

**Public Lands Law and Policy
NRM 204, 3 Credits
Spring Semester 2012
Arctic Health, Room 183
Tuesday & Thursday, 2:00-3:30**

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If you have a physical or learning disability, please advise me in writing of any special consideration necessary by the beginning of the second class. I will do everything possible to accommodate you in accordance with the Americans with Disabilities Act.

This class covers the major laws and policies governing the management of federal public lands and resources. The goals of the course are to gain an understanding of the agencies that manage the different land units and resources and the laws which animate their management strategies. Additionally, we will cover important issues affecting public lands and natural resources in the Western United States and Alaska.

Class Schedule

Thursday January 19

1. Course Introduction

Tuesday January 24

2. The Philosophy of Public Land
 - Thinking about natural resources [Wilkinson preface and 1-27]
 - Wise Use v. Preservation (Pinchot v. Muir) [Reading packet 1-15]

Thursday January 26- Tuesday January 31

2. The National Forests
 - Organic Act and Multiple Use Sustained Yield Act (MUSY) [Reading packet 19-27; Wilkinson 120-142]
 - National Forest Management Act and Forest Management Planning [Wilkinson 142-174]

Thursday February 2- Tuesday February 7

3. The Bureau of Land Management
 - Taylor Grazing Act and Mining Law of 1872 [Wilkinson 29-50, 75-98]
 - Federal Land Policy and Management Act (FLPMA) [Wilkinson 50-74, 98-113]

Thursday February 9

4. Wild and Scenic Rivers
 - Wild and Scenic Rivers Act [Reading packet 37-44]

Tuesday February 14- Thursday February 16

5. The National Park Service
 - National Parks Organic Act [Reading packet 45-49]
 - Antiquities Act [Reading packet 50-59]

Tuesday February 21- Thursday February 23

6. Wildlife Refuges [Reading packet 60-81]
 - National Wildlife Refuge System Administration Act of 1966 and Refuge Recreation Act
 - 1997 National Wildlife Refuge System Improvement Act and "Compatibility"

Tuesday February 28- Thursday March 1

7. Wilderness
 - The Preservation Ethic [Reading packet 82-139]
 - The Wilderness Act [Reading packet 140-170]

Tuesday March 6

Review for midterm

Thursday March 8

Midterm

Tuesday March 13- Thursday March 15

Spring Break

Tuesday March 20

8. National Environmental Policy Act (NEPA) [Reading packet 171-192]
- About NEPA
 - When must an EIS be prepared?
 - How to tell if the EIS is adequate?
 - Does NEPA work?

Thursday March 22

no class

Tuesday March 27

NEPA continued

Thursday March 29 Tuesday April 3

9. Public Lands and Land Law in Alaska
- Alaska Native Claims Settlement Act (ANCSA) [Reading packet 193-208]
 - Alaska National Interest Lands Conservation Act (ANILCA) [Reading packet 209-223]

Thursday April 5

10. Migratory Birds
- Migratory Bird Treaty Act [Reading packet 224-232]
 - Constitutional Treaty Power [Reading packet 233-238]

Tuesday April 10

11. Marine Mammal Protection Act (MMPA) [Reading packet 244-257]
- About MMPA
 - Management Principles
 - Tuna-Dolphin Conflict
 - Navy Sonar Issue

Thursday April 12- Tuesday April 17

12. Water Law
- Riparian Rights v. Prior Appropriations [Reading packet 265-287]
 - Damming the West [Wilkinson 219-292]
 - Water Scarcity [handout]

Thursday April 19- Tuesday April 24- Thursday April 26

13. Endangered Species Act (ESA) [Reading packet 290-327]
- Why Should We Save the Endangered?
 - About the ESA
 - Tellico Dam, the Snail Darter, and the God Squad

Tuesday May 1

Review for final

Thursday May 3

In Class Final Exam

Course Requirements and Grading:

Textbooks:

There is a required reading packet which I will hand out in class, and a text book that you must purchase entitled *Crossing the Next Meridian: Land, Water, and the Future of the West*, by Charles F. Wilkinson (Island Press, Washington DC, 1992). In the syllabus, readings in the text will be denoted as "Wilkinson" and those in the reading packet as "Reading packet."

Exams:

There will be one midterm exam and one final exam, the final exam is not cumulative. Each exam will account for 30% of your total final grade. Exams will take place in class and will be **closed book**. Exam questions will be drawn from the required readings, lectures, and the classroom discussions. A close understanding of the course material is important as exam questions may require you to apply information you learned in class to new situations, rote memorization will often not be enough to get an A. Exams will include essay and short answer questions. Please make sure that you write legibly as illegible answers may not be graded. There will be no makeup exams, if you are unable to take the exam on the date scheduled and you have a good reason, please see me as soon as possible.

Assignments and Quizzes:

There will be 2-4 take home assignments and 2-4 quizzes worth a total of 30% of your grade.

Assignments will be **open note**, and may require additional research. You may not work together, except to prepare for in-class debates. Assignments must be typed and must be handed in on time. Late work will lose 10% of the total available points each day it is late.

Quizzes will be in-class, pop quizzes. They will be **open note** and will take place in the first 15 minutes of the class period, so timeliness is crucial. Missed quizzes cannot be made up.

Attendance, Preparation, and Class Participation:

Attendance and proper preparation for each class session are mandatory. Regular class participation is strongly encouraged and will impact your grade. Together these three components will make up 10% of your final grade.

Grades:

This course is graded with a letter grade corresponding to the numerical score you receive. This class will use +/- grades.

Extra Help:

If you find, at any time during the semester, that you are having trouble understanding the concepts discussed in class, please see me before you fall behind. I am happy to provide additional explanations and other help to any student who is interested.

Good luck to each of you this semester.

Udall, S. The Quiet Crisis. (Gibbs Smith, Salt Lake City, 1997).

CHAPTER VIII

The Woodlands:

PINCHOT AND THE FORESTERS

The American Colossus was fiercely intent on appropriating and exploiting the riches of the richest of all continents—grasping with both hands, reaping where he had not sown, wasting what he thought would last forever. New railroads were opening new territory. The exploiters were pushing farther and farther into the wilderness. The man who could get his hands on the biggest slice of natural resources was the best citizen. Wealth and virtue were supposed to trot in double harness.

—GIFFORD PINCHOT
Breaking New Ground

THE timber barons and their congressional allies, who had run roughshod over Carl Schurz in the late 1870's, continued to ride high both in the West and in Washington. In the 70's and 80's permissive timber laws were passed, which opened new avenues to those intent on taking trees by trespass and fraud. The penalty for stealing a horse in some parts of the West was often death, as Gifford

Pinchot wryly noted, but the stealing of public trees cast not a "shadow on the reputation of the thief."

The unlimited frontier freedom, which had swept aside the old barriers of caste and class, quickly erected new ones of wealth and gave political power to the new rich. Hand-picked Congressmen dedicated to the Great Giveaway were the chief spokesmen in Washington for the landgrabbers, and for a time the domineering men who ran the company towns turned such states as Maine and Wisconsin and Oregon into company states.

Gifford Pinchot saw the climax of the Big Raids in the 1890's, and he described the scene with both candor and color:

Out in the Great Open Spaces where Men were Men the domination of concentrated wealth over mere human beings was something to make you shudder. I saw it and fought it, and I know. . . . Big money was King in the Great Open Spaces, and no mistake. . . . The powers and principalities which controlled the politics and the people of the West began to emerge from the general landscape. Principalities like the Homestake Mine in the Black Hills, the Anaconda Mine in the Rockies, Marcus Daly's feudal overlordship of the Bitroot Valley, and Miller and Lux's vast holdings of flocks and herds and control of grazing lands on the Pacific slope—these and others showed their hands or their teeth. So did powers like the Northern and Southern Pacific and the Great Northern Railroads, the irrigation interests of California, and the great cattle and sheep stock growers' association.

In the forests, as on the ranges and in the mines, it was every man for himself, and it would take a generation of protest, and a Rough Rider President, to slow down the onslaught and put the get-rich-quick capitalists on the defensive. The nineteenth-century lumber tycoons, to give them full credit, housed a growing nation, cleared land,

and hastened the pace of westward expansion. However, in the process, they set world records for waste, and their prodigal prosperity consumed the stored "capital" of nature—which, by right, belonged to other generations.

By our standards they were spendthrift, but they played under spendthrift rules, and a mill operator who stopped to save soil, or protect second growth, or reduce the danger of fire would have gone bankrupt in a hurry. Lumbering was our largest manufacturing business during most of the nineteenth century, and the stripped hillsides and blackened woods left by its reckless "rush" did more than anything else to awaken us to the fallacy of the Myth of Superabundance.

Before the forest raids were finished, about half of the cutover woodlands had gone into farms and the other half was in sorry second growth or had been logged and burned into barrenness. By 1920 only one-fifth of our primeval forest lands remained uncut. This was one of the most wasteful chapters written by the raiders.

Most of the time, the American pioneer was too busy subjugating the land to be interested in husbandry. Even the first isolated acts of preservation were dictated by necessity, and not by wisdom about the woods: the early colonial governors who blazed selected trees with a "broad arrow" did so for the sole purpose of reserving superior shipmasts for the British fleet; and the common woodlots maintained by some New England towns were attempts to save enough nearby trees for local home building and native crafts.

Although from independence onward, disposal was our land policy, in the early 1870's small countercurrents were set in motion. The need for systematic preservation first became apparent in the Eastern states where the raids had begun and where the consequences of forest waste and land damage were already visible. The first government agency

to reverse the trend was the New York Forest Commission, which, in 1872, halted the sale of state forest land.

The following year, some members of the American Association for the Advancement of Science opened a campaign to save the forests, and another strong voice was added two years later when the American Forestry Association came into being. These pioneer conservation organizations carried on a constant campaign for a new approach to national stewardship.

Meanwhile, in the hinterland, the tree raid was still moving toward its climax, but a few Eastern magazines and newspapers were beginning to raise doubts about the race for resources, and the need for national policies was increasingly apparent. The abortive efforts of Schurz inspired the introduction of initial forestry bills into the Congress. Senator Edmunds of Vermont, George Perkins, Marsh's nephew, twice secured Senate approval of a bill to establish a forest reservation "at the headwaters of the Missouri River." But the House failed to pass either measure, and new giveaway bills had an easy time in Congress and opened up further opportunities for the landgrabbers.

The forest savers made slow headway during the decade of the 80's, but their persistent campaign finally elicited support from President Harrison and his Secretary of the Interior, John W. Noble. In the closing hours of an 1891 congressional session—largely through Noble's adroit use of a veto threat, these sixty words were inserted, as a "rider" in a public lands bill:

Section 24. That the President of the United States may, from time to time, set apart and reserve, in any state or territory having 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.

This terse proviso did not, on its face, seem to threaten the Great Giveaway. Noble's amendment was ungrammatical and apparently innocuous, and its potential did not penetrate the minds of the adjourning members. Committeees had not considered it; its adoption contravened the rules of both Houses; it was not debated; and had its scope been spelled out, the representatives of the forest states of the West would have opposed it almost to a man.

As a piece of legislation, it was a fluke: one of the most far-reaching conservation decisions ever made was ironically consummated in half-hidden haste. At one stroke it gave Presidents the power to set aside or "withdraw" certain forests where all logging would be forbidden, and to control the disposal of the remaining forest lands.

Within a month after passage of the act, President Harrison withdrew 13,000,000 acres and set up 15 "reserves" under Noble's Department. As a people, we now had some land that was off limits for the forest raiders—at least on paper. However, no one had a management plan, for in 1891 there was only one professional forester, Bernhard Fernhow, a German emigrant of 1876, who was a friend of Schurz and tried to implement some of his ideas.

Without rules for use, this reserving of certain forests, as some Westerners rightly pointed out, was a "lock-up" of land. A showdown was inevitable, and it came in 1897 when Grover Cleveland—then a lame-duck President—signed a proclamation that set aside new forest areas double the size of the Harrison reserves.

Outraged Senators demanded impeachment of the President, and bills were passed to reverse Cleveland's proclamation. Congress would have repealed the 1891 act then and there, but a presidential veto and adjournment saved the day. The stage was thus set for Gifford Pinchot, who strode onto the Washington scene in 1898 with a plan and a program for the systematic management of American forests.

Pinchot, then thirty-eight, was wellborn, well-educated, and well prepared to inaugurate practical forestry in America. After Yale he studied silviculture in France with a master teacher, Sir Dietrich Brandis, the founder of forestry in British India, and verified Marsh's earlier observations on European forest practices. On his return to the United States, young Gifford made long field trips into the back country of the South and the West, and later was hired to manage the Vanderbilt estate in the Great Smoky Mountains.

Appointed as the Department of Agriculture's Chief Forester in 1898, he headed an information service that had no timberland to manage. But he soon set about to remedy the situation. The man and the job were made for each other: "GP" had the clear eye of a scientist, a naturalist's love of woods and open spaces, the moral fervor of an evangelist, and a politician's intuition. Before he was through he would need all of these talents, for if he was to succeed, the flow of American thought about natural resources would have to be reversed.

He had the lean look of a Moses and a similar sense of mission. His task, he was convinced, was to stop the practice of forest destruction in the United States, and to inaugurate the practice of forestry. He knew the conditions on America's watersheds, and once he decided on a solution he was as single-minded as the timber raiders themselves. He had long argued that the idea of "reserves" was wrong: the ax should be regulated, not stopped in mid-air. He believed any forestry plan would work only if the people who lived nearby would support it. This concept became the heart of Pinchot's plan. His instincts told him that the Western men in Congress could not long tolerate huge, permanent land withdrawals that threatened the development of basic industries. Pinchot devised a use-with-along-view plan, and his compromise approach halted

those who wanted to revoke the Cleveland proclamation.

The big break for Pinchot, and for forestry, came when Theodore Roosevelt assumed the presidency on the death of McKinley in 1901. The two men were already acquainted. As Governor of New York, Roosevelt had called Pinchot in for consultations about the resource problems of his state. In his first State-of-the-Union message the new President declared that "the forest and water problems are perhaps the most vital internal questions of the United States." (This part of his message had been written by Pinchot and F. H. Newell, one of Powell's former aides who was then the chief advocate of federal leadership in Western water development.) It included a call for a federal reclamation program and a sound use plan for the "reserves."

During Theodore Roosevelt's first term, Pinchot worked overtime to sell his idea that forests could be "saved" and used simultaneously. He was still a forester without forests, and his objective was to persuade the President and the Congress to give him a corps of trained forest rangers and make him the warden of all federal timberlands.

A tireless and persuasive talker, GP began to cultivate support in and out of Washington. He knew as much about the growth of public opinion as he did about the growth of trees, and each major step he took, or proposed to the President, was calculated to catch a fresh breeze of public support. The study commission, and the national conference were tools he perfected to further his cause. Once TR was elected in his own right in 1904, Pinchot arranged a Washington meeting of the American Forestry Congress to coincide with the President's long-awaited recommendation on forest management and a bill was swiftly passed in 1905, transferring the reserves from the Department of the Interior to the Department of Agriculture, and they were soon designated National Forests.

By any standards, Gifford Pinchot was a magnificent

bureaucrat. In his time the Forest Service was the most exciting organization in Washington. It was more a family than a bureau. In the field, around campfires, and in his home GP discussed the next moves and gave his associates the feeling that they served on the general staff in a national crusade. A natural leader, he chose his men well, gave them authority, aroused an *esprit de corps* and sent them forth to save the forests. The rule book he wrote for his men was filled with crisp, common-sense guidelines. Typical Pinchot maxims were: "The public good comes first," and "Local questions will be decided by local officers on local grounds." In a matter of months his new "forest rangers" were winning over the West.

Pinchot was a fighter who gave the raiders blow for blow. At a Denver conference one day, a cattle industry spokesman who charged a ranger with outrageous conduct was put to silence when Pinchot called his bluff: "If what you say is true, give me the man's name, and he will be fired today!" He had no use for the monopolists and the free-loaders on the public domain, and they quickly found out that the public interest, for him, was more than a phrase. Grazers and loggers were assessed user fees, and for the first time grass and trees were managed in such a way that they could be replenished on a sustained-yield basis. Law and order came late to the public lands, but Pinchot's rangers prevailed because they were firm and fair and spoke for the future.

Despite the initial successes of the Forest Service, the die-hard opponents of federal forests watched uneasily as the young President signed a series of land-conserving proclamations. They were convinced a line had to be drawn, and in 1907 a group of Western Senators sought to turn the tables on Pinchot and Roosevelt by attaching to an appropriation bill a rider that repealed the Forest Reser-

vation Act of 1891 in the timber-rich States of Oregon, Washington, Idaho, Montana, and Wyoming.

It was the end of the session, and the President was forced to sign the bill, but the alert Pinchot was ready with a counterstroke. Ten days later the floor of the President's office was strewn with maps and surveys as the final decisions were made, and TR, with inimitable gusto, signed proclamations creating 16,000,000 acres of new forests in these five states. Later that day, his conservation goal accomplished, he inked the bill that would have tied his hands. All told, under the Act of 1891, Presidents Harrison, Cleveland, and Roosevelt set aside 132,000,000 acres which today comprise the greater part of the magnificent national forests of the West.

Pinchot and TR would lose some battles, but they had already won the most important engagements in the conservation war. Once Pinchot had saved his trees, he turned his attention to other abuses of the raiders. One February day in 1907, while Pinchot was riding his horse through Rock Creek Park in Washington, the conservation cause took on a new aspect:

Suddenly the idea flashed through my head that there was a unity in this complication—that the relation of one resource to another was not the end of the story. Here were no longer a lot of different, independent and often antagonistic questions, each on its own separate little island, as we have been in the habit of thinking. In place of them, here was one single question with many parts. Seen in this new light, all these separate questions fitted into and made up the one great central problem of the use of the earth for the good of man.

On that day in 1907, three hundred years had elapsed since the founding of the first colony at Jamestown—three hundred years of exploitation and misuse of the continent's

resources. On that day Thomas Jefferson had been in his grave for eighty-one years, George Perkins Marsh had been in his for twenty-five, and John Wesley Powell had been dead for five. On that day nearly all of the buffalo were gone, most of the forests had been leveled, and millions of acres of soil were eroding away. But a counter-movement was at last well under way, and Pinchot had defined it: "the use of the earth for the good of man."

What was needed now was a word, a name—to sum up the concept. A conversation with forester Overton Price brought up the fact that government forests in India were called "conservancies." Pinchot and Price liked the ring of the word, and thus a concept that had originated in the seminal thinking of such men as Thoreau and Marsh now had an expressive name—conservation.

Pinchot was one of the great teachers of his time: he taught frugality when waste was the accepted creed; he turned his back on the race for riches and sought the higher goal of public service; and when money power was king in parts of our land, he aroused in the people a sense of their own power.

It was the Chief Forester who framed most of the ideas which became Theodore Roosevelt's conservation program. The influential White House Conference on Conservation in 1908, the farsighted Inland Waterways Commission study, and the landmark report of the International Conservation Commission in 1909 were Pinchot-planned and Pinchot-executed projects. He was the composer, and also played first violin while the redoubtable Roosevelt conducted.

In all our history, Pinchot is the only bureau chief who was first counselor to a President on high policy. TR's letter to Pinchot the day the President left the White House was a memorable commendation: "As long as I live

I shall feel for you a mixture of respect and admiration and an affectionate regard. I am a better man for having known you. . . . I owe you a particular debt of obligation for a very large part of the achievement of this Administration."

Pinchot stayed on with Taft, but their convictions differed, and the tandem harness did not fit. At best, Taft was lukewarm toward TR's policies, and the contrast of personal styles was, to use Pinchot's words, "as though a sharp sword was succeeded by a roll of paper, legal size." Within a year the Chief Forester deliberately picked a fight with Taft over the actions of his Interior Secretary, Richard A. Ballinger. The still-disputed Ballinger-Pinchot controversy led to Pinchot's stormy departure, and also generated the friction which ignited the first fires of the Bull Moose movement.

The conservation movement was a river of many tributaries, and if GP was not, as he liked to believe in his later years, its fountainhead, he was nevertheless one of its vital sources. He was key man of a key decade, and his leadership was crucial in persuading the American people to turn from flagrant waste of resources to programs of wise stewardship.

Once launched, the forestry movement quickly gathered momentum. In 1911, Eastern Congressmen and conservationists passed the Weeks Act, and the policy of complete disposal had come full circle: from Maine to Florida, the government began to buy back cut-over tracts for inclusion in a national-forest system for the East. Public lands were indispensable after all, as Easterners belatedly discovered.

The preaching of Pinchot and his men—and the public opinion they stirred up—began to penetrate the lumber industry itself. A few leaders began to wonder if Pinchot's sustained-yield idea was not worth a try, and "tree farm-

ing" under private land management had a hopeful beginning.

Pinchot had shortcomings, and one of them led him to an unhappy confrontation. Over the years the extraction aspects of land conservation became a fetish with him. He always had a blind spot to wildlife and wilderness values: to him, untrammelled wilderness was a form of waste. It took the later leadership of foresters like Robert Marshall and Aldo Leopold to establish a system of wilderness reserves in the high country of the national forests. The nascent national park concept also left Pinchot cold.

The classic encounter that embroiled him and other dedicated conservationists involved the first head-on collision between the Pinchot idea of conservation-for-use and the park concept of scenic preservation. The controversy was known by an improbable name: Hetch Hetchy. Pinchot's chief opponent, a friend who knew even more about the American out-of-doors than he, was an improbable person—John Muir.

CHAPTER IX

Wild and Park Lands:

JOHN MUIR

There is an eagle in me and a mockingbird . . . and the eagle flies among the Rocky Mountains of my dreams and fights among the Sierra crags of what I want . . . and the mockingbird warbles in the early forenoon before the dew is gone, warbles in the underbrush of my Chattanooga of hope, gushes over the blue Ozark foothills of my wishes—and I got the eagle and the mockingbird from the wilderness.

—CARL SANDBURG
"Wilderness"

A VIOLENT GALE was roaring through the forests of the Sierra Nevada one cold, clear morning in December of 1874 as John Muir wandered through the woods, "enjoying the passionate music of the storm." It occurred to him that a tree was the best place to catch the full force of a windstorm, so he chose a 100-foot Douglas fir, scrambled to the upper branches, and swayed there for hours "like a bobolink on a reed."

"Never before," he wrote later, "did I enjoy so noble an exhilaration of motion . . . My eye roved over the piny hills and dales as over fields of waving grain, and felt the

light running in ripples and broad swelling undulations across the valleys from ridge to ridge, as the shining foliage was stirred by corresponding waves of air."

The episode was typical. Muir was determined to stretch his senses to their limits. He invariably sought the most intimate relation to natural forces—to the winds, the storms, the rivers and forests and wild animals—whether it required climbing to the top of a wind-bent fir or sleeping out in a mountain blizzard to feel the snowflakes on his face. He developed his inner ear to catch the nuances of nature, and this led him to evolve land-preservation concepts that still have a unique purity and simplicity.

John Muir's lifelong education in what he called the "University of the Wilderness" began when he was a boy in Scotland and continued in youthful wanderings in the back regions of the Great Lakes. It reached a broader phase in late 1867 when he took a 1,000-mile saunter through Kentucky, Tennessee, Georgia, and Florida. His odyssey continued to Cuba, through the Isthmus of Panama, and on to San Francisco.

He was thirty when he first saw the Golden Gate and set eyes on the summits of the Sierra Nevada. It was the spring of 1868 and he knew at once he had found his homeland. He described with absolute rapture the great range and the Central Valley, brilliant with wild flowers: "And from the eastern boundary of the vast golden flower bed rose the mighty Sierra, miles in height, and so gloriously colored, and so radiant, it seemed not clothed with light, but wholly composed of it, like the wall of some celestial city."

In his first exploratory walk into this mountain wilderness, he viewed a steep-walled canyon which became for him a personal sanctuary—the stupendous valley of the Yosemite. From the first, Muir sought as many contacts with the wilderness as one man could absorb. To him, the

true wilderness experience was far more than mere exposure to nature; it began with heightened sensibilities and ended in exactness of observation. His senses were alive to the most subtle variations of color, line, texture, aroma, and sound. In a description of Yosemite Falls, for example, he wrote that the plummeting water "has far the richest, as well as the most powerful, voice of all the falls of the valley, its tones varying from sharp hiss and rustle of the wind in the glossy leaves of the live-oaks and the soft, sifting, hushing tones of the pines, to the loudest rush and roar of storm winds and thunder among the crags of the summit peaks."

For Muir it was not enough merely to observe the fine sculpturings of the Sierra peaks, the lake basins carved in solid rock, the polished granite surfaces of canyon walls; he wanted to find the roots of things and he viewed the natural world with the eye of a scientist. His theory that Yosemite Valley had been carved by Ice Age glaciers, although ridiculed at the time by leading geologists (who believed that the valley's floor had dropped down in a cataclysm), was later confirmed. In describing the panorama visible from the top of Mount Ritter, Muir visualized the vanished glaciers that had carved the peaks, canyons, and valleys below:

Standing here in the deep, brooding silence all the wilderness seems motionless, as if the work of creation were done. But in the midst of this outer steadfastness we know there is incessant motion and change. Ever and anon, avalanches are falling from yonder peaks. These cliff-bound glaciers, seemingly wedged and immovable, are flowing like water and grinding the rocks beneath them. The lakes are lapping their granite shores and wearing them away, and every one of these rills and young rivers is fretting the air into music, and carrying the mountains to the plains.

Muir saw that men were eyewitnesses to creation if only they opened their senses to it. Each journey into the wilderness was for him a trip to a fresh wonderland. It was also an experience of self-knowledge and self-fulfillment. He felt the same reverence for the land—the sense of wholeness and oneness—that had been experienced by the Indians and the early naturalists. In the wilderness, he wrote, “life seems neither long nor short, and we take no more heed to save time or make haste than do the trees and stars. This is true freedom, a good practical sort of immortality.”

Early in his mountain career Muir came to a conclusion that decisively affected his own future and to some degree the future of his country: wilderness freedom, like political freedom, was perennially in danger and could be maintained only by eternal vigilance. It was necessary, he became convinced, permanently to preserve large tracts of choice lands in public ownership.

Although many years earlier such naturalists as George Catlin, Emerson, and Thoreau had vaguely recognized the need to preserve some of our finest landscapes, the first specific steps toward doing so had been taken only a few years before John Muir arrived in California by a young landscape architect named Frederick Law Olmsted, the designer of New York's Central Park. Impressed by the grandeur of Yosemite Valley, Olmsted and others persuaded Congress to pass a bill to preserve it “for public use, resort and recreation.” The measure was signed by President Lincoln in 1864. Yosemite Valley, ceded to the State of California and administered along lines suggested by Olmsted, was the first scenic reserve created by federal action, and the event is a landmark in the history of conservation.

A few years later members of an expedition exploring the Yellowstone region in Wyoming were so overwhelmed

by the beauty of the geysers, canyons, waterfalls, lakes, and forests that they began to discuss ways and means of saving a few superlative parts of primitive America for all time. If these men had shared the raider mentality of their day, they might have staked out a commercial bonanza for themselves. They could, quite lawfully, have filed homestead or mining claims in the nearest land office and exploited key tracts of this masterpiece of nature for private profit.

But to some of these explorers monopoly of such scenery was unthinkable, and the idea of a permanent public reserve was discussed over a campfire one night in 1870 at the confluence of the Firehole and Gibbon rivers. One of the explorers, Judge Cornelius Hedges, later wrote a newspaper article on the subject. The idea generated support and it was only two years later that President Grant signed a little-debated and little-understood Yellowstone Park bill, providing that more than 2,000,000 acres—a region larger than Rhode Island and Delaware combined—be “dedicated and set apart as a public park or pleasuring ground for the benefit and enjoyment of the people. . . .”

Because Wyoming was still a territory, Yellowstone was placed in the custody of the Secretary of the Interior and became our first national park. The concern of a few people for the rights of future generations made the difference, and this factor of foresight would mean the success of most future park proposals.

The remoteness of the Yellowstone region had protected it from the inroads of the loggers and cattlemen, but Muir's plan to create a comparable nationally owned park in the mountain area surrounding Yosemite Valley was another story. The users, already on the scene, had come to look on the Yosemite high country as their private preserve. Muir had seen the first encroachments on his sanc-

tuary early in his mountain career when he came upon denuded "gardens and meadows" on the Merced River above Yosemite Valley. The sheepmen and their "hoofed locusts" were responsible, and Muir had written in anger: "The money-changers were in the temple."

On trip after trip he had found evidence of the destructive results of overgrazing. ". . . The grass is eaten close and trodden until it resembles a corral. . . . Nine-tenths of the whole surface of the Sierra has been swept by the scourge. It demands legislative interference."

Muir's search for a remedy to protect the wild lands carried him beyond Emerson and Thoreau and the earlier naturalists to take up the fight for the land. Protest was not enough; men had to act; and from that point on, John Muir became a sort of Senator-at-large for the American out-of-doors.

Sheep were not the only agents of destruction in the Sierra. In exploring the groves of giant sequoia, Muir found sawmills going at full capacity. Lumbermen were cutting magnificent trees thousands of years old, blasting them with gunpowder into manageable size, wasting half the timber and setting fire to what was left. The sounds of lumber-mill saws, "booming and moaning like bad ghosts, destroying many a fine tree," still rang in his ears when, in February, 1876, he wrote a newspaper article, "God's First Temples—How Shall We Preserve Our Forests?", which was an appeal for the protection of the forests.

Like George Perkins Marsh, he described the ultimate result of the misuse of upland watersheds. The soil and water of these mountain areas contained "the roots of all the life of the valleys." In destroying the balance of nature in the mountains, man was cutting his own lifeline. "Whether our loose-limbed government is really able or

willing to do anything," he concluded, ". . . remains to be seen."

He did not wait to see, however. Although Muir shunned the public attention his writings would bring, he saw his course as clear. He had filled his pen in the wilderness; now he must direct it to write those thoughts that came to him out of the wondrous silence of a high mountain meadow, or flowed into him from the shiny granite as he rested and watched the clouds through pine boughs overhead. He found Eastern publishers eager to print not only his wilderness stories, but also his pleas for legislation to save the common wealth.

The tone of his writings ranged from lyrical to vitriolic. His sense of indignation was expressed in his opinions of the loggers who were felling the sequoias:

. . . Through all the wonderful, eventful centuries since Christ's time—and long before that—God has cared for these trees, saved them from drought, disease, avalanches, and a thousand straining, leveling tempests and floods; but he cannot save them from fools—only Uncle Sam can do that.

Not satisfied with merely putting the burden on Uncle Sam, Muir, a city-hater, came down out of the mountains time after time to do battle for his wild lands. He failed in his first assaults on the Myth of Superabundance, but bills he inspired were introduced in the '80's to save the finest groves of sequoias as federally owned parks, and to enlarge the Yosemite reservation.

It took a series of articles by Muir, published by his ally, Robert Underwood Johnson of *Century* magazine, to arouse the country to the need for the preservation of the entire Yosemite region around the relatively small state-managed park in Yosemite Valley. Interior Secretary

Noble, one of Muir's readers, took up the cudgels with President Harrison and the Congress, and a special bill was passed, in October of 1890, creating a "forest reservation" of more than a million acres. At about the same time, other Muir plans were partially fulfilled when the Sequoia and General Grant reserves were created to save some of the finest remaining groves of big trees. Although the legislation did not specifically refer to these three areas as "national parks," the term had previously been applied to Yellowstone, and Secretary Noble adopted it in naming them.

Encouraged by this success, Muir set out to form a private organization of mountaineers and conservationists to carry on his fight for the wilderness. Out of this effort came the Sierra Club, a crusading organization "... to explore, enjoy and protect the nation's scenic resources. . . ." Second only to John Muir in marshaling the organization's forces was his young colleague, William E. Colby, who joined the club two years after its founding, was its secretary for forty-four years, and a leader of the organization for more than half a century.

With the formation of the Sierra Club, Muir's career entered a new phase: the writer-naturalist became an organizer and a politician. The Sierra Club's first big fight, under Muir's leadership, was a counterattack against lumbermen and stockmen who wanted a stronghold in the Yosemite country. A House-passed bill would have cut the park area in half, but the Muir men mounted a counter-offensive, and the bill was tabled by the Senate. The Sierra Club had proved that the California vigilante idea would work for conservation if enough determined men were aroused.

But there was more to come. Surrounded by Yosemite National Park, Muir's beloved Yosemite Valley itself was

still in the hands of the state and badly mismanaged by profit-seeking concessionaires. Meadows were plowed, the forest floor was grazed bare, trees were felled, and Mirror Lake was dammed for irrigation. The floor of the incomparable valley was becoming a barnyard. In 1895 an outraged Muir and the Sierra Club opened a decade-long campaign for national management which could resist untoward pressures of local interests.

The turning point of the fight came when Muir and President Theodore Roosevelt crossed paths in 1903. The two outdoorsmen camped under the sequoias of the Mariposa Grove, rode horseback on the long trail to Glacier Point overlook, and talked late into the night around the fire. For once the ebullient Roosevelt met his match in conversation. Like all others who encountered Muir, Roosevelt was spellbound by the eloquence and enthusiasm of this bearded zealot who preached a mountain gospel with John the Baptist fervor. The mountaineer did nearly all the talking and the President listened, fascinated, while Muir denounced the damage being done in the Sierra by the loggers and the stockmen and expounded at length about nature and wilderness.

One night the two men rolled up in their blankets and went to sleep on the ground. Next morning they found themselves covered with four inches of snow, and when they rode down to the valley, the President rejoined his party, shouting, "This has been the grandest day of my life!"

Muir had argued strongly for recession of Yosemite Valley to the federal government, and the President left Yosemite a convinced "recessionist." But Roosevelt's approval was not enough. It was also necessary to convince the California legislature. The Sierra Club carried the campaign to Sacramento and won a hard-fought victory early

in 1905. Writing to his friend Johnson, Muir described his adventures in politics:

I am now an experienced lobbyist; my political education is complete. Have attended Legislature, made speeches, explained, exhorted, persuaded every mother's son of the legislators, newspaper reporters, and everybody else who would listen to me.

Recession of Yosemite Valley was now possible if Congress approved, and Muir recruited a new ally, the railroad tycoon E. H. Harriman. With Harriman and Roosevelt on their side, Muir and his associates were able to swing the necessary votes, and Yosemite Valley finally became part of Yosemite National Park.

During the first years of the twentieth century, the burgeoning conservation movement had established itself as a force to be reckoned with on the American scene. Pinchot and his men were forcing the commercial interests to use forests wisely, while the Muir men were bent on barring commercial activity altogether from some of the finest remaining primeval landscapes. Pinchot and Muir were fast friends in 1896 at the time they worked together with the National Forestry Commission. When the commission reached Arizona's Grand Canyon, the two left the party. Pinchot in later years described the occasion:

While the others drove through the woods to a "scenic point" and back again, with John Muir I spent an unforgettable day on the rim of the prodigious chasm, letting it soak in. . . . When we came across a tarantula he wouldn't let me kill it. He said it had as much right there as we did.

The rest of the commission bedded down in a hotel, but Muir and Pinchot decided to sleep out on the rim of the

canyon in freezing weather. "Muir was a storyteller in a million," Pinchot wrote. "We made our beds of cedar boughs in a thick stand that kept the wind away, and there he talked till midnight. It was such an evening as I have never had before or since."

That night on the rim of the Grand Canyon was almost the last time the two men were on speaking terms. A clash between them, which began soon afterward, was perhaps the most dramatic confrontation in the history of the conservation movement. It was, in a way, inevitable, since each was headstrong, opinionated, and on fire with a sense of mission.

They had fought on the same side in the first stages of the fight against the raiders and against waste and mismanagement of the national estate. Muir, in the prime of life when Pinchot had been a student at Yale, was a stalwart battler to save the forests, and his eloquent pen gave fresh courage to those who carried on the lonely struggle for forest protection in the 1880's. Both men were for federal reserves, for government action, and for scientific programs of planning and management.

It was understandable that Pinchot, trained in forestry, would place his major emphasis on silviculture, and on the development of a sustained-yield harvesting program for the forests. If he failed to comprehend the need for parkland preservation, it is explainable by the fact that he was compelled to concentrate on the rules and educational work necessary to establish order in the forests. If he emphasized product values and considered the esthetic values merely incidental this, too, was understandable.

Unavoidably, Pinchot's philosophy of conservation for use collided with Muir's conviction that the best parts of the woodlands and wilderness should be preserved inviolate as sanctuaries of the human spirit.

The conflict came, in the first instance, over sheep-grazing practices in the mountains of the West. Pinchot later admitted that "overgrazing by sheep does destroy the forest. . . . John Muir called them hoofed locusts, and he was right." But Pinchot was an adept politician and felt compelled to accommodate his plans to user-group demands whenever his long-range goals were not violated. He wrote: ". . . We were faced with this simple choice: Shut out all grazing and lose the Forest Reserves, or let stock in under control and save the Reserves for the Nation." Pinchot chose compromise, but Muir was unbending, and sheep-grazing, controlled or not, was anathema to him.

On the one hand, Pinchot looked on the public lands as a workshop to be managed for many purposes under a plan of balanced use. Muir accorded a place in the resource picture to livestock and hydroelectric power, but he gave first priority to preserving the finest landscapes of the public domain as temples unspoiled and intact. Drawing a line between the workshop and the temple was, and still is today, the most sensitive assignment for conservation planners.

Their sheep argument intensified, but the clashing concepts of these two giants finally came to a historic showdown on Muir's home ground, Yosemite National Park. Within the park, on the Tuolumne River some twenty miles north of Yosemite Valley itself, was another glacier-carved valley called Hetch Hetchy. "I have always called it the 'Tuolumne Yosemite,'" John Muir wrote, "for it is a wonderfully exact counterpart of the Merced Yosemite, not only in its sublime rocks and waterfalls but in the gardens, groves and meadows of its flowery park-like floor."

In the "Tuolumne Yosemite," officials of the growing city of San Francisco, searching for a new source of water

and power found an "ideal" location for a dam site. They filed a claim on the valley in 1901 and the issue was joined, for the proposed dam and reservoir were squarely within the boundaries of the National Park.

The wide waters of the reservoir would obliterate a sublime valley for all time, but the city needed hydro power and an assured water supply and the resource-development conservationists found themselves in a fierce contest with the conservers of the parks.

The Muir men were convinced that the integrity of the whole national-park system was at stake. If Yosemite National Park could be invaded and the Hetch Hetchy valley inundated, no other park would be safe from the dam builders and advocates of water-power development. Obviously, the parklands would be a prime future target as it would be cheaper to build dams in public parks than to buy up private property elsewhere.

The fight continued for more than a decade and involved many of our national leaders. The reservoir and public-power advocates finally played their trump card—a report of an advisory board of army engineers, which pointed out that, although there were several other possible sources of water for San Francisco, Hetch Hetchy would be the cheapest to build and would generate the most electric power. The report defined the issue squarely in dollars-and-cents terms. John Muir replied with indignant eloquence:

These temple destroyers, devotees of ravaging commercialism, seem to have a perfect contempt for Nature, and, instead of lifting their eyes to the God of the Mountains, lift them to the Almighty Dollar.

Dam Hetch Hetchy! As well dam for watertanks the people's cathedrals and churches, for no holier temple has ever been consecrated by the heart of man.

The emotional argument raged from San Francisco to Washington as "nature lover" and "bird watcher" became opprobrious epithets. There was no middle ground for compromise, as Muir's friend, Congressman William Kent of San Francisco, sadly found out. Kent had purchased and given the Muir Woods grove of redwood trees to the nation as a tribute to the man he later defeated in the Hetch Hetchy fight. Muir's central contention was that other dam sites were available but were not given consideration by the Congress or by his opponents. A second-best dam site would have saved water and scenery, too, but that was not to be.

In December of 1913 a bill was passed and the Hetch Hetchy dam was authorized. To Muir, the lesson was plain: no wilderness anywhere, even in the national parks, could be kept unspoiled unless the believers in preservation of scenic masterworks learned to organize and marshal new strength. Sadly, John Muir, seventy-five and exhausted from the grueling battle, wrote: "They will see what I meant in time. . . ." Sensing that the end was near, he feverishly worked fifteen hours a day to finish a book of his Alaskan travels. In December of 1914 he died, the manuscript at his bedside.

The valley of Hetch Hetchy was a superior scenic resource of the North American continent. It was flooded out, but those who had fought a losing fight for the principles of park preservation served notice on the country that its outdoor temples would be defended with blood and bone.

Muir's career ended on a note of failure, but the Hetch Hetchy episode must be seen in larger perspective. During John Muir's lifetime, and to a large degree because of his leadership, the national-park idea became part of the conservation constellation. He played a vital role in establishing six of our superb national parks—Sequoia, Yosemite,

Mount Rainier, Crater Lake, Glacier, and Mesa Verde—and a dozen parklike national monuments, including two that eventually became national parks, Grand Canyon and Olympic.

Among those who were inspired by Muir was Stephen Tyng Mather, an energetic Chicago businessman. Recovering, in 1904, from a nervous breakdown, Mather had turned to the mountains for rejuvenation, and had become interested in the Yosemite recession fight. He joined the Sierra Club, took part in the organization's annual mountain outings and first met Muir on a camping trip in the summer of 1912. Like Pinchot and Roosevelt and all the rest, Mather was caught up by Muir's eloquence and enthusiasm.

Two years later, indignant over land depredations in Sequoia and Yosemite and appalled at the sight of cattle grazing inside the parks, Mather wrote an irate letter to Secretary of Interior Franklin K. Lane, and was promptly invited to join his staff as the directing head of the national parks. Mather accepted his offer in 1915, but at the outset, he had very little to work with in the way of staff or funds. From the beginning, the national parks had been an administrative stepchild of the Interior Department. Each park superintendent was responsible directly to the Secretary of the Interior, who had little time to co-ordinate the management of the parklands. For many years Muir, and such colleagues as landscape architect Frederick Law Olmsted, Jr., and J. Horace McFarland of the American Civic Association, had urged the formation of a special agency to administer and protect the parks, and their urging finally resulted in the enactment of the National Park Service Act in 1916.

Self-made millionaire, philanthropist, mountain climber, and promoter by nature, Mather, like Pinchot, an inspirer

of men, was an ideal father for the National Park Service. He used his business acumen and powers of persuasion to curb grazing privileges, protect migratory birds, conserve historical landmarks and enlarge the park system itself. He instituted an educational and interpretive program to make the parks meaningful to visitors, and when Park Service appropriations were not available, he used his personal checkbook to accomplish urgent ends.

Mather thought national parks should be spacious areas of superior scenery to be preserved forever for the highest forms of outdoor recreation. He persuaded both the Department of the Interior and the Congress to accept this definition, and slowly the country at large caught on to the essentials of our National Parks.

A dilemma that plagued Mather and his successors was inherent in the national-park concept. The act of 1916 instructed the Interior Department "to conserve the scenery . . . and the wildlife . . . in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations." As the most popular parks attracted thousands of visitors, the problem of "impairment" became a grave one, and each year the National Park Service had to resolve its use-but-don't-spoil dilemma. Mather realized that the only solution was to build up a tradition of high standards through a corps of highly trained, dedicated personnel, who would make sound judgments with their eyes on the needs of other generations. As a result the National Park Service today exemplifies one of the highest traditions of public service.

When Mather took office in 1915, there were fourteen maladministered national parks. By the time failing health forced him to resign in 1929, there were twenty-one superb units under one creative plan of management. The American national-park idea is today a conservation ideal

in all parts of the world—the most enduring tribute to Muir and to Stephen Tyng Mather.

More and more Americans see, as Muir did, that in this increasingly commercial civilization there must be natural sanctuaries where commercialism is barred, where factories, subdivisions, billboards, power plants, dams and all forms of economic use are completely and permanently prohibited, where every man may enjoy the spiritual exhilaration of the wilderness. Americans have belatedly begun to prize the values of their wild lands and parklands, and each year more of them see the significance of John Muir's good counsel:

Climb the mountains and get their good tidings. Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you and the storms their energy, while cares will drop off like autumn leaves.

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Coggins, et al. Federal Public Land and Resources Law. 5th Edition. (Foundation Press New York, 2002).

