences were raising disturbing observations about the natural world. No longer could managers attempt to manage at least our protected areas (parks and wilderness) in terms of a balance of nature and natural processes; instead, they needed to manage landscape-level changes. They have yet to agree on a way to do this, offering up various approaches. Those approaches include "hands-off" management, managing ecological integrity, managing for historical fidelity, and managing for resilience. Environmental advocates did not stop with protected areas; they argued that traditional multiple-use lands needed "resiliency" and "integrity approaches" as well, creating concern from traditional multiple-use advocates. Without anyone actually saying it in these terms, it was as though the old multiple-use legal direction to manage without impairment of the *productivity* of the land had changed to *resiliency* or *integrity.*

Advocacy or Normative Science

Scientific knowledge has become massively important in natural resource decisions. Laws such as the Endangered Species Act demand up-to-date scientific information. Society has entered a realm where questions abound over both how the scientific method gets used and the role of science. Robert Lackey presents the problem in terms of what he calls "normative science," defined as "information that is developed, presented or interpreted based on an assumed, usually unstated, preference for a particular policy choice."[49]

For example, a scientist could personally believe that the four Snake River dams should to be breached to restore salmon runs. If that scientist actually structured his or her research to arrive at that preordained conclusion about dam breaching, he or she would be doing Lackey's normative science. In a sense, this might not be so different from foresters of an earlier day believing that timber harvesting was a given.

Advocacy science can also involve attempts to use science as a policy trump card. Here it is an attempt to answer policy questions shot throughout with public values by invoking science as a truth claim. It often can be framed with language such as, "The science is in, cattle grazing *should* be ended on the public lands." Science can certainly inform, but it cannot answer the question of whether cattle grazing *should* be allowed on the public lands of the United States.

THE CONSERVATION MOVEMENT AND FEDERALISM: A STORY THAT DOES NOT END

There has always been a countermovement to the conservation movement's solution of national management of the public lands. As early as 1912, several states had begun a call, which would reoccur with regularity up to the present day, to transfer the national forests (and later other federal lands) to the states. Chief Forester Graves resisted the call with an argument that noted that the public would lose control to particular and local interests: "The underlying purpose of the proposed transfer of the national forests to the States is really not to substitute State for Federal control, but rather to substitute individual for public control. Its most earnest advocates are the very interests which wish to secure such control."[50]

Calls for transfer continue today.[51] The most recent set of events occurred in Arizona in 2013. In March, the state legislature passed a bill that called for federal land agencies to give up title to roughly 48,000 square miles of federal land by 2015. The bill was vetoed by Arizona governor Jan Brewer (in office 2009–) for reasons including cost and legal uncertainties, but action did not end there. Proposition 120 was placed on the November ballot for a vote by all Arizonians. The proposition called for the federal government to relinquish what would amount to most non-Native American land within the state, including Grand Canyon National Park. Only nationally established native reservations, a trivial amount of state cessations, and small military reservations were not included. Arguments ranged from those touting state sovereignty to those asserting that federal land ownership was unconstitutional to promises to protect "Grand Canyon State Park." The proposition failed by a vote of 67.7 percent to 32.3 percent.

In Utah, action was legislative. That body passed HB 148, the "Transfer of Public Lands Act and Related Study." The law requires the United States to extinguish title to public lands and transfer title to those public lands to the state on or before December 31, 2014. The law mandated a study by Utah's Constitutional Defense Council to be given to the 2013 general session of the legislature. That study was prepared by the Council and Utah's Public Lands Policy

Coordinating Office. The report included several key sections, including a historical background, management summaries, and proposed legislation creating a Public Lands Interim commission to further study transfer. The report admitted to a governing assumption that individuals closest to the lands in question were better able to make land management decisions. By the end of the report, however, there was evidence that its authors realized that they were dealing with great complexity:

> The transfer of public lands contemplated by H.B. 148 is a bold initiative that will require a re-examination of public lands policy on a federal, state and county level. This re-examination must be fully informed and it implications thoughtfully evaluated. The many interests that have become institutionalized over the course of the past century must be identified, studied and given a voice in what must be characterized as a process. This process should have as its goal the development of a new vision for the public lands that better meets the economic, energy, education and recreation needs of today.[52]

If the statement above is any indication, perhaps conservation and public policy issues stand where they started. The interest groups of old have multiplied and must be identified, studied, and given a voice. But how? Multiple-use management seems in some disrepair, and many are frustrated by interest group gridlock, even though the source of much of it comes from disagreement over the purposes of natural resource management. Experts no longer have a dominant voice but an important participatory one. Laws require sound information for decision making; that legacy of the conservation movement is intact.

As in the 1890s, it may well be time for a new "vision" for the natural resources of the United States. The numerous small and area-specific collaborative groups that have developed throughout the country hold promises of getting citizens to speak and work together, but they have not as yet changed the national conversation. Many people speak of public lands and water as important for biodiversity and ecosystem protection, that those environmental values should be the most important part of the vision. However, many other citizens still value the same lands and waters for what they can produce in terms of jobs, resources, and economic development. It is fair to conclude that the nation remains in the middle of a contested arena of different values, visions, and expectations, all in an era of constrained budgets and personal and societal contradictions over the role of government. It will be a rough time for a new vision.

***See also* Chapter 2: Agricultural Practices, Westward Expansion, and Land Use (First Arrivals through the 1870s); Chapter 3: A Changing Geography of Hope: Technology, Nature, and Progress (1800–Present); Chapter 4: Legacies of Indigenous Resistance to Colonial Expansion (1860s–Present); Chapter 6: Recognizing Limits to Growth: An Overview of U.S. Environmental Law and Its Impact (1860s–Present); Chapter 7: Urbanization and Land Use: Issues and Policies (1700s–Present); Chapter 8: Water and Waterways: Issues and Policies (1700s–Present).**

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