CHAPTER 8

THE TIMBER RESOURCE

Federal policy toward wood production from federal lands is primarily implemented through the U.S. Forest Service's management of the national forest system. In the last three decades, that policy has undergone profound change. For the first seven decades of the national forests' existence, congressional directives were generally understood to mean that the Forest Service was to harvest timber on the national forests where, when and how it thought best. The principal governing law was the Organic Act of 1897, 16 U.S.C. §§ 475-482 (§ 476 repealed 1976), setting general guidelines for administering the forests; and later the Multiple-Use, Sustained-Yield Act of 1960, 16 U.S.C. §§ 528-531. Each was deemed a grant of unfettered authority, and the courts did not much intrude: Forest Service powers and discretion were routinely upheld in the few cases challenging them; e.g., *Light v. United States* and *United States v. Grimaud*, Chapter 2, supra pp. 107-11. Timber litigation mostly was a miscellany of timber theft convictions and private contract disputes until the rise of the modern environmental movement, beginning about 1970.

This historical autonomy was due in large part to the rich tradition nurtured in the Forest Service by Gifford Pinchot from the time he became the head of the Forestry Division in the Department of Agriculture in 1898. Though he originally had no trees to manage, Pinchot's brand of conservation and silviculture (the growing and tending of trees as a branch of forestry) effectively became official federal policy in 1905, when Congress transferred the forest reserves from the Interior to the Agriculture Department, and the U.S. Forest Service was formally created to manage them. Even today, Pinchot's name is commonly invoked within the Forest Service and in congressional hearings.

The Forest Service gained its share of detractors over the years, especially as annual harvests from the national forests shot up with the demands of World War II and the postwar construction boom. In the last decade, however, in one of the most sweeping changes in modern federal land law and policy, the annual timber cut has declined sharply as a result of several factors. They include: (a) limitations brought about by endangered species concerns; (b) the maturation of the Forest Service planning process under the National Forest Management Act of 1976; (c) a near-halt in the building of new roads on national forest lands in order to protect land in a roadless condition; (d) growing public opposition to clearcutting as a timber management tool; and (e) a migration of the core of the domestic timber industry from the public lands of the northwest to private tree

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farms in the southeast. This evolution is illustrated by statistics showing annual timber production from the national forests in selected years over the twentieth century: From Pinchot's day in the first decade of the twentieth century, the cut remained relatively consistent at about 1 billion board feet annually for a few decades, climbing to 2 billion board feet in 1940. During World War II, the harvest rose to about 4 billion board feet. In the postwar boom years, the cut shot up, reaching 12 billion board feet by the mid-1960s, where it remained until about 1990. Then, as a result of the forces just mentioned, the annual harvest steadily fell to about 3 billion board feet in 2002. Through all this, although the Forest Service concedes that its track record includes some serious professional and political misjudgments, most knowledgeable critics (from any direction) recognize that the agency's history and heritage have given it a professional tradition uncommonly respected among governmental institutions.

From the days of near-complete deference and autonomy, federal timber policy is now governed by some detailed legal standards, defined by legislation, further elaborated on by administrative rules, and enforced by the courts. A recent Chief of the Forest Service has noted that "[a]gency decisionmakers spend as much or more time with lawyers as with natural resource management personnel." Jack Ward Thomas, *Stability and Predictability in Federal Forest Management: Some Thoughts from the Chief*, 17 *Pub.L. and Resources L. Rev.* 9, 19 (1996). Elsewhere in this book some of the pertinent issues have been explored, including NEPA, the planning process, and limitations imposed in contracts, such as timber sales contracts (see Chapter 5, pp. 255-83 *supra*). This chapter looks at others in some detail. Section A of this chapter analyzes forest practices under the rubric of multiple use, sustained yield, a longstanding touchstone of federal forest management. Section B deals with modern national forest law stemming from stricter judicial review, focusing on the National Forest Management Act of 1976. Section C takes a brief look at the legal standards applicable to management of the timber-rich public lands managed by the BLM, the so-called O & C lands in Oregon.

For the history of the Forest Service and its practices, see Harold Steen, *THE UNITED STATES FOREST SERVICE: A HISTORY* (1976); Glen O. Robinson, *THE FOREST SERVICE* (1975); Samuel Trask Dana & Sally Fairfax, *FOREST AND RANGE POLICY* (2d ed. 1980); James L. Huffman, *A History of Forest Policy in the United States*, 8 *Env'tl L.* 239 (1978); Charles Wilkinson, *The National Forest Management Act: The Twenty Years Behind, the Twenty Years Ahead*, 68 *Colo. L. Rev.* 659 (1997); Kathie Durbin, *TREE HUGGERS: VICTORY, DEFEAT, AND RENEWAL IN THE NORTHWEST ANCIENT FOREST CAMPAIGN* (1996); Richard W. Behan, *PLUNDERED PROMISE: CAPITALISM, POLITICS, AND THE PUBLIC LANDS* (2001); Paul W. Hirt, *A CONSPIRACY OF OPTIMISM: MANAGEMENT OF THE NATIONAL FORESTS SINCE WORLD WAR II* (1996). National forest issues in the eastern United States are treated in William E. Shands & Robert G. Healy, *THE LANDS NOBODY WANTED* (1977).

A. TRADITIONAL FOREST SERVICE MANAGEMENT

1. THE MULTIPLE-USE, SUSTAINED-YIELD ACT

Although the 1897 Forest Service Organic Act referred primarily to management for timber, water, and protection of the forests, 16 U.S.C. § 476,* the Forest Service in fact managed its lands to serve a broader number of uses from its inception. Grazing interests had been an important presence on national forest land from the beginning; see *Light v. United States*, supra p. 110. Visionaries like Aldo Leopold and Bob Marshall labored from within to expand recreational opportunities in national forests, and to promote the protection of wildlife. By the 1950's, the wilderness movement had begun to make its presence felt. At the same time, the traditional users—timber operators and reclamation interests—argued for greater protection for their particular needs. As these cross-currents swirled about the agency in the middle of the twentieth century, it decided to go to Congress for ratification, delicately arguing both that new legislation was desirable to clarify the agency's mission, and that it had possessed such broad authority all along. See, e.g., Samuel Trask Dana & Sally Fairfax, *FOREST AND RANGE POLICY* 200-05 (2d ed. 1980).

The result was the Multiple-Use, Sustained-Yield Act of 1960 (MUSY Act), 16 U.S.C. § 528-31, the key provision of which listed five uses alphabetically. In a classic case of political optics elevating form over substance, the Forest Service's draft of the statute (accepted by Congress) took pains to show its sensitivity to recreation by modifying the word with the adjective "outdoor," in order to allow it to be listed first:

It is the policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. The purposes of this Act are declared to be supplemental to, but not in derogation of, the purposes for which the national forests were established as set forth in the Act of June 4, 1897. * * * [16 U.S.C. § 528]

The Secretary of Agriculture is authorized and directed to develop and administer the renewable surface resources of the national forests for multiple use and sustained yield of the several products and services obtained therefrom. In the administration of the national forests due consideration shall be given to the relative values of the various resources in particular areas. * * * [16 U.S.C. § 529]

As used in this Act, the following terms shall have the following meanings:

(a) "Multiple use" means: The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all these

* Cf. *United States v. New Mexico*, 438 U.S. 696 (1978), Chapter 6, supra p. 521.

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resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

(b) "Sustained yield of the several products and services" means the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land. [16 U.S.C. § 531]

The BLM formally received its multiple use mandate in the Federal Land Policy and Management Act in 1976. FLPMA's definitions of these two concepts generally track those quoted above, although there are some interesting differences in the definition of "multiple use." See 43 U.S.C. § 1702(c), (h). FLPMA lists not five but an open-ended number of uses; i.e., "including, but not limited to, recreation, range, timber, minerals[*], watershed, wildlife and fish, and natural scenic, scientific and historical values * * *." It also speaks of meeting "the present *and future* needs of the American people," and of coordinating management of the various resources "without *permanent* impairment of the productivity of the land *and the quality of the environment* * * *." (differences from the MUSY Act italicized).

QUESTIONS

1. How much management discretion do these definitions leave to the managing agencies? Do they provide enough "law to apply" for the courts to engage in meaningful review of agency decisions implementing them?
2. Does the definition of "multiple use" *require* the agency to make a cost/benefit analysis in determining which uses will be allowed on specific acres? Does it *allow* the agency to use such an analysis in its discretion?
3. Might nearly every kind of resource management serve more than one use? For example, wildlife protection might also serve the needs of recreation; clearcutting of timber might improve habitat for certain kinds of wildlife; livestock grazing might accelerate water runoff; roads built for logging might promote motorized recreation, or be used for cross-country skiing in the winter, etc. Does that make meaningful judicial review for multiple use decisions more difficult?

* Minerals were included in the BLM definition, but not the Forest Service's, because under the terms of the 1905 Act transferring the Forest Service to the Department of Agriculture, 16 U.S.C. § 472, the BLM

oversees the development of minerals on the national forests. As illustrated by various materials in Chapter 6, however, the Forest Service regulates mining activities in order to protect the other resources of the forests.

4. Look closely at the differences between the MUSY and FLPMA definitions of "multiple use." Does the listing of "natural scenic, scientific and historical values" as "multiple uses" in FLPMA suggest, by negative implication, that the U.S. Forest Service cannot manage for such uses under MUSY? Do the italicized additions in FLPMA, quoted above, call for a management standard for BLM lands meaningfully different from that applied on the national forest lands under MUSY? For example, does the statutory direction to the BLM to coordinate its management of the various resources without "permanent" impairment of the productivity of the lands mean that the Forest Service is supposed to manage its lands to prevent *any* impairment of the productivity of its lands, even a temporary impairment? Or are these questions presuming that these statutes should be read technically, when in fact they should be read as stating broad principles?

5. How does "sustained yield" differ from "multiple use"? Is the former primarily a scientific judgment, and the latter primarily a political one? If so, does that give the courts a greater or lesser basis to review sustained yield decisions?

Although "multiple use" and "sustained yield" have come to be thought of as the guiding principles for managing nearly a half a billion acres of land under the purview of the BLM and the Forest Service, they have tended to mean "all things to all people." See Charles Conklin, PLLRC Revisited: A Potpourri of Memories, 54 Denver L.J. 445, 448 (1977). "Multiple use" is difficult if not impossible to define concretely: The usual formulations are so abstract that they cannot be applied with predictability, rationality, or uniformity to actual land management problems. A widely used definition of the multiple use concept, that it is "a practice in which a given land area functions in two or more compatible ways," merely illustrates its abstractness. For example, what is a "given land area"? If the area considered is an entire forest, then multiple use may be achieved by dividing the forest into sections and allocating a different use to each section. This, however, restricts the area in which a given activity may occur, and is to that extent considered undesirable. If, on the other hand, the "land area" is a relatively small plot, mutually exclusive uses such as timber harvesting and recreation may not be able to occur simultaneously.

The Forest Service has treated this problem as if it is at least partially artificial because, no matter what use is made of the land, some other use will surely be compatible with it. Thus, clearcutting is deemed compatible with selected wildlife habitat enhancement (it increases forage for deer), and wildlife enhancement is compatible with recreation (although it does not necessarily follow that clearcutting is compatible with recreation).

Few judicial decisions have addressed agency implementation of these concepts. An early one came in connection with the largest single timber sale ever entered into by the Forest Service. In 1968, it sold 8.7 billion board feet of timber from the Tongass National Forest in southeast Alaska

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to U.S. Plywood-Champion Papers, Inc. The transaction encompassed more than 99% of the commercial forest lands (more than 4.5 million acres of the 16 million acre national forest), and called for harvest over a period of 50 years. It was challenged in court on several grounds, one of which was the MUSY Act. In *Sierra Club v. Hardin*, 325 F.Supp. 99, 122-24 (D.Alaska 1971), the court denied relief:

Plaintiffs introduced substantial testimony as well as documentary evidence, much of it in the form of offers of proof, to show that the Tongass National Forest is being administered predominantly for timber production. While the material undoubtedly shows the overwhelming commitment of the Tongass National Forest to timber harvest objectives in preference to other multiple use values, Congress has given no indication as to the weight to be assigned each value and it must be assumed that the decision as to the proper mix of uses within any particular area is left to the sound discretion and expertise of the Forest Service. Accordingly, evidence was admitted only for the purpose of showing that the Forest Service failed to give ["due consideration" under 16 U.S.C. § 529] to any of the competing uses or that it took into consideration irrelevant matters which it should not have considered. The court must presume * * * that the Forest Service did give due consideration to the various values specified in the Multiple Use-Sustained Yield Act.

The district court's decision was vacated and remanded by the court of appeals. *Sierra Club v. Butz*, 3 Env'tl. L. Rptr. 20292 (9th Cir. 1973). The court explained:

[A] report by A. Starker Leopold and Reginald H. Barrett to U.S. Plywood-Champion Papers, Inc., * * * [analyzed] the manner in which the sales contract should be carried out, with due consideration given to social values other than the economic yield of pulp or lumber. It was the view of this team of experts that "the basic precepts on which the original timber sale contract were based are not today acceptable." It recommended "that the company explore with the Forest Service the possibility of revising the cutting plan to provide more adequate protection for the wide spectrum of ecologic values that is characteristic of Southeastern Alaska." * * *

The [lower] court, at 325 F.Supp. 123 n. 48, discussed what should be regarded as "due" consideration under the Act and concluded that what was intended was that the Forest Service should "apply their expertise to the problem after consideration of all relevant values." It concluded that "some" consideration was sufficient. (For the purposes of this order we accept this interpretation, with the caution that "due consideration" to us requires that the values in question be informedly and rationally taken into balance. The requirement can hardly be satisfied by a showing of knowledge of the consequences and a decision to ignore them.) * * *

In our judgment the [Starker-Leopold] report tendered upon this motion may be found to bear upon the stated issues: Whether the Forest Service in truth had knowledge of the ecological consequences of

the contract and cutting plan to which it agreed; whether in reaching its decision it failed to consider the available material (the report appends a 10-page list of material cited in the report in existence at the time the contract was entered into); further, a relevant question may be whether consideration was given to alternatives (such as those recommended by the report), which, while giving prime consideration to timber values, would still afford protection to the other values to which due consideration must be given.

NOTES AND QUESTIONS

1. How can a concededly "overwhelming commitment" to timber production on the Tongass National Forest be consistent with "multiple use"? Could the Service legally decide to cut every tree in the Tongass National Forest? Could it also decree that no trees at all will be cut? As the district court observed, only a little more than one quarter of the Tongass National Forest contained commercial stands of timber. Even though the Forest Service sold practically all this timber in this sale, nearly three-quarters of the land area in the Tongass National Forest was arguably left for other uses. Is that relevant to the issue here? How useful is "due consideration" as a standard of judicial review?
2. Timber harvesting in the Tongass National Forest has been the source of continual judicial and congressional attention ever since 1973, under statutes more specific than MUSY, such as the Tongass Timber Reform Act, 16 U.S.C. § 539d. See, e.g., *Hoonah Indian Assn. v. Morrison*, 170 F.3d 1223 (9th Cir.1999); *Friends of Southeast's Future v. Morrison*, 153 F.3d 1059 (9th Cir.1998); *Alaska Wilderness Recreation & Tourism Ass'n v. Morrison*, 67 F.3d 723 (9th Cir.1995). See Steven A. Daugherty, *The Unfulfilled Promise of an End to Timber Dominance on the Tongass: Forest Service Implementation of the Tongass Timber Reform Act*, 24 *Envtl. L.* 1573 (1994).
3. More recent cases discussing MUSY include *Perkins v. Bergland*, 608 F.2d 803, 806 (9th Cir.1979), dealing with regulation of livestock grazing on federal lands, where the court described the "so-called standards" in the MUSY Act as "contain[ing] the most general clauses and phrases * * * [which] can hardly be considered concrete limits upon agency discretion. Rather it is language which 'breathe[s] discretion at every pore.'" (citation omitted); *Wind River Multiple-Use Advocates v. Espy*, 835 F.Supp. 1362, 1372 (D.Wyo.1993), *aff'd* 85 F.3d 6341 (table) (10th Cir. 1996); *Big Hole Ranchers Assn. v. U.S. Forest Service*, 686 F.Supp. 256, 264 (D.Mont.1988) (multiple use gives agency "wide discretion to weigh and decide the proper uses within any area"). See George Cameron Coggins, *Of Succotash Syndromes and Vacuous Platitudes: The Meaning of "Multiple Use, Sustained Yield" for Public Land Management (Part I)*, 53 *U.Colo.L.Rev.* 229, 279-80 (1982); Michael Blumm, *Public Choice Theory and the Public Lands: Why "Multiple Use" Failed*, 18 *Harv.Envntl.L.Rev.* 405 (1994).
4. "Multiple use" has a powerful emotional and political content in federal land management as a shorthand for emphasizing the traditional

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uses—mining, livestock grazing, and timber harvesting. As controlling law, however, it is far less significant today than before enactment of many modern statutes. NEPA and the Forest Service and BLM planning mandates together ushered in a new management era for these agencies, ending the near-plenary discretion they assumed and enjoyed in making MUSY decisions. While the modern statutes may be more procedural than substantive (and while the courts may give a higher level of scrutiny to agency process than agency outcomes), the fact remains that the “multiple use” federal lands are gradually being more or less formally zoned, with particular areas being managed for some dominant uses. Congress has directly played a role in this zoning process, by designating large tracts of Forest Service (and, increasingly, BLM) lands as Wilderness, Wild & Scenic Rivers, National Recreation Areas, National Conservation Areas, and the like. See generally Chapters 11–12, *infra*. There have also been numerous executive actions with similar effect, such as designations of national monuments, critical habitat, and areas of critical environmental concern, withdrawals, and zoning through the federal land planning process.

5. Even on lands nominally still subject to “multiple use” management, laws like the National Forest Management Act, explored in the next section, provide much more specific guidance for taking account of differing resources and values. Furthermore, in recent years, partially in response to the need to comply with the Endangered Species Act, all of the federal land management agencies have begun to move toward something that has come to be known by many as “ecosystem management.” Recall the cautionary comments on this idea in the excerpt from Michael Bean and Melanie Rowland’s *THE EVOLUTION OF NATIONAL WILDLIFE LAW*, Chapter 1, *supra* p. 31. For the Forest Service and BLM, ecosystem management evidently is a variant of, or gloss upon, multiple use management. See Robert Keiter, *Beyond the Boundary Line: Constructing a Law of Ecosystem Management*, 65 U.Colo.L.Rev. 293 (1994). See also Oliver A. Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 Minn.L.Rev. 869 (1997) (after studying the experience of the Forest Service and the BLM, among others, Professor Houck concludes that “however high we raise our sights towards managing the whole, the requirement of individual species will remain the bottom line, or we will have no bottom line, and the entire effort will fail”); Rebecca W. Thomson, *Ecosystem Management: Great Idea, But What Is It, Will It Work and Who Will Pay for It*, 19 *Nat.Res. & Emt.* No. 3 at 42 (1995).

6. All this raises the question whether multiple-use/sustained yield—in its classic formulation as allowing consideration of a wide variety of uses, without any one having priority—has any meaning anymore, or any future. See, e.g., Wilkinson, *The End of Multiple Use*, *High Country News*, Mar. 30, 1987, at 15. In the spring of 1992 the Congressional Research Service convened a conference of experts to explore whether Congress ought to move away from MUSY as the abiding principle of national forest and public land management. See *Multiple Use and Sustained Yield: Changing Philosophies for Federal Land Management?* House Committee on Interior and Insular Affairs Print No. 11, 102d Cong. 2d Sess. (1992). Among the questions raised were: How is sustainability to be defined? What is to be

sustained, and how is it to be demonstrated and evaluated by land managers? How great a commitment should be made to commodity users who depend on federal resources, and how can these local needs be balanced with broader national interests? What pricing system for resource uses and outputs is fair and of greatest national benefit? Is legislative reform needed? Not surprisingly, no consensus emerged on the answers.

NOTE: THE RESOURCES PLANNING ACT OF 1974

With a few exceptions, Congress has generally refused, here and in most other areas of public natural resource law, to create "revolving funds" whereby financial receipts from federal resource programs are returned directly to the federal land management agency for its use. See, e.g., ONE THIRD OF THE NATION'S LAND 286-87 (1970); see also Chapter 4, pp. 380-81 *supra*. Instead, the federal land management agencies, like most other federal agencies, receive their operating funds through the annual congressional appropriations process. The Forest Service has long regarded itself as disadvantaged by the ups-and-downs of that annual exercise. In the Forest and Range and Renewable Resources Planning Act of 1974 (RPA), as amended, 16 U.S.C. §§ 1601-1613, Congress embarked on what proved to be a hopelessly idealistic effort to bring more rationality to the process. It acknowledged that forest lands are capital assets and that the agency requires reliable estimates of future funding to plan for timber management practices such as reforestation.

The RPA directs the Forest Service periodically to prepare three planning documents: (1) an Assessment describing the renewable resources of all the nation's forest and range lands (every ten years); (2) a Program, with a planning horizon of at least forty-five years, proposing long-range objectives and setting out the specific costs for all Forest Service activities (every five years); and (3) an Annual Report evaluating Forest Service activities in comparison with the objectives proposed in the Program. In addition, the RPA requires the President to submit two documents to Congress: (1) a Statement of Policy, which is based upon the Program and which can be modified by Congress, to be used in framing future budget requests for Forest Service activities (every five years); and (2) a Statement of Reasons, an explanation accompanying any annual proposed budget which does not request funds necessary to achieve the objectives of the Statement of Policy.

This was the triumph of the rationality of planning over political imperatives. Despite high expectations, the RPA has not fundamentally altered the Forest Service budget or budgetary politics in the White House or Congress. Budget proposals and appropriations almost immediately dropped below the amounts recommended in the 1975 Program and the resulting 1976 Statement of Policy. When President Carter's proposed 1979 budget fell well short of the funding envisioned by the Statement of Policy (intended to guide future budget requests), the National Wildlife Federation sued, taking the position that the President's Statement of Reasons did not explain the shortfall to the extent required by the RPA. In

2. Or is this a tempest in a teapot? The plaintiffs did not question that scientific research was a legitimate purpose of the parks, and in fact the National Park Service (and other federal land managing agencies) issue thousands of research permits every year. If that is the case, what is the harm in reserving to the land managers (and, by implication, the general public who "own" these resources) a financial interest in the results of the research?

3. The National Park Omnibus Management Act of 1998, quoted in Judge Lamberth's opinion, also directs the Secretary of the Interior to "undertake a program of inventory and monitoring of National Park System resources to establish baseline information and to provide information on the long-term trends in the condition of National Park System resources." 16 U.S.C. § 5934.

4. For commentary, see Sandra Bourgasser-Ketterling, *Bioprospecting on Public Lands: Should Private Companies Compensate the Government for their Use of Public Land Resources?*, 8 *J.L. & Policy* 481 (2000); Holly Doremus, *Nature, Knowledge and Profit: The Yellowstone Bioprospecting Controversy and the Core Purposes of America's National Parks*, 26 *Ecology L.Q.*, 401 (1999).

D. RIVER PRESERVATION

Over time, reflecting what Holmes called the "felt necessities of the times," Congress has changed its perception of the primary value of rivers. For many decades the touchstone was navigability; from the beginning, the federal government has asserted a strong interest in maintaining the navigable capacity of waterways in order to assist the commerce of the Nation. *Gibbons v. Ogden*, 22 U.S. (9 Wheat.) 1 (1824). Flood control was another early (and constant) impetus for river development by means of dams, diversions, dredging, and channelization. 33 U.S.C. § 701 et seq. See, e.g., John Barry, *RISING TIDE* (1997), an excellent account of the corruption of science by the Corps of Engineers in advancing its agenda (with sometimes disastrous effects) to build flood control facilities on the Mississippi River in the late nineteenth and early twentieth centuries. As advancing settlement crossed the one hundredth meridian and encountered the arid and semiarid areas of the west, the focus shifted to using rivers for irrigation, culminating in the Reclamation Act of 1902. 43 U.S.C. §§ 371-376; see pp. 98-101 supra. Within a few years, the potential of rivers for hydroelectric power generation led to the Federal Power Act of 1920. 16 U.S.C. § 791 et seq. See Chapter 6, supra pp. 560-82.

All this emphasis on controlling and manipulating river systems led to a vast network of dams and other works which in the aggregate dwarf the Interstate Highway System as the engineering marvel of this hemisphere. A 1982 survey by the National Park Service counted some 300,000 dams in the United States, and found only about 2% of the river mileage in the country was in relatively natural, undeveloped condition. Another estimate

is that there are 75,000 dams in the U.S. over six feet tall, one built for every day since George Washington was President.

These water resource developments have costs as well as benefits, and many costs were not reflected in the traditional cost/benefit calculations used to justify more dams and storage projects. One of the first major political conservation battles in this century was fought over whether a river in Yosemite National Park should be dammed to provide a water supply for San Francisco. Some of the Hetch Hetchy story is recounted in Wood, *supra* at pp. 114-17; see also Gray Brechin, *IMPERIAL SAN FRANCISCO* 71-117 (1999). Later, many others came to believe that the sacrifice of the natural values of the Nation's dwindling supply of free-flowing rivers was ultimately counterproductive. What is usually marked as the first major conservation fight in the modern era was sparked by the Bureau of Reclamation's proposal to build the Echo Park Dam in Dinosaur National Monument on the Colorado River in the early 1950's. This battle was won by dam opponents, but at a significant cost—the tradeoff was to build another, even larger dam (Glen Canyon) that flooded the heart of southern Utah's canyon country with Lake Powell. See Russell Martin, *A STORY THAT STANDS LIKE A DAM* 43-74 (1989). It did not take long before battles over whether particular river segments should be preserved in free-flowing condition were occurring in many areas of the United States.

Concomitantly, support began to grow to establish a system that would make informed judgments on which river segments were worthy of preservation before crises were reached. In 1960, the National Park Service recommended to the Senate Select Committee on National Water Resources that some remaining free-flowing streams be preserved. The need for such preservation was documented in a 1962 Outdoor Recreation Review Commission Report, later endorsed by President Johnson. The concept of a river-based, parklike reservation reached initial fruition when Congress created in 1964 the Ozark National Scenic Riverways, 16 U.S.C. § 460m-7, under which the Current and Jack's Fork Rivers in Missouri became "National Rivers." (The Buffalo River in Arkansas was also made a national river (sort of a ribbon national park administered by NPS) in 1972. See Buffalo National River Act, 16 U.S.C. § 460m-8 to 460m-14.) Then in 1968, Congress enacted the Wild and Scenic Rivers Act (WSRA), 16 U.S.C. §§ 1271-1287, described in the following excerpt. For more detail on the Act and its implementation, see generally George C. Coggins and Robert Glicksman, *PUBLIC NATURAL RESOURCES LAW* § 15.02 (2001).

Sally K. Fairfax, Barbara T. Andrews & Andrew P. Buchsbaum, *Federalism and the Wild and Scenic Rivers Act: Now You See It, Now You Don't**

59 Wash.L.Rev. 417 (1984).

* * * The WSRA was essentially a reform measure. It was specifically designed to blend with not always compatible missions of established

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agencies while remedying inadequacies in long-established state and federal approaches to land and water management programs. As with any entrant into a crowded policy arena, the Wild and Scenic Rivers Act was a compromise, sculpted to blend new interests with old. The final wording is ambiguous at precisely the points where advocates seek clarity. As a result, it is extremely difficult to identify "the" federal position on wild and scenic rivers specifically, or on water more generally. * * *

In passing a national WSRA, Congress was responding to three major concerns. The first was the apparent inadequacy of state systems for preserving and protecting rivers, especially in the West. More Western States have historically followed the water rights doctrine of prior appropriation which evolved to encourage private development of water. Traditionally, water left in place was not a "beneficial use" of water and, hence, was not protected under state law. Even though several state legislatures have moved to include instream uses within their appropriation systems, states still have the reputation of being poor guardians of these uses. A major goal of WSRA was to enhance both state and federal attention to protection of instream values.

Congress' second concern was to control federal water development. Section I of the Act declares that

the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

The federal presence in developing water, spread among numerous agencies, was piecemeal and poorly integrated, yet powerful. As the country's "environmental consciousness" evolved, it became highly controversial. In passing WSRA, Congress sought balance in the federal program.

A third congressional goal behind WSRA was to increase congressional control over the federal land management agencies. In the 1960's and 1970's, "Congress took unprecedented steps in giving the land managing agencies specific directions for managing designated areas of the public lands" for environmental purposes. The WSRA was part of this trend toward specialized, environmentally protective legislation. It affected the activities of the National Park Service, the Bureau of the Land Management, the Fish and Wildlife Service, and the United States Forest Service. Whether these agencies were preservation or multiple-use entities made little difference; Congress intended to control federal agency activities affecting land along designated wild and scenic river corridors. * * *

B. *Basic Provisions of the National Wild and Scenic Rivers Act*

The WSRA is a special-purpose statute designed to preserve "selected rivers," along with their "immediate environments," that possess one or more "outstandingly remarkable scenic, recreational, geologic, fish and

wildlife, historic, cultural, or other similar values."⁵² The rivers are to be protected for their "free-flowing" characteristics, which specifically include water quality.⁵³ These values are imprecise, frequently sounding more hortatory than implementable.

The Act is more concrete in defining classifications of rivers, methods of including them in the system, and responsibilities for federal and state agencies involved in the intricate management process. Pristine *wild* rivers, relatively undisturbed *scenic* rivers, or developed *recreational* rivers may be included in the federal system. Congress also established a phased approach to river inclusion: in addition to *included*, fully protected rivers, it identified *potential additions* and administrative study rivers in order to protect rivers under consideration. * * *

1. DESIGNATING WILD & SCENIC RIVERS

a. *By Congress.* Usually Congress designates individual river segments as part of the Wild & Scenic Rivers System by statute. The political process in Congress tends to dictate, with rare exceptions, that any such designation have the support of the entire (or at least most) of the state's congressional delegation before it will be enacted. At last count about 165 river segments in 35 states, comprising thousands of miles, have been designated. See 16 U.S.C. § 1274(a).

b. *By the Secretary.* The Act contains a mechanism to bypass Congress, for the Secretary of the Interior is given authority, upon request of a state's governor, to include rivers in the federal system that have been designated as wild, scenic or recreational rivers by an "act of the [state] legislature." 16 U.S.C. § 1273(a)(ii). If the Secretary agrees, and the rivers are designated for inclusion in the federal system, they are basically managed the same as other rivers designated by Congress, although they are administered by the state or its political subdivision. The federal lands in the included segment, however, remain under federal control; see *Wilderness Society v. Tyrrel*, infra this section.

In June 1980, Governor Jerry Brown of California requested Interior Secretary Cecil Andrus to designate five river segments in northern California which had been protected under state law as part of the national system. An expedited EIS process ensued, during which counties in California and Oregon obtained preliminary orders enjoining the Secretary from acting. On the last day of the Carter Administration, however, the Ninth Circuit vacated the injunctions. Secretary Andrus had been optimistic enough to anticipate the decision: When President Carter had sent a routine memo to all cabinet officers requesting their resignations as of 5:00 p.m. on January 19th, Andrus asked permission to delay his resignation. Carter (a devotee of wild rivers who had been one of the first persons to raft the Chatooga River in his native Georgia, and who had while President

52. 16 U.S.C. § 1271 (1982).

53. *Id.*

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spent several days rafting the Middle Fork of the Salmon River with Secretary Andrus) agreed. The Secretary was attending a reception at the White House on the evening of January 19th when an aide phoned to say that the injunction had been lifted. Andrus returned to his office to sign the North Coast river proclamations, his last official act in office. In *Del Norte County v. United States*, 732 F.2d 1462 (9th Cir.1984), the court upheld the Department's accelerated NEPA compliance.

In *City of Klamath Falls v. Babbitt*, 947 F.Supp. 1 (D.D.C.1996), the plaintiff city wanted to construct a dam on a scenic river segment added to the national system by the Secretary after it had been put into the state wild & scenic river system by the Oregon voters in an initiative. (Congress had not acted on a proposal to legislate its inclusion.) The court determined that the popular vote was an "act of the legislature" within the meaning of the WSRA.

c. *Study Rivers.* Congress has also from time to time passed legislation requiring federal agencies to study particular river segments for possible inclusion in the system, and to report their findings to Congress for possible action. As of 2001, more than 100 studies had been ordered; see 16 U.S.C. § 1276(b). In the meantime, federal land in a quarter-mile corridor on each side is withdrawn from "entry, sale, or other disposition" and from the Mining Law (but not the Mineral Leasing Act). *Id.* §§ 1279(b), 1280(b). Furthermore, the Federal Energy Regulatory Commission (FERC, formerly the Federal Power Commission, or FPC) may not license hydroelectric dams on any so-called "study" river for a period of time to allow for the study and congressional consideration. *Id.* § 1278(a). But such protection against the FERC apparently does not extend to rivers that a state has studied and applied to the Secretary for inclusion. See *North Carolina v. FPC*, 533 F.2d 702 (D.C.Cir.1976), remanded, 429 U.S. 891 (1976). Thus the FERC could license a dam on the river anytime before the Secretary designated it for inclusion. But see *Appalachian Power Co. v. United States*, 607 F.2d 935 (Ct.Cl.1979), cert. denied, 446 U.S. 935 (1980) (no compensation for loss of opportunity to build the dam because no property interest vested in the FERC license until judicial review of the FERC action was completed).

d. *Determining the Boundaries of Designated River Segments.* The Act contemplates that the Congress, in designating a river segment for inclusion in the system, will not specify how much land along the river should be included. Instead, it directs the administering Secretary to select detailed boundaries within one year of designation, which "shall include an average of not more than 320 acres of land per mile measured from the ordinary high water mark on both sides of the river." 16 U.S.C. § 1274(b). In *Sokol v. Kennedy*, 210 F.3d 876 (8th Cir.2000), the court rejected the Park Service's argument that it had complete discretion (other than the acreage limitation) regarding its selection of land for inclusion in the Niobrara River Scenic Area. Instead, the court opined, the selection process should be governed by a determination that the land has "outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values," since that standard was found in Congress's

introductory statement of policy in the Act, 16 U.S.C. § 1271, which was incorporated into the general management standard of 16 U.S.C. § 1281(a). This meant, according to the court, that the agency was not prohibited from including

unremarkable land; indeed, the Act could require such inclusion where necessary to protect outstandingly remarkable resources, e.g., because of the need for buffer zones around resources or because of discontinuities in a resource's locations. Equally, the Act does not require that the boundaries encompass all the outstandingly remarkable resources; this might be impossible given the acreage limitation. * * * The Act allows the administering agency discretion to decide which boundaries would best protect and enhance the outstandingly remarkable values in the river area, but it must identify and seek to protect those values, and not some broader category.

The court therefore struck down the agency's boundary-setting, which had used the standard of including "significant" or "important" resources rather than "outstandingly remarkable."

2. MANAGING WILD & SCENIC RIVERS

The Act directs that, upon designation, every river "shall be classified, designated, and administered" as either

- (1) *wild*; that is, "generally inaccessible except by trail, with watershed or shorelines essentially primitive and waters unpolluted * * * represent[ing] vestiges of primitive America;"
- (2) *scenic*; whose shorelines and watershed are "still largely primitive and * * * undeveloped, but accessible in places by roads;" or
- (3) *recreational*; that is, "readily accessible by road or railroad," with some development along their shorelines, and that "may have undergone some impoundment or diversion in the past."

See 16 U.S.C. § 1272(b)(1-3). These definitions have been further refined by "guidelines" adopted by the agencies; see 41 Fed.Reg. 39,454 (1982), discussed at p. 1102, note 4, *infra*.

Classification of the river segments according to these criteria presumably should influence how they are managed to serve the goals of the Act. Some, however, have expressed doubt about this; e.g.: "One might suppose that the degree of protection afforded a river would be based on the river's classification. However, one would be wrong: the Act specifies protections based on river classification *only* with regard to mining." Fairfax, Andrews & Buchsbaum, *supra*, 59 Wash.L.Rev. at 429 (emphasis in original). While it is true that the Act expressly differentiates among the categories of rivers only with respect to mining, the commentators' conclusion may be overstated. As shown in the next principal case, the controlling management directive is to protect rivers "in accordance with the purposes of" the Act. Because the Act itself creates these different categories, presumably Congress intended them to serve somewhat different purposes and their management should be affected accordingly.

Dams. The W & SRA designation forbids dams and other interferences with the free-flowing condition of the designated river segment, regardless of whether it is classified as wild, scenic, or recreational. The pertinent statutory section, 16 U.S.C. § 1278(a), is not a paragon of clarity. It begins by prohibiting FERC from licensing any project works "on or directly affecting" a designated river. The same sentence goes on to prohibit *all* federal agencies (including FERC) from assisting any water project that would have a "direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration." The next sentence says that these limitations shall "not preclude licensing of, or assistance, to developments below or above [the designated reach] or on any stream tributary thereto which will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area" when it was designated. It is not clear whether the second sentence establishes an independent standard or is merely an elaboration of the "direct and adverse effect" standard in the first sentence. For discussion of these provisions, see *High Country Resources and Glacier Energy Co. v. FERC*, 255 F.3d 741 (9th Cir.2001) (including concurring and dissenting opinions); see also *Swanson Mining Co. v. FERC*, 790 F.2d 96 (D.C.Cir.1986). This section does not, however, apply to a congressionally authorized dam, so that the consent of the agencies administering a designated W & S River is not required. See *Oregon Natural Resources Council v. Harrell*, 52 F.3d 1499 (9th Cir.1995).

Mining. 16 U.S.C. § 1280 covers mining. Generally speaking, it provides that designation permanently withdraws federally owned minerals within one-quarter mile of the bank of a designated river that is classified as *wild* from development under either the Mining Law or the leasing acts. All mining activity in all designated river corridors, regardless of how they are classified, is to be regulated "to effectuate the purposes of" the Act, including to provide "safeguards against pollution of the river involved and unnecessary impairment of the scenery within the component in question." Mining patents shall convey the right to the minerals only. All these restrictions are "subject to valid existing rights."

Other Management Activities. The Act is not so clear on what other management restrictions apply, or even where or how they apply. Three of the key provisions are as follows:

For rivers designated on or after January 1, 1986, the Federal agency charged with the administration of each component of the National Wild and Scenic Rivers System shall prepare [within three years of the date of designation] a comprehensive management plan for such river segment to provide for the protection of the river values. The plan shall address resource protection, development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of this chapter. The plan shall be coordinated with and may be incorporated into resource management planning for affected adjacent Federal lands.

16 U.S.C. § 1274(d)(1). For rivers designated before January 1, 1986, the agency is directed to review "all boundaries, classifications and plans * * *

for conformity within the requirements of this subsection within ten years through regular agency planning processes." 16 U.S.C. § 1274(d)(2). The provisions were added by amendment in 1986; previously, the Act mandated management plans only for rivers designated by Congress.

Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.

16 U.S.C. § 1281(a).

(a) The Secretary of the Interior, the Secretary of Agriculture, and the head of any other Federal department or agency having jurisdiction over any lands which include, border upon, or are adjacent to, any river included within the National Wild and Scenic Rivers System or under consideration for such inclusion * * * shall take such action respecting management policies, regulations, contracts, plans, affecting such lands * * * as may be necessary to protect such rivers in accordance with the purposes of this chapter. * * * Particular attention shall be given to scheduled timber harvesting, road construction, and similar activities which might be contrary to the purposes of this chapter.

(b) Nothing in this section shall be construed to abrogate any existing rights, privileges, or contracts affecting Federal lands held by any private party without the consent of said party.

(c) The head of any agency administering a component of the [WSR System] shall cooperate with the Administrator, Environmental Protection Agency and with the appropriate State water pollution control agencies for the purpose of eliminating or diminishing the pollution of waters of the river.

16 U.S.C. § 1283. The courts have in recent years begun to answer some of the interpretive questions posed.

Newton County Wildlife Ass'n v. U.S. Forest Service

United States Court of Appeals for the Eighth Circuit, 1997.
113 F.3d 110.

■ Before FAGG, FLOYD R. GIBSON, and LOKEN, CIRCUIT JUDGES.

■ LOKEN, CIRCUIT JUDGE.

Newton County Wildlife Association, the Sierra Club and certain individuals (collectively "the Wildlife Association") sued the United States Forest Service and four of its employees (collectively the "Forest Service") seeking judicial review of four timber sales in the Ozark National Forest.

Arguments against the program would you expect to see? Shouldn't public land visitors be obligated at least to pay a fee sufficient to internalize their externalities? Is there any reason to treat a park visitor differently than a mining company? For a review of the program, see Holly Lippke Fretwell & Michael J. Podolsky, *A Strategy for Restoring America's National Parks*, 1 DUKE ENV'T. L. & POL'Y FORUM 143 (2003); UNITED STATES GENERAL ACCOUNTING OFFICE, *RECREATION FEES: INFORMATION ON FOREST SERVICE MANAGEMENT OF REVENUE FROM THE FEE DEMONSTRATION PROGRAM* (GAO-03-470, Apr. 2003).

7. Think back on the excerpt discussing the presence of Boxley Valley within the Buffalo National River unit of the park system. How would you respond to Professor Sax's question about whether an owner should be allowed to tear down a traditional style barn and replace it with a cheaper and more useful aluminum structure? What land use controls are permissible or appropriate? These same questions arise frequently with historic buildings in cities. Do you see any difference between preserving nature and preserving culture? Is there a stronger justification for one of the two?

8. As the excerpt from Pete Morton above indicates, many preservation advocates are uncomfortable with economic or utilitarian arguments for preservation. Sometimes, as is the case with Pete Morton, their view is that economic arguments are second-best or incomplete. For some others, however, economic arguments are dangerous or even immoral; preservation, both an ecological and moral imperative without respect to costs or benefits. As Ed Abbey once remarked: "The idea of wilderness needs no defense. It only needs more defenders." EDWARD ABBEY, *THE JOURNEY HOME* 22 (1977). Consider the response to such concerns from two free market environmentalists:

Economists understand that whatever people claim, environmental quality is only one of several competing values they seek. They must trade-off more of some values for less of another. Scarcity—the fact that virtually no resources are abundant enough to satisfy all human demands at zero cost—dictates that choices must be made among competing values or goods. Just as people on fixed budgets must choose between buying a new television or a new sofa, societies must choose among competing goods (e.g., more health care, safer roads, more environmental protection). Open space and wildlife habitat provided by parks, ranches, and wilderness are among the goods involved in the trade-off. It is intellectually and ethically impossible to pretend away the necessity of such choices.

John A. Baden & Pete Geddes, *Environmental Entrepreneur: Keys to Achieving Wilderness Conservation Goals*, 76 U. DENV. L. REV. 519, 520 (1999). Is Abbey correct that "wilderness needs no defense," or are you more persuaded by the views of Baden and Geddes? Is it possible to think about preservation without weighing its value against other uses of natural resources? Does that weighing of values need to be monetized, or can cost-benefit analysis have a broader conception?

III. NATIONAL PARKS

Wallace Stegner once described national parks as "the best idea we ever had. Absolutely American, absolutely democratic, they reflect us at

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best rather than our worst. . . ." Wallace Stegner, *The Best Idea We Ever Had*, in MARKING THE SPARROW'S FALL: THE MAKING OF THE AMERICAN WEST 137 (Page Stegner ed., 1998). The casebook has already introduced the national parks and the Park Service in Chapters 2 and 3. As discussed there, the national park idea was inaugurated with the creation of Yellowstone National Park in 1872. During the conservation era that spanned the turn of the century, a number of new parks were created by Congress, including Yosemite in 1890, Mount Rainier in 1899, Crater Lake in 1902, Mesa Verde in 1906, Grand Canyon in 1908, Zion and Olympic in 1909, Glacier in 1910 and Rocky Mountain in 1915. By 1916, the Interior Department was responsible for 14 national parks but had neither an organization nor policy guidance from Congress for managing those parks. In 1916, Congress gave it both, passing the Park Service Organic Act, which created the National Park Service within the Department of the Interior. Act of August 25, 1916; ch. 408, 39 Stat. 535. 16 U.S.C. §§ 1-4. Over time the National Park System expanded to include units with 22 different types of designations, including national parks, national monuments, national recreation areas, national seashores, national lakeshores, national historic sites, and national battlefields. The National Park System now comprises 355 areas, 56 of which are national parks, and just under 79 million acres of land. See National Park Service Website, available at <http://www.nps.gov>; DYAN ZASLOWSKY & T.H. WATKINS, THESE AMERICAN LANDS: PARKS, WILDERNESS AND THE PUBLIC LANDS 11-27 (1994).

Truth be told, national parks have been one of the less contentious areas of natural resources law. Partly because park designations usually include lands for which there is widespread agreement about their outstanding scenic qualities and even more because Congress itself creates parks, the designation process has produced precious little litigation or case law. Even the most committed sagebrush rebels and wise use advocates have been careful not to concentrate their antifederal fire on national park designations, preferring instead to focus on national forest and BLM lands. The facet of national parks that has triggered more disputes, particularly in recent years, is their management and thus that is where this section of the chapter will focus. To grasp why management of the parks more often triggers litigation, consider the following excerpt in which Professor Sax gives a brief overview of federal national park policy:

JOSEPH SAX, MOUNTAINS WITHOUT HANDRAILS 6-7 (1980)

If the government had a plan for the parks it was establishing, it was certainly casual about it. No bureau existed to manage these places until 1916, forty-four years after the Yellowstone reservation. Yellowstone, in fact, was run by the United States Cavalry, and the others were pretty much left to themselves and to a few hardy innkeepers and adventurous tourists. The modern desire to view the parks as the product of a prophetic public ecological conscience has little history to support it. The early parks were reserved for their scenery and their curiosities, and they reflect a fascination with monumentalism as well as biological ignorance or indifference. * * *

For a good many years, this fragile ideological coalition held together with only modest conflict. The preservationists (as they are now called), who always

comprised the most active and interested constituency in favor of national parks, had little to complain about. The parks were there, but they were little used and so little developed—Congress was always grudging with appropriations: “Not one cent for scenery” was its long-standing motto—that those who wanted to maintain the parks as they were, both for their own use and as a symbol of man’s appropriate relationship to nature, had what they wanted.

The professional park managers, organized as the National Park Service in 1916, also found circumstances generally to their liking. Like all bureaucrats they had certain imperial ambitions. But the park system was steadily growing and that was satisfying. Some of their gains were made at the expense of the national forests, housed in another federal department, and while inter-bureau infighting was at times intense, the general public was indifferent to such matters. Moreover, in its early years, and particularly before the full blossoming of the automobile era, the Park Service was able to take an active promotional posture, encouraging increasing tourism, road building, and hotel development without losing the support of its preservationist constituency. It was then in everyone’s interest to create greater public support for the parks. The more people came to the national parks, more people would approve the establishment of new parks and would approve funding for management needed to protect and preserve them. Even the most ardent wilderness advocates complained little about the Park Service as a promotional agency. The adverse effects tourism might have were long viewed as trivial.

The tourists who came to the parks in the early days were in general not much different from those who come today. They arrived in carriages, slept in hotels, and spent a good deal of their time sitting on verandas. But of course they came in much smaller numbers, their impact on the resources was much less, and, despite the comforts they provided themselves, the setting in which they lived in the parks was fairly primitive and marked a sharp contrast with life at home. A visit to a national park was still an adventure, quite unlike an ordinary vacation. The alliance of preservationists (whose interest in parks was essentially symbolic and spiritual) and vacationers (to whom the parks were a commodity for recreational use) was not threatened by the low intensity use the parks received for many decades. The contradiction Congress had enacted in law in the 1916 general management act, ordering the National Park Service once to promote use and to conserve the resources so as to leave them unimpaired, was actually a workable mandate.

The recreation explosion of recent years has unraveled that alliance and brought to the fore questions we have not previously had to answer: For whom and for what are the parks most important? Which of the faithful national park constituencies will have to be disappointed so that the parks can serve their “true” purpose?

A. THE PARK SERVICE ORGANIC ACT

In the preceding excerpt Professor Sax concludes by asking “[w]hich of the faithful national park constituencies will have to be disappointed so that the parks can serve their ‘true’ purpose?” His placement of quotation marks around the word “true” suggests that park purposes are and inevitably will remain contested terrain. In a broad sense, this is certainly true. Park management is always subject to Congress’ will. A closer question is whether the parks have a “true” purpose under current law.

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Is there a correct balance between recreation and preservation, between protection and use? Or is park management purely a matter of Park Service discretion under which the agency effectively decides park purposes? The first place to look for an answer to that question is the Park Service Organic Act, which gave the Park Service the mission "to conserve the scenery and the natural and historic objects and the wildlife therein, and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." 16 U.S.C. §§ 1-18f. In addition to the Organic Act, separate missions for individual parks are spelled out in their individual authorizing legislation and then additional management criteria are developed in planning documents prepared for each park. Disputes about park use and management tend, however, to come back to the terms of the Organic Act and its mandate to provide for enjoyment of the parks while leaving them unimpaired for future generations. Professor Sax and many others have suggested that this language creates a contradiction and he questions whether it provides a workable mandate. Is he right? Professor Keiter takes a somewhat different view in the following excerpt explaining the basics of the Organic Act and park management:

**Robert B. Keiter, *Preserving Nature in the National Parks: Law, Policy, and Science in a Dynamic Environment*,
74 DENV. U. L. REV. 649, 675-78 (1997)**

Under the Organic Act, the Park Service is obligated to administer national parks to conserve scenery, wildlife, natural and historic objects, and to provide for public enjoyment, while ensuring that parks are left "unimpaired for the enjoyment of future generations." Although the Act speaks in terms of both preservation and public use, the statutory "nonimpairment" standard indicates that resource preservation responsibilities should take precedence over public use in the event of conflict. The 1978 amendments to the Organic Act, which provide that national parks shall be protected and managed "in light of the high public value and integrity" of the system, reaffirms and strengthens Congress' commitment to the basic Organic Act preservation tenets. Indeed, several courts have concluded that the amended statute clearly gives primacy to resource preservation over competing uses or interests. This construction of the Organic Act, with its emphasis on preserving nature, supports the basic nonintervention and ecological restoration premises of the Park Service's preservation policy.

Under the Organic Act, the Secretary of the Interior is vested with broad regulatory authority over the national parks. This provision provides the Secretary with adequate legal authority to implement nonintervention and restoration preservation policies. The courts have consistently sustained Park Service regulations and policies designed to protect park resources, including limitations on hunting, fishing, rafting, mountain biking, and vehicle use within the parks. Where the Park Service has sought to limit visitor activities in deference to protecting the ecological health or appearance of park resources, the courts have deferred to the agency's judgments. . . . Nevertheless, despite its considerable authority, the Park Service generally has not translated its resource management policies into governing regulations, choosing instead to define its preservation policies through general policy statements.

The Park Service has implemented its preservation policy through the park planning process. Under the Organic Act, the Park Service is obligated to develop general management plans "for the preservation and use of each unit of the National Park system." General management plans are required to address park resource preservation measures, visitor facilities plans, visitor carrying capacities, and boundary modifications. Most national parks . . . have prepared management plans that contain general wildlife and fire management principles as well as policies governing individual species and ecological processes. These general management plans are sometimes supplemented by more specific management plans, such as Yellowstone's rather detailed bison and fire management plans. Given the environmental consequences attached to both types of plans, they ordinarily should be subject to NEPA compliance requirements. This would provide the public an opportunity to participate in formulating and implementing preservation policy, and subject underlying ecological assumptions to some degree of scrutiny. However, it is unclear whether preservation policies established in general management plans would be subject to judicial review at this planning stage.

The Organic Act and individual park enabling statutes also contain specific exceptions to the notion that national parks are inviolate natural sanctuaries. Under the Organic Act, the Secretary of the Interior may cut timber to protect park resources and scenery against insects or disease, and destroy animals of plants "as may be detrimental to the use of . . . parks." These provisions evidently allow the Secretary to elevate other park resource considerations above preservation, so long as intervention can be reconciled with these statutory responsibilities. Individual park enabling acts also may require or authorize management approaches inconsistent with general preservation policy. For example, elk hunting is statutorily sanctioned in Grand Teton National Park, and Yellowstone National Park is authorized to "sell or otherwise dispose of" its surplus bison. Although neither provision precludes Park Service officials from pursuing a nonintervention preservation policy, they nonetheless indicate that other specified considerations may take precedence.

CASE STUDY: OFF-ROAD VEHICLES IN CANYONLANDS NATIONAL PARK

To place the Organic Act mandate within a specific context, consider the following excerpt from the Tenth Circuit's decision in *Southern Utah Wilderness Alliance v. Dabney*, 222 F.3d 819 (10th Cir. 2000), which addressed the use of four-wheel drive vehicles within an environmentally sensitive area of Canyonlands National Park.

Plaintiff-Appellee Southern Utah Wilderness Alliance ("Wilderness Alliance") challenged portions of a National Park Service ("NPS") backcountry management plan ("BMP") that affected access to areas of Canyonlands National Park in Utah. Wilderness Alliance alleged that the BMP violated the . . . the National Park Service Organic Act ("the Organic Act" or "the Act") 16 U.S.C. §§ 1-18(j); and the Canyonlands National Park Enabling Act, 16 U.S.C. § 271. Utah Shared Access Alliance ("Utah Shared Access"), a combination of groups supporting four-wheel drive vehicle recreation, intervened as defendants. * * *

In 1992, the NPS began developing a BMP for Canyonlands National Park and the Orange Cliffs Unit of Glen Canyon National Recreation Area. The goal of that plan as articulated by the NPS was "to develop backcountry

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3. Partly in response to the court's suggestion of the need for additional regulation, Congress in 1978 amended the first section of the Park Service's Organic Act, providing:

The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.

See PUB. L. NO. 95-250, Title I, § 101(b), 92 Stat. 166 (1978) (codified as amended at 16 U.S.C. § 1a-1 (1994)). The purpose of the so-called "Redwood Amendments," said the Senate Report, was to make clear that the "Secretary has an absolute duty, which is not to be compromised, to fulfill the mandate of the 1916 Act to take whatever actions and seek whatever relief as will safeguard the units of the National Park System." Senate Report 95-528, 95th Cong., 1st Sess., 9 (Oct. 21, 1977). If this amendment had been in place prior to the court's decision, would it have made a difference to the court's analysis? Did the existing legal authority give the Park Service jurisdiction to regulate activities beyond park boundaries? What authority was the Park Service given by the Act creating Redwood National Park?

IV. NATIONAL MONUMENTS

Although national parks tend to have a higher profile in the American consciousness, national monuments have been and remain a critical component of the nation's preservation history. Between 1906 and 2001, fourteen presidents established 122 national monuments covering approximately seventy million acres of land in twenty-eight states, one territory, and the District of Columbia. Many of our most treasured national parks—including Grand Canyon, Olympic, Zion, Bryce Canyon, Capitol Reef, Canyonlands, and Glacier Bay—began as national monuments. Like the national parks, national monuments have been managed primarily by the Park Service, although, as discussed below, President Clinton for the first time allowed the BLM and the Forest Service to share in those duties. If monuments are mostly managed by the Park Service, mostly managed like parks, and in fact the precursor to many national parks, they nevertheless remain distinct from the parks in one crucial way—they are the products of presidential action rather than congressional action. It is this critical fact that merits separate treatment. Whereas congressional creation of parks has engendered little conflict, presidential proclamation of monuments, albeit pursuant to authority delegated by Congress in the Antiquities Act of 1906, 16 U.S.C. § 431, has often generated public outcry. That outcry has generally been limited to directly affected communities and has been relatively short-lived, but it is worth study because it is a recurring feature of public lands debate that has significant implications for executive preservation efforts more generally. This section of the chapter focuses on the debate over the creation of national monuments and does not delve deeply into their management. Recognize, however, that just as parks must be

managed in accordance with the Park Service Organic Act and the specific park creation acts, monuments must be managed under the mandates of the Antiquities Act and the specific proclamation creating any particular monument.

A. THE ANTIQUITIES ACT

National monuments are a product of The Antiquities Act, which authorizes the President of the United States,

in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic and scientific interest that are situated upon lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected.

16 U.S.C. § 431. The Antiquities Act has its origin in concerns about protecting noted archaeological sites such as Chaco Canyon and Mesa Verde, as well as dozens of lesser sites, from private collecting of artifacts by both professionals and amateurs that threatened to rob the public of its cultural heritage. By the turn of the century, a consensus had emerged among policy officials that this practice had to be stopped and that even surveys conducted by qualified researchers had to be carefully regulated. In light of this origin, most commentators who have considered the Antiquities Act and its legislative history have concluded that it was designed to protect only small tracts of land around archeological sites. The complex political history of the law, however, suggests that some of the Act's promoters intended a broader design.

In keeping with the general conservation ferment of the times, officials within the Department of the Interior consistently pushed to give the president more expansive preservation power than was needed to address the specific problem of harm to archeological sites. An early draft bill introduced by congressman Lacey and authored within the Interior Department, proposed to give the President authority to

[s]et apart and reserve tracts of public land, which for their scenic beauty, natural wonders or curiosities, ancient ruins or relics, or other objects of scientific or historic interest, or springs of medicinal or other properties it is desirable to protect and utilize in the interest of the public; and the President shall, by public proclamation, declare the establishment of such reservation and the limits thereof.

H.R. 11021, 58th Cong. § 1 (1900). The bill met resistance because of its expansive language and during the next few years underwent a series of changes designed to resolve that objection. As ultimately enacted in 1906, the Antiquities Act did not authorize protection of lands for their "scenic beauty" or "natural wonders" and it limited reservations of land to the "smallest area compatible with the proper care and management of the objects to be protected." 16 U.S.C. § 431 (emphasis added). Nevertheless, the Act still included the language from Lacey's original bill authorizing the protection of "objects of historic or scientific interest." As discussed further below, this language was to prove key in future judicial decisions

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supporting an expansive interpretation of the Antiquities Act. See generally Mark Squillace, *The Monumental Legacy of the Antiquities Act of 1906*, 37 GA. L. REV. 473, 476-86 (2003) (describing background and legislative history of the Antiquities Act).

While the Act's language left room for debate about the scope of authority that Congress intended to give the president, Theodore Roosevelt quickly resolved upon an expansive interpretation of presidential authority under the Act. His resolve can at least partly be explained by the fact that when enacted in 1906, the Antiquities Act was unique in affording the president clear authority to set aside lands for preservation purposes. Congress had enacted the General Revision Act of 1891, which authorized the president to set aside forest reserves. But while forests were generally withdrawn from disposition and entry under the homestead and other laws, they were not protected from other forms of development, especially mining. As a result of Gifford Pinchot's utilitarian approach to forest management, the focus of the Forest Service was on the conservation and use of forest resources, and not on their preservation. Presidents, including Roosevelt in the case of bird refuges, had also asserted an implied power to reserve lands for conservation purposes, and this authority would later be upheld in *United States v. Midwest Oil Co.*, 236 U.S. 459 (1915), excerpted in Chapter 2. But at the time of the Antiquities Act, no legislative authority was available that provided for the preservation of public lands. See generally Mark Squillace, *The Monumental Legacy of the Antiquities Act of 1906*, 37 GA. L. REV. 473, 487-89 (2003).

Beginning with Roosevelt, the Antiquities Act has left a remarkable legacy of preservation. The story is told in the following excerpt.

**Mark Squillace, *The Monumental Legacy
of the Antiquities Act of 1906,*
37 GA. L. REV. 473, 490-507 (2003)**

Soon after the Antiquities Act was passed, Roosevelt designated Devil's Tower in Wyoming as the nation's first monument. He followed that decision with seventeen more proclamations in less than three years, including, most importantly, the more than 800,000-acre Grand Canyon National Monument. The Grand Canyon National Monument was important not only because of its significance to our national heritage, but also because it spawned the lawsuit that seemed destined from the start to secure the expansive interpretation of the Antiquities Act that would make the Act's legacy possible.

If one were to choose a set of facts from which to promote a broad reading of the Antiquities Act, one might very well have chosen the Grand Canyon as the setting, and invented a character like Ralph Henry Cameron. Cameron, along with his brother Niles and a local prospector named Peter Berry, had located mining claims along the South Rim of the Grand Canyon and had successfully developed a copper mine in the canyon below Grandview Point. Cameron's real interests, however, were along the Bright Angel Trail where he was able to use the mining law to exploit tourists rather than minerals. Initially, Cameron charged a toll for access along the trail as authorized under an Arizona territorial law. When his toll rights expired in 1906, Cameron used numerous strategically-located, but probably invalid, mining claims along the trail as a pretense for continuing to charge an access fee. Unfortunately for Cameron, his interests conflicted with those of the Santa Fe Railroad Company,

and the railroad challenged Cameron's claims in the courts and before the Department of the Interior.

In 1909, Secretary of the Interior James Garfield declared that Cameron's claims lacked sufficient mineral values to justify issuing a patent. Still, Cameron persisted in charging fees for access to public land that he did not own and for which he lacked any lawful claim, using his various political offices to keep the authorities at bay. Eventually, Cameron's case wound up in the United States Supreme Court [*Cameron v. United States*, 252 U.S. 450 (1920)]. Among other things, Cameron alleged that President Roosevelt lacked the authority to designate the Grand Canyon as a national monument. The Court quickly dismissed Cameron's Antiquities Act claim. Quoting from Roosevelt's proclamation, the Court found that the Grand Canyon "is an object of unusual scientific interest." The Court went on to note:

[The Grand Canyon] is the greatest eroded canyon in the United States, if not in the world, is over a mile in depth, has attracted wide attention among explorers and scientists, affords an unexampled field for geologic study, is regarded as one of the great natural wonders, and annually draws to its borders thousands of visitors.

Nowhere does the court specifically address the language from the Antiquities Act that the monument must be "the smallest area compatible with the proper care and management of the objects to be protected," but the clear implication of the Court's decision was that the size of the monument was not disqualifying if the "protected object" was otherwise of "scientific interest." * * *

The six presidents who followed immediately after Theodore Roosevelt took up the cause of proclaiming new monuments with surprising vigor. Among the ten monuments proclaimed by William Howard Taft was the Mukuntuweap National Monument in southwestern Utah, which in 1915 was enlarged and renamed the Zion National Monument by President Wilson. On November 19, 1919, Congress further enlarged the protected area, and redesignated it the Zion National Park.

Woodrow Wilson established or modified seventeen national monuments. He proclaimed the first eighty acres of what is now the more than 200,000-acre Dinosaur National Monument in northwestern Colorado and northeastern Utah, as well as the Sieur de Monts National Monument in Maine in 1916 which now forms the core of Acadia National Park.

Perhaps the most important of William Harding's eight national monuments was Bryce Canyon in southern Utah, now included in the Bryce Canyon National Park. Calvin Coolidge created thirteen national monuments including Craters of the Moon in Idaho, Glacier Bay in Alaska, and the Statue of Liberty in New York. Herbert Hoover created nine national monuments including Arches in southeastern Utah, the Great Sand Dunes in southern Colorado, Death Valley in California, and Saguaro in southern Arizona. Each of the monuments is now a national park.

In addition to enlarging many existing monuments, Franklin Roosevelt created eleven new monuments including the Joshua Tree National Monument in California, Cedar Breaks in southwestern Utah, Capitol Reef in southern Utah, Channel Islands off the coast of southern California, the Badland National Monument in western South Dakota, and the Jackson Hole National Monument in Wyoming. This last decision sparked the next major lawsuit under the Antiquities Act. * * *

In *Wyoming v. Franke*, the State challenged Roosevelt's proclamation on the grounds that the evidence failed to support the claim that the monument

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contained "historic landmarks, [and] historic or prehistoric structures or objects of historic or scientific interest." After hearing evidence on both sides, the court noted that it had limited authority to review the proclamation:

If there be evidence in the case of a substantial character upon which the President may have acted in declaring that there were objects of historic or scientific interest included within the area, it is sufficient upon which he may have based a discretion. * * *

The controversy over the Jackson Hole National Monument also sparked what was perhaps the most successful congressional opposition to a monument proclamation. Lengthy hearings were held before the House Committee on Public Lands, and virtually every prominent Wyoming politician offered testimony opposing the monument. In 1944, Congress actually passed legislation that would have abolished the monument, but Roosevelt pocket vetoed the bill. In response, Congress refused to appropriate money for the management of the monument for seven years after it was proclaimed. Finally, in 1950, Congress negotiated a compromise with President Truman that provided for adding the monument lands to the Grand Teton National Park, but amending the Antiquities Act to prohibit the President from designating any further monuments in Wyoming. * * *

After Franklin Roosevelt and until Jimmy Carter, presidents continued to expand and otherwise modify existing monuments, but new monuments slowed to a trickle. There were, however, two important monuments established during this period. The first was the C & O Canal proclaimed by Dwight Eisenhower at the end of his administration in 1961. The canal, which stretches more than 180 miles between Washington and Cumberland, Maryland, operated from 1828-1924, primarily to haul coal from western Maryland. * * *

Some members of Congress held continuing disdain for these executive branch proclamations. In fact, Eisenhower's decision so piqued Congressman Wayne Aspinall of Colorado, the powerful chair of the House Committee on Interior and Insular Affairs, that Aspinall blocked funding for the C & O Canal National Monument for many years. Aspinall's action, like the action of an earlier Congress with respect to the Jackson Hole National Monument, served as a continuing warning to future presidents that national monument proclamations under the Antiquities Act carried risks. A President might be able to preserve the status quo on public lands through a monument proclamation, but he might be denied the money that was needed to protect the monument's resources. * * *

The other important monument proclaimed during this period was Marble Canyon, adjacent to the former Grand Canyon National Monument and now part of the Grand Canyon National Park. * * *

President Jimmy Carter did not make extensive use of the Antiquities Act, with one remarkable exception. On December 1, 1978, Carter proclaimed seventeen new or enlarged national monuments in Alaska, covering fifty-six million acres. [He did so because under the 1971 Alaska Native Claims Settlement Act about 80 million acres of land that had been set aside for study for protective designation was about to be reopened for entry and development.] For their sheer size, Carter's proclamations were unparalleled, and it is unlikely that land-based monuments will ever again approach their scale. The path that led to protecting these lands serves as a testament to the significant role that the Antiquities Act continues to play in land preservation in the United States. * * *

The Carter monuments sparked bitter opposition in Alaska, but the withdrawals effectively halted mineral development in Alaska and thereby provided the impetus for congressional action. On December 2, 1980, two years after these executive actions, Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). ANILCA designated more than one-hundred million acres of land in new conservation units, including 43.6 million acres of new parklands, 53.7 million acres of new wildlife refuge land, twenty-five new wild and scenic rivers, and 56.4 million acres of wilderness. Many of the protected areas were carved out of the monuments that had been declared just two years earlier by President Carter. * * *

Despite the fact that the conservation units established under ANILCA ultimately supplanted the monuments proclaimed by Carter, it was the Antiquities Act decision that prompted two lawsuits, one brought by the State of Alaska and the other by the Anaconda Copper Company. In *Alaska v. Carter*, [462 F. Supp. 1155 (D. Alaska 1978),] the State claimed that the President's decision to designate a monument, and the Secretary of the Interior's recommendation to the President that he declare a monument, were subject to NEPA's environmental impact statement requirement. The court did not address the scope of the Antiquities Act directly, but did conclude that the President was not an agency subject to NEPA's impact statement requirement. Furthermore, the court found that since the Interior Department's recommendation was made at the President's request, the Interior Department could not be compelled to file an impact statement before making its recommendation. According to the court, to hold otherwise "would raise serious constitutional questions." * * *

As reflected in the litigation described above, national monuments have often proved quite controversial. It should be clear that the controversies were not simply abstract disagreements about whether particular lands were of sufficient "scientific or historic interest" to merit designation. Rather, two core concerns animated the disputes. The first was the sense of those rural public lands communities adjacent to the new monument that the monument would "lock up" the natural resources upon which the community depended for its economic livelihood, whether for ranching, mining, or logging. The second was a perception that the proclamations were an abuse of executive power. The reactions of Wyoming's congressional delegation to the creation of Jackson Hole National Monument are illustrative. As Wyoming Senator Joseph O'Mahoney saw it, the Jackson Hole proclamation was "not only an invasion of the rights of the sovereign State of Wyoming . . . [and] an invasion of the sacred rights of people affected, it is also an invasion of the rights of Congress to legislate in connection with something definitely within the jurisdiction of the Congress alone." A Bill to Abolish the Jackson Hole National Monument. Hearings on H.R. 2241 Before the House Comm. on Public Lands, 78th Cong. 114 (1943). Wyoming Congressman Frank A. Barrett added: "The Park Service is just like every other bureau. They are exceedingly avaricious." *Id.* at 52. Similarly when President Johnson, in January 1969, just 90 minutes before he was to leave office, signed Antiquities Act proclamations adding some 264,000 acres to Arches and Capitol Reef National Monuments, Utah's Senator Wallace Bennett argued that the proclama-

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tions were a "last gasp attempt to embalm a little more land in the West," and protested that the actions were "arbitrary" and "unilateral . . . with no notice whatsoever, without hearing any interested group, without prior consultation with Congress and without consultation or discussion with state officials." James R. Rasband, *Utah's Grand Staircase: The Right Path to Wilderness Preservation?* 70 U. COLO. L. REV. 483, 490-91 (1999).

In the long run, even the most hotly disputed monuments have come to be valued by almost all constituents. Arches and Capitol Reef are now crown jewels of Utah's tourism industry and Wyoming Senator Alan Simpson concluded years later: "All of us agree that Teton County would not look like it does today if they hadn't (established the monument and expanded the park). Instead of open space there would be gas stations, motels and other businesses on Antelope Flats north of Jackson where the view of the Tetons remains largely unobstructed by development. It was great in hindsight." Candy Moulton, *National Monuments? Not in Wyoming*, CASPER STAR TRIB., Jan. 1, 2001, at A1. If most monuments look "great in hindsight," what explains the continuing opposition to monuments at the time they are created? Consider this question again at the conclusion of the following section describing the more recent flurry of monument proclamations by President Clinton.

B. THE CLINTON MONUMENTS

Following President Carter's Alaska monuments, the Antiquities Act went unused during the Reagan and Bush administrations, and it continued to lie idle for most of President Clinton's first term. President Clinton had come to office with ambitious environmental goals, but most of his efforts were rebuffed, particularly after the Republicans took over congress in 1994. Taking stock of its options, the President decided to turn where so many other presidents had and to use his authority under the Antiquities Act. The prime candidate for a monument was Utah's spectacular red rock country, which had for a number of years seen fierce disputes about the amount of land deserving of wilderness protection, a subject discussed further in the wilderness section below. Aware of previous controversies generated by the Act, the president first sought advice about the political repercussions of a proclamation. The answer given to President Clinton by both his advisors and prominent Democrats in the West was positive. As they saw it, the designation would have particular appeal in the urban areas of the West where the president had the best opportunity for capturing votes, and would only hurt him in staunchly Republican Utah and with rural constituencies who were unlikely to vote for him in any event. Convinced of its positive political repercussions, in September 1996, President Clinton proclaimed the creation of a new, 1.7 million acre national monument in southern Utah—The Grand Staircase-Escalante National Monument. See generally James R. Rasband, *Utah's Grand Staircase: The Right Path to Wilderness Preservation?*, 70 U. COLO. L. REV. 483 (1999).

In complaints that had a familiar ring in Antiquities Act controversies, Utah's congressional delegation, which had only learned of the President's intentions in a *Washington Post* story some 11 days before the proclama-

tion, described the President's actions as a shameful and arrogant act of political opportunism and cried foul over the administration's failure to consult them or to give any public notice of the proposal. Utah's Senator Hatch declared that "[i]n all my years in the U.S. Senate, I have never seen a clearer example of the arrogance of federal power. . . . Indeed, this is the mother of all land grabs." Laurie Sullivan Maddox, *Taking Swipes at Clinton, Utahns Vow to Fight Back*, SALT LAKE TRIB., Sept. 19, 1996, at A5. Politicians from other Western states joined in the chorus, with Senator Burns of Montana calling the proclamation the act of a "tyrant" and Senator Craig of Idaho describing it as a "phenomenal misuse of power." *Id.* The view of the residents of Kane and Garfield counties, the southern Utah counties within which the Monument is located, was even less kind. President Clinton and Interior Secretary Babbitt were hung in effigy and were subjected to vituperative criticism. Four years after the Monument's creation, Louise Liston, chairman of the Garfield County Commission and a rancher from the community of Escalante adjacent to the Monument, offered the following criticisms:

Louise Liston, *Sustaining Traditional Community Values*, J. LAND, RESOURCES & ENVTL. L. 585, 585-86, 592 (2001)

The creation of the Monument has literally changed the course of our lives. As a result of the Monument's designation, the people of my county have suffered a great loss. In addition to lost revenues, a lifestyle of values and work ethics is being replaced with a lifestyle encumbered by federal regulations, restrictions, and threats. A once proud and peace-loving people are being turned into a hostile, antagonistic, suspicious, and distrustful community. * *

This change in attitude is a result of people's fear of how to proceed, what to expect, and how to preserve the lifestyle they love and have sacrificed over many years to preserve. Those of us called to work with the federal agencies are often perceived as traitors to those values and traditions these people hold dear. I have found through my involvement with county government at the national level, that congressmen and residents in eastern states, where federal ownership of land is meager, cannot begin to comprehend the impacts on local governments and local economies that rely upon the land for their survival.

It is very destructive when the fate of a region is determined by people who do not have to live with the direct results of their decisions, and that is what we are experiencing. We have shared the beauty of our deserts, high plateaus, and pine-scented mountains in Garfield County for decades. We have borne the monetary burden of caring for the millions of visitors that traverse the land. We rescue them when they get lost, provide emergency services when they get hurt, take care of their garbage, keep the roads safe and passable, put out the fires they carelessly start, provide law enforcement, and a myriad of other services they demand. This care is provided on a very limited budget by volunteer workers who must miss work and leave their families to help. * *

In conclusion, the economic, social and environmental concerns facing Garfield County and other counties throughout the West are real. The lives of people living in areas adjacent to public lands and special designations such as the Monument, are being directly impacted by land management decisions. Historically, the consideration of those impacts has not been sufficiently addressed in legislation, regulation, or implementation by the federal government. I am keenly aware of the unmatched beauty of the deserts, the high plateaus

and the mountains to the south, the families, and the beauty and majesty of the most America's renewable natural resource put back into

Although the creation of the monument was a controversial issue, and, indeed, was followed by a period of controversy. Following his re-election as Secretary of the Interior, Clinton was arguably the most powerful President ever, exceeding all previous administrations in term, Clinton's actions, thereby established a monument system that included four small islands in the Virgin Islands and the Coastal National Monument, rocks, pinnacles and other features of the United States federal lands, including the BLM's monuments—Grazing and the United States National Antiquities Act protects the land to be managed in cooperation with the monument's management. *The Monument*, 507-14 (2003).

In response to the Antiquities Act, and to the president's moral respect to these Antiquities Act monuments described as a national monument. I personally visited the monument's status. Second, interested members of the area under the Antiquities Act and Congress and the Secretary of the Interior protect the area.

and the mountains, and of the limitless opportunities for solitude and rejuvenation to the soul. However, I am also keenly aware of the communities, schools, families, and friends who struggle and sacrifice to live in the shadow of that beauty and maintain a quality of life not found in modern urban societies. What most Americans do not realize at this point in time is that the most valuable renewable natural resource is the human resource, and this resource must be put back into the environmental equation or we will not survive.

Although the Grand Staircase-Escalante National Monument proved controversial in Utah, it was highly popular elsewhere around the country and, indeed, was quite popular in Utah's urban and suburban areas. Following his re-election in 1996, and acting on the recommendations of Secretary of the Interior Bruce Babbitt, Clinton embarked on what was arguably the most ambitious expansion of the national monument system ever, exceeding even the prodigious efforts of the Theodore Roosevelt administration nearly one hundred years earlier. By the end of his second term, Clinton had proclaimed twenty-two new or expanded national monuments, thereby adding approximately six million acres to the national monument system. The monuments were a diverse collection. They included four small historic sites, one new and one expanded monument in the Virgin Islands that consisted entirely of submerged lands, the California Coastal National Monument, which included all unappropriated islands, rocks, pinnacles, and exposed reefs in the jurisdictional waters of the United States for the 841 miles of California coastline. Fourteen of the monuments, including the Grand Staircase, were assigned to the Bureau of Land Management's (BLM) management responsibility, marking the first time the BLM had been assigned such a preservation task. Another of the monuments—Giant Sequoia in California—was to be managed primarily by the United States Forest Service, and another—Hanford Reach, which protects the last free-flowing nontidal stretch of the Columbia River—was to be managed primarily by the United States Fish and Wildlife Service, in cooperation with the Department of Energy. *See generally* Mark Squillace, *The Monumental Legacy of the Antiquities Act of 1906*, 37 GA. L. REV. 473, 507-14 (2003).

In response to the criticism of the Grand Staircase-Escalante proclamation, and to defuse efforts by some in Congress to amend or repeal the Antiquities Act, Interior Secretary Babbitt, who was the architect of the president's monument proclamation policy, took a different approach with respect to these later monuments. Although not obligated to do so by the Antiquities Act, he committed to a three-part process—which he often described as a “no surprises” policy—before recommending any new national monuments to the president. First, he expressed a willingness to personally visit any area that his office was considering for monument status. Second, he agreed to meet personally with local officials and interested members of the public about different strategies for protecting the area under review. Finally, he agreed to afford local members of Congress and senators the opportunity to adopt appropriate legislation to protect the area under consideration for national monument status before

making a recommendation to the president. This last concession resulted in legislation protecting several remarkable areas that would not likely have received congressional attention without indications from the Secretary that these areas were being considered for national monument status. *Id.* at 539-40.

Despite Secretary Babbitt's efforts, many of the new monuments proved just as locally unpopular as the Grand Staircase. The result was a variety of legal challenges to the proclamations. Two of those cases were decided on the same day by the D.C. Circuit. In the first, the court addressed the threshold question of the appropriate standard of review for a court hearing a challenge to a monument proclamation.

MOUNTAIN STATES LEGAL FOUNDATION V. BUSH,
306 F.3d 1132 (D.C. Cir. 2002),
cert. denied 124 S. Ct. 61 (2003)

Presidential Proclamations designating national monuments have been challenged in only a handful of cases; in each the court has upheld the President's action. The Supreme Court has considered the Antiquities Act in three cases, each time confirming the broad power delegated to the President under the Act. *United States v. California*, 436 U.S. 32 (1978); *Cappaert v. United States*, 426 U.S. 138, 141-42 (1976); *Cameron v. United States*, 252 U.S. 450 (1920).

Although the Supreme Court has never expressly discussed the scope of judicial review under the Antiquities Act, the Court has directly addressed the nature of review of discretionary Presidential decisionmaking under other statutes. The Court has highlighted the separation of powers concerns that inhere in such circumstances and has cautioned that these concerns bar review for abuse of discretion altogether. *United States v. George S. Bush & Co.*, for example, involved § 336(c) of the Tariff Act of 1930, which provided that the President:

shall by proclamation approve rates of duties and changes in classification and in basis of value specified in any report of the [Tariff] [C]ommission . . . if in his judgment such rates of duty and changes are shown by such investigation of the commission to be necessary to equalize such differences in costs of production.

310 U.S. 371, 376-77 (1940) (quoting 19 U.S.C. § 336(a)) (emphasis added). The statute provided for judicial review only of legal questions. The Court held that "[t]he President's method of solving the problem [of foreign exchange value] was open to scrutiny neither by the Court of Customs and Patent Appeals nor by us." *Id.* at 379. Similarly, in *Dalton v. Specter*, the Court considered a statute—the Defense Base Closure and Realignment Act of 1990—that did "not at all limit the President's discretion. . . ." 511 U.S. 462, 470 (1994). Judicial review was unavailable under the Administrative Procedure Act ("APA") because the President is not an "agency" within the meaning of that statute. *Id.* at 469-70 (citing *Franklin v. Massachusetts*, 505 U.S. 788, 800 (1992)). The Court then "assume[d] for the sake of argument that some claims that the President has violated a statutory mandate are judicially reviewable outside the framework of the APA," *id.* at 474 (citation omitted) but it reiterated that "such review is not available when the statute commits the decision to the discretion of the President." *Id.* The Court held, "[h]ow the President chooses to exercise the discretion Congress has granted him is not a matter for our review." *Id.* at 476.

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A common complaint was that the "Bambi Syndrome" subverted the involvement process. The public was concerned with individual animals and not their ecosystem as a whole, and seemed to respond more to emotional media presentations than technical assessments prepared by the managers. Skepticism towards the managers and emotionalism created by Walt Disney-like misconceptions of wildlife jeopardized the information function. The sentimental value of individual wildlife to the public became clear, but the decision-makers obtained few valuable comments or feasible alternatives; many suggested alternatives ranged from the emotional to the fanciful to the irrational. While the information function was partially served, managers felt that the public was often not interested in staff assessments and that the public input was simply not valuable enough to deserve a great deal of effort. In no case did the public suggest a feasible alternative that the staff had not previously considered. The public's "Bambi Syndrome" was simply incompatible with sound resource management. * * *

The constitutional underpinnings of federal law over wildlife were discussed in Chapter 3, pp. 203-07; and the Endangered Species Act was discussed in Chapter 5, supra pp. 434-508. Section A of this chapter addresses managerial priorities of the National Wildlife Refuge System, managed by the U.S. Fish & Wildlife Service (USFWS) in the Department of the Interior. Section B examines wildlife controversies in the national parks, national forests and on the BLM public lands. Sections C and D take brief looks at the Migratory Bird Treaty Act and the Wild, Free-Roaming Horses and Burros Act, respectively. An excellent introduction to these issues is found in Michael J. Bean & Melanie J. Rowland, *THE EVOLUTION OF NATIONAL WILDLIFE LAW* (3d ed. 1997). See also George Cameron Coggins & Robert Glicksman, *3 PUBLIC NATURAL RESOURCES LAW*, ch. 18; Thomas Lund, *AMERICAN WILDLIFE LAW* (1980); for factual background on wildlife management, see *WILDLIFE AND AMERICA* (Howard P. Brokaw, ed. 1978).

A. THE NATIONAL WILDLIFE REFUGE SYSTEM

1. HISTORY AND ISSUES OF ADMINISTRATION

Michael J. Bean and Melanie J. Rowland, *The Evolution of National Wildlife Law**

283-91 (3d ed. 1997).

The National Wildlife Refuge System is the only extensive system of federally owned lands managed chiefly for the conservation of wildlife.[**]

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** [Eds. In 1997 Congress defined the "mission" of the National Wildlife Refuge System as "a national network of lands and waters for the conservation, management,

* * * The Refuge System comprises nearly 91 million acres, almost 76 million of which are in Alaska.

The origins of the Refuge System can be traced to the turn of the century, when presidential proclamation established the first federal wildlife refuges. Soon Congress also became involved in creating refuges, first by authorizing the President in 1905 and 1906 to designate certain areas as wildlife ranges. In 1908, Congress established a National Bison Range in Montana by its own action.

The Migratory Bird Treaty Act, passed in 1918, provided the stimulus for a systematic program of refuge acquisition. The Act's failure to authorize acquisition of migratory bird habitat came to be recognized as a serious shortcoming. To provide the needed authority, Congress passed the Migratory Bird Conservation Act (hereinafter Conservation Act) in 1929.

The Conservation Act established a Migratory Bird Conservation Commission to review and approve proposals of the Secretary of the Interior for the purchase or rental of areas under the Act. Although several subsequent statutes—including the Fish and Wildlife Coordination Act, the Fish and Wildlife Act of 1956, the Land and Water Conservation Fund Act, and the Endangered Species Acts of 1966, 1969, and 1973—contained acquisition authority, the Conservation Act continues to be a major source of authority for wildlife refuge acquisition.

The Migratory Bird Hunting Stamp Act, enacted in 1934, assured a steady source of funding for refuge acquisition under the Conservation Act. The Hunting Stamp Act, however, almost assured a refuge system keyed principally to the production of migratory waterfowl. * * * A 1958 amendment provided that funds derived from the Act could be used to acquire "waterfowl production areas," which are small wetland or pothole areas. * * *

Until 1966, there was no single law governing the administration of the many federal wildlife refuges. The numerous administrative units, known variously as "game ranges," "wildlife ranges," "wildlife management areas," "waterfowl production areas," and "wildlife refuges," were under the jurisdiction of the Fish and Wildlife Service, or, in a few cases, the joint jurisdiction of [FWS and BLM]. Each unit was, however, governed by the often vague standards of the law or executive order by which it was created.

The National Wildlife Refuge System Administration Act of 1966 introduced a measure of rationality into this system by consolidating the varied units into a single National Wildlife Refuge System. The Act, however, did little to spell out standards to guide System administration. It (1) placed restrictions on the transfer, exchange, or other disposal of lands

and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." 16 U.S.C. § 668dd(a)(2).]

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within the system, (2) clarified the Secretary's authority to accept donations of money to be used for land acquisition, and (3) most importantly, authorized the Secretary to "permit the use of any area within the System for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever he determines that such uses are compatible with the major purposes for which such areas were established."³⁴ This authorization of "compatible" uses thus made clear that the national wildlife refuges are not to be managed as "single-use" lands, but more properly as "dominant use" lands.

Similarly, although the Conservation Act provided that all refuges acquired pursuant to its authority be operated as "inviolable sanctuar[ies],"³⁶ later enactments rendered this language largely meaningless. Congress authorized the Secretary to permit public hunting on an ever-increasing proportion of the total area of any refuge, if "compatible with the major purposes for which such laws were established."***

The other major law governing refuge administration is the Refuge Recreation Act of 1962 [Eds.: which is addressed in the *Ruby Lake* decisions, further below]. * * *

Considerable controversy has arisen over refuge management. Conflicts have concerned FWS's jurisdiction over certain refuges, the Secretary's authority to transfer lands from the system, and, most frequently, his or her authority to permit or prohibit particular uses under the compatibility standard.

Consolidation of so many disparate units into a single National Wildlife Refuge System did not change the fact that many of the units were established for widely varying purposes. In particular, the System included units expressly established both for wildlife protection *and* for livestock grazing. Reflecting this duality of purpose, certain "game ranges" were jointly administered until 1975 by FWS and BLM. In that year, the Secretary of the Interior directed that BLM become sole manager of three game ranges. The prospect that FWS, whose paramount mission is wildlife conservation, would be divested of its authority in favor of the multiple-use-oriented BLM so alarmed wildlife proponents that they both filed a lawsuit

34. 16 U.S.C. § 668dd(d)(1). * * *

36. 16 U.S.C. § 715(d)(2).

** [Eds. In a later section, at pp. 295-96, Bean and Rowland point out:

Hunting was first permitted on a wildlife refuge in 1924. From then until 1949, hunting was permitted primarily on units where it was a traditional activity on the land in question before it became part of the refuge system. In 1949, Congress authorized the Secretary to permit public hunting on up to 25 percent of any unit acquired under the Conservation Act. The proportion was increased to 40 percent in 1958. Finally, the National

Wildlife Refuge System Administration Act of 1966 authorized the Secretary to permit "compatible" hunting on any unit of the National Wildlife Refuge System, retaining the 40 percent limitation only with respect to migratory waterfowl.

As a matter of politics, Congress tied the amount of hunting allowed on refuges to the cost of the federal duck stamp; i.e., the 1949 Act raised the cost of the duck stamp from \$1 to \$2 at the same time it permitted hunting on up to 25% of the land in a migratory bird refuge; the proportion went to a maximum of 40% when Congress raised the price of the stamp to \$3 nine years later.]

and simultaneously introduced legislation to reverse the Secretary's decision.

Both the lawsuit and the legislative efforts were successful in 1976. In *Wilderness Society v. Hathaway*, the District Court for the District of Columbia enjoined the transfer of authority to the BLM on the ground that "the Secretary is required to exercise his discretion and authority with respect to the administration of game ranges and wildlife refuges through the Fish and Wildlife Service." One month later, Congress confirmed this result by amending the Refuge Administration Act to direct that all units of the System be administered through the FWS and that all units then within the System remain so except under certain limited conditions.

* * * [C]ourts have resolved jurisdictional conflicts under the Refuge Administration Act in favor of FWS. In *Trustees of Alaska v. Watt*, the Secretary of the Interior had delegated responsibilities pertaining to oil and gas exploration and development in the Arctic National Wildlife Refuge to the United States Geological Survey (USGS). The USGS was to develop initial guidelines for exploration, review and approve exploration plans, and, after a period of five years, recommend whether additional exploration or development was warranted. The USGS had the exclusive responsibility for the first and last of these. Its approval of exploration plans was subject to concurrent approval by FWS.

The court concluded that this arrangement violated the Refuge Administration Act's requirement that FWS administer all units of the Refuge System. To "administer" a refuge is to "manage" it, the court reasoned, and the Service's duty to manage required it "to control and direct the Refuge by regulating human access in order to conserve the entire spectrum of wildlife found in the Refuge." Even preparing a report to Congress that "supplies information essential to determining whether development activity will be permitted within the Refuge" was, in the court's view, "a Refuge administration function." As to the requirement that FWS concur in the approval of any exploration plan, the court concluded that this was the very sort of "joint administration" of a refuge that the 1976 amendments prohibited. The Ninth Circuit subsequently affirmed the district court's decision and embraced its opinion. [524 F. Supp. 1303 (D. Alaska 1981), *aff'd*, 690 F.2d 1279 (9th Cir.1982)].

NOTES AND QUESTIONS

1. In 1997 Congress enacted an "organic" act for the USFWS which is discussed further below; pp. 882-87 *infra*. As of this writing, there are about 93 million acres in more than five hundred National Wildlife Refuges in all 50 states and several territories.

2. Refuges may be created or added to in several ways: By executive withdrawal, by act of Congress, by transfers from other federal agencies, and by purchase, donation, or exchange under various authorities such as the Migratory Bird Conservation Act, the Endangered Species Act, or the Land and Water Conservation Fund. See generally Richard J. Fink, *The National Wildlife Refuges: Theory, Practice, and Prospect*, 18 *Harv.*

Envtl.L.Rev. 1 (1994). For a useful table showing the chronology of significant events surrounding the refuge system, see Kevin Gergely, J. Michael Scott & Dale Goble, *A New Direction for the U.S. National Wildlife Refuges: The National Wildlife Refuge System Improvement Act of 1997*, 20 *Natural Areas J.* 107 (2000).

3. Where do you suppose the first President Roosevelt found the authority to create wildlife refuges by executive order? Cf. *United States v. Midwest Oil Co.*, Chapter 2, *supra* p. 119. The Secretary of the Interior retains the power to withdraw federal lands for wildlife protection purposes, whether or not he chooses to place the lands in the National Wildlife Refuge System under the jurisdiction of the USFWS. See Chapter 4, *supra* pp. 340-47. For example, in 1971 Secretary of the Interior Rogers Morton issued an order setting aside 26,000 acres of BLM-managed public lands in Idaho as the Snake River Birds of Prey Natural Area. To enhance protection for what was said to be the most dense nesting population of raptors in the world, in early 1980 the Carter Administration submitted a bill to Congress that would have enlarged the protected area and established it as a National Conservation Area. When Congress dragged its feet, and after the November 1980 election gave the Administration lame duck status, Secretary of the Interior (and past and future Idaho governor) Cecil Andrus used the Federal Land Policy and Management Act (FLPMA) to withdraw about 418,000 acres from disposal. This withdrawal was held to meet the procedural requirements of FLPMA in *Sagebrush Rebellion, Inc. v. Hodel*, 790 F.2d 760 (9th Cir.1986). In 1993, Congress finally got around to designating 483,000 acres as the Snake River Birds of Prey National Conservation Area, 16 U.S.C. § 460iii et seq., still managed by BLM.

4. Sometimes the President has used the Antiquities Act to set aside land to be managed for, among other things, wildlife, and sometimes given management authority over the area to the USFWS. President Carter's Alaska monuments included several large ones of this type, which Congress converted to national wildlife refuges in ANILCA. See p. 355 *supra*. In 2000, President Clinton proclaimed the Hanford Reach National Monument along the Columbia River, around the Hanford Nuclear reservation managed by the Department of Energy, and gave the USFWS primary management authority. See 65 Fed. Reg. 37,253 (Jan. 11, 2000).

5. The Bean and Rowland excerpt notes that some of the units of the Refuge system were originally established as "game ranges," with the dual and often conflicting purposes of grazing livestock and protecting wildlife. One such area was the Fort Peck Game Range (later redesignated the Charles M. Russell National Wildlife Range) in eastern Montana, created by executive order (No. 7509) by the second President Roosevelt in 1936. The order provided that the Range's "natural forage resources shall be first utilized for the purpose of sustaining in a healthy condition a maximum of" 400,000 sharptail grouse and 1500 antelope as "primary" species, and "such nonpredatory secondary species in such numbers as may be necessary to maintain a balanced wildlife population." It went on to say that "all" the Range's forage resources "shall be available, except as herein

otherwise provided with respect to wildlife, for domestic livestock" under secretarial regulation implementing the Taylor Grazing Act.

Does this language give wildlife a priority on the Game Range? All wildlife, or just the "primary" species? Or do cows have equal priority? Or does the Order basically leave it up to the Secretary to allocate the "natural forage resources" among these groups as she sees fit? In fact, the Secretary for a number of years gave cows and wildlife equal priority. See *Schwenke v. Secretary of the Interior*, 720 F.2d 571, 574 n. 4 (9th Cir.1983). In *Schwenke*, the Ninth Circuit construed the quoted language to give priority to the sharptail grouse and the antelope, up to the population numbers mentioned in the order; and after that, all wildlife and livestock had "equal priority in access to the forage resources of the Range."

Schwenke went on to consider the effect of Congress's decision in 1976 (briefly described in the Bean and Rowland excerpt, *supra*) to transfer exclusive control of game ranges to the Fish & Wildlife Service. Noting that the transfer statute "does not mention the relative priorities of livestock and wildlife in access to the forage resources" on these game ranges, the court opined, in *dictum*, that because the "primary mission" of the FWS is wildlife, the transfer of jurisdiction to that agency would ordinarily give wildlife priority in access. But because there was no mention of the 1936 Executive Order in either the 1976 Act or its legislative history, the court refused to find that the Order's scheme of priority had been repealed by implication. The court went on to hold that the 1976 transfer of jurisdiction meant that the FWS would administer livestock grazing on the Range not under the Taylor Grazing Act (as the 1936 Executive Order had provided), but rather under the Wildlife Refuge Act.

In the wake of this decision, what legal standards guide the manager of the Game Range in her decision to allocate forage between cows and wildlife? Prior to 1985, FWS followed BLM's prior practice and allocated about 60% of the forage to livestock. In that year, the FWS completed an EIS on livestock grazing on the Range, and decided to alter the allocation so that wildlife got 63% of the Range's forage and livestock 37%. NEPA compliance on the decision was upheld against attack in *Schwenke v. Secretary of the Interior (II)*, 21 ELR 20542 (D.Mont.1990).

6. While wildlife professionals often speak of "wildlife management," frequently preceded by "the science of," a satisfactory definition is elusive. Its defenders maintain that it is a body of generally accepted principles derived from extensive research, but some suggest that modern practices of wildlife management are merely the residue of decades of one damn mistake after another. See generally J. Trefethan, *AN AMERICAN CRUSADE FOR WILDLIFE* (1975); D.Allen, *OUR WILDLIFE LEGACY* (rev. ed. 1962). One is tempted to say that "wildlife management," like "multiple use management," resembles obscenity: one may know it when one sees it, even though one admittedly cannot describe it in words. See *Jacobellis v. Ohio*, 378 U.S. 184, 197 (1964) (Stewart, J., concurring).

7. Comprehensive legal treatments of national wildlife refuge issues are found in Robert Fischman, *The National Wildlife Refuge System and Hallmarks of Modern Organic Legislation*, 29 *Ecology L.Q.* ____ (forthcom-

ing, 2002); Richard J. Fink, *The National Wildlife Refuges: Theory, Practice, and Prospect*, 18 *Harv. Envtl. L. Rev.* 1 (1994). See also Nathaniel Reed & Dennis Drabelle, *THE FISH AND WILDLIFE SERVICE* (1984). Reed, a longtime outstanding conservationist, was Assistant Secretary of the Interior for Fish, Wildlife & Parks in the early 1970s.

2 THE ROLE OF STATE LAW

State of Wyoming v. United States

United States Court of Appeals for the Tenth Circuit, 2002.
279 F.3d 1214.

- Before LUCERO, POLITZ,* and BALDOCK, CIRCUIT JUDGES.
- BALDOCK, CIRCUIT JUDGE.

Once again a federal court is called upon to unravel a congressionally-legislated Federal-State standoff. The National Elk Refuge (NER), a part of the National Wildlife Refuge System (NWRS), encompasses approximately 24,700 acres of wilderness north of Jackson Hole, Wyoming, in the greater Yellowstone area.¹ Brucellosis, a serious disease that causes miscarriage, is endemic to free-ranging elk in the greater Yellowstone area and a threat to Wyoming's domestic cattle industry. Plaintiff State of Wyoming and the United States Fish and Wildlife Service (FWS), a division of the United States Department of the Interior (USDI), disagree over how best to manage brucellosis on the NER. Specifically, the State challenges the FWS's refusal to permit the State to vaccinate elk on the NER with a brucellosis vaccine known as "Strain 19." According to the FWS, after several years of research and study, the biosafety and efficacy of Strain 19 vis-a-vis elk remain unproven. The State disagrees.

Resolution of this matter ultimately rests upon our construction of the National Wildlife Refuge System Improvement Act of 1997 (NWRSIA) (codified at 16 U.S.C. § § 668dd-668ee). Unfortunately, the NWRSIA does not (nor does any Federal law) directly address the problem of brucellosis in wildlife, or establish clear priority between wildlife and domestic livestock when interests involving the two conflict. In the jurisdictionally-fragmented Yellowstone area, however, one thing is certain: Wildlife management policies affecting the interests of multiple sovereigns demand a high degree of intergovernmental cooperation. Such cooperation is conspicuously absent in this case.

Brucellosis is a disease caused by *Brucella abortus*, a bacterial borne pathogen which infects the reproductive organs and lymphatic system of

* The Honorable Henry A. Politz, United States Senior Circuit Judge for the Fifth Circuit Court of Appeals, sitting by designation.

1. . . . Congress established the NER in 1912, then 2,760 acres, to protect both human and elk interests in the Jackson Hole valley. See 16 U.S.C. § 673. The NER became

a part of the NWRS in 1966. Numerous species make the NER their home during part of all of the year. In addition to elk, these species include birds, bison, mule deer, big-horn sheep, pronghorn antelope, moose, wolves, coyotes, badgers, and black and grizzly bears.

3. NATIONAL WILDLIFE REFUGE MANAGEMENT AND THE COMPATIBILITY TEST

As noted earlier, the national wildlife refuges do not offer "refuge" in one commonly accepted meaning of the word: hunting, fishing, and trapping have become normal activities on refuge lands, and other economically oriented practices, from haying to mineral leasing, may also occur. Like some other federal lands, some refuges are also threatened with degradation from human overuse, particularly recreational use. Until 1997, the basic legal standard for administration of the Refuge System was found in the National Wildlife Refuge Administration Act (16 U.S.C. § 668dd(d)(1)):

The Secretary is authorized, under such regulations as he may prescribe, to—(A) permit the use of any area within the System for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever he determines that such uses are compatible with the major purposes for which such areas were established * * *.

(Changes introduced by the 1997 Act are discussed further below.) The Act went on to create certain exceptions and limitations on application of this generic "compatibility" standard, but it remained the principal management criterion. A prior statute, the Refuge Recreation Act of 1962 (considered in the next principal case), established a similar but not identical standard, and it was expressly preserved by the Refuge Administration Act (16 U.S.C. § 668dd(h)).

The compatibility test did not provoke litigation until the mid-1970s. (*Udall v. Tallman*, Chapter 4, supra p. 308, grew out of a controversy over the compatibility of oil and gas leasing in refuges, but no compatibility issues were involved in the case.) We have already seen one application of the "compatibility" standard, in *National Audubon Society v. Hodel* (St. Matthews Island exchange), Chapter 4, supra p. 369, which arose in connection with whether a proposed exchange of private inholdings inside Refuges for other federal lands elsewhere met a statutory "public interest" test. The following court opinions remain among the fullest explorations of the application of the compatibility standard.

Defenders of Wildlife v. Andrus (Ruby Lake Refuge I)

United States District Court, District of Columbia, 1978.
11 *Envtl. Rptr. Cases* 2098.

■ PRATT, J.

[In April 1978 the Fish & Wildlife Service adopted special regulations governing recreational boating in the Ruby Lake National Wildlife Refuge. Plaintiff filed this suit two months later, charging that the regulations violated the Refuge Recreation Act of 1962 (16 U.S.C. § 460k), and seeking injunctive relief against continued motorboat use in the Refuge.] * * *



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Findings of Fact

I. Ruby Lake National Wildlife Refuge.

1.1 On July 2, 1938, by Executive Order No. 7923, President Franklin Roosevelt "reserved and set apart" the Refuge "as a refuge and breeding ground for migratory birds and other wildlife," in order to effectuate further the purposes of the Migratory Bird Conservation Act. The area so reserved and set apart * * * comprised all lands and waters within a described area of approximately 37,640 acres in Elko and White Pine Counties, Nevada. 3 Fed.Reg. 1639 (July 7, 1938).

1.2 Section 5 of the Migratory Bird Conservation Act, 15 U.S.C. § 715d, authorizes the United States to purchase, rent or otherwise reserve areas "for use as inviolate sanctuaries for migratory birds * * *." Section 6 of this Act, 16 U.S.C. § 715e, requires that easements and reservations retained by any grantor from whom the United States received title "shall be subject to rules and regulations prescribed by the Secretary of [Interior] for the occupation, use, operation, protection and administration of the areas as inviolate sanctuaries for migratory birds * * *."

1.3 The primary purpose for which the Refuge was established is for use as a refuge, breeding ground and inviolate sanctuary for migratory birds. * * *

1.6 The Refuge consists of 25,150 acres of wetlands and 12,468 acres of surrounding uplands. The wetlands portion of the Refuge consist of the 7,000-acre South Sump, which is the primary waterfowl nesting area, and the North and East Sumps, which are all maintained by a complex and intricate flowage of waters throughout the marsh basin. The average depth of water in the South Sump is approximately four feet, and in the North and East Sumps considerably less.

1.7 The management objectives of the Refuge are (1) to preserve, restore and enhance in their natural eco-systems all species of animals and plants that are endangered or threatened with becoming endangered on lands of the National Wildlife Refuge System; (2) to perpetuate the migratory bird resource for the benefit of people—to manage the refuge for an annual production of 5,000 canvasbacks and 5,000 redheads; (3) to preserve natural diversity and abundance of mammals and non-migratory birds on refuge land; and (4) to provide understanding and appreciation of fish and wildlife ecology and man's role in his environment, and to provide visitors with high quality, safe, wholesome, and enjoyable recreation which is fully compatible and consistent with, and which in no way harms or interferes with the area's primary purpose as a refuge and breeding ground for migratory birds and other wildlife.

1.8 All national wildlife refuges are maintained for the primary purpose of preserving, protecting and enhancing wildlife and other natural resources and of developing a national program of wildlife and ecological conservation and rehabilitation. These refuges are established for the restoration, preservation, development and management of wildlife and wildlands habitat; for the protection and preservation of endangered or threatened species and their habitat; and for the management of wildlife

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and wildlands to obtain the maximum benefits from these resources. 50 C.F.R. § 25.11(b).

II. *The Refuge Supports Canvasback and Redhead Ducks and a Diverse Population of Other Migratory Birds and Wildlife.*

2.1 The Refuge provides one of the most important habitats and nesting areas for over-water nesting waterfowl in the United States. The Refuge is particularly valuable to the canvasback and redhead duck, which use the area in approximately equal numbers for nesting and broodrearing during the spring, summer and early fall.

2.2 Continental populations of both the redhead and the canvasback duck are low and both species have suffered throughout their respective ranges from encroachment and habitat loss. In 1972, the annual winter waterfowl inventory conducted by the United States Fish and Wildlife Service showed an all time low of 179,000 canvasbacks. The redhead has faced intensive drainage programs in the prairie-parkland region of central North America, the major breeding area of this species. A more comprehensive program oriented towards habitat protection is necessary to conserve and protect these species.

2.3 The canvasback duck and the redhead duck have been listed as "migratory birds," as defined by Section 11 of the Migratory Bird Conservation Act, 16 U.S.C.A. § 715j, and are protected by the Migratory Bird Treaty Act, 16 U.S.C.A. §§ 703 to 711, and by [treaties between the U.S. and Great Britain (on behalf of Canada), Mexico, and Japan].

2.4 In addition to the canvasback and redhead duck, numerous species of waterfowl and other birds using the Refuge have been so designated as "migratory birds," including the prairie falcon, the peregrine falcon, the bald eagle, the golden eagle, the trumpeter swan, the white-faced ibis, the snowy egret, the great blue heron, the black-crowned night heron, the ruddy duck, the ringed-necked duck, the sandhill crane, the Canada goose, the coot and the cinnamon teal.

Conclusions of Law

III. *The Ruby Lake Special Regulations are Invalid in That They do not Include Appropriate Findings Necessary to Their Promulgation.*

3.1 On April 21, 1978, the Secretary of Interior promulgated the Ruby Lake Special Regulations, 50 C.F.R. § 25.34 (hereinafter referred to as "regulations").

3.2 These regulations permit year-round boating in an area designated as Zone 1 in the South Sump by boats without motors or boats with electric motors.

3.3 Beginning on July 1 on the east side and July 15 on the west side of an area designated as Zone 2 of the South Sump, and extending until December 31, boats without motors, boats with electric motors and boats with internal combustion motors of unlimited horsepower are permitted. No boat may exceed 20 miles per hour in any area or 5 miles per hour in areas so designated by the Refuge Manager.

3.4 Beginning on July 1 and extending until December 31, waterskiing is permitted on a designated area from 10 a.m. to 5 p.m. daily.

3.5 Beginning on August 1 and extending until December 31, boats without motors, boats with electric motors and boats with internal combustion motors of unlimited horsepower are permitted in an area designated as Zone 3 of the South Sump. No boat may exceed 20 miles per hour in any area or 5 miles per hour in areas so designated.

3.6 The Refuge Recreation Act of 1962 (16 U.S.C. § 460K) governs the Secretary's authority to permit recreation within the Ruby Lake National Wildlife Refuge and all other areas within the National Wildlife Refuge System, national fish hatcheries and other conservation areas administered by the Secretary for fish and wildlife purposes. The Refuge Recreation Act provides in pertinent part that:

"In recognition of mounting public demands for recreational opportunities on areas within the National Wildlife Refuge System, * * * the Secretary of the Interior is authorized, as an appropriate incidental or secondary use, to administer such areas or parts thereof for public recreation when in his judgment public recreation can be an appropriate incidental or secondary use: Provided, That such public recreation use shall be permitted only to the extent that is practicable and not inconsistent with other previously authorized Federal operations or with the primary objectives for which each particular area is established: * * * And provided further, That none of the aforesaid refuges, hatcheries, game ranges, and other conservation areas shall be used during any fiscal year for those forms of recreation that are not directly related to the primary purposes and functions of the individual area until the Secretary shall have determined—

(a) that such recreational use will not interfere with the primary purposes for which the areas were established, and

(b) that funds are available for the development, operation, and maintenance of these permitted forms of recreation. This section shall not be construed to repeal or amend previous enactments relating to particular areas." (emphasis added)

3.7 In supporting enactment, Congressman Dingell stated on the floor of the House:

"The Secretary must make certain findings before he throws these areas open to public use; the bill requires him to find, for example, that there is sufficient money available to administer and protect these areas, and *he must find that the utilization for recreational use will not be harmful to the basic purpose of the refuges.*" 108 Cong.Rec. 5548 (April 2, 1962) (Emphasis added).

3.8 In determining to permit recreational use of a National Wildlife Refuge, the burden of proof is necessarily on the Secretary to demonstrate that such use is incidental to, compatible with, and does not interfere with the primary purpose of the refuge as "an inviolate sanctuary for migratory birds."

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3.9 The regulations violate the statutory standard because the Secretary failed to make the determination required by the statute that the permitted recreational use would not interfere with the Refuge's primary purpose as an "inviolate sanctuary for migratory birds."

3.10 The Refuge Recreation Act does not permit the Secretary to weigh or balance economic, political or recreational interests against the primary purpose of the Refuge.

3.11 When Congress has sought to authorize the weighing or balancing of competing interests it has done so explicitly.

3.12 Neither poor administration of the Refuge in the past, nor prior interferences with its primary purposes, nor past recreational uses, nor deterioration of its wildlife resource since its establishment, nor administrative custom or tradition alters the statutory standard. The Refuge Recreation Act permits recreational use only when it will not interfere with the primary purpose for which the Refuge "was established." The prior operation of the Refuge in a manner inconsistent with that purpose does not change the base point for applying the statute's standard. Past recreational use is irrelevant to the statutory standard except insofar as deterioration of the wildlife resource from prior recreational use serves to increase the need to protect, enhance and preserve the resource. Past recreational abuses may indeed require the Secretary to curtail recreational use to an even greater degree than mandated by the Refuge Recreation Act, in order to restore and rehabilitate the area promptly as required by the Secretary's existing regulations. 50 C.F.R. § 25.11(b).

*IV. This Court Will Not Supply Findings to Support the Regulations on Behalf of the Secretary. * * **

4.4 In adopting these regulations the Assistant Secretary balanced economic, political and recreational interests against the primary wildlife purpose of the refuge and reached a compromise.

4.5 The compromise reached by the Assistant Secretary in adopting these regulations was not supported by certain members of his staff. The former Refuge Manager, an expert in wildlife biology and management, testified in opposition to the regulation. The Deputy Associate Director for Wildlife refused to [endorse] the regulations because in his opinion the regulations were not in the best interest of the Refuge and the resources for which it was established. * * *

[The court enjoined the regulations and ordered the Secretary to promulgate, within five days, new regulations "which permit secondary uses of Ruby Lake only insofar as such usages are not inconsistent with the primary purpose for which the refuge was established," and to "take all appropriate and necessary steps to enforce the resulting regulations."]

Defenders of Wildlife v. Andrus (Ruby Lake Refuge II)

United States District Court, District of Columbia, 1978.
455 F.Supp. 446.

■ PRATT, J.

[The Secretary quickly issued new regulations that differed from the old ones only in setting lower speed (but not horsepower) limits for

powerboats. On August 18, 1978, the court threw out the new version and ordered yet another round of rulemaking. The opinion noted that approximately 30,000 boaters annually used the 7000 acre South Sump that was the preferred nesting habitat for migratory birds. Boating was increasing dramatically; 19% per year in recent years. The opinion concluded:]

19. If the regulations are permitted to continue in effect they will immediately and irreparably damage plaintiff's interests and the wildlife resources of the Refuge. The use of powerboats of unlimited horsepower on the Refuge (including for waterskiing) will directly and immediately harm the wildlife resources of the Refuge (i) by reducing submergent aquatic vegetation which is the principal food source for migratory waterfowl; (ii) by reducing macroinvertebrate populations which are the principal food sources for ducklings; (iii) by breaking up broods, by separating ducklings from their hen, by forcing broods out of brooding areas, and thereby reducing brood size; and (iv) by reducing the reproductive success of late nesting and re-nesting hens.

20. Late nesting and re-nesting extends through September 1 of each season and occurs with sufficient frequency to be significant to the immediate and long-term productivity of the Refuge.

21(a). The level of boating use permitted by these regulations is not incidental to or compatible with, and will interfere with the primary purpose of[,] the Refuge.

(b). The suggestion that horsepower limitations would not be appropriate, and would not aid the primary purpose of the Refuge, is completely contrary to all reason and the facts of the record.

(c). The proposed speed limitations to be used in conjunction with [unlimited] horsepower are so obviously unenforceable that to rely on a speed limitation, even as high as twenty miles an hour, is unrealistic because of its very unenforceability.

Conclusions of Law

22. The regulations violate the statutory standard of the Refuge Recreation Act because the degree and manner of boating use which they would permit is not incidental or secondary use, is inconsistent, and would interfere with the Refuge's primary purpose.

23. The regulations violate the statutory standard of the Refuge Recreation Act because the degree and manner of boating use which they would permit is not practicable because of their unenforceability.

24. The Secretary's determination that the level of boating permitted by the regulations does not interfere with the Refuge's primary purpose is arbitrary and capricious.

25. Based on the record in this action, the use of boats with unlimited horsepower in the South Sump of the Refuge is inconsistent and interferes

with its primary purpose as a refuge and breeding ground for migratory birds and wildlife.

NOTES AND QUESTIONS

1. What legal restrictions did the Refuge Recreation Act place on the Secretary? A typical dictionary definition is that "compatible" means "capable of existing together in harmony." Does that support the court's ruling here?

2. What recreational activities do you suppose occurred on the Refuge between the date of the Act (1962) and the first adoption of the regulations in 1978? As a matter of law, was unrestricted recreation allowed until the Secretary restricted or prohibited it? Or was it prohibited until the Secretary determined to allow it? Note that the Refuge Recreation Act said public recreation use "shall be permitted only to the extent that is * * * not inconsistent with * * * the primary objectives for which each particular area is established * * * [and] until the Secretary shall have determined (a) that such recreational use will not interfere with the primary purposes for which the areas were established."

3. The 1966 National Wildlife Refuge Administration Act was worded somewhat differently, authorizing the Secretary to permit other uses "whenever he determines that such uses are compatible with the major purposes for which such areas were established." 16 U.S.C. § 668dd(d)(1). In *Wilderness Society v. Babbitt*, 5 F.3d 383 (9th Cir.1993), the court addressed whether the defendants' failure to examine the effects of cattle grazing in a wildlife refuge was "substantially justified" under the Equal Access to Justice Act, 28 U.S.C. § 2412(d)(1)(A). If it was not, the plaintiffs were eligible for attorneys fees under the Act after the government settled the lawsuit with the plaintiffs by agreeing to examine the compatibility of grazing with the Refuge's purposes. The court said:

[T]he Service renewed annual grazing permits without regard to the incompatibility of grazing to the Refuge's purposes. As early as December 1989, the Service was aware that its grazing practices were damaging the Refuge. The Refuge Manager warned that "there is no question that current grazing practices causing this damage are negatively impacting fish and wildlife habitats and are (1.) in violation of the refuge's executive orders and (2.) currently not compatible with the uses for which the refuges were established."

The Refuge Manager's report did not foreclose the possibility that the Service could formulate a grazing plan that would be compatible with purposes of the Refuge. Based upon this report, however, the Service had a duty to investigate the compatibility of grazing with the Refuge's purposes prior to permitting grazing on the Refuge. Nonetheless, the Service continued its same practices, issuing grazing permits for 1990 without any compatibility determination. It made little headway in formulating a new management plan prior to the initiation of the *Wilderness Society* lawsuit in 1991. In light of the Refuge Manager's

report, we cannot find that the Service's actions were substantially justified.

Absent the Refuge manager's December 1989 finding, was the Service's renewal of grazing permits without a finding of compatibility "substantially justified"? Judge Farris dissented from the court's ruling, construing the Refuge Act as "not specify[ing] that the Service has a duty to make a compatibility determination to permit the continuation of a preexisting use of the Refuge." Because grazing "had been permitted on the Refuge since 1936," Judge Farris opined that

[w]ithout plain language or precedent to alert the Service to its "duty" under the Act, the Service was not unreasonable for continuing an age-old practice while it formulated alternatives. * * * On the basis of a single memorandum, without benefit of trial, the majority confidently holds that the Service has breached its duty. I am troubled by the perverse incentives created by this holding and the adverse consequences it will have beyond this case. The majority tells all government agencies that if they discover a problem with one of their programs, they should never discuss it openly and frankly. If one member of an agency expresses an opinion, and the government does not immediately adopt his position, a court may later find that the agency illegally "disregarded" his advice. That is not and should not be the law.

4. In the 1997 organic act, Congress addressed the issue discussed in paragraphs 2-3 immediately above. It provided that the Secretary "shall not initiate or permit a new use of a refuge or expand, renew, or extend an existing use of a refuge, unless the Secretary has determined that the use is a compatible use * * *," except that "[c]ompatibility determinations in existence on [the date of enactment] shall remain in effect until and unless modified." 16 U.S.C. § 668dd(d)(3)(A)(i) and (iv). If this language had been applied by the court in the *Wilderness Society* case discussed in paragraph 3, what would have been the result?

5. Could nearby residents who, prior to 1978, bought high-powered boats for use on the Ruby Lake Wildlife Refuge maintain an estoppel argument against the government taking action to restrict their use? (Suppose there were no other places within hundreds of miles where such boats could be used.) Would they or should they have a credible claim that the regulations have unconstitutionally "taken" their property interests in their boats without compensation?

6. Did the court here show sufficient deference to agency expertise? Note some wildlife professionals in the Department thought the first regulations were too weak, and that the "former Refuge Manager, an expert in wildlife biology and management, testified in opposition to the regulation." Is this relevant to the court's determination of whether the regulations were lawful? Conclusive on the point? The Assistant Secretary of the Interior (a political appointee with supervisory power over the Fish & Wildlife Service) made the final decision and, according to Judge Pratt's first opinion, "balanced economic, political, and recreational interests against the primary wildlife purpose of the refuge and reached a compromise." Was this relevant? Unwise? Unlawful?

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7. An important part of applying the compatibility test is, of course, to determine the primary or major purposes of the Refuge. This is not always as simple as it may seem. What, for example, are the primary purposes of the Ruby Lake Refuge? Judge Pratt said (in finding 1.3 in his first opinion) that the primary purpose was as a "refuge, breeding ground and inviolate sanctuary for migratory birds." But Franklin Roosevelt's 1938 Executive Order established the Refuge "as a refuge and breeding ground for migratory birds *and other wildlife*." (Emphasis added) Suppose speedboats did not threaten migratory birds (at least in seasons when the birds were not present on the Refuge) but did threaten other forms of wildlife. Does the compatibility test require that speedboats be restricted?

8. Also on this point of primary purposes, the court referred to the Migratory Bird Conservation Act (MBCA), which authorizes reservations "for use as inviolate sanctuaries for migratory birds." It was enacted in 1929, nine years before FDR reserved the Ruby Lake Refuge. Was FDR's order consistent with MBCA? Might FDR have reserved the area for "other wildlife" not under the MBCA, but under his more general withdrawal authority?

9. This overlap of statute and orders, with somewhat different expressions of purposes, is more typical than not in the national wildlife refuge system. The 1997 legislation announces the "policy of the United States" to manage "each refuge * * * to fulfill the mission of the System, as well as the specific purposes for which that refuge was established." 16 U.S.C. § 668dd(a)(3)(A). It went on to say that "if a conflict exists between the purposes of a refuge and the mission of the System, the conflict shall be resolved in a manner that first protects the purposes of the refuge, and, to the extent practicable, that also achieves the mission of the System." *Id.*, § 668dd(a)(4)(D). How would the hypothetical in paragraph 7, above (involving speedboat use that did not threaten migratory birds but did threaten other wildlife) be resolved under this language? See generally Robert Fischman, *The National Wildlife Refuge System and Hallmarks of Modern Organic Legislation*, 29 *Ecology L.Q.* — (forthcoming, 2002).

10. The Humane Society and similar groups sought to stop sport and other hunting in wildlife refuges before 1997, relying primarily on the *Ruby Lake* rationale. They were unsuccessful. See, e.g., *Humane Society v. Hodel*, 840 F.2d 45 (D.C.Cir.1988); *Humane Society v. Lujan*, 768 F.Supp. 360 (D.D.C.1991); *Bean & Rowland*, at 294-97.

11. In *Animal Lovers Volunteer Ass'n v. Cheney*, 795 F.Supp. 994 (C.D.Cal.1992), the court rejected plaintiffs' attempt to halt a program to trap red fox at a national wildlife refuge in order to protect two endangered bird species found there. One of plaintiffs' arguments (which the court described as "disjointed" and "couched in inflammatory rhetoric") was that oil production allowed in the refuge was more harmful to the birds than the foxes. The court concluded that Congress was aware that prior owners of a portion of the land acquired for the refuge had retained their oil and gas rights, and the legislative history of the act establishing the refuge acknowledged that oil production would continue. The court also found that USFWS had fulfilled its "compatibility" obligations because it

had evidence that red foxes were playing a substantial enough role in "inhibiting" the two endangered bird species to justify the trapping program.

THE 1997 NATIONAL WILDLIFE REFUGE SYSTEM IMPROVEMENT ACT (NWRISA) AND THE COMPATIBILITY TEST

In 1997, Congress enacted a long-sought organic act for the National Wildlife Refuge System. The NWRISA restated the compatibility test this way: "'compatible use' means a wildlife-dependent recreational use or any other use of a refuge that, in the sound professional judgment of the Director, will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge." 16 U.S.C. § 668ee(1). "Sound professional judgment" was defined as "a finding, determination, or decision that is consistent with principles of sound fish and wildlife management and administration, available science and resources, and adherence to the requirements of this Act and other applicable laws." *Id.*, § 668ee(3).

One of the co-authors of this text opined that "[i]f this had been all that Congress chose to say on the question of compatibility, *Ruby Lake* would have been effectively overridden and the FWS would be free to do whatever it chose." George C. Coggins and Robert Glicksman, PUBLIC NATURAL RESOURCES LAW § 14A.02 (2001). Do you agree? Would a failure to impose limits on speedboats have satisfied this standard? Note that the statute, somewhat unusually, refers to the "sound professional judgment" not of the Secretary of the Interior, but of the Director of the U.S. Fish & Wildlife Service. Like the Secretary, the Director is a political appointee, appointed by the President and subject to Senate confirmation, but unlike the Secretary, the Director is also required by statute to be, "by reason of scientific education and experience, knowledgeable in the principles of fisheries and wildlife management." 16 U.S.C. § 742b(b). Should this make a difference in how the statute is interpreted?

Coggins and Glicksman continue:

But those definitions cannot be read in isolation. The NWRISA not only dictates a hierarchy of use priorities, it also requires general use decisions to be made in the context of formal land use planning, and further requires particular use decisionmaking to observe elaborate procedural (and several substantive) requirements. * * * *

Like practically all legislation, the 1997 NWRISA was the product of political compromise. In this case, the primary players were environmentalists who wanted strong protection for wildlife habitat and the ecological health of refuges, and sport hunters and anglers, who wanted to ensure that their interests would receive some priority consideration in refuge management. The broad architecture of the compromise, fashioned in a

* [Eds. Refuge planning under this Act is 432-33.]
briefly described in Chapter 5, *supra*, pp.

series of meetings among the contending interests in Secretary of the Interior Babbitt's office, was rather elegant: The environmentalists got strong, bottom-line protection for the ecological health of refuges, and the sport hunters and anglers got priority attention through creation of a new category of "wildlife-dependent recreational uses," although this use had to be consistent with the ecological health standard. The losers in the process were non-wildlife-dependent recreational users (who were subjected to more stringent compatibility rules and processes that will make their uses increasingly fragile if not obsolete); and animal rights sympathizers (whose cause was set back by the priority positioning of hunting and angling on the refuges). Coggins and Glicksman summarize the results this way:

[1] The Hierarchy of Uses Under the NWRISA

The NWRISA establishes three tiers of uses. At the top is the conservation of wildlife, plants, and their habitats.⁵ Conservation is defined as sustaining, restoring, and enhancing healthy populations of wildlife using "methods and procedures associated with modern scientific resource programs," the latter including "regulated taking."⁶ All human uses must be compatible with this overriding mission,⁷ and no [new or renewal of permission for an existing] use may be allowed until such compatibility has been formally determined.⁸

Conservation of healthy wildlife populations for the benefit of future generations is a quasi-preservational standard. Refuges certainly are not to be "inviolable sanctuaries" under the NWRISA, although no significant deterioration of the resource base may be allowed, at least theoretically.⁹ The abstruseness of some of the congressional language will leave considerable room for argument in many situations. Phrases like "sound professional judgment," "principles of sound fish and wildlife management," "available science," and "modern scientific resource programs" are all more in the eye of the beholder than they are concrete rules or even principles. Refuge managers thus will have great latitude in resolving particular conflicts and in promulgating general policies. But that discretion remains bounded by the highest priority that Congress gave to the conservation mission. That mission in turn is subordinate to the purpose of individual refuge establishment.¹¹

To the extent that any human use will be allowed in refuges, "wildlife-dependent recreational uses" are entitled to the highest priority.¹²

5. 16 U.S.C. § 668dd(a)(2). [The statute reads: "The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."]

6. *Id.* § 668ee(4).

7. *Id.* § 668dd(a)(3).

8. *Id.* § 668dd(d)(3)(A)(i). * * *

9. 16 U.S.C. § 668dd(a)(4)(B). [This section provides that the Secretary shall administer the System to, among other things, "ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans."]

11. 16 U.S.C. § 668dd(a)(4)(D).

12. [Eds. The statute provides that "compatible wildlife-dependent recreational uses are the priority general public uses of the System and shall receive priority consid-

Those are "hunting, fishing, wildlife observation and photography, or environmental education and interpretation."¹³ Congress found that these are "generally compatible uses"¹⁴ and are "legitimate and appropriate public" System uses.¹⁵ Priority general public uses are to receive "enhanced consideration over other general public uses."¹⁶

Wildlife observation, photography, and education are largely noncontroversial. The priority Congress accorded to hunting and fishing answers the question of compatibility so long debated and litigated. Those consumptive uses are generally compatible and of higher priority than all other commodity uses. They are to be "facilitated" where appropriate.¹⁸ The first court to construe the NWRISA held that no compatibility determination was required for the decision to maintain an elk feeding program because it was not a "use" and because it was carried out by persons authorized to manage the refuge.^{18.1} The court enjoined the proposed bison culling hunt, however, for lack of adequate environmental analysis.^{18.2}

"All other uses" have the lowest priority. Thus, grazing, oil drilling, non-wildlife related recreation, water development, and timber harvesting are theoretically outlawed not only where they contradict the NWRS mission or the purposes for which individual refuges were established, but also where such uses would materially interfere with hunting, fishing, photography, and the other "wildlife-dependent recreational uses."

[2] Compatibility Standards and Procedures—Transition

By the year 2012, all national wildlife refuges are to be managed pursuant to a land use plan.¹⁹ Those plans should prescribe and proscribe uses, at least generally, for each refuge. Until then, Congress specified several standards and procedures for determining compatibility. First, no new uses may be initiated until after a formal finding of compatibility (which may be issued during the planning process).²¹ Second, for new land additions to the System, identified wildlife-dependent recreational uses may continue on an interim basis.²² Third, uses previously deemed compatible may continue until "modified."²³ Whether these provisions put in jeopardy all non-wildlife-dependent uses in existence in 1997 for which no formal consistency determina-

eration in refuge planning and management." 16 U.S.C. § 668dd(a)(3)(C).]

13. *Id.* § 668ee(2).

14. *Id.* § 668dd note.

15. § *Id.* § 668dd(a)(3)(B).

16. *Id.* § 668dd(a)(4)(J).

18. 16 U.S.C. § 668dd(a)(3)(D).

18.1 *Fund for Animals v. Clark*, 27 F.Supp.2d 8 (D.D.C.1998) (*Elk Refuge Bison*). [Eds. Specifically, the court suggested that "use" of the refuge is something that is to be

performed "by third parties or the public," not the government itself, an interpretation bolstered by the fact that the statute "specifically exempts from the compatibility requirement actions taken by 'persons authorized to manage' the refuge area. 16 U.S.C. § 668dd(c)." 27 F.Supp.2d at 11.]

18.2 *Id.* at 12-14.

19. 16 U.S.C. § 668dd(e).

21. 16 U.S.C. § 668dd(d)(3)(A)(i).

22. *Id.* § 668dd(d)(3)(a)(ii).

23. *Id.* § 668d(d)(3)(A)(iv).

tion had been made is an open question. The Act says that "determinations" remain in effect, not that the uses may continue. Certainly, the legislation indicates a fairly strong bias against those other uses, a conclusion buttressed by the Act's consistency procedures.

The statute requires the Secretary, in implementing the compatibility provisions of the NWRSA, among other things, to estimate the "time-frame, location, manner, and purpose of each use"; the "effects of each use;" and to provide for "the elimination or modification of any use as expeditiously as practicable after a determination is made that the use is not a compatible use." See 16 U.S.C. § 668dd(d)(3)(B)(i)-(ix).

NOTES AND QUESTIONS

1. In *McGrail & Rowley v. Babbitt*, 986 F.Supp. 1386 (S.D.Fla.1997), *aff'd w/o opinion*, 226 F.3d 646 (11th Cir.2000), the court upheld the USFWS's denial of a permit to operate a commercial boat tour on Boca Grande Key in the Key West National Wildlife Refuge because it was incompatible with refuge purposes. Among other things, the plaintiff argued that the FWS was being inconsistent because it allowed another company to operate tours on another key in the Refuge. The FWS distinguished the two because it found the permitted tours were "passive and education oriented" and its customers apparently obeyed admonitions not to enter into closed areas, whereas the tours conducted by the company being denied permission were recreational, involving picnicking, kayaking, and wading, and passengers were supplied with sports equipment like frisbees and paddleballs for use on the beach, and they had been observed entering closed areas. The court upheld the FWS, although it grumbled that it "might well have come to different conclusions" regarding the FWS decision to permit *any* commercial tours.

2. Where does recreational boating fit in? Might a speedboat operator on Ruby Lake claim that she is engaged in "wildlife-dependent recreational use" by occasionally fishing or observing wildlife (e.g., the panicked flight of migratory birds disturbed by the boat)?

3. Kevin Gergely, J. Michael Scott, & Dale Goble, *A New Direction for the U.S. National Wildlife Refuges: The National Wildlife Refuge System Improvement Act of 1997*, 20 *Natural Areas J.* 107, 115 (2000), describe the 1997 Act as establishing a

"hierarchy among * * * three categories of uses. Wildlife-based uses remain dominant, but "compatible wildlife-dependent recreational uses" are designated as "the priority general public uses of the system," are to receive "priority consideration in refuge planning and management" and "should be facilitated"; all other "compatible uses" are at the bottom of the hierarchy-they are to be permitted but not facilitated." * * *

"[The House Committee Report on the legislation] makes it clear that the use of the term "facilitated" with regard to wildlife-dependent recreation was carefully chosen. The phrase "should be facilitated"

falls short of a definite requirement; in the language of the report, it is an "encouragement, but not a requirement." Read together, the report and the statute indicate that wildlife-dependent recreation is an important use of refuges—but "wildlife and wildlife conservation must come first." Thus, the Act reinforces and clarifies the "dominant use" concept that has historically characterized the system but shifts the emphasis toward conservation."

4. The 1997 Act defines the "mission" of the National Wildlife Refuge System as "a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." 16 U.S.C. § 668dd(a)(2).

The mission statement raises a host of questions: Which plant and animal populations is the FWS to sustain, restore, or enhance? Those that might be expected to have occurred prior to the arrival of Euro-Americans? Those that were present when the particular refuge was established? Those that are now present on the refuge? The populations that we prefer because they are endangered or provide game for hunters or for some other reason? * * *

Although the [1997 Act] mandates that FWS administer refuges for "conservation," the Act is vague on the importance of preserving ecosystems and ecosystem functions. * * *

[There is a] need to provide flexibility for the managing agency, particularly given the diversity of individual refuges and the Refuge System's history. Although there is a growing concern for focusing conservation efforts at the ecosystem scale, individual refuges were established for a variety of different reasons. Many refuges were created primarily to provide breeding, feeding, and staging areas for migratory waterfowl; others were established to conserve endangered species or to protect large portions of ecosystems for multiple species. Congress chose to accommodate this historical variety through the RIA's mission statement and its definition of "conservation."*

Gergely, et al., 20 *Natural Areas J.* at 111-13 (2000).

5. The 1997 Act directs the Secretary to administer the system of wildlife refuges to, among other things, "ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans." 16 U.S.C. § 668dd(a)(4)(B). Gergely et al. discuss the challenge of applying these three goals as management standards, especially considering that many refuges were established for migratory bird habitat, and the production of waterfowl and other migratory game birds has long been an overriding objective of the System and the FWS. For example, a number of the wildlife refuges created for waterfowl are dependent upon water impoundments and other human measures to manipulate the hydrologic system to serve

* [Eds. The Act defines conservation in terms of "sustain[ing] and, where appropriate, restor[ing] and enhanc[ing] healthy populations of fish, wildlife, and plants." 16 U.S.C. § 668ee(4).]

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the needs of the birds. "Such refuges almost certainly do not have the species composition, diversity, or functional organization that they would have in their unimpounded state. On the other hand, if they reproduce a now-missing composition, diversity, and functional organization, presumably the biodiversity goal of the [Act] is being advanced." 20 Natural Areas J. at 113. "Can the agency shift its focus beyond game species and adopt a more holistic, biodiversity conservation approach? Does this mean protecting the remaining components of drastically altered systems, or is there a mandate for restoration?" *Id.* at 117.

6. Other commentary on the 1997 Act is beginning to emerge. See Cam Tredennick, *The National Wildlife System Improvement Act of 1997: Defining the National Wildlife Refuge System for the Twenty-First Century*, 12 *Fordham Env'tl.L.J.* 41 (2000). Bean & Rowland discuss the pre-1997 compatibility litigation in *THE EVOLUTION OF NATIONAL WILDLIFE LAW* 293-98.

7. Many decades ago a federal court of appeals acknowledged that federal power over migratory wildlife (under the Migratory Bird Treaty Act, see pp. 906-18 *infra*) authorizes the Secretary of the Interior to prohibit hunting of migratory waterfowl on nonfederal land adjacent to a national wildlife refuge "in order to make this refuge more effective." *Bailey v. Holland*, 126 F.2d 317 (4th Cir.1942).

~~B. WILDLIFE CONSERVATION AND MANAGEMENT ON OTHER FEDERAL LANDS~~

~~1. THE NATIONAL PARK SYSTEM~~

~~Fishing, principally "catch and release," is generally permitted in many units of the national park system. Hunting, however, is generally prohibited (by regulation, rather than express statutory provision), although some units of the system are open to hunting by special legislative dispensation. For example, hunters and their allies in Alaska successfully sought in the Alaska National Interest Lands Conservation Act to designate some national park system lands in Alaska as "national park preserves" (where hunting would be allowed) instead of regular "national parks." See 16 U.S.C. § 3201.~~

~~The National Park Service sometimes licenses hunting to control park wildlife populations, and this has occasionally been controversial. See *Davis v. Latschar*, 202 F.3d 359 (D.C.Cir.2000) (deer harvest in military park upheld) (discussed at p. 1031 *infra*). Park Service wildlife management was attacked in Alston Chase, *PLAYING GOD IN YELLOWSTONE* (1986). See generally George Coggins, *Protecting the Wildlife Resources of National Parks from External Threats*, XXII *Land & Water L.Rev.* 1 (1987). Sometimes, as illustrated in the following case, the national park system and the wildlife found within its borders cannot be isolated from the surrounding lands, and in the process ranchers and other neighboring landowners, wildlife advocates and state and federal agencies can all be pitted against each other.~~

2

Conservation Values and Ethics

It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean something far broader than mere economic value; I mean value in the philosophical sense.

Aldo Leopold, 1949

The Value of Biodiversity

Conservation biologists often treat the value of biodiversity as a given. To many laypeople, however, the value of biodiversity may not be so obvious. Because conservation efforts require broad public support, the conservation biologist should be able to articulate fully the value of biodiversity. Why should we care about—that is, value—biodiversity?

Environmental philosophers customarily divide value into two main types, expressed by alternative pairs of terms: **instrumental** or **utilitarian** as opposed to **intrinsic** or **inherent**. Instrumental or utilitarian value is the value that something has as a means to another's ends. Intrinsic or inherent value is the value that something has as an end in itself. The intrinsic value of human beings is rarely contested. The intrinsic value of nonhuman natural entities and nature as a whole has been the subject of much controversy. Perhaps because the suggestion that nonhuman natural entities and nature may also have intrinsic value is so new and controversial, some prominent conservationists (e.g., Myers 1983) have preferred to provide a purely utilitarian rationale for conserving biodiversity. The view that biodiversity has value only as a means to human ends is called **anthropocentric** (human-centered). On the other hand, the view that biodiversity is valuable simply because it exists, independently of its use to human beings, is called **biocentric**.

Instrumental Value

The anthropocentric instrumental (or utilitarian) value of biodiversity may be divided into three basic categories—goods, services, and information. The

Table 2.1
Four Categories of the Instrumental Value
of Biodiversity

Category	Examples
Goods	Food, fuel, fiber, medicine
Services	Pollination, recycling, nitrogen fixation, homeostatic regulation
Information	Genetic engineering, applied biology, pure science
Psycho-spiritual	Aesthetic beauty, religious awe, scientific knowledge

psycho-spiritual value of biodiversity is possibly a fourth kind of anthropocentric utilitarian value (Table 2.1).

First, goods. Human beings eat, heat with, build with, and otherwise consume many other living beings. But only a small fraction of all life-forms have been investigated for their utility as food, fuel, fiber, and other commodities. Many potential food plants and animals may await discovery. And many of these might be grown on a horticultural or agricultural scale, as well as harvested in the wild, adding variety at least to the human diet, and possibly even saving us from starvation if conventional crops fail due to incurable plant diseases or uncontrollable pests (Vietmeyer 1986a, b). Fast-growing trees—useful for fuelwood or making charcoal, or useful for pulp or timber—may still be undiscovered in tropical forests. New organic pesticides may be manufactured from yet to be screened or discovered plants (Plotkin 1988). The medicinal potential of hitherto undiscovered and/or unassayed plants and animals seems to be the most popular and persuasive rationale of this type for preserving biodiversity. Vincristine, extracted from the Madagascar periwinkle, is the drug of choice for the treatment of childhood leukemia (Farnsworth 1988). Discovered in the late 1950s, it is the most often cited example of a recent and dramatic cure for cancer manufactured from a species found in a place where the native biota is now threatened with wholesale destruction. Doubtless many other hitherto unscreened, perhaps even undiscovered, species might turn out to have equally important medical uses—if we can save them.

The degree to which conservationists rely on the argument that potential medicines may be lost if we allow species extinction to grind on is revealing. It reflects the reverence and esteem with which medicines are held in contemporary Western culture—a culture, it would seem, of hypochondriacs. Spare no expense or inconvenience to save them, if unexplored ecosystems may harbor undiscovered cures for our diseases! According to Meadows (1990), “some ecologists are so tired of this line of reasoning that they refer wearily to the ‘Madagascar periwinkle argument.’ . . . [Those] ecologists hate the argument because it is both arrogant and trivial. It assumes that the Earth’s millions of species are here to serve the economic purposes of just one species. And even if you buy that idea, it misses the larger and more valuable ways that nature serves us.”

Which brings us to the second point, services. Often overlooked by people who identify themselves first and foremost as “consumers” are the services performed by other species working diligently in the complexly orchestrated economy of nature (Meadows 1990). Green plants replenish the oxygen in the

atmosphere and remove carbon dioxide. Certain kinds of insects, birds, and bats pollinate flowering plants, including many agricultural species, and are being lost at a frightening rate (Buchmann and Nabhan 1996). Fungal and microbial life-forms in the soil decompose dead organic material and play a key role in recycling plant nutrients. Rhizobial bacteria turn atmospheric nitrogen into usable nitrate fertilizer for plants. If the **Gaia hypothesis** (Lovelock 1988) is correct, the Earth's temperature and the salinity of its oceans are organically regulated. The human economy is no more than a small subsystem of the economy of nature and would abruptly collapse if major environmental service sectors of the larger natural economy were to be disrupted.

Third, information. The mindless destruction of species "uncared for and unknown"—in the words of Darwin's contemporary and codiscoverer of evolution by natural selection, Alfred Russel Wallace (1863)—has been compared to setting fire to sections of a vast library and burning books that no one has read. Each is a storehouse of information. Desirable characteristics encoded in isolatable genes and transferable, by means of gene splicing, to edible or medical resources, may be "burned up" with the "volume" in which they could once be found. Genetic information, in other words, is a potential economic good. Such information also has another utility, more difficult to express. Meadows (1990), however, captures it nicely:

Biodiversity contains the accumulated wisdom of nature and the key to its future. If you ever wanted to destroy a society, you would burn its libraries and kill its intellectuals. You would destroy its knowledge. Nature's knowledge is contained in the DNA within living cells. The variety of genetic information is the driving engine of evolution, the immune system for life, the source of adaptability.

Some 1.5 million species have been formally named and described (see Chapter 4). Based upon the most conservative recent estimates of the total number of the planet's species—between five and ten million—that means that only 15–30%, at most, are known to science (Gaston 1991). Based upon more liberal recent estimates of the total—30 million or more—the number known to science could represent less than 5% (Erwin 1988). Imagine the loss to science if, as Raven (1988) predicts, 25% of the world's life-forms, due to the destruction of much of their moist tropical habitat, become extinct in the coming quarter-century, before they can even be scientifically named and described.

The vast majority of these threatened species are not vascular plants or vertebrate animals; they are insects (Wilson 1985b). The reason that Erwin (1988) suspects that there may be so many species of invertebrates is that so many may be endemic or host-specific. Most of these unknown insects at risk of extinction would probably prove to be useless as human food or medicine—either as whole organisms, as sources of chemical extracts, or as sources of gene fragments—nor would many be likely to play a vital role in the functioning of regional ecosystems (Ehrenfeld 1988). Though it may be difficult to so callously view such a tragedy, we may account their loss, nevertheless, in purely utilitarian terms—as a significant loss of a potential nonmaterial human good, namely, pure human knowledge of the biota.

Fourth, psycho-spiritual resources. Aldo Leopold (1953) hoped that, through science, people would acquire "a refined taste in natural objects." A beetle, however tiny and ordinary as beetles go, is as potentially beautiful as any work of fine art. And natural variety—a rich and diverse biota—is something Soulé (1985) thinks nearly everyone prefers to monotony. Wilson (1984) finds a special wonder, awe, and mystery in nature—which he calls "biophilia," and which for him seems almost to lie at the foundations of a religion of natural history. To be

moved by the beauty of organisms and whole, healthy ecosystems, to experience a sense of wonder and awe in the face of nature's inexhaustible marvels is to become a better person, according to Norton (1987).

If from the point of view of the value of information—genetic and otherwise—the mindless destruction of biodiversity is like book burning, then from the point of view of natural aesthetics and religion, it is like vandalizing an art gallery or desecrating a church. There has been little doubt expressed that the value of pure scientific knowledge is anthropocentric, and the aesthetic and spiritual value of nature is often understood to be a highfalutin kind of utilitarian value. Ehrenfeld (1976) thinks that aesthetic and spiritual rationales for the conservation of biodiversity are “still rooted in the homocentric, humanistic worldview that is responsible for bringing the natural world, including us, to its present condition.” Nevertheless, the beauty and sanctity of nature has sometimes been accounted an intrinsic, not an instrumental, value. According to Sagoff (1980), for example, “we enjoy an object because it is valuable; we do not value it merely because we enjoy it. . . . Esthetic experience is a perception, as it were, of a certain kind of worth.”

Intrinsic Value

Unlike instrumental value, intrinsic value is not divisible into categories. Discussion of intrinsic value has focused on two other issues: the sorts of things that may possess intrinsic value, and whether intrinsic value exists objectively or is subjectively conferred.

In response to mounting concern about human destruction of nonhuman life, some contemporary philosophers have broken with Western religious and philosophical tradition and attributed intrinsic value, by whatever name, to the following: robustly conscious animals (Regan 1983); **sentient** animals (Warnock 1971); all living things (Taylor 1986); species (Callicott 1986; Rolston 1988; Johnson 1991); biotic communities (Callicott 1989); ecosystems (Rolston 1988; Johnson 1991); and evolutionary processes (Rolston 1988). Leopold (1949, 1953) attributed “value in the philosophical sense”—by which he could mean only what philosophers call “intrinsic value”—to “land,” defined as “all of the things on, over, or in the earth” (Callicott 1987a). Soulé (1985) categorically asserts that “biotic diversity has intrinsic value”, and Ehrenfeld (1988) categorically asserts that “value is an intrinsic part of diversity.”

Environmental philosophers who claim that intrinsic value exists objectively in human beings and other organisms reason as follows. In contrast to a machine, such as a car or a vacuum cleaner, an organism is “autopoietic”—self-organizing and self-directed (Fox 1990). A car is manufactured; in other words, it does not grow up, orchestrated by its own DNA. And a car's purposes—to transport people and to confer status on its owner—are imposed on it from a source outside itself. Machines do not have their own goals or purposes, as organisms do—neither consciously chosen goals nor genetically determined goals. What are an organism's self-set goals? They may be many and complex. For us human beings they may include anything from winning an Olympic gold medal to watching as much television as possible. All organisms, however, strive (usually unconsciously and in an evolutionary sense) to achieve certain basic predetermined goals—to grow, to reach maturity, to reproduce (Taylor 1986).

Thus, interests may be intelligibly attributed to organisms, but not to machines. Having ample sunlight, water, and rich soil is in an oak tree's interest, though the oak tree may not be actively interested in these things, just as eating fresh vegetables may be in a child's interest, though the child may be

actively interested only in junk food. One may counter that, by parity of reasoning, getting regular oil changes is in a car's interest, but because a car's ends or purposes are not its own, being well-maintained is not in its own interest, but in the interest of its user, whose purposes it serves exclusively. Another way of saying that ever striving and often thriving organisms have interests is to say that they have a good of their own. But *good* is just an older, simpler word meaning pretty much the same thing as *value*. Hence to acknowledge that organisms have interests—have goods of their own—is to acknowledge that they have what philosophers call *intrinsic value*.

Intrinsic and instrumental value are not mutually exclusive; many things may be valued both for their utility and for themselves. Employers, for example, may value their employees in both ways. Similarly, intrinsically valuing biodiversity does not preclude appreciating the various ways in which it is instrumentally valuable.

Norton (1991) argues that some environmental philosophers and conservation biologists, by claiming that biodiversity has intrinsic value (or is intrinsically valuable), have actually done more harm than good for the cause of conservation. Why? Because the intrinsic value issue divides conservationists into two mutually suspicious factions—anthropocentrists and biocentrists. The latter dismiss the former as “shallow resourcists;” and the former think that the latter have gone off the deep end (Norton 1991). If biodiversity is valuable because it ensures the continuation of ecological services, represents a pool of potential resources, satisfies us aesthetically, inspires us religiously, and makes better people out of us, the practical upshot is the same as if we attribute intrinsic value to it: we should conserve it. Instrumentally valuing biodiversity and intrinsically valuing it “converge” on identical conservation policies, in Norton's view (Figure 2.1); thus, we don't really need to appeal to the intrinsic value of biodiversity to ground conservation policy. Hence, Norton argues, the controversial and divisive proposition that biodiversity has intrinsic value should be abandoned. A wide and long anthropocentrism, he thinks, is an adequate value package for conservation biology.

Attributing intrinsic value to biodiversity, however, makes a practical difference in one fundamental way that Norton seems not to have considered. If biodiversity's intrinsic value were as widely recognized as is the intrinsic value of human beings, would it make much difference? All forms of natural resource exploitation that might put it at risk would not be absolutely prohibited, as intrinsic value easily can be ignored. After all, recognizing the intrinsic value of human beings does not absolutely prohibit putting people at risk when the benefits to the general welfare (or “aggregate utility”) of doing so are sufficiently great. For example, in 1990, soldiers from the United States and other industrial nations were sent into combat, and some were killed or wounded, not to protect themselves and their fellow citizens from imminent annihilation, but to secure supplies of Middle Eastern petroleum and to achieve geopolitical goals.

Rather, if the intrinsic value of biodiversity were widely recognized, then sufficient justification would have to be offered for putting it at risk—just as we demand sufficient justification for putting soldiers at risk by sending them

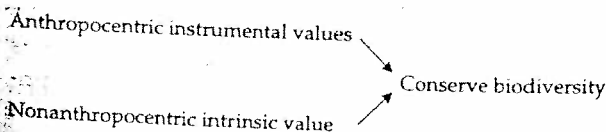
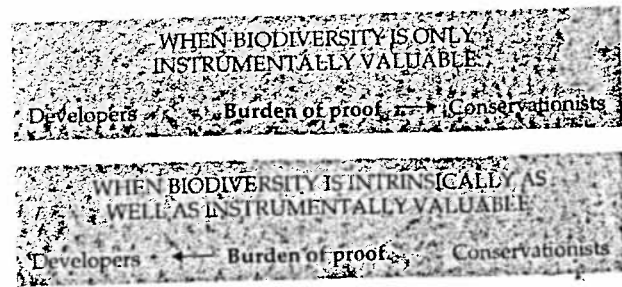


Figure 2.1 Norton's convergence hypothesis.

Figure 2.2 Burden of proof according to instrumental and intrinsic value systems.



to war. The practical difference that attributing intrinsic value to biodiversity makes is to shift the burden of proof from conservationists who are trying to protect it to those whose actions might jeopardize it (Figure 2.2). Fox (1993) puts this point clearly and forcefully:

Recognizing the intrinsic value of the nonhuman world has a dramatic effect upon the framework of environmental debate and decision-making. If the nonhuman world is only considered to be instrumentally valuable then people are permitted to use and otherwise interfere with any aspect of it for whatever reasons they wish. If anyone objects to such interference then, within this framework of reference, the onus is clearly on the person who objects to justify why it is more useful to humans to leave that aspect of the world alone. If, however, the nonhuman world is considered to be intrinsically valuable then the onus shifts to the person who wants to interfere with it to justify why they should be allowed to do so.

Monetizing the Value of Biodiversity

Monetizing the value of biodiversity is a technical task for economists. Here we discuss only the basic ways of putting a dollar value on biodiversity and the philosophical issues raised by the prospect of doing so. It might seem that only the instrumental value of biodiversity is subject to expression in monetary terms. Some environmental economists, accordingly, explicitly endorse a strict anthropocentrism (Randall 1986). However, as we shall see, even the intrinsic value of biodiversity can be taken into account in an economic assessment of conservation goals.

Some endangered species have a market price: notoriously, elephants for their tusks; rhinoceroses for their horns; baleen whales for their meat, bone, and oil; and Bengal tigers for their pelts. In some cases—the blue and sperm whales, for example—their monetary value is the only reason the species are threatened with extinction. In other cases—the Bengal tiger and the mountain gorilla, for example—habitat destruction is also a factor in their endangerment. Myers (1981), however, suggests that taking advantage of their monetary value may be the key to conserving many species. An alternative perspective is provided by Holmes Rolston in Essay 2A.

According to modern economic theory, what is necessary for transforming a species' market price from a conservation liability into a conservation asset is to take it out of a condition that economists call a "commons" and "enclose" it. *Enclosing* here does not mean literally building a fence around a species population; it means, rather, assigning rights to cull it. A wild species that has a market value is subject to overharvesting when property rights to it cannot be legitimately asserted and enforced. This leads to the **tragedy of the commons** (Hardin 1968), discussed in Chapter 19. If a resource can be owned (either privately or publicly) and property rights to it can be enforced, then the species

ESSAY 2A

Our Duties to Endangered Species

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Few persons doubt that we have obligations concerning endangered species, because persons are helped or hurt by the condition of their environment, which includes a wealth of wild species, currently under alarming threat of extinction. Whether humans have duties directly to endangered species is a deeper question, important in both ethics and conservation biology, in both practice and theory. Many believe that we do. The *U.N. World Charter for Nature* states, "Every form of life is unique, warranting respect regardless of its worth to man." The *Biodiversity Convention* affirms "the intrinsic value of biological diversity." Both documents are signed by well over a hundred nations. A rationale that centers on species' worth to persons is anthropocentric; a rationale that includes their intrinsic and ecosystem values is naturalistic.

Many endangered species have no resource value, nor are they particularly important for the usual humanistic reasons: scientific study, recreation, ecosystem stability, and so on. Is there any reason to save such "worthless" species? A well-developed environmental ethics argues that species are good in their own right, whether or not they are "good for" anything. The duties-to-persons-only line of argument leaves deeper reasons untouched; such justification is not fully moral and is fundamentally exploitive and self-serving on the part of humans, even if subtly so. Ethics has never been very convincing when pleaded as enlightened self-interest (that one ought always to do what is in one's intelligent self-interest).

An account of duties to species makes claims at two levels: one is about facts (a scientific issue, about species); the other is about values (an ethical issue, involving duties). Sometimes, species can seem simply made up, since taxonomists regularly revise species designations and routinely put after a species the name of the "author" who, they say, "erected" the taxon. If a species is only a category or class, boundary lines may be arbitrarily drawn, and the species is nothing more than a convenient grouping of its members, an artifact of taxonomists. No one proposes

duties to genera, families, orders, or phyla; biologists concede that these do not exist in nature.

On a more realistic account, a biological species is a living historical form, propagated in individual organisms, that flows dynamically over generations. A species is a coherent, ongoing, dynamic lineage expressed in organisms, encoded in gene flow. In this sense, species are objectively there—found, not made, by taxonomists. Species are real historical entities, interbreeding populations. By contrast, families, orders, and genera are not levels at which biological reproduction takes place. Far from being arbitrary, species are the real survival units.

This claim—that there are specific forms of life historically maintained over time—does not seem fictional, but rather is as certain as anything else we believe about the empirical world, even though at times scientists revise the theories and taxa with which they map these forms. Species are not so much like lines of latitude and longitude as like mountains and rivers, phenomena objectively there to be mapped. The edges of such natural kinds will sometimes be fuzzy, and to some extent discretionary (see Chapter 3). One species will slide into another over evolutionary time. But it does not follow from the fact that speciation is sometimes in progress that species are merely made up, rather than found as evolutionary lines.

At the level of values and duties, an environmental ethics finds that such species are good kinds, and that humans ought not, without overriding justification, to cause their extinction. A consideration of species offers a biologically based counterexample to the focus on individuals typically sentient and usually persons—so characteristic of Western ethics. In an evolutionary ecosystem, it is not mere individuality that counts. The individual represents, or re-presents anew, a species in each subsequent generation. It is a token of an entity, and the entity is more important than the token. Though species are not moral agents, a biological identity—a kind of value—is here defended. The dignity resides in the dynamic form; the individual inherits this, exemplifies it,

and passes it on. The possession of a biological identity reasserted genetically over time is as characteristic of the species as of the individual. Respecting that identity generates duties to species.

The species is a bigger event than the individual, although species are always exemplified in individuals. Biological conservation goes on at this level too, and, really, this level is the more appropriate one for moral concern, a more comprehensive survival unit than the organism. When an individual dies, another one replaces it. Tracking its environment over time, the species is conserved and modified. With extinction, this stops. Extinction shuts down the generative processes in a kind of superkilling. It kills forms (species) beyond individuals. It kills collectively, not just distributively. To kill a particular plant is to stop a life of a few years or decades, while other lives of such kind continue unabated; to eliminate a particular species is to shut down a story of many millennia, and leave no future possibilities.

Because a species lacks moral agency, reflective self-awareness, sentience, or organic individuality, some hold that species-level processes cannot count morally. But each ongoing species represents a form of life, and these forms are, on the whole, good kinds. Such speciation has achieved all the planetary richness of life. All ethicists say that in *Homo sapiens* one species has appeared that not only exists but ought to exist. A naturalistic ethic refuses to say this exclusively of one late-coming, highly developed form, but extends this duty more broadly to the other species—though not with equal intensity over them all, in view of varied levels of development.

The wrong that humans are doing, or allowing to happen through carelessness, is stopping the historical gene flow in which the vitality of life lies. A shut-down of the life stream is the most destructive event possible. Humans ought not to play the role of murderers. The duty to species can be overridden, for example, with pests or disease organisms. But a *prima facie* duty stands nevertheless. What is wrong with human-caused extinction is not just the loss of

human resources, but the loss of biotic sources. The question is not: What is this rare plant or animal good for? But: What good is here? Not: Is this species good for my kind, *Homo sapiens*? But: Is *Rhododendron chapmanii* a good of its kind, a good kind? To care about a plant or animal species is to be quite nonanthropocentric and objective about botanical and zoological processes that take place independently of human preferences.

Increasingly, we humans have a vital role in whether these stories continue. The duties that such power generates no longer attach simply to individuals or persons, but are emerging duties to specific forms of life. The species line is the more fundamental living system, the whole, of which individual organisms are the essential parts. The species too has its integrity, its individuality, and it is more important to protect this than to protect individual integrity. The appropriate survival unit is the appropriate level of moral concern.

A species is what it is, inseparable from the environmental niche into

which it fits. Particular species may not be essential in the sense that the ecosystem can survive the loss of individual species without adverse effect. But habitats are essential to species, and an endangered species typically means an endangered habitat. Integrity of the species fits into integrity of the ecosystem. Endangered species conservation must be ecosystem-oriented. It is not preservation of *species* that we wish, but the preservation of *species in the system*. It is not merely *what* they are, but *where* they are that we must value correctly.

It might seem that for humans to terminate species now and again is quite natural. Species go extinct all the time. But there are important theoretical and practical differences between natural and anthropogenic extinctions. In natural extinction, a species dies when it has become unfit in its habitat, and other species appear in its place. Such extinction is normal turnover. Though harmful to a species, extinction in nature is seldom an evil in the system. It is rather the key to tomorrow. The species is employed in, but abandoned to, the

larger historical evolution of life. By contrast, artificial extinction shuts down tomorrow because it shuts down speciation. One opens doors, the other closes them. Humans generate and regenerate nothing; they only dead-end these lines. Relevant differences make the two as morally distinct as death by natural causes is from murder.

On the scale of evolutionary time, humans appear late and suddenly. Even more lately and suddenly they increase the extinction rate dramatically. What is offensive in such conduct is not merely senseless loss of resources, but the maelstrom of killing and insensitivity to forms of life. What is required is not prudence, but principled responsibility to the biospheric earth. Only the human species contains moral agents, but conscience ought not be used to exempt every other form of life from consideration, with the resulting paradox that the sole moral species acts only in its collective self-interest toward all the rest.

will be conserved, so the theory goes, because the owner will not be tempted to "kill the goose that lays the golden egg."

Or will he, she, or it? Other factors, such as species' reproductive rates and growth rates in relationship to interest rates, discount rates, and so on, confound this simple picture. As Haneman (1988) points out, "the interest rate level, the nature of the net benefit function and its movement over time, and the dynamics of the resource's natural growth process combine to determine the optimal intertemporal path of exploitation . . . Other things being equal, the higher the interest rate at which future consequences are discounted, the more it is optimal to deplete the resource now."

The blue whale is a case in point. The International Whaling Commission effectively encloses whale populations, despite occasional poaching, by allotting species harvest quotas to whaling nations (Forcan 1979). Clark (1973) concludes, however, that it would be more profitable to hunt blue whales to complete extinction and invest the proceeds in some other industry than to wait for the species population to recover and harvest blue whales at sustainable levels indefinitely. Clark does not recommend this course of action. On the contrary, his point is that market forces alone cannot always be made to further conservation goals.

The idea of conserving economically exploitable threatened species by enclosing and sustainably harvesting them may work well enough in conserving species with relatively high reproductive and growth rates (such as ungulates), but may not work at all well in conserving species that have relatively low reproductive and growth rates (such as whales). Hence, enlisting the market in the cause of conservation must be done very carefully on a case-by-case basis.

Potential goods—new foods, fuels, medicines, and the like—have no market price, obviously, because they remain unknown or undeveloped. To destroy species willy-nilly, however, before they can be discovered and exam-

ined for their resource potential is to eliminate the chance that a desirable commodity will become available in the future. Hence, biodiversity may be assigned an "option price," defined as "the amount people would be willing to pay in advance to guarantee an option for future use" (Raven et al. 1992). The option price of any given undiscovered or unassayed species may be very small because the chance that a given species will prove to be useful is also probably very small (Ehrenfeld 1988). But added together, the option prices of the million or more species currently threatened with wholesale extinction might be quite formidable.

The market confers a dollar value on biodiversity in other ways than the price of the actual and potential goods that nature provides. People pay fees to visit national parks, for example, and to hike in wilderness areas. Such fees—no less than the price of vincristine or of wildebeest steaks—express the value of a bit of biodiversity in money. But often, because user fees are usually low, the true monetary value of the psycho-spiritual "resource" is underexpressed by those fees alone. Subsidies provided from local, state, and federal tax revenues might also be factored in when assessing the monetary value of a psycho-spiritual resource. The money people spend—for such things as gasoline, food, lodging, and camping equipment—to get to a particular spot and visit it may be credited to the resource by employing the "travel cost method" (Peterson and Randall 1984; see also Case Study 3 in Chapter 18). "Contingent valuation," in which people are polled and asked what they would be willing to pay for the opportunity to enjoy a certain experience—say, to hear wolves howling in Yellowstone National Park in the United States—is also used to calculate the dollar value of psycho-spiritual resources (Peterson and Randall 1984).

Even economists now recognize—and of course attempt to monetize—the "existence value" of biodiversity (Randall 1988). Some people take a modicum of satisfaction in just knowing that biodiversity is being protected even if they have no intention of consuming exotic meats or personally enjoying a wilderness experience. Existence value has a price; one way to ascertain it would be to calculate the amount of money sedentary people actually contribute to conservation organizations, such as The Nature Conservancy or the Rainforest Action Network. Further, economists now also recognize "bequest value"—the amount people would be willing to pay to assure that future generations of *Homo sapiens* will inherit a biologically diverse world (Raven et al. 1992).

Monetizing the value of the often free or underpriced recreational, aesthetic, intellectual, and spiritual utility of nature is more often attempted than monetizing the value of the services that the economy of nature provides to the human economy. In part this may simply reflect the level of ecological literacy among economists, who may be growing adept at "shadow pricing" (as contingent valuation is sometimes called) psycho-spiritual resources. As occasional ecotourists and consumers of outdoor recreation, they can readily understand these resources, but the nuances of pollination, nutrient cycling, and the like may remain a mystery to them. Their neglecting to quantify the value of the service sector of the economy of nature may also reflect the fact that so far, most vital services performed for us free of charge by other species are not scarce, and economists calculate prices only for those things that are (but see Buchmann and Nabhan 1996).

Meadows (1990) hints at one way of monetizing natural services: "How would you like the job," she asks, "of pollinating trillions of apple blossoms some sunny afternoon in May? It's conceivable maybe that you could invent a machine to do it, but inconceivable that the machine could work as elegantly and cheaply as the honey bee, much less make honey on the side." The value of nature's service economy could be monetized by calculating the cost of

replacing natural services with artificial ones. Put in terms of scarcity and options, what would be the cost of employing human labor or machines to pollinate plants, if—because of present economic practices, such as excessive use of insecticides—in the future pollinating organisms were to become vanishingly scarce?

Ehrenfeld (1988) notes, however, that, just as many species have little potential value as goods, many species are likely to have little importance in the service sector of the economy of nature: "The species whose members are the fewest in number, the rarest, the most narrowly distributed—in short, the ones most likely to become extinct—are obviously the ones least likely to be missed by the biosphere. Many of these species were never common or ecologically influential; by no stretch of the imagination can we make them out to be vital cogs in the ecological machine."

Some philosophers and conservation biologists strenuously object to the penchant of economists for reducing all value to monetary terms (Sagoff 1988; Ehrenfeld 1988). Some things have a price, others have a dignity. And, as a familiar matter of fact, we have attempted to exclude certain things from the market that we believe have a dignity—things, in other words, to which we attribute intrinsic value. Indeed, one possible motive for claiming that biodiversity has intrinsic value (or is intrinsically valuable) is to exclude it from economic valuation, and thus to put it beyond the vagaries of the market. We have, for example, attempted to take human beings off the market by outlawing slavery, and attempted to take sex off the market by outlawing prostitution. Why not take intrinsically valuable biodiversity off the market by outlawing environmentally destructive human activities?

Sagoff (1988) argues that we have two parallel and mutually incommensurable systems for determining the value of things: the market and its surrogates on the one hand, and the ballot box on the other. As private individuals, most of us would refuse to sell our parents, spouses, or children—at any price. And as citizens united into polities, we may refuse to trade biodiversity for any "benefit" projected in a benefit-cost analysis. Indeed, the United States Endangered Species Act of 1973 is a splendid example of a political decision to take biodiversity off the market.

Economists counter that we must often make hard choices between such things as the need to bring arable land into production and protecting the habitat of endangered species (Randall 1986). While we may like to believe, piously and innocently, that intrinsically valuable people are literally priceless, the value of a human life is not uncommonly monetized. The dollar value of a human life, for example, might be reflected by the amount that an automobile insurance company pays a beneficiary when a customer kills another person in an accident, or by the maximum amount that an industry is willing to pay (or is required by law to pay) to protect the health and safety of its employees. Similarly, recognizing the intrinsic value of biodiversity does not imply that it cannot be priced. The only way we can make informed choices is to express the entire spectrum of natural values, from "goods" and "services" to "existence," in comparable terms: dollars.

The Endangered Species Act was amended in 1978 to create a high-level interagency committee, the so-called "God Squad," which could allow a project that put a listed species in jeopardy of extinction to go forward if its economic benefits were deemed sufficiently great. This legislation affirms that we do indeed have two incommensurable systems of determining value—one economic and the other political. It also affirms the original political decision to exempt biodiversity from being routinely monetized and traded off for greater economic benefits. But it acknowledges that politically and economi-

cally determined values often clash in the real world. And it provides that when the opportunity cost of conserving biodiversity exceeds an unspecified threshold, the God Squad can allow economic considerations to override the general will of the citizens of the United States, democratically expressed through their Congressional representatives, that the nation's extant native species be conserved, period.

Bishop (1978) formalizes the reasoning behind the God Squad amendment to the U.S. Endangered Species Act. He advocates the safe minimum standard (SMS) approach, an alternative to the practice of aggregating everything from the market price to the shadow price of biodiversity, plugging it into a benefit-cost analysis (BCA), and choosing the economically most efficient course of action (Figure 2.3). Instead, the SMS assumes that biodiversity has incalculable value and should be conserved unless the cost of doing so is prohibitively high. As Randall (1988) explains,

Whereas the . . . BCA approach starts each case with a clean slate and painstakingly builds from the ground up a body of evidence about the benefits and costs of preservation, the SMS approach starts with a presumption that the maintenance of the SMS for any species is a positive good. The empirical economic question is, "Can we afford it?" Or, more technically, "How high are the opportunity costs of satisfying the SMS?" The SMS decision rule is to maintain the SMS unless the opportunity costs of doing so are intolerably high. In other words, the SMS approach asks, how much will we lose in other domains of human concern by achieving the safe minimum standard of biodiversity? The burden of proof is assigned to the case against maintaining the SMS.

As noted earlier in this chapter, the practical effect of recognizing the intrinsic value of something is not to make it inviolable, but to shift the burden of proof, the onus of justification, onto those whose actions would adversely affect it. Because the safe minimum standard approach to monetizing the value of biodiversity shifts the burden of proof from conservationists to developers, it tacitly acknowledges, and incorporates into economic appraisal, biodiversity's intrinsic value.

Conservation Ethics

According to Leopold (1949), ethics, biologically understood, constitutes "a limitation on freedom of action." Ethics, in other words, constrains self-serving behavior in deference to some other good (Table 2.2).

Anthropocentrism

In the Western religious and philosophical tradition, only human beings are worthy of ethical consideration. All other things are regarded as mere means to human ends. Indeed, anthropocentrism seems to be set out in no uncertain terms at the beginning of the Bible. Man alone is created in the image of God, is given dominion over the earth and all the other creatures, and, finally, is

Figure 2.3 Burden of proof according to the standard BCA and the SMS approaches.

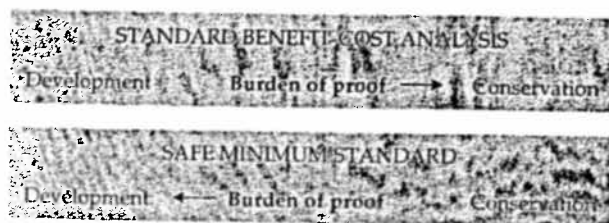


Table 2.2
A Comparison of Western Environmental Ethics

Value	Anthropocentrism	Judeo-Christian Stewardship Ethic	Biocentrism	Ecocentrism
Intrinsic value	Human beings	Species/creation as a whole	Individual organisms	Species, ecosystems, biosphere
The value of nature	Instrumental	Holistic-intrinsic	Individualistic-intrinsic	Holistic-intrinsic
"Man's" place in nature	Lord and master	Caretaker	One among equals	Plain member and citizen

commanded to subdue the whole creation. White (1967) claimed that because Jews and Christians believed, for many centuries, that it was not only their God-given right, but their positive religious duty, to dominate all other forms of life, science and an eventually aggressive, environmentally destructive technology developed uniquely in Western civilization.

As Norton (1991) has shown, an effective conservation ethic can be constructed on the basis of traditional Western anthropocentrism. Ecology has revealed a world that is far more systemically integrated than the biblical authors could have imagined, and subduing nature has untoward ecological consequences. An anthropocentric conservation ethic would require individuals, corporations, and other interest groups to fairly consider how their actions that directly affect the natural environment indirectly affect other human beings. Logging tropical forests, for example, may make fine hardwoods available to wealthy consumers, turn a handsome profit for timber companies, employ workers, and earn foreign exchange for debt-ridden countries. But it may also deprive indigenous peoples of their homes and traditional means of subsistence, and people everywhere of undiscovered resources, valuable ecosystem services, aesthetic experiences, and scientific knowledge. And, unchecked, logging may leave future generations of human beings a depauperate world (intergenerational inequity). Thus, logging and other environmentally destructive types of resource development may be judged unethical without any fundamental change in the framework of traditional Western moral thought.

The Judeo-Christian Stewardship Conservation Ethic

Stung by the allegation that the Judeo-Christian worldview was ultimately responsible for bringing about the contemporary environmental crisis, some environmentally concerned Christians and Jews challenged White's (1967) interpretation of biblical environmental attitudes and values (Barr 1972). After all, God pronounced everything that He created during the five days before He created human beings to be "good." Thus, God appears to have conferred intrinsic value on every kind of creature, not just on humanity. Indeed, the text suggests that God intended His creation to be replete and teeming with life:

And God said, Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth in the open firmament of heaven. And God created great whales, and every living creature that moveth, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind: and God saw that it was good. And God blessed them, saying, Be fruitful and multiply, and fill the waters in the seas, and let fowl multiply in the earth. (Genesis 1:20-22)

Further, "dominion" is an ambiguous notion. Just what does it mean for "man" to have dominion over nature? White (1967) argues that, in the past at least, Jews and Christians took it to mean that people should exercise a despotism over nature. Later in Genesis, however, God put Adam (who may represent all human beings) in the Garden of Eden (which may represent all of nature) "to dress it and to keep it" (Genesis 2:15). Our "dominion," this suggests, should be that of a responsible caretaker—a *steward*—rather than a tyrant. But what about "man" alone being created in the image of God? That could be taken to confer unique responsibilities, not unique privileges, on human beings. As God cares for humanity, so we who are created in the image of God must care for the earth.

The Judeo-Christian Stewardship Environmental Ethic is elegant and powerful. It also exquisitely matches the ethical requirements of conservation biology (Baker 1996). The Judeo-Christian Stewardship Environmental Ethic confers objective, intrinsic value on nature in the clearest and most unambiguous of ways—by divine decree. But intrinsic value devolves upon species, not individual specimens. For it is clear that during His several acts of creation God is creating species, "kinds," not individual animals and plants—whales, in other words, not specifically the one that swallowed Jonah or the one named Moby Dick. Thus, it is species, not individual specimens, that God pronounces good. Hence, human beings may freely use other living things as long as we do not endanger their species—as long, in other words, as we do not compromise the diversity of the creation. As Ehrenfeld (1988) points out, the Judeo-Christian Stewardship Environmental Ethic makes human beings directly accountable to God for conserving biodiversity: "Diversity is God's property, and we, who bear the relationship to it of strangers and sojourners, have no right to destroy it."

Traditional Non-Western Environmental Ethics

Christianity is a world religion, but so are Islam and Buddhism. Other major religious traditions, such as Hinduism and Confucianism, while more regionally restricted, nevertheless claim millions of devotees. Ordinary people are powerfully motivated to do things that can be justified in terms of their religious beliefs. Therefore, to distill environmental ethics from the world's living religions is extremely important for global conservation. The well-documented effort of Jewish and Christian conservationists to formulate the Judeo-Christian Stewardship Environmental Ethic in biblical terms suggests an important new line of inquiry: How can effective conservation ethics be formulated in terms of other sacred texts? Callicott (1994) offers a comprehensive survey. To provide even a synopsis of that study would be impossible here; however, a few abstracts of traditional non-Western conservation ethics may be suggestive.

Muslims believe that Islam was founded, in the seventh century A.D., by Allah (God) communicating to humanity through the Arabian prophet Mohammed, who regarded himself as part of the same prophetic tradition as Moses and Jesus. Therefore, because the Hebrew Bible and the New Testament are earlier divine revelations underlying distinctly Muslim belief, the basic Islamic worldview has much in common with the basic Judeo-Christian worldview. In particular, Islam teaches that human beings have a privileged place in nature, and, going further in this regard than Judaism and Christianity, that all other natural beings were created to serve humanity. Hence, there has been a strong tendency among Muslims to take a purely instrumental approach to the human-nature relationship. As to the conservation of biodiversity, the Arabian oryx was nearly hunted to extinction by oil-rich sheikhs armed with military

assault rifles in the cradle of Islam. But callous indifference to the rest of creation is no longer sanctioned religiously in the Islamic world.

Islam does not distinguish between religious and secular law. Hence, new conservation regulations in Islamic states must be grounded in the Koran, Mohammed's book of divine revelations. In the early 1980s, a group of Saudi scholars scoured the Koran for environmentally relevant passages and drafted *The Islamic Principles for the Conservation of the Natural Environment*. While reaffirming "a relationship of utilization, development, and subjugation for man's benefit and the fulfillment of his interests," this landmark document also clearly articulates an Islamic version of stewardship: "he [man] is only a manager of the earth and not a proprietor, a beneficiary not a disposer or ordainer" (Kadr et al. 1983). The Saudi scholars also emphasize a just distribution of "natural resources," not only among members of the present generation, but among members of future generations. And, as Norton (1991) has argued, conservation goals are well served when future human beings are accorded a moral status equal to that of those currently living. The Saudi scholars have even found passages in the Koran that are vaguely ecological; for example, God "produced therein all kinds of things in due balance" (Kadr et al. 1983).

Ralph Waldo Emerson and Henry David Thoreau, thinkers at the fountainhead of North American conservation philosophy (discussed in Chapter 1), were influenced by the subtle philosophical doctrines of Hinduism, a major religion in India. Hindu thought also inspired Arne Naess's (1989) contemporary "Deep Ecology" conservation philosophy. Hindus believe that at the core of all phenomena there is one and only one Reality or Being. God, in other words, is not a supreme Being among other lesser and subordinate beings, as in the Judeo-Christian-Islamic tradition. Rather, all beings are a manifestation of the one essential Being—called *Brahman*. And all plurality, all difference, is illusory, or at best only apparent.

Such a view would not seem to be a promising point of departure for the conservation of biological diversity, because the actual existence of diversity, biological or otherwise, seems to be denied. Yet in the Hindu concept of *Brahman*, Naess (1989) finds an analogue to the way ecological relationships unite organisms into a systemic whole. However that may be, Hinduism unambiguously invites human beings to identify with other forms of life, for all life-forms share the same essence. Believing that one's own inner self, *atman*, is identical, as an expression of *Brahman*, with the selves of all other creatures leads to compassion for them. The suffering of one life-form is the suffering of all others; to harm other beings is to harm oneself. As a matter of fact, this way of thinking has inspired and helped to motivate one of the most persistent and successful conservation movements in the world, the Chipko movement, which has managed to rescue many of India's Himalayan forests from commercial exploitation (Guha 1989; Shiva 1989).

Jainism is a religion of relatively few adherents, but a religion of great influence in India. Jains believe that every living thing is inhabited by an immaterial soul, no less pure and immortal than the human soul. Bad deeds in past lives, however, have crusted these souls over with *karma*-matter. *Ahimsa* (non-injury of all living things) and asceticism (eschewing all forms of physical pleasure) are parallel paths that will eventually free the soul from future rebirth in the material realm. Hence, Jains take great care to avoid harming other forms of life and to resist the fleeting pleasure of material consumption. Extreme practitioners refuse to eat any but leftover food prepared for others, and carefully strain their water to avoid ingesting any waterborne organ-

isms—not for the sake of their own health, but to avoid inadvertently killing other living beings. Less extreme practitioners are strict vegetarians and own few material possessions. The Jains are bidding for global leadership in environmental ethics. Their low-on-the-food-chain and low-level-of-consumption lifestyle is held up as a model of ecological right livelihood (Chappel 1990). And the author of the *Jain Declaration on Nature* claims that the central Jain moral precept of *ahimsa* “is nothing but environmentalism” (Singhvi n.d.).

Though now virtually extinct in its native India, Buddhism has flourished for many hundreds of years elsewhere in Asia. Its founder, Siddhartha Gautama, first followed the path of meditation to experience the oneness of *Atman-Brahman*, and then the path of extreme asceticism in order to free his soul from his body—all to little effect. Then he realized that his frustration, including his spiritual frustration, was the result of desire. Not by obtaining what one desires—which only leads one to desire something more—but by stilling desire itself can one achieve enlightenment and liberation. Further, desire distorts one’s perceptions, exaggerating the importance of some things and diminishing the importance of others. When one overcomes desire, one can appreciate each thing for what it is.

When the Buddha realized all this, he was filled with a sense of joy, and he radiated loving-kindness toward the world around him. He shared his enlightenment with others, and formulated a code of moral conduct for his followers. Many Buddhists believe that all living beings are in the same predicament: we are driven by desire to a life of continuous frustration, and all can be liberated if all can attain enlightenment. Thus Buddhists can regard other living beings as companions on the path to Buddhahood and *nirvana*.

Buddhists, no less than Jains and Christians, are assuming a leadership role in the global conservation movement. Perhaps most notably, the Dalai Lama of Tibet is the foremost conservationist among world religious leaders. In 1985, the Buddhist Perception of Nature Project was launched to extract and collate the many environmentally relevant passages from Buddhist scriptures and secondary literature. Thus, the relevance of Buddhism to contemporary conservation concerns could be demonstrated, and the level of conservation consciousness and conscience in Buddhist monasteries, schools, colleges, and other institutions could be raised (Davies 1987). Bodhi (n.d.) provides a succinct summary of Buddhist environmental ethics: “With its philosophic insight into the interconnectedness and thoroughgoing interdependence of all conditioned things, with its thesis that happiness is to be found through the restraint of desire, with its goal of enlightenment through renunciation and contemplation and its ethic of noninjury and boundless loving-kindness for all beings, Buddhism provides all the essential elements for a relationship to the natural world characterized by respect, care, and compassion.”

One-fourth of the world’s population is Chinese. Fortunately, traditional Chinese thought provides excellent conceptual resources for a conservation ethic. The Chinese word *tao* means *way* or *road*. The Taoists believe that there is a *Tao*, a Way, of nature. That is, natural processes occur not only in an orderly but also in a harmonious fashion. Human beings can discern the *Tao*, the natural well-orchestrated flow of things. And human activities can either be well adapted to the *Tao*, or they can buck it. In the former case, human goals are accomplished with ease and grace and without disturbing the natural environment; but in the latter they are accomplished, if at all, with difficulty and at the price of considerable disruption of neighboring social and natural systems. Capital-intensive Western technology,—such as nuclear power plants and industrial agriculture,—is very “un-Taoist” in esprit and motif.

Modern conservationists find in Taoism an ancient analogue of today's countermovement toward appropriate technology and sustainable development. The great Mississippi Valley flood of 1993 is a case in point. The river system was not managed in accordance with the *Tao*. Thus, levees and flood walls only exacerbated the big flood when it finally came. Better to locate cities and towns outside the floodplain and allow the mighty Mississippi River occasionally to overflow. The rich alluvial soils in the river's floodplains could be farmed in dryer years, but no permanent structures should be located there. That way, the floodwaters could periodically spread over the land, enriching the soil and replenishing wetlands for wildlife, and the human dwellings on higher ground could remain safe and secure. Perhaps the officers of the U.S. Corps of Engineers should study Taoism. We can only hope that their counterparts in China will abandon newfangled Maoism for old-fashioned Taoism before trying to contain, rather than cooperate with, the Yangtze River.

The other ancient Chinese religious worldview is Confucianism. To most people, Asian and Western alike, Confucianism connotes conservatism, adherence to custom and social forms, filial piety, and resignation to feudal inequality. Hence, it seems to hold little promise as an intellectual soil in which to cultivate a conservation ethic. Ames (1992), however, contradicts the received view: "There is a common ground shared by the teachings of classical Confucianism and Taoism . . . Both express a 'this-worldly' concern for the concrete details of immediate experience rather than . . . grand abstractions and ideals. Both acknowledge the uniqueness, importance, and primacy of particular persons and their contributions to the world, while at the same time expressing the ecological interrelatedness and interdependence of this person with his context."

From a Confucian point of view, a person is not a separate immortal soul temporarily residing in a physical body; a person is, rather, the unique center of a network of relationships. Because his or her identity is constituted by these relationships, the destruction of one's social and environmental context is equivalent to self-destruction. Biocide, in other words, is tantamount to suicide.

In the West, because individuals are not ordinarily conceived to be robustly related to and dependent upon their context—not only for their existence but for their very identity—it is possible to imagine that they can remain themselves and be "better off" at the expense of both their social and natural environments. But from a Confucian point of view, it is impossible to abstract persons from their contexts. Thus, if *context* is expanded from its classic social to its current environmental connotation, Confucianism offers a very firm foundation upon which to build a contemporary Chinese conservation ethic.

The tenets and conservation implications of these various non-Western religions are summarized in Table 2.3. Essay 2B by Susan Bratton further explores the role of religion in conservation.

Biocentrism

Before the advent of environmental ethics, moral philosophers in the Western tradition granted moral standing to human beings and human beings alone, not by appeal to a mystical property, such as the image of God, but by appeal to observable traits, such as rationality or linguistic ability. Because only people, they argued, can reason or speak, only people are worthy of ethical treatment. In the 18th century, Immanuel Kant (1959), for example, argued that human beings are intrinsically valuable ends because we are rational, while animals (and other forms of life) are only instrumentally valuable means because they are not. Contemporary environmental philosophers have attempted to con-

Table 2.3
A Comparison of Traditional Non-Western Conservation Ethics

Characteristic	Islam	Hinduism	Jainism	Buddhism	Taoism	Confucianism
Source of value in nature	External; <i>Allah</i> (God)	Internal; <i>Atman-Brahman</i>	Internal; soul (<i>jiva</i>)	Internal; Buddha-nature	Emergent; the <i>Tao</i> (Way)	Emergent; relational
Human attitude toward nature	Respect for creation is respect for Creator	Identification; self-realization	<i>Ahimsa</i> (noninjury)	Loving-kindness; solidarity	Harmony; cooperation	Interrelated; interdependent
Conservation practice	Conserve resources for future generations	Conserve trees and other beings that manifest <i>Atman-Brahman</i>	Low on the food chain; low level of consumption	Still desires; reduce consumption; contemplate nature	Adapt human economy to nature's economy	Conserve nature to preserve human society

struct a nonanthropocentric environmental ethic without appeal to mystical religious concepts, such as God, the *Tao*, or the universal Buddha-nature. Some have done so by arguing that reason and linguistic ability are inappropriate qualifications for moral standing, and that other observable traits are more appropriate.

Singer (1975) and Regan (1983) exposed classic Western anthropocentric ethics to the following dilemma: if the qualification for ethical standing—or “criterion for moral considerability” as it is more technically called—is pitched high enough to exclude nonhuman beings, then it will exclude as well those human beings who also fail to measure up. Human infants, the severely retarded, and the profoundly senile are not rational. If, following Kant, we make rationality the criterion of moral considerability, then these human “marginal cases” may be treated just as we treat nonhuman beings who fail to meet it. They may become, for example, unwilling subjects of painful medical tests and experiments; they may be hunted for sport; or they may be made into dog

ESSAY 2B

Monks, Temples, and Trees
The Spirit of Diversity

Susan P. Bratton, University of North Texas

A Buddhist monk bends over and carefully waters a small seedling in the temple garden. Others of its kind are nearby. Older, taller trees shade the sanctuary paths with their fan-shaped leaves, and produce a crop of edible nuts each year. The monk looks at the little ginkgo and reflects that he never has seen one growing on its own in the surrounding mountains. Only in the temple gardens and their environs has the ginkgo survived, at least in his region of China.

From a venerable lineage, datable to the lower Jurassic, *Ginkgo biloba* is the only known remaining species of an entire division of vascular plants, the Ginkgophyta. Often called a “living fossil,” the modern shade tree is little different from the ginkgos of the early Cretaceous period. *Ginkgo* is also a taxon that may or may not exist in the wild. One of the largest “seminatural” populations, at Tian Mu Shan, is near the Kaishan temple, and thus may have

been under partial human protection, if not management, for centuries. Over the last several thousand years, Buddhist monks have probably slowly replaced the ginkgo's natural dispersal agents, such as leopard cats (*Felis bengalensis*) and helped preserve the species for posterity (del Tredici et al. 1992).

Our contemporary technocratic and scientifically oriented society often mistakenly considers religion to be either uninterested or uninformed when it

comes to protection and management of the natural world. We also assume that if religion is interested, it is the more "primitive" religions and those that practice magic that attempt to relate to or manipulate wild nature, while the great religions of the world—particularly the "peoples of the book," Judaism, Christianity, and Islam—are too theological and otherworldly to concern themselves with the various small pieces that make up the cosmos. The truth is, religious values have often helped to protect natural diversity, and religion remains one of the most important wellsprings of human concern for other species. E. O. Wilson has suggested that science alone cannot protect biodiversity; other cultural values must be called on as well.

Science attempts to understand the world through objective comparison. The various elements in the environment become "other," or differentiated from the scientist, who makes a conscious effort to distance herself from the phenomena she is observing. Religion, in contrast, establishes relationship or identification with the "other." The shaman becomes an intermediary with nature and links the village with the surrounding forests and their creatures; the Buddhist monk works in the temple garden and increases his spiritual understanding of the cosmos as a whole; the Hebrew psalmist sees the glory of God in the diversity of the wild and praises divine wisdom for placing the stork in the cedars and for maintaining both birds and forests with water gushing from mountain springs. Religion has a freedom of symbolic and aesthetic expression inappropriate to science. Religion can speak with nature, science can only speak about it.

Religion forwards the preservation of natural diversity in several different ways. The first is by providing ethical and social models for living respectfully with nature. For most cultures, religion is a primary means of defining right and wrong. The Koyukon of Alaska, for example, do not separate the natural and the spiritual world, and explain the spiritual power residing in nature

through Distant Time stories about the evolution of the cosmos. Since nature has spiritual power, it commands respect and is included in the religious code of morality and etiquette. The Koyukon avoid waste in food harvest and take only what they can use from their fragile far-northern lands. They do not kill female waterfowl preparing to nest, nor do they take young animals. They fear retribution in the form of bad luck if they violate taboos or are disrespectful of the animals they hunt, so their husbandry of natural resources is tightly tied to an animist worldview (Nelson 1983). Other religions with very different notions of the otherworldly may have rather similar rules. The Hebrew scriptures, with their one transcendent God, forbid removal of a mother bird from her nest.

Secondly, religion often provides direct protection for wild and cultivated plants and animals. Many cultures have holy places, including mountains, that humans may approach only for religious purposes, if at all. Rivers or forests may be sacred environs, where wildlife and vegetation are not to be disturbed. Sites are sometimes set aside specifically to protect taxa that have medicinal value or are utilized in religious ritual. Taboos or special religious significance can prevent the killing of individual wildlife species. Buddhism, one of the most abstract and philosophical of all religions, has protected numerous organisms, from ginkgos to cranes to monkeys, resident on the grounds of its temples. Some early Christian monks would not allow the native oak forests to be cleared from around their monasteries. St. Francis of Assisi instructed his followers to leave the borders of a cultivated garden unweeded to provide space for wildflowers, so that the blossoms, in their beauty, could praise the creator God. Even our contemporary wilderness areas in the United States are, among other purposes, supposed to preserve and protect "spiritual values."

Lastly, religion ties the nonhuman residents of the cosmos to the divine or to the overall meaning of human existence. This gives the biota a value that

science alone cannot provide. The saffron-robed initiate caring for the temple landscape sees each individual creature as beautiful in itself and beautiful in its interrelationship with its neighbors. The trees, the small clump of flowers, the rock and the sand, become more than xylem and chloroplasts, or feldspar and quartz. For the dedicated practitioner, the sanctity of the environment is an inspiration and a blessing. The spiritual realization of the Buddhist, in turn, blesses the environment (14th Dalai Lama 1992). In early and medieval Christianity, where love and compassion were key values and holiness was fervently pursued, the monks and desert ascetics often cared for wildlife, healing animals with injuries and even rescuing them from hunters. The early Christians thought animals could recognize the pure of heart, and that even wild lions and wolves would show affection for the great saints.

The religious myths and stories that teach us about the importance of other species are often so basic that we, in our human-dominated, industrial world, miss the critical message. Take, for example, the tale of Noah's ark. Noah did not save the animals just to be nice. Noah saved the animals because humans need the animals—all the animals, not just the domestic and the edible. Also, in the Genesis original, it is God who instructs Noah to build the ark. The great God of Israel wanted the animals rescued, and put Noah to a great deal of trouble during a very damp climatic period to accomplish this. God had created the animals in wondrous diversity and in marvelous order, and had blessed them as both good and beautiful well before the Garden of Eden was an official mailing address. When the animals march onto the ark according to their kinds, it is divine organization that is being honored, and when Noah saves them all, not just a few, it is the glory of divine handiwork that is being preserved (Bratton 1993). Modern conservation biology can perhaps take a lesson from this.

food. No one would want that to happen. To avoid it, Singer (1975) and Regan (1983) argue, we must lower the criterion for moral considerability. But if it is pitched low enough to include the human marginal cases, then it will also include a number of nonhuman animals. Singer (1975) follows Kant's 18th-century contemporary, Jeremy Bentham, and argues that sentience, the capacity to experience pleasure and pain, ought to be the criterion for ethical standing.

Goodpaster (1978) first took the step from animal liberation to biocentric (literally "life-centered") environmental ethics. From a biological point of view, sentience, he argued, evolved not as an end in itself, but as a means to animals' survival. Hence if there is something morally relevant about sentience, how much more morally relevant is that which sentience evolved to serve—namely, life. Moreover, all living things, as explained earlier in this chapter, have a good of their own, and therefore have interests. That fact too, according to Goodpaster (1978), ought to entitle all living things to ethical standing.

Defining a more extreme view, Taylor (1986) argues that all living things are of equal "inherent worth" (Figure 2.4). Apart from the ethically problematic and practically impossible task of according equal moral consideration to each and every living thing, Taylor's pure and extreme biocentrism has little relevance to conservation biology—which, once more, is not concerned with the fate of specimens, but of species, ecosystems, and evolutionary processes.

As modified by Rolston (1988), however, biocentrism may address the concerns of conservation biologists and hence may represent a viable conservation ethic. Rolston agrees with Taylor that all living things have intrinsic value (or inherent worth) and thus should enjoy moral standing. But he does not agree that all living things are equal. To the baseline intrinsic value that organisms possess by virtue of having interests and a good of their own, Rolston adds a value "bonus," as we might think of it, for being sentient, and he adds an additional value bonus for being rational and self-conscious. Hence, sentient animals have more intrinsic value than insentient plants, and human beings have more intrinsic value than sentient animals (Figure 2.4). Rolston's biocentrism thus better accords with our intuitive sense of a value hierarchy than does Taylor's, because in Rolston's version, the life of a human being is more valuable than that of a white-tailed deer, and that of a deer is more valuable than that of a jack pine. And, as noted earlier in this chapter, Rolston also provides intrinsic value, or something similar to it—a value "dividend" as we might think of it—for species, ecosystems, and their evolutionary processes. He argues, therefore, that we have a moral duty to preserve them as well. The development of biocentric and ecocentric philosophies in a historical framework is further explored in Essay 2C by Roderick Nash.

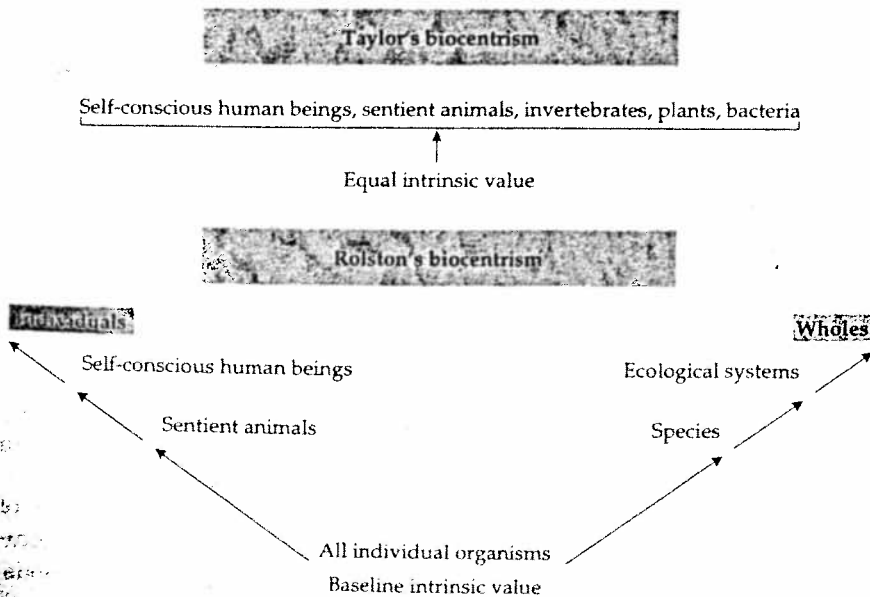


Figure 2.4 Taylor's biocentrism, in which all individual organisms have equal intrinsic value, and Rolston's, in which the baseline intrinsic value at the level of individual organisms is augmented by sentience and self-consciousness; that is, organisms incur increasing intrinsic value for sentience and self-consciousness. Rolston also provides a parallel valuation scheme for "wholes": species and ecosystems.

ESSAY 2C

*An American Perspective***Discovering Radical Environmentalism in Our Own Cultural Backyard
From Natural Rights to the Rights of Nature**

Roderick Frazier Nash, University of California at Santa Barbara

The search for philosophical foundations for ecocentrism and radical environmentalism have led to ancient Asian religions, pre-Christian Druidic rituals, and Native American cosmologies. Much can be learned—and certainly much inspiration gained—from these attempts to relate humans to nature respectfully and responsibly. But are these belief systems the most promising platform for environmental reform—indeed, paradigm change—in the modern American context?

The problem is that mainstream Americans cannot easily think like Indians, Druids, or Taoists; for better or for worse, we march to the beat of a different cultural drummer. But we do have one powerful ideal with which to change paradigms. It is as American as apple pie, and it could provide the motivation to save the planet and us along with it.

Natural rights liberalism is the most potent concept in the history of American thought. It was present before the American experiment, in 1215, when a handful of English nobles presented a Magna Carta to their king, challenging the exclusivity of the royal definition of rights. The message was straightforward: we are members of this society and we want rights too. By 1776, England's American colonies had expanded the meaning of natural rights considerably. Now "all men" were thought to be endowed with them, and the colonists

felt strongly enough about them to fight a war for independence.

Granted that the Jeffersonian sense of "men" was severely limited. Red men, black men, and female men were not yet regarded as full members of the moral community. But the spirit of 1776 was extremely volatile. One of its most dramatic extensions resulted in a huge paradigm change: the abolition of slavery. Beginning in the 1830s, a handful of "radical" American reformers determined to extend basic American natural rights ideals to blacks. The campaign struck one of the most sensitive chords in the American mind: the rights of an oppressed minority to liberation. By 1865 the moral circle had widened and all slaves were legally free.

Today we see in the environmental movement remarkable growth of another "radical" idea: nature has rights that humans should respect. Deep ecology calls for the liberation of land and nonhuman life from ownership and abuse. There are appeals for the end of earth slavery. Echoing the Abolitionists' cry, "No Compromise with Slave Holders!" Earth First! proclaims, "No Compromise in Defense of Mother Earth!" The Boston Tea Party of 1773 and John Brown's 1859 raid on Harper's Ferry, Virginia, on behalf of slaves inspire environmental radicals. The arresting implication of this parallel is that the slavery issue was not educated or legislated away; it took a civil war and cost

a million lives. Will the implementation of environmental ethics also involve conflict?

It is important to acknowledge that the extension of ethics to include nature is not even a simple *conceptual* task. Colonists and slaves, after all, were human; Spotted Owls and wild rivers are not. Classic natural rights are individual-oriented: *every* human has them. This spells trouble in the human relationship to nature. Are we to refrain from *any* impact on our environment? Can we never kill *anything* to eat? Few rational people think so; clearly there must be differences in moral behavior. But for increasing numbers of people it does make sense to say that all the species that share the planet with us have rights to exist and pursue their lives in their own way. Some feel that ecosystem processes have intrinsic value and a claim to freedom from the tyranny often imposed by human civilization.

Already we have legislation such as the Endangered Species Act of 1973, which gives legal protection to nonhuman existence rights. We also have national park and wilderness acts, which protect nonliving things and ecological processes. From this starting point, it is plausible that American morality can once again expand. This time we could move from natural rights to the rights of nature.

Ecocentrism

For sound philosophical as well as temperamental reasons, those conservation biologists with nonanthropocentric sympathies have gravitated to the Aldo Leopold Land Ethic in their search for a fitting conservation ethic. Leopold was himself a conservation biologist; indeed, he was, perhaps, the prototype of the breed (Meine 1992). Further, the Leopold Land Ethic is not based on religious beliefs, nor is it an extension of the ethical paradigm of classic Western moral philosophy. It is grounded, rather, in evolutionary and ecological biology. Hence, most nonanthropocentric conservation biologists, irrespective of their religious or cultural background, find the Leopold Land Ethic intellectually congenial.

In *The Descent of Man*, Darwin tackled the problem of the evolutionary origins and development of ethics. How could "limitations on freedom of action" possibly have arisen through natural selection, given the universal "struggle for existence" (Leopold 1949)? In a nutshell, Darwin (1904) answered as follows: social organization enhances the survival and reproductive efficiency of many kinds of organisms. Among mammals, parental and filial affections, having spilled over to other close kin, bound individuals into small social units such as packs, troops, and bands. When one mammal—*Homo sapiens*—acquired the capacity for reflection and speech, behaviors that were conducive to social integrity and stability were dubbed "good" and those that were anti-social were dubbed "bad." Or, as Darwin (1904) wrote, "No tribe could hold together if murder, robbery, treachery, &c., were common; consequently such crimes within the limits of the same tribe, 'are branded with everlasting infamy.'" Once originated, ethics developed apace with the growth and development of society. According to Darwin (1904),

As man advances in civilization, and small tribes are united into larger communities, the simplest reason would tell each individual that he ought to extend his social instincts and sympathies to all the members of the same nation though personally unknown to him. This point being once reached, there is only an artificial barrier to prevent his sympathies extending to the men of all nations and races.

Here, at the end of the 20th century, we have finally reached the point that Darwin could only envision in the middle of the 19th: a universal ethic of human rights. But, also during the 20th century, ecology discovered (actually rediscovered, because many tribal peoples seem to have represented their natural environments in analogous terms) that human beings are not only members of various human communities—from the familial clan to the family of man—but members of a "biotic community" as well.

From Darwin we learn that "All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts" (Leopold 1949); and from Leopold, that ecology now "simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land." If whenever a new community came to be recognized in the past, "the simplest reason would tell each individual that he ought to extend his social instincts and sympathies," Leopold argues, then the same "simplest reason" ought to kick in again, now that ecology informs us that we are members of a biotic community.

Though it has been altogether forgotten in Western moral philosophy over the last 200 years, human ethics has always had a strong holistic aspect. That is, human beings have felt that they had duties and obligations to their communities as such, as well as to individual members of those communities. About this Darwin (1904) was emphatic: "actions are regarded by savages, and were probably so regarded by primeval man, as good or bad, solely as they obviously affect the tribe, not that of the species, nor that of the individual member of the tribe. This agrees well with the belief that the so-called moral sense is aboriginally derived from the social instincts, for both relate at first exclusively to the community."

Influenced by Darwin, Leopold also gave his land ethic a decided holistic cast: "In short, a land ethic," he writes, "changes the role of *Homo sapiens* from conqueror of the land community to plain member and citizen of it. It implies respect for his fellow-members and also respect for the community as such" (Leopold 1949). Indeed, by the time Leopold came to write the summary moral maxim, or "golden rule," of the land ethic, he seems to have forgotten about "fellow-members" altogether and only mentions the "community as

such": "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

Staunch apologists for the rugged individualism characteristic of Western moral philosophy during the last two centuries have charged that the land ethic leads to "environmental fascism"—the subordination of the rights of individuals, including human individuals, to the good of the whole (Regan 1983; Aiken 1984). They have a point where nonhuman animals are concerned. The land ethic would permit—nay, even require—killing animals, such as feral goats or rabbits, that pose a threat to populations of endangered floral species or to the general health and integrity of biotic communities. But Leopold, following Darwin, represented the land ethic as an ethical "accretion"—that is, an addition to, not a substitute for, our long-standing human-to-human ethics.

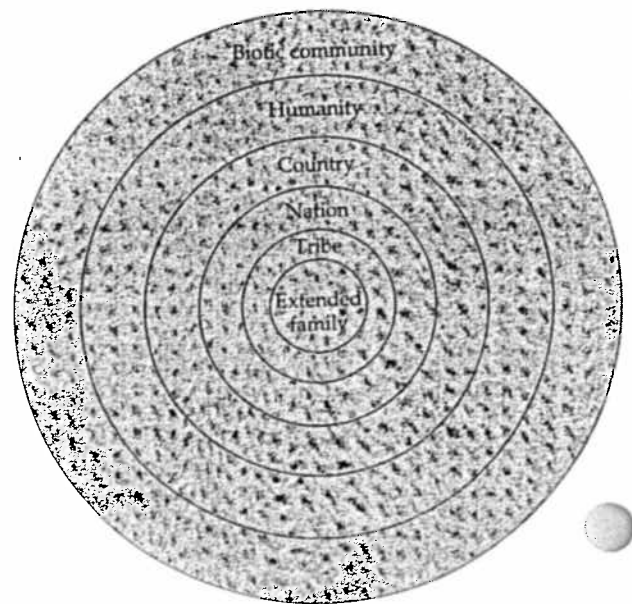
That human beings have recently become members of national and international communities does not mean that we are no longer members of more ancient and more narrowly circumscribed social groups, such as extended families, or that we are relieved of all the moral duties and responsibilities that attend our active family, clan, and civic affiliations (Figure 2.5). Similarly, because we now realize that we are also members of a biotic community does not mean that we are relieved of all the moral duties and responsibilities that attend our membership in the full spectrum of human communities.

This defense of the Leopold land ethic against the charge that it promotes environmental fascism leads to the charge that it is a "paper tiger," an ecocentric environmental ethic without "teeth." For if we must fully acknowledge all our ancient and modern human duties and obligations as well as our more recently discovered environmental ones, how can we ever justify sacrificing human interests to conserve nonhuman species and ecosystems?

Fortunately, not all human-environment conflicts are life and death issues. We rarely face a choice between killing human beings and conserving biodiversity. Rather, most choices are between human lifestyles and biodiversity. For example, Japanese and other consumers of whale meat are not asked to lay down their lives to save the whales, only to change their dietary preferences. To save forests, we do not have to commit suicide; we can save them

Figure 2.5 The various communities to which human beings belong, and how these communities are hierarchically ordered in the Leopold Land Ethic. The smallest and most intimate community is the family; the largest is the multispecies biotic community. In general, duties and obligations related to the communities at or closer to the center historically have taken precedence over those at or closer to the perimeter. But we must also consider the gravity, or weight, of duties and obligations to these communities, as well as their proximity, when they come into conflict with one another.

Community Membership in the Leopold Land Ethic



simply by using less lumber and paper, and by recycling what cellulose we must extract. All human interests are not equal. We should be prepared to override less important human interests for the sake of the vital interests of other forms of life, and for ecological health and integrity.

Leopold penned the land ethic at mid-century. Ecological science then represented nature as tending toward a static equilibrium, and portrayed disturbance and perturbation—especially that caused by *Homo sapiens*—as abnormal and destructive (Odum 1953). In light of recent doubts about the very existence of “biotic communities” that persist as such through time (Brubaker 1988), in view of the shift in contemporary ecology to a more dynamic paradigm (Botkin 1990), and in recognition of the incorporation of natural disturbance into theories of patch- and landscape-scale ecological dynamics (Pickett and White 1985), we might wonder whether the Leopoldian Land Ethic has become obsolete. Has the paradigm shift from “the balance of nature” to “the flux of nature” in ecology invalidated the land ethic? No, but recent developments in ecology may require revising the land ethic.

Leopold was aware of and sensitive to natural change. He knew that conservation must aim at a moving target. How can we conserve a biota that is dynamic, ever-changing, when the very words *conserve* and *preserve*—especially when linked to *integrity* and *stability*—connote stasis? The key to solving this conundrum is the concept of temporal and spatial scale. A review of Leopold’s “The Land Ethic” reveals that he had the key, though he may not have realized just how multiscalar change in nature actually is.

In “The Land Ethic,” Leopold (1949) writes, “Evolutionary changes . . . are usually slow and local. Man’s invention of tools has enabled him to make changes of unprecedented violence, rapidity, and scope.” As noted, Leopold was keenly aware that nature is dynamic, but, under the sway of mid-century equilibrium ecology, he conceived of natural change primarily in evolutionary, not in ecological, terms. Nevertheless, scale is equally relevant when consideration of ecological change is added to that of evolutionary change; that is, when normal climatic oscillations and patch dynamics are added to normal rates of extinction, hybridization, and speciation.

Homo sapiens is a part of nature, “a plain member and citizen” of the “land-community,” as Leopold (1949) put it. Hence, anthropogenic (human-caused) changes imposed on nature are no less natural than any other. But, because *Homo sapiens* is a moral species, capable of ethical deliberation and conscious choice, and because our evolutionary kinship and biotic community membership add a land ethic to our familiar social ethics, anthropogenic changes may be land-ethically evaluated. But by what norm? The norm of appropriate scale.

Temporal and spatial scale in combination are the key to the evaluation of direct human ecological impacts. Long before *Homo sapiens* evolved, violent disturbances regularly occurred in nature (Pickett and White 1985), and they still do, quite independently of human agency. Volcanoes bury the biota of whole mountains with lava and ash. Tornadoes rip through forests, leveling trees. Hurricanes erode beaches. Wildfires sweep through forests and savannas. Rivers drown floodplains. Droughts dry up lakes and streams. Why, then, are analogous anthropogenic disturbances—clear-cuts, beach developments, hydroelectric impoundments, and the like—environmentally unethical? As such, they are not; it is a question of scale. In general, frequent, intense disturbances, such as tornadoes, occur at small, widely distributed spatial scales; spatially broader disturbances, such as droughts, occur infrequently. And most disturbances, at whatever level of intensity and scale, are stochastic (random) and chaotic (unpredictable). The problem with anthropogenic perturba-

tions—such as industrial forestry and agriculture, exurban development, drift net fishing, and such—is that they are far more frequent, widespread, and regularly occurring than are nonanthropogenic perturbations; they are well out of the normal spatial and temporal range of disturbances experienced by ecosystems over evolutionary time (Holling and Meffe 1996).

Pickett and Ostfeld (1995)—proponents of the new natural disturbance/patch dynamics paradigm in ecology—agree that appropriate scale is the operative norm for ethically appraising anthropogenic ecological perturbations. They note that

the flux of nature is a dangerous metaphor. The metaphor and the underlying ecological paradigm may suggest to the thoughtless and greedy that because flux is a fundamental part of the natural world, any human-caused flux is justifiable. Such an inference is wrong because the flux in the natural world has severe limits. . . . Two characteristics of human-induced flux would suggest that it would be excessive: fast rate and large spatial extent.

Among the abnormally frequent and widespread anthropogenic perturbations that Leopold himself censures in "The Land Ethic" are the continent-wide elimination of large predators from biotic communities in North America, the ubiquitous substitution of domestic species for wild ones, the ecological homogenization of the planet resulting from the "world-wide pooling of faunas and floras," and the ubiquitous "polluting of waters or obstructing them with dams."

The summary moral maxim of the land ethic, then, must be updated in light of developments in ecology over the past quarter-century. Leopold acknowledged the existence and significance of natural environmental change, but seems to have thought of it primarily on a very slow evolutionary time scale. Even so, he thereby incorporates the concept of inherent environmental change and the crucial norm of scale into the land ethic. In light of more recent developments in ecology, we can add norms of scale for both climatic and ecological dynamics to the land ethic. Although one hesitates to edit Leopold's elegant prose, we attempt to formulate a contemporary summary moral maxim for the land ethic with the following:

A thing is right when it tends to disturb the biotic community only at normal spatial and temporal scales. It is wrong when it tends otherwise.

Summary

Conservation biology is driven by the *value* of biodiversity. But why should people value biodiversity? Philosophers have distinguished two basic types of value, instrumental and intrinsic. Biodiversity is instrumentally valuable for the *goods* (e.g., actual and potential food, medicine, fiber, and fuel), *services* (e.g., pollination, nutrient recycling, oxygen production), *information* (e.g., practical scientific knowledge, a genetic library), and *psycho-spiritual satisfaction* (e.g., natural beauty, religious awe, pure scientific knowledge) that it provides for intrinsically valuable human beings. Biodiversity may also be intrinsically valuable—valuable, that is, as an end in itself, as well as a means to human well-being. Like ourselves, other forms of life are self-organizing beings with goods of their own. And we human beings are capable of valuing other beings for their own sakes, as well as for what they do for us.

In order to compare its value with the value of other things, economists have attempted to *monetize* both the instrumental and intrinsic value of biodiversity. Philosophers have also based *conservation ethics* on the value of biodiversity. If biodiversity is only instrumentally valuable to human beings, its destruction by one person in pursuit of personal gain may be harmful to

another person—in which case the destruction of biodiversity may be immoral. If biodiversity also has intrinsic value, its destruction may be doubly immoral.

The Bible recognizes the intrinsic value of nonhuman species (God declared them to be “good”). Accordingly, contemporary Jewish and Christian theologians have formulated a Judeo-Christian Stewardship Conservation Ethic. Many other world religions are also developing distinct conservation ethics based on their scriptures and traditions. The Aldo Leopold Land Ethic is not based on any religion, but on contemporary evolutionary and ecological biology. From an evolutionary perspective, human beings are kin to all other forms of life, and from an ecological perspective, human beings are “plain members and citizens” of the “biotic community.” According to Leopold, these general scientific facts generate ethical obligations to our “fellow voyagers in the odyssey of evolution,” to “fellow-members of the biotic community,” and to that “community as such.” Though ecology now acknowledges the normalcy of change and disturbance in nature, the Leopold Land Ethic, appropriately revised in light of these recent developments in science, remains the guiding environmental ethic for conservation biology.

Questions for Discussion

1. Should conservation biologists explain the value of biodiversity to the general public in purely instrumental (or utilitarian) terms, or should they also offer reasons for thinking that biodiversity has intrinsic (or inherent) value?
2. How should a conservation biologist trying to save a small endangered plant species, such as Furbish’s lousewort, respond to the question, “What good is it?”
3. Suppose that a developer wants to build a dog track outside Houston, Texas, in the last remaining habitat of the Houston toad. If nonhuman species have only instrumental value, should the toad’s habitat be saved? If nonhuman species have intrinsic value, could any development proposal that usurped the toad’s habitat be morally justified?
4. Would the existence of a legal international market in ivory help or hurt efforts to conserve African elephants?
5. Should conservation biologists campaign to take biodiversity off the market and say, in effect, “Not for sale at any price,” or should we try to show that the dollar value of biodiversity exceeds the dollar value of the lumber, electricity, beef, or what-have-you, whose production contributes to the erosion of biodiversity?
6. How does the understanding of human nature and the place of human beings in nature set out in Genesis in the Bible compare with the understanding of human nature and the place of human beings in nature forthcoming from science?
7. Suppose that a population of weedy sentient animals—say, feral goats—is threatening the survival of a plant species endemic to an island. What ethical concerns should a conservation biologist take into account before proposing a course of action?
8. If, in Rolston’s biocentrism, the life of a white-tailed deer is more intrinsically valuable than that of a jack pine, would it also follow that the life of

a gray squirrel is more intrinsically valuable than that of a thousand-year-old redwood tree? Is the life of a human being more intrinsically valuable than that of a thousand-year-old redwood tree? Why?

9. Suppose that your brother is a logger or millworker in the Pacific Northwest. As a conservation biologist, should you support a moratorium on all logging of old-growth forests in the region, or do family obligations require you to be more concerned about your brother's lifestyle and livelihood?
10. If indigenous peoples have lived on and significantly affected all continents except Antarctica for at least 10,000 years, are wilderness areas devoid of human residents "artificial?"
11. Suppose that, to your claim that the current episode of abrupt, massive species extinction is immoral, someone replied, "Ninety-nine percent of all species that ever existed on earth are now extinct. Why, then, should we be concerned about rendering more of them extinct?" How would you respond?
12. Suppose that, to your claim that clear-cutting the last remaining old-growth Douglas fir forests of the Pacific Northwest is immoral, someone replied, "Douglas fir is not the climax forest in the region—western hemlock is—and Douglas fir forests are found there because the forest succession in the region is periodically reset by catastrophic fires. Why, then, should we be concerned about imitating the effects of fires by clear-cutting?" Formulate an answer based on melding an ethical argument and scientific reasoning.

Suggestions for Further Reading

- Callicott, J. B. (ed.). 1987. *Companion to A Sand County Almanac*. University of Wisconsin Press, Madison. Essays by biographers, historians, literary critics, scientists, and philosophers sketch Leopold's life and the natural history of Wisconsin's sand counties. They analyze his classic work on conservation values and ethics, interpret his land ethic, and trace its impact on conservation policy and practice.
- Callicott, J. B. 1994. *Earth's Insights: A Multicultural Survey of Ecological Ethics*. University of California Press, Berkeley. Global conservation efforts can succeed only if they are consistent with and motivated by the deepest beliefs of people all over the world. Sketched in this book are conservation values and ethics grounded in Judaism, Christianity, Islam, Hinduism, Buddhism, Taoism, Confucianism, and in the worldviews of selected Pacific, North American, African, and Australian indigenous peoples.
- Kellert, S. R. 1996. *The Value of Life: Biological Diversity and Human Society*. Island Press, Washington, D.C. Kellert identifies the biologically based, but culturally variable, value of biodiversity. Kellert's study incorporates extensive empirical information, based on sociological research, about the value various peoples find in nature.
- Krutilla, J. and A. Fisher. 1985. *The Economics of Natural Environments: Studies in the Valuation of Commodity and Amenity Resources*. Revised ed. Resources for the Future, Washington, D.C. This volume provides a straightforward account of methods of monetizing the values of natural environments used by neoclassical economists.
- Leopold, A. 1949. *A Sand County Almanac and Sketches Here and There*. Oxford University Press, New York. Leopold is often called a "prophet" because he was a quarter-century ahead of his time in formulating a nonanthropocentric conservation philosophy and environmental ethic. This slender volume of essays is often called "the Bible of the contemporary conservation movement," and is a "must read" for any serious student of conservation.

Leopold, Aldo. Here and There. (Oxford University Press, New York, 1949).

Conservation Esthetic

Barring love and war, few enterprises are undertaken with such abandon, or by such diverse individuals, or with so paradoxical a mixture of appetite and altruism, as that group of avocations known as outdoor recreation. It is, by common consent, a good thing for people to get back to nature. But wherein lies the goodness, and what can be done to encourage its pursuit? On these questions there is confusion of counsel, and only the most uncritical minds are free from doubt.

Recreation became a problem with a name in the days of the elder Roosevelt, when the railroads which had banished the countryside from the city began to carry city-dwellers, *en masse*, to the countryside. It began to be noticed that the greater the exodus, the smaller the per-capita ration of peace, solitude, wildlife, and scenery, and the longer the migration to reach them.

The automobile has spread this once mild and local predicament to the outermost limits of good roads—it has made scarce in the hinterlands something once abundant on the back forty. But that something must nevertheless be found. Like ions shot from the sun, the week-enders radiate from every town, generating heat and friction as they go. A tour-

ist industry purveys bed and board to bait more ions, faster, further. Advertisements on rock and rill confide to all and sundry the whereabouts of new retreats, landscapes, hunting-grounds, and fishing-lakes just beyond those recently overrun. Bureaus build roads into new hinterlands, then buy more hinterlands to absorb the exodus accelerated by the roads. A gadget industry pads the bumps against nature-in-the-raw; woodcraft becomes the art of using gadgets. And now, to cap the pyramid of banalities, the trailer. To him who seeks in the woods and mountains only those things obtainable from travel or golf, the present situation is tolerable. But to him who seeks something more, recreation has become a self-destructive process of seeking but never quite finding, a major frustration of mechanized society.

The retreat of the wilderness under the barrage of motorized tourists is no local thing; Hudson Bay, Alaska, Mexico, South Africa are giving way, South America and Siberia are next. Drums along the Mohawk are now honks along the rivers of the world. *Homo sapiens* putters no more under his own vine and fig tree; he has poured into his gas tank the stored motivity of countless creatures aspiring through the ages to wiggle their way to pastures new. Ant-like he swarms the continents.

This is Outdoor Recreation, Latest Model.

Who now is the recreationist, and what does he seek? A few samples will remind us.

Take a look, first, at any duck marsh. A cordon of parked cars surrounds it. Crouched on each point of its reedy margin is some pillar of society, automatic ready, trigger finger itching to break, if need be, every law of commonwealth or commonweal to kill a duck. That he is already overfed in no way dampens his avidity for gathering his meat from God.

Wandering in the near-by woods is another pillar, hunting rare ferns or new warblers. Because his kind of hunting seldom calls for theft or pillage, he disdains the killer. Yet, like as not, in his youth he was one.

At some near-by resort is still another nature-lover—the kind who writes bad verse on birchbark. Everywhere is the unspecialized motorist whose recreation is mileage, who has run the gamut of the National Parks in one summer, and now is headed for Mexico City and points south.

Lastly, there is the professional, striving through countless conservation organizations to give the nature-seeking public what it wants, or to make it want what he has to give.

Why, it may be asked, should such a diversity of folk be bracketed in a single category? Because each, in his own way, is a hunter. And why does each call himself a conservationist? Because the wild things he hunts for have eluded his grasp, and he hopes by some necromancy of laws, appropriations, regional plans, reorganization of departments, or other form of mass-wishing to make them stay put.

Recreation is commonly spoken of as an economic resource. Senate committees tell us, in reverent ciphers, how many millions the public spends in its pursuit. It has indeed an economic aspect—a cottage on a fishing-lake, or even a duck-point on a marsh, may cost as much as the entire adjacent farm.

It has also an ethical aspect. In the scramble for unspoiled places, codes and decalogues evolve. We hear of 'outdoor manners.' We indoctrinate youth. We print definitions of 'What is a sportsman?' and hang a copy on the wall of whoever will pay a dollar for the propagation of the faith.

It is clear, though, that these economic and ethical manifestations are results, not causes, of the motive force. We

seek contacts with nature because we derive pleasure from them. As in opera, economic machinery is employed to create and maintain facilities. As in opera, professionals make a living out of creating and maintaining them, but it would be false to say of either that the basic motive, the *raison d'être*, is economic. The duck-hunter in his blind and the operatic singer on the stage, despite the disparity of their accoutrements, are doing the same thing. Each is reviving, in play, a drama formerly inherent in daily life. Both are, in the last analysis, esthetic exercises.

Public policies for outdoor recreation are controversial. Equally conscientious citizens hold opposite views on what it is and what should be done to conserve its resource-base. Thus the Wilderness Society seeks to exclude roads from the hinterlands, and the Chamber of Commerce to extend them, both in the name of recreation. The game-farmer kills hawks and the bird-lover protects them in the name of shotgun and field-glass hunting respectively. Such factions commonly label each other with short and ugly names, when, in fact, each is considering a different component of the recreational process. These components *differ widely in their characteristics or properties*. A given policy may be true for one but false for another.

It seems timely, therefore, to segregate the components, and to examine the distinctive characteristics or properties of each.

We begin with the simplest and most obvious: the physical objects that the outdoorsman may seek, find, capture, and carry away. In this category are wild crops such as game and fish, and the symbols or tokens of achievement such as heads, hides, photographs, and specimens.

All these things rest upon the idea of *trophy*. The pleasure

they give is, or should be, in the seeking as well as in the getting. The trophy, whether it be a bird's egg, a mess of trout, a basket of mushrooms, the photograph of a bear, the pressed specimen of a wild flower, or a note tucked into the cairn on a mountain peak, is a *certificates*. It attests that its owner has been somewhere and done something—that he has exercised skill, persistence, or discrimination in the age-old feat of overcoming, outwitting, or reducing-to-possession. These connotations which attach to the trophy usually far exceed its physical value.

But trophies differ in their reactions to mass-pursuit. The yield of game and fish can, by means of propagation or management, be increased so as to give each hunter more, or to give more hunters the same amount. During the past decade a profession of wildlife management has sprung into existence. A score of universities teach its techniques, conduct research for bigger and better wild animal crops. However, when carried too far, this stepping-up of yields is subject to a law of diminishing returns. Very intensive management of game or fish lowers the unit value of the trophy by artificializing it.

Consider, for example, a trout raised in a hatchery and newly liberated in an over-fished stream. The stream is no longer capable of natural trout production. Pollution has fouled its waters, or deforestation and trampling have warmed or silted them. No one would claim that this trout has the same value as a wholly wild one caught out of some unmanaged stream in the high Rockies. Its esthetic connotations are inferior, even though its capture may require skill. (Its liver, one authority says, is also so degenerated by hatchery feeding as to forebode an early death.) Yet several

but the ornithologist is ready to bite off ten-penny nails. Artificialized management has, in effect, bought fishing at the expense of another and perhaps higher recreation; it has paid dividends to one citizen out of capital stock belonging to all. The same kind of biological wildcatting prevails in game management. In Europe, where wild-crop statistics are available for long periods, we even know the 'rate of exchange' of game for predators. Thus, in Saxony one hawk is killed for each seven game birds bagged, and one predator of some kind for each three head of small game.

Damage to plant life usually follows artificialized management of animals—for example, damage to forests by deer. One may see this in north Germany, in northeast Pennsylvania, in the Kaibab, and in dozens of other less publicized regions. In each case over-abundant deer, when deprived of their natural enemies, have made it impossible for deer food plants to survive or reproduce. Beech, maple, and yew in Europe, ground hemlock and white cedar in the eastern states, mountain mahogany and cliff-rose in the West, are deer foods threatened by artificialized deer. The compo-

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millstones of ecological mismanagement are saved only at the cost of endless indemnities and barbed wire.

We generalize, then, by saying that mass-use tends to dilute the quality of organic trophies like game and fish, and to induce damage to other resources such as non-game animals, natural vegetation, and farm crops.

The same dilution and damage is not apparent in the yield of 'indirect' trophies, such as photographs. Broadly speaking, a piece of scenery snapped by a dozen tourist cameras daily is not physically impaired thereby, nor does any other resource suffer when the rate increases to a hundred. The camera industry is one of the few innocuous parasites on wild nature.

We have, then, a basic difference in reaction to mass-use as between two categories of physical objects pursued as trophies.

Let us now consider another component of recreation, which is more subtle and complex: the feeling of isolation in nature. That this is acquiring a scarcity-value that is very high to some persons is attested by the wilderness contro-

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versy. The proponents of wilderness have achieved a compromise with the road-building bureaus which have the custody of our National Parks and Forests. They have agreed on the formal reservation of roadless areas. Out of every dozen wild areas opened up, one may be officially proclaimed 'wilderness,' and roads built only to its edge. It is then advertised as unique, as indeed it is. Before long its trails are congested, it is being dolled up to make work for CCC's, or an unexpected fire necessitates splitting it in two with a road to haul fire-fighters. Or the congestion induced by advertising may whip up the price of guides and packers, whereupon somebody discovers that the wilderness policy is undemocratic. Or the local Chamber of Commerce, at first quiescent at the novelty of a hinterland officially labeled as 'wild,' tastes its first blood of tourist-money. It then wants more, wilderness or no wilderness.

In short, the very scarcity of wild places, reacting with the *mores* of advertising and promotion, tends to defeat any deliberate effort to prevent their growing still more scarce.

It is clear without further discussion that mass-use involves a direct dilution of the opportunity for solitude; that when we speak of roads, campgrounds, trails, and toilets as 'development' of recreational resources, we speak falsely in respect of this component. Such accommodations for the crowd are not developing (in the sense of adding or creating) anything. On the contrary, they are merely water poured into the already-thin soup.

We now contrast with the isolation-component that very distinct if simple one which we may label 'fresh-air and change of scene.' Mass-use neither destroys nor dilutes this value. The thousandth tourist who clicks the gate of the

National Park breathes approximately the same air, and experiences the same contrast with Monday-at-the-office, as does the first. One might even believe that the gregarious assault on the outdoors enhances the contrast. We may say, then, that the fresh-air and change-of-scene component is like the photographic trophy—it withstands mass-use without damage.

We come now to another component: the perception of the natural processes by which the land and the living things upon it have achieved their characteristic forms (evolution) and by which they maintain their existence (ecology). That thing called 'nature study,' despite the shiver it brings to the spines of the elect, constitutes the first embryonic groping of the mass-mind toward perception.

The outstanding characteristic of perception is that it entails no consumption and no dilution of any resource. The swoop of a hawk, for example, is perceived by one as the drama of evolution. To another it is only a threat to the full frying-pan. The drama may thrill a hundred successive witnesses; the threat only one—for he responds with a shotgun. To promote perception is the only truly creative part of recreational engineering.

This fact is important, and its potential power for bettering 'the good life' only dimly understood. When Daniel Boone first entered into the forests and prairies of 'the dark and bloody ground,' he reduced to his possession the pure essence of 'outdoor America.' He didn't call it that, but what he found is the thing we now seek, and we here deal with things, not names.

Recreation, however, is not the outdoors, but our reaction to it. Daniel Boone's reaction depended not only on the

quality of what he saw, but on the quality of the mental eye with which he saw it. Ecological science has wrought a change in the mental eye. It has disclosed origins and functions for what to Boone were only facts. It has disclosed mechanisms for what to Boone were only attributes. We have no yardstick to measure this change, but we may safely say that, as compared with the competent ecologist of the present day, Boone saw only the surface of things. The incredible intricacies of the plant and animal community—the intrinsic beauty of the organism called America, then in the full bloom of her maidenhood—were as invisible and incomprehensible to Daniel Boone as they are today to Mr. Babbitt. The only true development in American recreational resources is the development of the perceptive faculty in Americans. All of the other acts we grace by that name are, at best, attempts to retard or ~~mask the process of dilution.~~

Sinclair Lewis novel - Wis. Governor 1930-1934
 Let no man jump to the conclusion that Babbitt must take his Ph.D. in ecology before he can 'see' his country. On the contrary, the Ph.D. may become as callous as an undertaker to the mysteries at which he officiates. Like all real treasures of the mind, perception can be split into infinitely small fractions without losing its quality. The weeds in a city lot convey the same lesson as the redwoods; the farmer may see in his cow-pasture what may not be vouchsafed to the scientist adventuring in the South Seas. Perception, in short, cannot be purchased with either learned degrees or dollars; it grows at home as well as abroad, and he who has a little may use it to as good advantage as he who has much. As a search for perception, the recreational stampede is footless and unnecessary.

There is, lastly, a fifth component: the sense of husbandry. It is unknown to the outdoorsman who works for conservation with his vote rather than with his hands. It is realized only when some art of management is applied to land by some person of perception. That is to say, its enjoyment is reserved for landholders too poor to buy their sport, and land administrators with a sharp eye and an ecological mind. The tourist who buys access to his scenery misses it altogether; so also the sportsman who hires the state, or some underling, to be his gamekeeper. The Government, which essays to substitute public for private operation of recreational lands, is unwittingly giving away to its field officers a large share of what it seeks to offer its citizens. We foresters and game managers might logically pay for, instead of being paid for, our job as husbandmen of wild crops.

That a sense of husbandry exercised in the production of crops may be quite as important as the crops themselves is realized to some extent in agriculture, but not in conservation. American sportsmen hold in small esteem the intensive game-cropping of the Scottish moors and the German forests, and in some respects rightly. But they overlook entirely the sense of husbandry developed by the European landholder in the process of cropping. We have no such thing as yet. It is important. When we conclude that we must bait the farmer with subsidies to induce him to raise a forest, or with gate receipts to induce him to raise game, we are merely admitting that the pleasures of husbandry-in-the-wild are as yet unknown both to the farmer and to ourselves.

Scientists have an epigram: ontogeny repeats phylogeny. What they mean is that the development of each individual

repeats the evolutionary history of the race. This is true of mental as well as physical things. The trophy-hunter is the caveman reborn. Trophy-hunting is the prerogative of youth, racial or individual, and nothing to apologize for.

The disquieting thing in the modern picture is the trophy-hunter who never grows up, in whom the capacity for isolation, perception, and husbandry is undeveloped, or perhaps lost. He is the motorized ant who swarms the continents before learning to see his own back yard, who consumes but never creates outdoor satisfactions. For him the recreational engineer dilutes the wilderness and artificializes its trophies in the fond belief that he is rendering a public service.

The trophy-recreationist has peculiarities that contribute in subtle ways to his own undoing. To enjoy he must possess, invade, appropriate. Hence the wilderness that he cannot personally see has no value to him. Hence the universal assumption that an unused hinterland is rendering no service to society. To those devoid of imagination, a blank place on the map is a useless waste; to others, the most valuable part. (Is my share in Alaska worthless to me because I shall never go there? Do I need a road to show me the arctic prairies, the goose pastures of the Yukon, the Kodiak bear, the sheep meadows behind McKinley?)

It would appear, in short, that the rudimentary grades of outdoor recreation consume their resource-base; the higher grades, at least to a degree, create their own satisfactions with little or no attrition of land or life. It is the expansion of transport without a corresponding growth of perception that threatens us with qualitative bankruptcy of the recreational process. Recreational development is a job not of

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building roads into lovely country, but of building receptivity into the still unlovely human mind.

Wildlife in American Culture

The culture of primitive peoples is often based on wildlife. Thus the plains Indian not only ate buffalo, but buffalo largely determined his architecture, dress, language, arts, and religion.

In civilized peoples the cultural base shifts elsewhere, but the culture nevertheless retains part of its wild roots. I here discuss the value of this wild rootage.

No one can weigh or measure culture, hence I shall waste no time trying to do so. Suffice it to say that by common consent of thinking people, there are cultural values in the sports, customs, and experiences that renew contacts with wild things. I venture the opinion that these values are of three kinds.

First there is value in any experience that reminds us of our distinctive national origins and evolution, i.e. that stimulates awareness of history. Such awareness is 'nationalism' in its best sense. For lack of any other short name, I shall call this, in our case, the 'split-rail value.' For example: a boy scout has tanned a coonskin cap, and goes Daniel-Booneing in the willow thicket below the tracks. He is re-enacting American history. He is, to that extent, culturally prepared to face the dark and bloody realities of the present. Again: a farmer boy arrives in the schoolroom reeking of

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muskrat; he has tended his traps before breakfast. He is re-enacting the romance of the fur trade. Ontogeny repeats phylogeny in society as well as in the individual.

Second, there is value in any experience that reminds us of our dependency on the soil-plant-animal-man food chain, and of the fundamental organization of the biota. Civilization has so cluttered this elemental man-earth relation with gadgets and middlemen that awareness of it is growing dim. We fancy that industry supports us, forgetting what supports industry. Time was when education moved toward soil, not away from it. The nursery jingle about bringing home a rabbit skin to wrap the baby bunting in is one of many reminders in folk-lore that man once hunted to feed and clothe his family.

Third, there is value in any experience that exercises those ethical restraints collectively called 'sportsmanship.' Our tools for the pursuit of wildlife improve faster than we do, and sportsmanship is a voluntary limitation in the use of these armaments. It is aimed to augment the role of skill and shrink the role of gadgets in the pursuit of wild things.

A peculiar virtue in wildlife ethics is that the hunter ordinarily has no gallery to applaud or disapprove of his conduct. Whatever his acts, they are dictated by his own conscience, rather than by a mob of onlookers. It is difficult to exaggerate the importance of this fact.

Voluntary adherence to an ethical code elevates the self-respect of the sportsman, but it should not be forgotten that voluntary disregard of the code degenerates and depraves him. For example, a common denominator of all sporting codes is not to waste good meat. Yet it is now a demonstrable fact that Wisconsin deer-hunters, in their pursuit of a legal buck, kill and abandon in the woods at least one doe,

fawn, or spike buck for every two legal bucks taken out. In other words, approximately half the hunters shoot any deer until a legal deer is killed. The illegal carcasses are left where they fall. Such deer-hunting is not only without social value, but constitutes actual training for ethical depravity elsewhere.

It seems, then, that split-rail and man-earth experiences have zero or plus values, but that ethical experiences may have minus values as well.

This, then, defines roughly three kinds of cultural nutriment available to our outdoor roots. It does not follow that culture is fed. The extraction of value is never automatic; only a healthy culture can feed and grow. Is culture fed by our present forms of outdoor recreation?

The pioneer period gave birth to two ideas that are the essence of split-rail value in outdoor sports. One is the 'go-light' idea, the other the 'one-bullet-one-buck' idea. The pioneer went light of necessity. He shot with economy and precision because he lacked the transport, the cash, and the weapons requisite for machine-gun tactics. Let it be clear, then, that in their inception, both of these ideas were forced on us; we made a virtue of necessity.

In their later evolution, however, they became a code of sportsmanship, a self-imposed limitation on sport. On them is based a distinctively American tradition of self-reliance, hardihood, woodcraft, and marksmanship. These are intangibles, but they are not abstractions. Theodore Roosevelt was a great sportsman, not because he hung up many trophies, but because he expressed this intangible American tradition in words any schoolboy could understand. A more subtle and accurate expression is found in the early writings of Stewart Edward White. It is not far amiss to say that

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such men created cultural value by being aware of it, and by creating a pattern for its growth.

Then came the gadgeteer, otherwise known as the sporting-goods dealer. He has draped the American outdoorsman with an infinity of contraptions, all offered as aids to self-reliance, hardihood, woodcraft, or marksmanship, but too often functioning as substitutes for them. Gadgets fill the pockets, they dangle from neck and belt. The overflow fills the auto-trunk, and also the trailer. Each item of outdoor equipment grows lighter and often better, but the aggregate poundage becomes tonnage. The traffic in gadgets adds up to astronomical sums, which are soberly published as representing 'the economic value of wildlife.' But what of cultural values?

As an end-case consider the duck-hunter, sitting in a steel boat behind composition decoys. A put-put motor has brought him to the blind without exercise. Canned heat stands by to warm him in case of a chilling wind. He talks to the passing flocks on a factory caller, in what he hopes are seductive tones; home lessons from a phonograph record have taught him how. The decoys work, despite the caller; a flock circles in. It must be shot at before it circles twice, for the marsh bristles with other sportsmen, similarly accoutred, who might shoot first. He opens up at 70 yards, for his polychoke is set for infinity, and the advertisements have told him that Super-Z shells, and plenty of them, have a long reach. The flock flares. A couple of cripples scale off to die elsewhere. Is this sportsman absorbing cultural value? Or is he just feeding minks? The next blind opens up at 75 yards; how else is a fellow to get some shooting? This is duck shooting, current model. It is typical of all public grounds, and

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of many clubs. Where is the go-light idea, the one-bullet tradition?

The answer is not a simple one. Roosevelt did not disdain the modern rifle; White used freely the aluminum pot, the silk tent, dehydrated foods. Somehow they used mechanical aids, in moderation, without being used by them.

I do not pretend to know what is moderation, or where the line is between legitimate and illegitimate gadgets. It seems clear, though, that the origin of gadgets has much to do with their cultural effects. Homemade aids to sport or outdoor life often enhance, rather than destroy, the man-earth drama; he who kills a trout with his own fly has scored two coups, not one. I use many factory-made gadgets myself. Yet there must be some limit beyond which money-bought aids to sport destroy the cultural value of sport.

Not all sports have degenerated to the same extent as duck-hunting. Defenders of the American tradition still exist. Perhaps the bow-and-arrow movement and the revival of falconry mark the beginnings of a reaction. The net trend, however, is clearly toward more and more mechanization, with a corresponding shrinkage in cultural values, especially split-rail values and ethical restraints.

I have the impression that the American sportsman is puzzled; he doesn't understand what is happening to him. Bigger and better gadgets are good for industry, so why not for outdoor recreation? It has not dawned on him that outdoor recreations are essentially primitive, atavistic; that their value is a contrast-value; that excessive mechanization destroys contrasts by moving the factory to the woods or to the marsh.

The sportsman has no leaders to tell him what is wrong. The sporting press no longer represents sport; it has turned

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billboard for the gadgeteer. Wildlife administrators are too busy producing something to shoot at to worry much about the cultural value of the shooting. Because everybody from Xenophon to Teddy Roosevelt said sport has value, it is assumed that this value must be indestructible.

Among non-gunpowder sports, the impact of mechanization has had diverse effects. The modern field glass, camera, and the aluminum bird-band have certainly *not* deteriorated the cultural value of ornithology. Fishing, but for outboard motors and aluminum canoes, seems less severely mechanized than hunting. On the other hand, motorized transport has nearly destroyed the sport of wilderness travel by leaving only fly-specks of wilderness to travel in.

Fox-hunting with hounds, backwoods style, presents a dramatic instance of partial and perhaps harmless mechanized invasion. This is one of the purest of sports; it has real split-rail flavor; it has man-earth drama of the first water. The fox is deliberately left unshot, hence ethical restraint is also present. But we now follow the chase in Fords! The voice of Bugle Ann mingles with the honk of the flivver! However, no one is likely to invent a mechanical foxhound, or to screw a polychoke on the hound's nose. No one is likely to teach dog-training by phonograph, or by other painless shortcuts. I think the gadgeteer has reached the end of his tether in dogdom.

It is not quite accurate to ascribe all the ills of sport to the inventor of physical aids-to-sport. The advertiser invents ideas, and ideas are seldom as honest as physical objects, even though they may be equally useless. One such deserves special mention: the 'where-to-go' department. Knowledge of the whereabouts of good hunting or fishing is a very personal form of property. It is like rod, dog, or gun: a thing to

be loaned or given as a personal courtesy. But to hawk it in the marketplace of the sports column as an aid to circulation seems to me another matter. To hand it to all and sundry as free public 'service' seems to me distinctly another matter. Even 'conservation' departments now tell Tom, Dick, and Harry where the fish are biting, and where a flock of ducks has ventured to alight for a meal.

All of these organized promiscuities tend to depersonalize one of the essentially personal elements in outdoor sports. I do not know where the line lies between legitimate and illegitimate practice; I am convinced, though, that 'where-to-go' service has broken all bounds of reason.

If the hunting or fishing is good, the 'where-to-go' service suffices to attract the desired excess of sportsmen. But if it is no good, the advertiser must resort to more forcible means. One such is the fishing lottery, in which a few hatchery fish are tagged, and a prize is offered for the fisherman catching the winning number. This curious hybrid between the techniques of science and of the pool hall insures the overfishing of many an already exhausted lake, and brings a glow of civic pride to many a village Chamber of Commerce.

It is idle for the professional wildlife managers to consider themselves aloof from these affairs. The production engineer and the salesman belong to the same company; both are tarred with the same stick.

Wildlife managers are trying to raise game in the wild by manipulating its environment, and thus to convert hunting from exploitation to cropping. If the conversion takes place, how will it affect cultural values? It must be admitted that split-rail flavor and free-for-all exploitation are historically associated. Daniel Boone had scant patience with agricultural cropping, let alone wildlife cropping. Perhaps

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the stubborn reluctance of the 'one-gallus' sportsman to be converted to the cropping idea is an expression of his split-rail inheritance. Probably cropping is resisted because it is incompatible with one component of the split-rail tradition: free hunting.

Mechanization offers no cultural substitute for the split-rail values it destroys; at least none visible to me. Cropping or management does offer a substitute, which to me has at least equal value: wild husbandry. The experience of managing land for wildlife crops has the same value as any other form of farming; it is a reminder of the man-earth relation. Moreover ethical restraints are involved; thus managing game without resorting to predator-control calls for ethical restraint of a high order. It may be concluded, then, that game cropping shrinks one value (split-rail) but enhances both of the others.

If we regard outdoor sports as a field of conflict between an immensely vigorous process of mechanization and a wholly static tradition, then the outlook for cultural values is indeed dark. But why cannot our concept of sport grow with the same vigor as our list of gadgets? Perhaps the salvation of cultural value lies in seizing the offensive. I, for one, believe that the time is ripe. Sportsmen can determine for themselves the shape of things to come.

The last decade, for example, has disclosed a totally new form of sport, which does not destroy wildlife, which uses gadgets without being used by them, which outflanks the problem of posted land, and which greatly increases the human carrying capacity of a unit area. This sport knows no bag limit, no closed season. It needs teachers, but not wardens. It calls for a new woodcraft of the highest cultural value. The sport I refer to is wildlife research.

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Wildlife research started as a professional priestcraft. The more difficult and laborious research problems must doubtless remain in professional hands, but there are plenty of problems suitable for all grades of amateurs. In the field of mechanical invention research has long since spread to amateurs. In the biological field the sport-value of amateur research is just beginning to be realized.

Thus Margaret Morse Nice, an amateur ornithologist, studied song sparrows in her back yard. She has become a world-authority on bird behavior, and has out-thought and outworked many a professional student of social organization in birds. Charles L. Broley, a banker, banded eagles for fun. He discovered a hitherto unknown fact: that some eagles nest in the South in winter, and then go vacationing to the north woods. Norman and Stuart Criddle, wheat ranchers on the Manitoba prairies, studied the fauna and flora of their farm, and became recognized authorities on everything from local botany to wildlife cycles. Elliott S. Barker, a cowman in the New Mexico mountains, has written one of the two best books on that elusive cat: the mountain lion. Do not let anyone tell you that these people made work out of play. They simply realized that the most fun lies in seeing and studying the unknown.

Ornithology, mammalogy, and botany, as now known to most amateurs, are but kindergarden games compared with what is possible for (and open to) amateurs in these fields. One reason for this is that the whole structure of biological education (including education in wildlife) is aimed to perpetuate the professional monopoly on research. To the amateur are allotted only make-believe voyages of discovery, to verify what professional authority already knows. What the

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youth needs to be told is that a ship is a-building in his own mental dry dock, a ship with freedom of the seas.

In my opinion, the promotion of wildlife research sports is the most important job confronting the profession of wildlife management. Wildlife has still another value, now visible only to a few ecologists, but of potential importance to the whole human enterprise.

We now know that animal populations have behavior patterns of which the individual animal is unaware, but which he nevertheless helps to execute. Thus the rabbit is unaware of cycles, but he is the vehicle for cycles.

We cannot discern these behavior patterns in the individual, or in short periods of time. The most intense scrutiny of an individual rabbit tells us nothing of cycles. The cycle concept springs from a scrutiny of the mass through decades.

This raises the disquieting question: do human populations have behavior patterns of which we are unaware, but which we help to execute? Are mobs and wars, unrests and revolutions, cut of such cloth?

Many historians and philosophers persist in interpreting our mass behaviors as the collective result of individual acts of volition. The whole subject matter of diplomacy assumes that the political group has the properties of an honorable person. On the other hand, some economists see the whole of society as a plaything for processes, our knowledge of which is largely *ex post facto*.

It is reasonable to suppose that our social processes have a higher volitional content than those of the rabbit, but it is also reasonable to suppose that we, as a species, contain population behavior patterns of which nothing is known because circumstance has never evoked them. We may have others the meaning of which we have misread.

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This state of doubt about the fundamentals of human population behavior lends exceptional interest, and exceptional value, to the only available analogue: the higher animals. Errington, among others, has pointed out the cultural value of these animal analogues. For centuries this rich library of knowledge has been inaccessible to us because we did not know where or how to look for it. Ecology is now teaching us to search in animal populations for analogies to our own problems. By learning how some small part of the biota ticks, we can guess how the whole mechanism ticks. The ability to perceive these deeper meanings, and to appraise them critically, is the woodcraft of the future.

To sum up, wildlife once fed us and shaped our culture. It still yields us pleasure for leisure hours, but we try to reap that pleasure by modern machinery and thus destroy part of its value. Reaping it by modern mentality would yield not only pleasure, but wisdom as well.



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Wilderness

Wilderness is the raw material out of which man has hammered the artifact called civilization.

Wilderness was never a homogeneous raw material. It was very diverse, and the resulting artifacts are very diverse. These differences in the end-product are known as cultures. The rich diversity of the world's cultures reflects a corresponding diversity in the wilds that gave them birth.

For the first time in the history of the human species, two changes are now impending. One is the exhaustion of wilderness in the more habitable portions of the globe. The other is the world-wide hybridization of cultures through modern transport and industrialization. Neither can be prevented, and perhaps should not be, but the question arises whether, by some slight amelioration of the impending changes, certain values can be preserved that would otherwise be lost.

To the laborer in the sweat of his labor, the raw stuff on his anvil is an adversary to be conquered. So was wilderness an adversary to the pioneer.

But to the laborer in repose, able for the moment to cast a philosophical eye on his world, that same raw stuff is something to be loved and cherished, because it gives definition and meaning to his life. This is a plea for the preservation of some tag-ends of wilderness, as museum pieces, for the edification of those who may one day wish to see, feel, or study the origins of their cultural inheritance.

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The Remnants

Many of the diverse wildernesses out of which we have hammered America are already gone; hence in any practical program the unit areas to be preserved must vary greatly in size and in degree of wildness.

No living man will see again the long-grass prairie, where a sea of prairie flowers lapped at the stirrups of the pioneer. We shall do well to find a forty here and there on which the prairie plants can be kept alive as species. There were a hundred such plants, many of exceptional beauty. Most of them are quite unknown to those who have inherited their domain.

But the short-grass prairie, where Cabeza de Vaca saw the horizon under the bellies of the buffalo, is still extant in a few spots of 10,000-acre size, albeit severely chewed up by sheep, cattle, and dry-farmers. If the forty-niners are worth commemorating on the walls of state capitols, is not the scene of their mighty begira worth commemorating in several national prairie reservations?

Of the coastal prairie there is one block in Florida, and one in Texas, but oil wells, onion fields, and citrus groves are closing in, armed to the teeth with drills and bulldozers. It is last call.

No living man will see again the virgin pineries of the Lake States, or the flatwoods of the coastal plain, or the giant hardwoods; of these, samples of a few acres each will have to suffice. But there are still several blocks of maple-hemlock of thousand-acre size; there are similar blocks of Appalachian hardwoods, of southern hardwood swamp, of cypress swamp, and of Adirondack spruce. Few of these

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tag-ends are secure from prospective cuttings, and fewer still from prospective tourist roads.

One of the fastest-shrinking categories of wilderness is coastlines. Cottages and tourist roads have all but annihilated wild coasts on both oceans, and Lake Superior is now losing the last large remnant of wild shoreline on the Great Lakes. No single kind of wilderness is more intimately interwoven with history, and none nearer the point of complete disappearance.

In all of North America east of the Rockies, there is only one large area formally reserved as a wilderness: the Quetico-Superior International Park in Minnesota and Ontario. This magnificent block of canoe-country, a mosaic of lakes and rivers, lies mostly in Canada, and can be about as large as Canada chooses to make it, but its integrity is threatened by two recent developments: the growth of fishing resorts served by pontoon-equipped airplanes, and a jurisdictional dispute whether the Minnesota end of the area shall be all National Forest, or partly State Forest. The whole region is in danger of power impoundments, and this regrettable cleavage among proponents of wilderness may end in giving power the whip-hand.

In the Rocky Mountain states, a score of areas in the National Forests, varying in size from a hundred thousand to half a million acres, are withdrawn as wilderness, and closed to roads, hotels, and other inimical uses. In the National Parks the same principle is recognized, but no specific boundaries are delimited. Collectively, these federal areas are the backbone of the wilderness program, but they are not so secure as the paper record might lead one to believe. Local pressures for new tourist roads knock off a chip here and a slab there. There is perennial pressure for extension of roads

for forest-fire control, and these, by slow degrees, become public highways. Idle CCC camps presented a widespread temptation to build new and often needless roads. Lumber shortages during the war gave the impetus of military necessity to many road extensions, legitimate and otherwise. At the present moment, ski-tows and ski-hotels are being promoted in many mountain areas, often without regard to their prior designation as wilderness.

One of the most insidious invasions of wilderness is via predator control. It works thus: wolves and lions are cleaned out of a wilderness area in the interest of big-game management. The big-game herds (usually deer or elk) then increase to the point of overbrowsing the range. Hunters must then be encouraged to harvest the surplus, but modern hunters refuse to operate far from a car; hence a road must be built to provide access to the surplus game. Again and again, wilderness areas have been split by this process, but it still continues.

The Rocky Mountain system of wilderness areas covers a wide gamut of forest types, from the juniper breaks of the Southwest to the 'illimitable woods where rolls the Oregon.' It is lacking, however, in desert areas, probably because of that under-aged brand of esthetics which limits the definition of 'scenery' to lakes and pine trees.

In Canada and Alaska there are still large expanses of virgin country

Where nameless men by nameless rivers wander
and in strange valleys die strange deaths alone.

A representative series of these areas can, and should, be kept. Many are of negligible or negative value for economic use. It will be contended, of course, that no deliberate plan-

ning to this end is necessary; that adequate areas will survive anyhow. All recent history belies so comforting an assumption. Even if wild spots do survive, what of their fauna? The woodland caribou, the several races of mountain sheep, the pure form of woods buffalo, the barren ground grizzly, the freshwater seals, and the whales are even now threatened. Of what use are wild areas destitute of their distinctive faunas? The recently organized Arctic Institute has embarked on the industrialization of the Arctic wastes, with excellent chances of enough success to ruin them as wilderness. It is last call, even in the Far North.

To what extent Canada and Alaska will be able to see and grasp their opportunities is anybody's guess. Pioneers usually scoff at any effort to perpetuate pioneering.

Wilderness for Recreation

Physical combat for the means of subsistence was, for unnumbered centuries, an economic fact. When it disappeared as such, a sound instinct led us to preserve it in the form of athletic sports and games.

Physical combat between men and beasts was, in like manner, an economic fact, now preserved as hunting and fishing for sport.

Public wilderness areas are, first of all, a means of perpetuating, in sport form, the more virile and primitive skills in pioneering travel and subsistence.

Some of these skills are of generalized distribution; the details have been adapted to the American scene, but the skill is world-wide. Hunting, fishing, and foot travel by pack are examples.

Two of them, however, are as American as a hickory tree; they have been copied elsewhere, but they were developed to their full perfection only on this continent. One of these is canoe travel, and the other is travel by pack-train. Both are shrinking rapidly. Your Hudson Bay Indian now has a put-put, and your mountaineer a Ford. If I had to make a living by canoe or packhorse, I should likely do likewise, for both are grueling labor. But we who seek wilderness travel for sport are foiled when we are forced to compete with mechanized substitutes. It is footless to execute a portage to the tune of motor launches, or to turn out your bellmare in the pasture of a summer hotel. It is better to stay home.

Wilderness areas are first of all a series of sanctuaries for the primitive arts of wilderness travel, especially canoeing and packing.

I suppose some will wish to debate whether it is important to keep these primitive arts alive. I shall not debate it. Either you know it in your bones, or you are very, very old.

European hunting and fishing are largely devoid of the thing that wilderness areas might be the means of preserving in this country. Europeans do not camp, cook, or do their own work in the woods if they can avoid doing so. Work chores are delegated to beaters and servants, and a hunt carries the atmosphere of a picnic, rather than of pioneering. The test of skill is confined largely to the actual taking of game or fish.

There are those who decry wilderness sports as 'undemocratic' because the recreational carrying capacity of a wilderness is small, as compared with a golf links or a tourist camp. The basic error in such argument is that it applies the philosophy of mass-production to what is intended to coun-

teract mass-production. The value of recreation is not a matter of ciphers. Recreation is valuable in proportion to the intensity of its experiences, and to the degree to which it differs from and contrasts with workaday life. By these criteria, mechanized outings are at best a milk-and-water affair. Mechanized recreation already has seized nine-tenths of the woods and mountains; a decent respect for minorities should dedicate the other tenth to wilderness.

Wilderness for Science

The most important characteristic of an organism is that capacity for internal self-renewal known as health.

There are two organisms whose processes of self-renewal have been subjected to human interference and control. One of these is man himself (medicine and public health). The other is land (agriculture and conservation).

The effort to control the health of land has not been very successful. It is now generally understood that when soil loses fertility, or washes away faster than it forms, and when water systems exhibit abnormal floods and shortages, the land is sick.

Other derangements are known as facts, but are not yet thought of as symptoms of land sickness. The disappearance of plants and animal species without visible cause, despite efforts to protect them, and the irruption of others as pests despite efforts to control them, must, in the absence of simpler explanations, be regarded as symptoms of sickness in the land organism. Both are occurring too frequently to be dismissed as normal evolutionary events.

The status of thought on these ailments of the land is

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reflected in the fact that our treatments for them are still prevalingly local. Thus when a soil loses fertility we pour on fertilizer, or at best alter its tame flora and fauna, without considering the fact that its wild flora and fauna, which built the soil to begin with, may likewise be important to its maintenance. It was recently discovered, for example, that good tobacco crops depend, for some unknown reason, on the preconditioning of the soil by wild ragweed. It does not occur to us that such unexpected chains of dependency may have wide prevalence in nature.

When prairie dogs, ground squirrels, or mice increase to pest levels we poison them, but we do not look beyond the animal to find the cause of the irruption. We assume that animal troubles must have animal causes. The latest scientific evidence points to derangements of the *plant* community as the real seat of rodent irruptions, but few explorations of this clue are being made.

Many forest plantations are producing one-log or two-log trees on soil which originally grew three-log and four-log trees. Why? Thinking foresters know that the cause probably lies not in the tree, but in the micro-flora of the soil, and that it may take more years to restore the soil flora than it took to destroy it.

Many conservation treatments are obviously superficial. Flood-control dams have no relation to the cause of floods. Check dams and terraces do not touch the cause of erosion. Refuges and hatcheries to maintain the supply of game and fish do not explain why the supply fails to maintain itself.

In general, the trend of the evidence indicates that in land, just as in the human body, the symptoms may lie in one organ and the cause in another. The practices we now call conservation are, to a large extent, local alleviations of

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biotic pain. They are necessary, but they must not be confused with cures. The art of land doctoring is being practiced with vigor, but the science of land health is yet to be born.

A science of land health needs, first of all, a base datum of normality, a picture of how healthy land maintains itself as an organism.

We have two available norms. One is found where land physiology remains largely normal despite centuries of human occupation. I know of only one such place: northern Europe. It is not likely that we shall fail to study it.

The other and most perfect norm is wilderness. Paleontology offers abundant evidence that wilderness maintained itself for immensely long periods; that its component species were rarely lost, neither did they get out of hand; that weather and water built soil as fast or faster than it was carried away. Wilderness, then, assumes unexpected importance as a laboratory for the study of land-health.

One cannot study the physiology of Montana in the Amazon; each biotic province needs its own wilderness for comparative studies of used and unused land. It is of course too late to salvage more than a lopsided system of wilderness study areas, and most of these remnants are far too small to retain their normality in all respects. Even the National Parks, which run up to a million acres each in size, have not been large enough to retain their natural predators, or to exclude animal diseases carried by livestock. Thus the Yellowstone has lost its wolves and cougars, with the result that elk are ruining the flora, particularly on the winter range. At the same time the grizzly bear and the mountain sheep are shrinking, the latter by reason of disease.

While even the largest wilderness areas become partially

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deranged, it required only a few wild acres for J. E. Weaver to discover why the prairie flora is more drought-resistant than the agronomic flora which has supplanted it. Weaver found that the prairie species practice 'team work' underground by distributing their root-systems to cover all levels, whereas the species comprising the agronomic rotation overdraw one level and neglect another, thus building up cumulative deficits. An important agronomic principle emerged from Weaver's researches.

Again, it required only a few wild acres for TogrEDIak to discover why pines on old fields never achieve the size or wind-firmness of pines on uncleared forest soils. In the latter case, the roots follow old root channels, and thus strike deeper.

In many cases we literally do not know how good a performance to expect of healthy land unless we have a wild area for comparison with sick ones. Thus most of the early travelers in the Southwest describe the mountain rivers as originally clear, but a doubt remains, for they may, by accident, have seen them at favorable seasons. Erosion engineers had no base datum until it was discovered that exactly similar rivers in the Sierra Madre of Chihuahua, never grazed or used for fear of Indians, show at their worst a milky hue, not too cloudy for a trout fly. Moss grows to the water's edge on their banks. Most of the corresponding rivers in Arizona and New Mexico are ribbons of boulders, mossless, soil-less, and all but treeless. The preservation and study of the Sierra Madre wilderness, by an international experiment station, as a norm for the cure of sick land on both sides of the border, would be a good-neighbor enterprise well worthy of consideration.

In short all available wild areas, large or small, are likely

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to have value as norms for land science. Recreation is not their only, or even their principal, utility.

Wilderness for Wildlife

The National Parks do not suffice as a means of perpetuating the larger carnivores; witness the precarious status of the grizzly bear, and the fact that the park system is already wolfless. Neither do they suffice for mountain sheep; most sheep herds are shrinking.

The reasons for this are clear in some cases and obscure in others. The parks are certainly too small for such a far-ranging species as the wolf. Many animal species, for reasons unknown, do not seem to thrive as detached islands of population.

The most feasible way to enlarge the area available for wilderness fauna is for the wilder parts of the National Forests, which usually surround the Parks, to function as parks in respect of threatened species. That they have not so functioned is tragically illustrated in the case of the grizzly bear.

In 1909, when I first saw the West, there were grizzlies in every major mountain mass, but you could travel for months without meeting a conservation officer. Today there is some kind of conservation officer 'behind every bush,' yet as wildlife bureaus grow, our most magnificent mammal retreats steadily toward the Canadian border. Of the 6000 grizzlies officially reported as remaining in areas owned by the United States, 5000 are in Alaska. Only five states have any at all. There seems to be a tacit assumption that if grizzlies survive in Canada and Alaska, that is good enough. It is not good enough for me. The Alaskan bears are a dis-

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tinct species. Relegating grizzlies to Alaska is about like relegating happiness to heaven; one may never get there.

Saving the grizzly requires a series of large areas from which roads and livestock are excluded, or in which livestock damage is compensated. Buying out scattered livestock ranches is the only way to create such areas, but despite large authority to buy and exchange lands, the conservation bureaus have accomplished virtually nothing toward this end. The Forest Service has, I am told, established one grizzly range in Montana, but I know of a mountain range in Utah in which the Forest Service actually promoted a sheep industry, despite the fact that it harbored the sole remnant of grizzlies in that state.

Permanent grizzly ranges and permanent wilderness areas are of course two names for one problem. Enthusiasm about either requires a long view of conservation, and a historical perspective. Only those able to see the pageant of evolution can be expected to value its theater, the wilderness, or its outstanding achievement, the grizzly. But if education really educates, there will, in time, be more and more citizens who understand that relics of the old West add meaning and value to the new. Youth yet unborn will pole up the Missouri with Lewis and Clark, or climb the Sierras with James Capen Adams, and each generation in turn will ask: Where is the big white bear? It will be a sorry answer to say he went under while conservationists weren't looking.

Defenders of Wilderness

Wilderness is a resource which can shrink but not grow. Invasions can be arrested or modified in a manner to keep

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an area usable either for recreation, or for science, or for wildlife, but the creation of new wilderness in the full sense of the word is impossible.

It follows, then, that any wilderness program is a rear-guard action, through which retreats are reduced to a minimum. The Wilderness Society was organized in 1935 for the one purpose of saving the wilderness remnants in America.

It does not suffice, however, to have such a society. Unless there be wilderness-minded men scattered through all the conservation bureaus, the society may never learn of new invasions until the time for action has passed. Furthermore a militant minority of wilderness-minded citizens must be on watch throughout the nation, and available for action in a pinch.

In Europe, where wilderness has now retreated to the Carpathians and Siberia, every thinking conservationist bemoans its loss. Even in Britain, which has less room for land-luxuries than almost any other civilized country, there is a vigorous if belated movement for saving a few small spots of semi-wild land.

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

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raw wilderness gives definition and meaning to the human enterprise.



The Land Ethic

When god-like Odysseus returned from the wars in Troy, he hanged all on one rope a dozen slave-girls of his household whom he suspected of misbehavior during his absence.

This hanging involved no question of propriety. The girls were property. The disposal of property was then, as now, a matter of expediency, not of right and wrong.

Concepts of right and wrong were not lacking from Odysseus' Greece: witness the fidelity of his wife through the

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long years before at last his black-prowed galleys clove the wine-dark seas for home. The ethical structure of that day covered wives, but had not yet been extended to human chattels. During the three thousand years which have since elapsed, ethical criteria have been extended to many fields of conduct, with corresponding shrinkages in those judged by expediency only.

The Ethical Sequence

This extension of ethics, so far studied only by philosophers, is actually a process in ecological evolution. Its sequences may be described in ecological as well as in philosophical terms. An ethic, ecologically, is a limitation on freedom of action in the struggle for existence. An ethic, philosophically, is a differentiation of social from anti-social conduct. These are two definitions of one thing. The thing has its origin in the tendency of interdependent individuals or groups to evolve modes of co-operation. The ecologist calls these symbioses. Politics and economics are advanced symbioses in which the original free-for-all competition has been replaced, in part, by co-operative mechanisms with an ethical content.

The complexity of co-operative mechanisms has increased with population density, and with the efficiency of tools. It was simpler, for example, to define the anti-social uses of sticks and stones in the days of the mastodons than of bullets and billboards in the age of motors.

The first ethics dealt with the relation between individuals; the Mosaic Decalogue is an example. Later accretions dealt with the relation between the individual and

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The Golden Rule tries to integrate the individual to society; democracy to integrate social organization to the individual.

There is as yet no ethic dealing with man's relation to land and to the animals and plants which grow upon it. Land, like Odysseus' slave-girls, is still property. The land-relation is still strictly economic, entailing privileges but not obligations.

The extension of ethics to this third element in human environment is, if I read the evidence correctly, an evolutionary possibility and an ecological necessity. It is the third step in a sequence. The first two have already been taken. Individual thinkers since the days of Ezekiel and Isaiah have asserted that the despoliation of land is not only inexpedient but wrong. Society, however, has not yet affirmed their belief. I regard the present conservation movement as the embryo of such an affirmation.

An ethic may be regarded as a mode of guidance for meeting ecological situations so new or intricate, or involving such deferred reactions, that the path of social expediency is not discernible to the average individual. Animal instincts are modes of guidance for the individual in meeting such situations. Ethics are possibly a kind of community instinct in-the-making.

The Community Concept

All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in that community, but his ethics prompt him also to

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co-operate (perhaps in order that there may be a place to compete for).

The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land.

This sounds simple: do we not already sing our love for and obligation to the land of the free and the home of the brave? Yes, but just what and whom do we love? Certainly not the soil, which we are sending helter-skelter downriver. Certainly not the waters, which we assume have no function except to turn turbines, float barges, and carry off sewage. Certainly not the plants, of which we exterminate whole communities without batting an eye. Certainly not the animals, of which we have already extirpated many of the largest and most beautiful species. A land ethic of course cannot prevent the alteration, management, and use of these 'resources,' but it does affirm their right to continued existence, and, at least in spots, their continued existence in a natural state.

In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.

In human history, we have learned (I hope) that the conqueror role is eventually self-defeating. Why? Because it is implicit in such a role that the conqueror knows, *ex cathedra*, just what makes the community clock tick, and just what and who is valuable, and what and who is worthless, in community life. It always turns out that he knows neither, and this is why his conquests eventually defeat themselves.

In the biotic community, a parallel situation exists. Abra-

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ham knew exactly what the land was for: it was to drip milk and honey into Abraham's mouth. At the present moment, the assurance with which we regard this assumption is inverse to the degree of our education.

The ordinary citizen today assumes that science knows what makes the community clock tick; the scientist is equally sure that he does not. He knows that the biotic mechanism is so complex that its workings may never be fully understood.

That man is, in fact, only a member of a biotic team is shown by an ecological interpretation of history. Many historical events, hitherto explained solely in terms of human enterprise, were actually biotic interactions between people and land. The characteristics of the land determined the facts quite as potently as the characteristics of the men who lived on it.

Consider, for example, the settlement of the Mississippi valley. In the years following the Revolution, three groups were contending for its control: the native Indian, the French and English traders, and the American settlers. Historians wonder what would have happened if the English at Detroit had thrown a little more weight into the Indian side of those tipsy scales which decided the outcome of the colonial migration into the cane-lands of Kentucky. It is time now to ponder the fact that the cane-lands, when subjected to the particular mixture of forces represented by the cow, plow, fire, and axe of the pioneer, became bluegrass. What if the plant succession inherent in this dark and bloody ground had, under the impact of these forces, given us some worthless sedge, shrub, or weed? Would Boone and Kenton have held out? Would there have been any overflow into Ohio, Indiana, Illinois, and Missouri? Any Louisiana Pur-

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resourceful, and persevering. The impact of occupancy here brought no bluegrass, or other plant fitted to withstand the bumps and buffeting of hard use. This region, when grazed by livestock, reverted through a series of more and more worthless grasses, shrubs, and weeds to a condition of unstable equilibrium. Each recession of plant types bred erosion; each increment to erosion bred a further recession of plants. The result today is a progressive and mutual deterioration, not only of plants and soils, but of the animal community subsisting thereon. The early settlers did not expect this: on the *ciénegas* of New Mexico some even cut ditches to hasten it. So subtle has been its progress that few residents of the region are aware of it. It is quite invisible to the tourist who finds this wrecked landscape colorful and charming (as indeed it is, but it bears scant resemblance to what it was in 1848).

This same landscape was 'developed' once before, but with quite different results. The Pueblo Indians settled the Southwest in pre-Columbian times, but they happened *not*

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The Ecological Conscience

Conservation is a state of harmony between men and land. Despite nearly a century of propaganda, conservation still proceeds at a snail's pace; progress still consists largely of letterhead pieties and convention oratory. On the back forty we still slip two steps backward for each forward stride.

The usual answer to this dilemma is 'more conservation education.' No one will debate this, but is it certain that only the *volume* of education needs stepping up? Is something lacking in the *content* as well?

It is difficult to give a fair summary of its content in brief form, but, as I understand it, the content is substantially this: obey the law, vote right, join some organizations, and practice what conservation is profitable on your own land; the government will do the rest.

Is not this formula too easy to accomplish anything worth-while? It defines no right or wrong, assigns no obliga-

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tion, calls for no sacrifice, implies no change in the current philosophy of values. In respect of land-use, it urges only enlightened self-interest. Just how far will such education take us? An example will perhaps yield a partial answer.

By 1930 it had become clear to all except the ecologically blind that southwestern Wisconsin's topsoil was slipping seaward. In 1933 the farmers were told that if they would adopt certain remedial practices for five years, the public would donate CCC labor to install them, plus the necessary machinery and materials. The offer was widely accepted, but the practices were widely forgotten when the five-year contract period was up. The farmers continued only those practices that yielded an immediate and visible economic gain for themselves.

This led to the idea that maybe farmers would learn more quickly if they themselves wrote the rules. Accordingly the Wisconsin Legislature in 1937 passed the Soil Conservation District Law. This said to farmers, in effect: *We, the public, will furnish you free technical service and loan you specialized machinery, if you will write your own rules for land-use. Each county may write its own rules, and these will have the force of law.* Nearly all the counties promptly organized to accept the proffered help, but after a decade of operation, *no county has yet written a single rule.* There has been visible progress in such practices as strip-cropping, pasture renovation, and soil liming, but none in fencing woodlots against grazing, and none in excluding plow and cow from steep slopes. The farmers, in short, have selected those remedial practices which were profitable anyhow, and ignored those which were profitable to the community, but not clearly profitable to themselves.

When one asks why no rules have been written, one is

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told that the community is not yet ready to support them; education must precede rules. But the education actually in progress makes no mention of obligations to land over and above those dictated by self-interest. The net result is that we have more education but less soil, fewer healthy woods, and as many floods as in 1937.

The puzzling aspect of such situations is that the existence of obligations over and above self-interest is taken for granted in such rural community enterprises as the betterment of roads, schools, churches, and baseball teams. Their existence is not taken for granted, nor as yet seriously discussed, in bettering the behavior of the water that falls on the land, or in the preserving of the beauty or diversity of the farm landscape. Land-use ethics are still governed wholly by economic self-interest, just as social ethics were a century ago.

To sum up: we asked the farmer to do what he conveniently could to save his soil, and he has done just that, and only that. The farmer who clears the woods off a 75 per cent slope, turns his cows into the clearing, and dumps its rainfall, rocks, and soil into the community creek, is still (if otherwise decent) a respected member of society. If he puts lime on his fields and plants his crops on contour, he is still entitled to all the privileged and emoluments of his Soil Conservation District. The District is a beautiful piece of social machinery, but it is coughing along on two cylinders because we have been too timid, and too anxious for quick success, to tell the farmer the true magnitude of his obligations. Obligations have no meaning without conscience, and the problem we face is the extension of the social conscience from people to land.

No important change in ethics was ever accomplished

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without an internal change in our intellectual emphasis, loyalties, affections, and convictions. The proof that conservation has not yet touched these foundations of conduct lies in the fact that philosophy and religion have not yet heard of it. In our attempt to make conservation easy, we have made it trivial.

Substitutes for a Land Ethic

When the logic of history hungers for bread and we hand out a stone, we are at pains to explain how much the stone resembles bread. I now describe some of the stones which serve in lieu of a land ethic.

One basic weakness in a conservation system based wholly on economic motives is that most members of the land community have no economic value. Wildflowers and songbirds are examples. Of the 22,000 higher plants and animals native to Wisconsin, it is doubtful whether more than 5 per cent can be sold, fed, eaten, or otherwise put to economic use. Yet these creatures are members of the biotic community, and if (as I believe) its stability depends on its integrity, they are entitled to continuance.

When one of these non-economic categories is threatened, and if we happen to love it, we invent subterfuges to give it economic importance. At the beginning of the century songbirds were supposed to be disappearing. Ornithologists jumped to the rescue with some distinctly shaky evidence to the effect that insects would eat us up if birds failed to control them. The evidence had to be economic in order to be valid.

It is painful to read these circumlocutions today. We have

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no land ethic yet, but we have at least drawn nearer the point of admitting that birds should continue as a matter of biotic right, regardless of the presence or absence of economic advantage to us.



A parallel situation exists in respect of predatory mammals, raptorial birds, and fish-eating birds. Time was when biologists somewhat overworked the evidence that these creatures preserve the health of game by killing weaklings, or that they control rodents for the farmer, or that they prey only on 'worthless' species. Here again, the evidence had to be economic in order to be valid. It is only in recent years that we hear the more honest argument that predators are members of the community, and that no special interest has the right to exterminate them for the sake of a benefit, real

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or fancied, to itself. Unfortunately this enlightened view is still in the talk stage. In the field the extermination of predators goes merrily on: witness the impending erasure of the timber wolf by fiat of Congress, the Conservation Bureaus, and many state legislatures.

Some species of trees have been 'read out of the party' by economics-minded foresters because they grow too slowly, or have too low a sale value to pay as timber crops: white cedar, tamarack, cypress, beech, and hemlock are examples. In Europe, where forestry is ecologically more advanced, the non-commercial tree species are recognized as members of the native forest community, to be preserved as such, within reason. Moreover some (like beech) have been found to have a valuable function in building up soil fertility. The interdependence of the forest and its constituent tree species, ground flora, and fauna is taken for granted.

Lack of economic value is sometimes a character not only of species or groups, but of entire biotic communities: marshes, bogs, dunes, and 'deserts' are examples. Our formula in such cases is to relegate their conservation to government as refuges, monuments, or parks. The difficulty is that these communities are usually interspersed with more valuable private lands; the government cannot possibly own or control such scattered parcels. The net effect is that we have relegated some of them to ultimate extinction over large areas. If the private owner were ecologically minded, he would be proud to be the custodian of a reasonable portion of such areas, which add diversity and beauty to his farm and to his community.

In some instances, the assumed lack of profit in these 'waste' areas has proved to be wrong, but only after most

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of them had been done away with. The present scramble to refeed muskrat marshes is a case in point.

There is a clear tendency in American conservation to relegate to government all necessary jobs that private landowners fail to perform. Government ownership, operation, subsidy, or regulation is now widely prevalent in forestry, and wilderness conservation, fisheries management, park and migratory bird management, with more to come. Most of this growth in governmental conservation is proper and logical, some of it is inevitable. That I imply no disapproval of it is implicit in the fact that I have spent most of my life working for it. Nevertheless the question arises: What is the ultimate magnitude of the enterprise? Will the tax base carry its eventual ramifications? At what point will governmental conservation, like the mastodon, become handicapped by its own dimensions? The answer, if there is any, seems to be in a land ethic, or some other force which assigns more obligation to the private landowner.

Industrial landowners and users, especially lumbermen and stockmen, are inclined to wail long and loudly about the extension of government ownership and regulation to land, but (with notable exceptions) they show little disposition to develop the only visible alternative: the voluntary practice of conservation on their own lands.

When the private landowner is asked to perform some unprofitable act for the good of the community, he today assents only with outstretched palm. If the act costs him cash this is fair and proper, but when it costs only forethought, open-mindedness, or time, the issue is at least debatable. The overwhelming growth of land-use subsidies in recent years must be ascribed, in large part, to the govern-

large, too complex, or too widely dispersed to be performed by government.

An ethical obligation on the part of the private owner is the only visible remedy for these situations.

The Land Pyramid

An ethic to supplement and guide the economic relation to land presupposes the existence of some mental image of land as a biotic mechanism. We can be ethical only in relation to something we can see, feel, understand, love, or otherwise have faith in.

The image commonly employed in conservation education is 'the balance of nature.' For reasons too lengthy to detail here, this figure of speech fails to describe accurately what little we know about the land mechanism. A much truer image is the one employed in ecology: the biotic pyramid. I shall first sketch the pyramid as a symbol of land, and later develop some of its implications in terms of land-use.

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cessive layer decreases in numerical abundance. Thus, for every carnivore there are hundreds of his prey, thousands of their prey, millions of insects, uncountable plants. The pyramidal form of the system reflects this numerical progression from apex to base. Man shares an intermediate layer with the bears, raccoons, and squirrels which eat both meat and vegetables.

The lines of dependency for food and other services are called food chains. Thus soil-oak-deer-Indian is a chain that has now been largely converted to soil-corn-cow-farmer. Each species, including ourselves, is a link in many chains. The deer eats a hundred plants other than oak, and the cow a hundred plants other than corn. Both, then, are links in a hundred chains. The pyramid is a tangle of chains so complex as to seem disorderly, yet the stability of the system proves it to be a highly organized structure. Its functioning depends on the co-operation and competition of its diverse parts.

In the beginning, the pyramid of life was low and squat; the food chains short and simple. Evolution has added layer

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after layer, link after link. Man is one of thousands of accretions to the height and complexity of the pyramid. Science has given us many doubts, but it has given us at least one certainty: the trend of evolution is to elaborate and diversify the biota.

Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals. Food chains are the living channels which conduct energy upward; death and decay return it to the soil. The circuit is not closed; some energy is dissipated in decay, some is added by absorption from the air, some is stored in soils, peats, and long-lived forests; but it is a sustained circuit, like a slowly augmented revolving fund of life. There is always a net loss by downhill wash, but this is normally small and offset by the decay of rocks. It is deposited in the ocean and, in the course of geological time, raised to form new lands and new pyramids.

The velocity and character of the upward flow of energy depend on the complex structure of the plant and animal community, much as the upward flow of sap in a tree depends on its complex cellular organization. Without this complexity, normal circulation would presumably not occur. Structure means the characteristic numbers, as well as the characteristic kinds and functions, of the component species. This interdependence between the complex structure of the land and its smooth functioning as an energy unit is one of its basic attributes.

When a change occurs in one part of the circuit, many other parts must adjust themselves to it. Change does not necessarily obstruct or divert the flow of energy; evolution is a long series of self-induced changes, the net result of which has been to elaborate the flow mechanism and to

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lengthen the circuit. Evolutionary changes, however, are usually slow and local. Man's invention of tools has enabled him to make changes of unprecedented violence, rapidity, and scope.

One change is in the composition of floras and faunas. The larger predators are lopped off the apex of the pyramid; food chains, for the first time in history, become shorter rather than longer. Domesticated species from other lands are substituted for wild ones, and wild ones are moved to new habitats. In this world-wide pooling of faunas and floras, some species get out of bounds as pests and diseases, others are extinguished. Such effects are seldom intended or foreseen; they represent unpredicted and often untraceable readjustments in the structure. Agricultural science is largely a race between the emergence of new pests and the emergence of new techniques for their control.

Another change touches the flow of energy through plants and animals and its return to the soil. Fertility is the ability of soil to receive, store, and release energy. Agriculture, by overdrafts on the soil, or by too radical a substitution of domestic for native species in the superstructure, may deplete the channels of flow or deplete storage. Soils depleted of their storage, or of the organic matter which anchors it, wash away faster than they form. This is erosion.

Waters, like soil, are part of the energy circuit. Industry, by polluting waters or obstructing them with dams, may exclude the plants and animals necessary to keep energy in circulation.

Transportation brings about another basic change: the plants or animals grown in one region are now consumed and returned to the soil in another. Transportation taps the

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energy stored in rocks, and in the air, and uses it elsewhere; thus we fertilize the garden with nitrogen gleaned by the guano birds from the fishes of seas on the other side of the Equator. Thus the formerly localized and self-contained circuits are pooled on a world-wide scale.

The process of altering the pyramid for human occupation releases stored energy, and this often gives rise, during the pioneering period, to a deceptive exuberance of plant and animal life, both wild and tame. These releases of biotic capital tend to becloud or postpone the penalties of violence.

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This thumbnail sketch of land as an energy circuit conveys three basic ideas:

- (1) That land is not merely soil.
- (2) That the native plants and animals kept the energy circuit open; others may or may not.
- (3) That man-made changes are of a different order than evolutionary changes, and have effects more comprehensive than is intended or foreseen.

These ideas, collectively, raise two basic issues: Can the land adjust itself to the new order? Can the desired alterations be accomplished with less violence?

Biotas seem to differ in their capacity to sustain violent conversion. Western Europe, for example, carries a far different pyramid than Caesar found there. Some large animals are lost; swampy forests have become meadows or plowland; many new plants and animals are introduced, some of which escape as pests; the remaining natives are greatly changed in distribution and abundance. Yet the soil is still there and, with the help of imported nutrients, still fertile; the waters flow normally; the new structure seems to func-

tion and to persist. There is no visible stoppage or derangement of the circuit.

Western Europe, then, has a resistant biota. Its inner processes are tough, elastic, resistant to strain. No matter how violent the alterations, the pyramid, so far, has developed some new *modus vivendi* which preserves its habitability for man, and for most of the other natives.

Japan seems to present another instance of radical conversion without disorganization.

Most other civilized regions, and some as yet barely touched by civilization, display various stages of disorganization, varying from initial symptoms to advanced wastage. In Asia Minor and North Africa diagnosis is confused by climatic changes, which may have been either the cause or the effect of advanced wastage. In the United States the degree of disorganization varies locally; it is worst in the Southwest, the Ozarks, and parts of the South, and least in New England and the Northwest. Better land-uses may still arrest it in the less advanced regions. In parts of Mexico, South America, South Africa, and Australia a violent and accelerating wastage is in progress, but I cannot assess the prospects.

This almost world-wide display of disorganization in the land seems to be similar to disease in an animal, except that it never culminates in complete disorganization or death. The land recovers, but at some reduced level of complexity, and with a reduced carrying capacity for people, plants, and animals. Many biotas currently regarded as 'lands of opportunity' are in fact already subsisting on exploitative agriculture, i.e. they have already exceeded their sustained carrying capacity. Most of South America is overpopulated in this sense.

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This deduction runs counter to our current philosophy, which assumes that because a small increase in density enriched human life, that an indefinite increase will enrich it indefinitely. Ecology knows of no density relationship that holds for indefinitely wide limits. All gains from density are subject to a law of diminishing returns.

Whatever may be the equation for men and land, it is improbable that we as yet know all its terms. Recent discoveries in mineral and vitamin nutrition reveal unsuspected dependencies in the up-circuit: incredibly minute quantities of certain substances determine the value of soils to plants, of plants to animals. What of the down-circuit? What of the vanishing species, the preservation of which we now regard as an esthetic luxury? They helped build the soil; in what unsuspected ways may they be essential to its maintenance? Professor Weaver proposes that we use prairie flowers to reflocculate the wasting soils of the dust bowl; who knows for what purpose cranes and condors, otters and grizzlies may some day be used?

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gards the land as soil, and its function as commodity-production; another group (B) regards the land as a biota, and its function as something broader. How much broader is admittedly in a state of doubt and confusion.

In my own field, forestry, group A is quite content to grow trees like cabbages, with cellulose as the basic forest commodity. It feels no inhibition against violence; its ideology is agronomic. Group B, on the other hand, sees forestry as fundamentally different from agronomy because it employs natural species, and manages a natural environment rather than creating an artificial one. Group B prefers natural reproduction on principle. It worries on biotic as well as economic grounds about the loss of species like chestnut, and the threatened loss of the white pines. It worries about a whole series of secondary forest functions: wildlife, recreation, watersheds, wilderness areas. To my mind, Group B feels the stirrings of an ecological conscience.

In the wildlife field, a parallel cleavage exists. For Group A the basic commodities are sport and meat; the yardsticks of production are ciphers of take in pheasants and trout.

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Artificial propagation is acceptable as a permanent as well as a temporary recourse—if its unit costs permit. Group B, on the other hand, worries about a whole series of biotic side-issues. What is the cost in predators of producing a game crop? Should we have further recourse to exotics? How can management restore the shrinking species, like prairie grouse, already hopeless as shootable game? How can management restore the threatened rarities, like trumpeter swan and whooping crane? Can management principles be extended to wildflowers? Here again it is clear to me that we have the same A-B cleavage as in forestry.

In the larger field of agriculture I am less competent to speak, but there seem to be somewhat parallel cleavages. Scientific agriculture was actively developing before ecology was born, hence a slower penetration of ecological concepts might be expected. Moreover the farmer, by the very nature of his techniques, must modify the biota more radically than the forester or the wildlife manager. Nevertheless, there are many discontents in agriculture which seem to add up to a new vision of 'biotic farming.'

Perhaps the most important of these is the new evidence that poundage or tonnage is no measure of the food-value of farm crops; the products of fertile soil may be qualitatively as well as quantitatively superior. We can bolster poundage from depleted soils by pouring on imported fertility, but we are not necessarily bolstering food-value. The possible ultimate ramifications of this idea are so immense that I must leave their exposition to abler pens.

The discontent that labels itself 'organic farming,' while bearing some of the earmarks of a cult, is nevertheless biotic in its direction, particularly in its insistence on the importance of soil flora and fauna.

The ecological fundamentals of agriculture are just as poorly known to the public as in other fields of land-use. For example, few educated people realize that the marvelous advances in technique made during recent decades are improvements in the pump, rather than the well. Acre for acre, they have barely sufficed to offset the sinking level of fertility.

In all of these cleavages, we see repeated the same basic paradoxes: man the conqueror *versus* man the biotic citizen; science the sharpener of his sword *versus* science the searchlight on his universe; land the slave and servant *versus* land the collective organism. Robinson's injunction to Tristram may well be applied, at this juncture, to *Homo sapiens* as a species in geological time:

Whether you will or not

You are a King, Tristram, for you are one

Of the time-tested few that leave the world,

When they are gone, not the same place it was.

Mark what you leave.

The Outlook

It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean something far broader than mere economic value; I mean value in the philosophical sense.

Perhaps the most serious obstacle impeding the evolution of a land ethic is the fact that our educational and economic system is headed away from, rather than toward, an intense consciousness of land. Your true modern is separated

mechanization of farming ought to cut the farmer's chains, but whether it really does is debatable.

One of the requisites for an ecological comprehension of land is an understanding of ecology, and this is by no means co-extensive with 'education'; in fact, much higher education seems deliberately to avoid ecological concepts. An understanding of ecology does not necessarily originate in courses bearing ecological labels; it is quite as likely to be labeled geography, botany, agronomy, history, or economics. This is as it should be, but whatever the label, ecological training is scarce.

The case for a land ethic would appear hopeless but for the minority which is in obvious revolt against these 'modern' trends.

The 'key-log' which must be moved to release the evolutionary process for an ethic is simply this: quit thinking about decent land-use as solely an economic problem. Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stabil-

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and faith rather than on investments of cash. As a land-user thinketh, so is he.

I have purposely presented the land ethic as a product of social evolution because nothing so important as an ethic is ever 'written.' Only the most superficial student of history supposes that Moses 'wrote' the Decalogue; it evolved in the minds of a thinking community, and Moses wrote a tentative summary of it for a 'seminar.' I say tentative because evolution never stops.

The evolution of a land ethic is an intellectual as well as emotional process. Conservation is paved with good intentions which prove to be futile, or even dangerous, because they are devoid of critical understanding either of the land, or of economic land-use. I think it is a truism that as the ethical frontier advances from the individual to the community, its intellectual content increases.

The mechanism of operation is the same for any ethic: social approbation for right actions: social disapproval for wrong actions.

By and large, our present problem is one of attitudes and

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implements. We are remodeling the Alhambra with a steam-shovel, and we are proud of our yardage. We shall hardly relinquish the shovel, which after all has many good points, but we are in need of gentler and more objective criteria for its successful use.

About the Author

Aldo Leopold was born in Burlington, Iowa, on January 11, 1887. As a boy, he developed a lively interest in field ornithology and natural history, and after schooling in Burlington, at Lawrenceville Prep in New Jersey, and the Sheffield Scientific School at Yale, he enrolled in the Yale forestry school, the first graduate school of forestry in the United States. Graduating with a masters in 1909, he joined the U.S. Forest Service, by 1912 was supervisor of the million-acre Carson National Forest, and in 1924 accepted the position of Associate Director of the U.S. Forest Products Laboratory in Madison, Wisconsin, the principal research institution of the Forest Service at that time. In 1933 he was appointed to the newly created chair in Game Management at the University of Wisconsin, a position he held until his death.

Leopold was throughout his life at the forefront of the conservation movement—indeed, he is widely acknowledged as the father of wildlife conservation in America. Though perhaps best known for *A Sand County Almanac*, he was also an internationally respected scientist, authored the classic text *Game Management*, which is still in use today, wrote over 350 articles, mostly on scientific and policy matters,

Howard Zahniser and the Fight for the Wilderness

Mechanized recreation already has seized nine-tenths of the woods and mountains; a decent respect for minorities should dedicate the other tenth to wilderness.

—ALDO LEOPOLD

We simply need that wild country available to us, even if we never do more than drive to its edge and look in. For it can be a means of measuring ourselves and our sanity as creatures, a part of the geography of hope.

—WALLACE STEGNER

The Sound of Mountain Water (1961)

WHEN BOTH houses of Congress cast overwhelming votes for a wilderness bill in 1964 it was a triumph for the old generation of conservationists, for a concept nurtured by Thoreau and John Muir. This landmark law also represented a solid victory for the nascent environmental movement and its efforts to place restraints on technology and to inculcate respect for the life-sustaining processes of nature.

The campaign to persuade the American people that it was in the national interest to preserve large enclaves of wildlands was initiated thirty years earlier by an elite group of conservationists who formed the Wilderness Society. The society had its beginning in the fall of 1934 when four friends sat on a riverbank in the Great Smoky Mountains and conceived of an

organization dedicated to saving remnants of the nation's virgin lands. They were Benton MacKaye, Harvey Broome, Bernard Frank, and Robert Marshall.

Marshall, the thirty-three-year-old human dynamo who personified the Wilderness Society in its early years, was once described by Justice Benjamin Cardozo as a "radiant presence." His short life was filled with physical and intellectual adventures. Bob was a latter-day explorer whose prodigious walks into wild country ranged from Alaska's Brooks Range on the Arctic Circle to the upper Sonoran Desert at the edge of Arizona's White Mountains. When he died at thirty-nine, Bob Marshall had lived with Eskimos and written a best-selling book about their culture, had composed a volume advocating public ownership of all U.S. forestlands, and had become an advocate of civil liberties and Norman Thomas's brand of socialism.

But his great passion was conservation, and his love for wild country was revealed by his response to a skeptic who asked how many acres of wilderness the nation needed. Marshall replied: "How many Brahms symphonies do we need?"

Born into a prominent, wealthy family, Bob developed, as a youngster, a fascination with wild things on hikes into vastnesses of New York's Adirondack Forest Preserve. His restless interest in the natural world subsequently ripened into a career in forestry, and by the time he was thirty he was a national expert in the recreational use of forestlands. In 1932, Gifford Pinchot asked Marshall to help him outline a new federal forestry policy for President-elect Franklin Roosevelt, and a short time later Secretary Harold Ickes assigned him the job of managing the Interior Department's Indian forests. As an executive, Bob Marshall spent most of his time in the field, and his backcountry walks in the West showed him that machines were poised at the edge of the nation's last wildlands.

The idea that federal foresters should take action to protect enclaves of unspoiled country in the nation's publicly owned

forests was formulated two decades earlier by Arthur Carhart, the first landscape architect hired by the U.S. Forest Service. He argued that some "unmarried" lands within the National Forests should be placed in reserves as "the property of all people." Art Carhart's concept became a reality a few years later when Aldo Leopold persuaded his superiors to designate an expanse of the Mogollon Mountains in New Mexico as the nation's first semiprotected "wild" area.

But by 1934 experienced land managers like Bob Marshall and his friends knew that such regulations were, at best, tentative decisions that could be readily cancelled or modified by subsequent administrators. Moreover, they were alarmed that growing demands for scenic parkways and relentless pressures by developers who wanted access to minerals and timber would slowly shrink the nation's estate of wildlands unless the boundaries of all reserves were delineated by laws. Like Muir before him, Marshall was convinced that "legislative interference" was imperative if "the tyrannical ambitions of civilization to conquer every niche of the whole earth" were to be repelled.

In the cramped days of the Great Depression, Marshall, Leopold, and the other founders of the Wilderness Society must have sensed that they had embarked on what might be a quixotic quest. In the first years of its existence, the society sought to publicize the values of wilderness, and it functioned to a large degree as an extension of Bob Marshall's pocketbook and personality. And it was a generous bequest in his will that enabled the society to survive during the war years of the 1940's.

In 1946, six years after Marshall's untimely death, Howard Zahniser picked up the torch of Bob's crusade when he left his position in the federal government and became the paid executive of the Wilderness Society's one-man operation in Washington. Some surely regarded the bookish, low-key Zahniser as a poor choice to spearhead a national campaign for a radical reform. Zahniser was a reserved man, but he had

attributes that made him an ideal person to lead the dogged, eighteen-year effort that ensued. He had an uncommon capacity for friendship, he wrote poetry, he adored Thoreau, and he had an affinity for the Book of Job. These were traits and interests that gave Howard Zahniser the faith and patience he needed to continue his seemingly unending walks in Washington's corridors of power.

In his first years at the helm of the society, Zahniser acquired vital insights into wilderness values on hikes in the same Adirondack expanses that had earlier fired the imagination of Bob Marshall. Moreover, when he presented testimony to the New York legislature in support of the "forever wild" covenant in that state's constitution, Zahniser formulated in his mind some of the basic concepts he later incorporated into the initial wilderness bill he submitted to his friends in Congress.

There was also a fascinating overlap in the lives of Rachel Carson and Howard Clinton Zahniser. Born fifteen months apart, they grew up in small towns in the valley of Pennsylvania's Allegheny River. Each graduated from a small college. Each taught school for a season before being employed to publicize the programs of the U.S. Fish and Wildlife Service. And each ultimately left government service (Rachel after sixteen years, Zahniser after fourteen); one to write books, the other to devote the remainder of his life to a crusade for the wilderness cause. And through a final coincidence, the lives of these environmental siblings ended a few days apart in the spring of 1964. Cancer claimed Rachel Carson on April 15; Howard Zahniser succumbed to heart failure twenty-one days later.

The Wilderness Society's 1950 decision to play a dominant role in the fight against the Echo Park Dam put Howard Zahniser at the nerve center of what became the most important exercise in conservation politics in over two decades. It also furnished a forum where he could collaborate with other conservation leaders, study the behavior of individual congressmen,

and learn how to muster support for a controversial conservation proposal.

Although he admired Dave Brower's frontal attack on the Bureau of Reclamation's proposed dams, Zahniser readily recognized that it would take a different strategy to persuade Congress to pass a law that cut against the grain of the prevailing American concept of resource development. His adversaries, as he well knew, viewed his wilderness legislation as an idea advanced by elitist recreationists who wanted to "lock up" resources that would be needed by future generations.

When Zahniser drafted a wilderness bill in 1956, the 7,000-member organization he led was embarking on a long-shot political undertaking. The preservation ethic he espoused ran counter to the mainstream values of the 1950's. With the Forest Service and the National Park Service taking the stance that wilderness legislation was unnecessary, the daunting question Zahniser faced was whether the nation's smallest conservation organization could persuade the Congress of the world's most development-oriented country to pass a law declaring that the resources in tens of millions of acres of its national lands were never to be developed.

Zahniser sensed early on that a congressional struggle over wilderness legislation would reverse the normal posture of the contending parties, with his society defending its proposal against frontal attacks launched by antagonistic industry groups. This convinced him that to overcome the powerful economic arguments of the mineral, timber, and grazing interests who were arrayed against him he had to fashion pragmatic arguments that would bring outdoorsmen, editorial writers, some prominent Western senators—and perhaps even a President—to his side.

Howard Zahniser presented testimony at nine sets of public hearings over an eight-year period, and this gave him ample opportunity to develop new themes and fresh arguments to rebut

the tiresome contentions of his opponents. Zahniser evolved a cogent set of arguments about the multiple uses and services that the wilderness offered to Americans. To disarm his critics, his presentations were low-key. He pointed out that a reserve of untrammeled lands would serve as the most important watersheds for river basins, as the locale of the finest high country fishing, as incomparable refuges for wildlife, and as price-less gene-pool laboratories where future scientists could go to find solutions to medical and horticultural problems. He also devised answers to the lock-up argument that appealed to so many mining-state congressmen. This took the form of an amendment which gave presidents a statutory "key" to unlock any reserve if a specific resource was needed in a national emergency.

Howard Zahniser was the right lobbyist for the Wilderness Society because he exuded goodwill and had the perseverance to outwait and outwit his adversaries. Although he saw his wilderness bill watered down and rewritten sixty-six times, his faith never faltered. There was mutual admiration between the militant Brower and the patient, soft-spoken Zahniser. The temperaments of these two men differed, but they shared a love affair with the earth's sacred places and each gained insights through their common campaigns.

The Wilderness Society faced heavy odds when it launched its campaign for wilderness legislation in the winter of 1957. No other nation had taken such a radical step, and Colorado's prickly Wayne Aspinall (who would soon hold this legislation hostage as the autocratic chairman of the House Interior Committee) probably expressed the prevailing sentiment in the West when he characterized the original bill as "a crazy idea."

The front-line opponents of the bill were the mining and timber and grazing interests who, since Pinchot's time, had been the dominant and domineering users of National Forest lands. The Eisenhower administration was attuned to those user

groups, and the Forest Service and the Park Service, agencies that should have been all-out supporters of the wilderness ethic, took the position that such legislation was superfluous.

Howard Zahniser knew from the start that his cause would not prevail unless he was able to persuade a powerful Western senator to be its champion. But it was important to begin, and Zahniser began by recruiting a Midwesterner, Senator Hubert Humphrey of Minnesota, and a Teddy Roosevelt Republican from Pennsylvania, Representative John Saylor, to serve as co-sponsors of the first bill.

Zahniser's record as a team player put him in a strong position to revive the Echo Park coalition and to encourage the other conservation organizations to make the wilderness fight their own. The many friendships he had nurtured strengthened his ability to lead this seemingly lost-cause campaign. And Zahniser had stalwart allies in Justice William O. Douglas, Joseph Wood Krutch, and Sigurd Olson, whose pro-wilderness books and essays served as background music for a steady flow of articles Howard composed to bring the wilderness gospel into the mainstream of American thought.

The first showdown came in the Senate Interior Committee during the 86th Congress in 1959. The result was a legislative dogfight that dramatized the profound disagreements among senators representing the Western states. Obdurate senators from Colorado and Wyoming first offered a meaningless substitute and followed with a dilatory "committee filibuster" of endless amendments. This stalemate sent a signal to the society that its four years of lobbying had been wasted.

Irrepressible as always, Zahniser viewed this fiasco as a learning experience, not a defeat. He had watched the machinations of his opponents with a shrewd eye, and this period's final skirmishes told him that New Mexico's Senator Clinton P. Anderson, the prospective new chairman of the Senate Interior Committee, was the leader he was looking for. Clint Anderson

was one of the Senate's best strategists in a floor fight, and, more important, he had acquired strong convictions about wilderness values thirty years earlier from an Albuquerque friend named Aldo Leopold.

The first turning point in the fight came after the 1960 election when Anderson agreed to lead the wilderness crusade and instructed his staff to prepare an "Anderson Bill" which he would introduce when the new Congress convened. The second occurred on February 13 when Chairman Anderson persuaded President Kennedy to feature an endorsement of his bill in the special conservation message he was planning to transmit to Congress. These maneuvers produced a drastic change for conservation. Now, for the first time, the wilderness alliance had the support of a President and a floor leader who knew how to muster majorities on Capitol Hill.

Once he had committed himself, it was characteristic of Clinton Anderson to pull out all the stops. Early hearings were scheduled, and by the end of July 1961 he had marshalled the votes needed to report his bill. The conservation coalition responded, and by midsummer mail to members of Congress was running sixty-six to one in favor of the Anderson bill.

Detained in Albuquerque by surgery, Anderson persuaded Frank Church of Idaho, a first-term senator from a state whose user industries were violently opposed to any "lockup" of undeveloped lands, to serve as the floor manager of his legislation. Church relished this adventure in high-risk politics, fought off crippling amendments, and listened, amazed, as his colleagues voted for the Wilderness Act by a seventy-eight to eight majority.

But euphoria was premature. Though samplings of sentiment indicated that if the members of the House of Representatives were allowed to vote, they would vote overwhelmingly for the Senate bill, the Chairman of the House Interior Committee, Wayne Aspinall, personally prepared a blockade to prevent a

vote on the Anderson bill. It would take three years of wrangling—and John Kennedy and Howard Zahniser would both be dead—before the wily Colorado congressman would relent and permit the House to work its will on this pioneering legislation.

The autocratic Aspinall, who had all of the good and bad traits of an industrious hedgehog, was Howard Zahniser's nemesis for five full years, from 1959 to 1964. A masterful manipulator, he was one of the last of this century's chairmen to run his committee as though his vote was the only one that counted. Moreover, he was contemptuous of the lawmaking skills of most senators; he resented intrusions on "his prerogatives" by the executive branch. He kept the members of his committee in line by constantly reminding them that he was in control and would personally decide the fate of every bill that was referred to his committee.

Aspinall's hedgehog qualities came into play any time "unreasonable outsiders" criticized his slow pace or intimidated he was obstructing action on important legislation. He would roll himself into a self-righteous ball, flourish his spines, and complain that lazy senators saddled him with their detail work. Then, as he retreated into his burrow, he would make a mental note to shelve the legislation favored by members of Congress who had the temerity to criticize him.

Although Wayne Aspinall tried Zahnise's patience in a hundred different ways—and spent five years thwarting his hopes—like Job, Zahniser never responded with rancor. This demonstration of brotherly love evoked such amazement that when Zahniser's death helped bring his remarkable tableau to its denouement, some of us wondered whether a catharsis of shame prompted Aspinall to relent and allow the Wilderness Bill to come to a vote in the House. In any event, the legislative stalemate was finally broken in the summer of 1964 when, in a moment of mutual exhaustion, Anderson and Aspinall struck

a deal that allowed a watered-down wilderness law to be sent to the President.

Those who remember Zahnise's ministry in Washington will never forget his playful mind nor his rich and generous spirit. When the long-precarious condition of his health was revealed at his death, one sensed that the love of life he wore on his sleeve was embedded in an awareness that he was living each day on borrowed time.

No one viewed it in that light at the time, but the 1964 Anderson-Aspinall compromise was, in truth, a political wager. The concession the Colorado chairman demanded and got was an amendment that no lands could be added to the newly created Wilderness System unless both branches of Congress voted for such additions. Representative Aspinall was betting that this provision—and the twenty-year procedural steepleschase it erected—would sap the strength of the wilderness movement and give the congressional delegation from each Western state a veto over any future expansion of wild areas in their state.

A weary Senator Anderson had a contrary hunch that if his bill became law, wilderness activism was here to stay and would flourish even in the West. Nearly a quarter of a century later, history tells us that Clinton Anderson not only won his wager, but that the idea he and his colleagues championed struck a note of restraint that gave credence to one of the newborn causes of ecology.

3. Understanding The Wilderness Act

This chapter presents a section-by-section interpretation of the Wilderness Act, with the aim of increasing the reader's understanding of what the act accomplishes and what Congress intended. Note that whenever the Wilderness Act refers to the Secretary of Agriculture, the provisions apply to national forest lands; when the Secretary of the Interior is mentioned, the provisions apply to national park system units, national wildlife refuges, and Bureau of Land Management (BLM) areas. The term "appropriate Secretary" applies to either the Secretary of Agriculture or the Secretary of the Interior.

It is also important to note that while the Wilderness Act makes several references to the Secretary of Agriculture, Section 603(c) of the Federal Land Policy Management Act of 1976, regarding Bureau of Land Management wilderness reviews, states that "once an area has been designated for preservation as wilderness, the provisions of the Wilderness Act which apply to national forest wilderness areas shall apply with respect to the

administration and use of such designated area...".

Interpretation of the Act

SECTION 1 states the title as the "Wilderness Act."

SECTION 2 is a statement of policy regarding wilderness. It includes the definition of wilderness and establishes the National Wilderness Preservation System.

In SECTION 2(a), Congress states that preservation of wilderness is necessary to ensure that increasing human population and human developments should not occupy or modify all areas of the country. Thus, the Wilderness Act, as federal policy, secures for the United States "an enduring resource of wilderness" and, to that end, establishes a National Wilderness Preservation System of appropriate federal lands designated by Congress as wilderness areas. The areas are to be administered for the American people "in such a

manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, [and] the preservation of their wilderness character...."

SECTION 2(b) specifies that each federal department and agency having jurisdiction over potential wilderness areas shall continue to manage those areas after they are included in the National Wilderness Preservation System.

The definition of wilderness is contained in SECTION 2(c). Wilderness is described as land where the natural community of life is untrammelled by humans, who visit but do not remain. Freedom, an essential ingredient and quality of wilderness, was beautifully captured by the crafters of the Wilderness Act in the use of the relatively obscure word "untrammelled." While often times confused with untrampled, Webster's Third New International Dictionary defines "untrammelled" as unhindered. The American Heritage Dictionary defines "untrammelled" as unshackled, allowed to run free.

For purposes of the Act, wilderness areas are undeveloped federal lands largely retaining their primeval character and influence without permanent improvements or

human habitation. They are to be managed so as to preserve natural conditions. Wilderness is further defined as an area that has primarily been affected by the forces of nature with the imprint of humans substantially unnoticeable, that offers outstanding opportunity for solitude or a primitive or unconfined type of recreation, and that may contain ecological, geological, or other features of scientific, educational, scenic, or historical values.

A wilderness area must include at least 5,000 acres or be of sufficient size to make preservation practicable. The latter qualification authorizes wilderness designation for areas less than 5,000 acres in size, such as islands or other enclaves that can be adequately protected as wilderness "in an unimpaired condition".

National Forest Lands

SECTION 3 designated certain areas on the national forests as units of the National Wilderness Preservation System. It also stated that federal lands in national forest primitive areas, the national park system, wildlife refuges, and game ranges should be considered for wilderness designation during the following ten years.

SECTION 3(a) designated as wilderness the 54 areas—

totaling 9.1 million acres—that had been administratively classified as "wilderness," "wild," and "canoe" areas on the national forests. The subsection also required the Secretary of Agriculture to make available to the public maps and descriptions of those areas and the regulations regarding their use. The Forest Service had already reviewed and identified the areas for wilderness protection, following public notice and public hearing procedures.

SECTION 3(b) addressed the 5.4 million acres in the 34 "primitive" areas in the national forests. It ordered the Secretary of Agriculture to review the areas over the following ten years to determine their suitability or non-suitability for preservation as wilderness. Following public notice, hearings, and the completion of the review, the secretary was to report his findings to the president. The president was then to make recommendations regarding each area to the Senate and the House of Representatives. The secretary completed the review of primitive areas within the ten-year period. Many of the determinations included proposed additions of contiguous national forest lands to wilderness areas designated by the Wilderness Act. Presidential recommendations regarding those lands have been made.

Each presidential recommendation was subject to approval by Congress. The primitive areas were to be protected as wilderness under the existing regulations of the Forest Service and the Secretary of Agriculture until Congress acted on a presidential recommendation. Congress has made decisions on nearly all of the primitive area recommendations, designating millions of acres of wilderness in addition to the 9.1 million acres established by the Wilderness Act.

Congress has added other national forest lands to the National Wilderness Preservation System—lands that in fact, if not through primitive area classification, met the requirements for wilderness designation. Nothing in the Wilderness Act prevents the Secretary of Agriculture from considering such *de facto* wilderness areas for preservation, and a number of reviews of *de facto* wilderness have taken place. The first was the system-wide Roadless Area Review and Evaluation (RARE), which occurred between 1971 and 1973, and which was successfully challenged in court as inadequate (*Sierra Club v. Buttz*). In the mid-1970s, the Forest Service began a separate review of each area studied during RARE as part of agency's planning process for all national forests. (See Chapter 4 for laws and regulations governing

wilderness review in the forest planning process.)

In 1977, the Carter administration ordered a second system-wide review called RARE II. Completed in 1979, RARE II was an accelerated study of 62 million acres of roadless areas for potential wilderness designation. Congress responded to the RARE II recommendations, and to a 1982 federal court of appeals decision that RARE II was also inadequate (*California v. Block*), with state-by-state

legislation for numerous states. Besides designating new wilderness areas, the RARE II bills prohibited the Forest Service from conducting additional state-wide wilderness reviews and directed the agency to review the wilderness option when revising individual national forest management plans.

Today, wilderness advocates continue to press for the inclusion of deserving national forest lands in the National Wilderness Preservation System. The Forest Service has begun to conduct new wilderness reviews during the forest plan revision process for each national forest. The RARE and RARE II experiences indicate a need for vigorous public participation in the planning process to ensure that agency reviews are conducted carefully and that subsequent recommendations are adequate.



Uses of Wilderness Areas

SECTION 4 authorizes uses of wilderness areas. References to national forest wilderness areas should be understood to include Bureau of Land Management wilderness areas as well.

SECTION 4(a) declares, with specific legislative references, that the Wilderness Act shall be supplemental to the purposes for which the national forests, parks, and refuges have been established. The primary management goal for wilderness, then, is the preservation of the wilderness character.

Other permitted uses of the federal land from which the wilderness area was withdrawn may continue if they do not interfere with the preservation of wilderness character. For example, road building and timber cutting that may be allowed in national forests are not permitted in a national forest wilderness; hunting, fishing, and other types of non-motorized recreation, however, may continue as in other portions of the national forest.

An important provision in SECTION 4(b) states: "Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer

National Park and Wildlife Refuge Lands

In SECTION 3(c), Congress provided for wilderness review of national park and national wildlife refuge areas, following a course similar to that for national forest primitive areas.

Over a ten-year period, the Secretary of the Interior was to review roadless portions—5,000 or more contiguous acres in size—of the parks, monuments, and other park system units. Similarly, he was to review any such areas plus all roadless islands in the wildlife refuges, big-game refuges, wildlife ranges, and game ranges. The reviews were to be done in three stages with about one-third of each system accomplished in each stage. Following the reviews, the secretary was to report to the president on the suitability or non-suitability of the areas for

preservation as wilderness. The agencies generally completed the reviews within the ten-year period, with some exceptions, such as Alaska.

The president was then to forward recommendations for wilderness to the House and the Senate. Congress has yet to act on some of the presidential recommendations for parks, refuges, and game ranges.

In 2000, U.S. Fish and Wildlife Service Director Jamie Clark directed all refuge managers to reinventor the National Wildlife Refuge System to identify their suitability for designation as wilderness. The studies will be completed as part of comprehensive conservation plans required for each refuge by the 1997 National Wildlife Refuge System Improvement Act. (See Chapters 6 and 7 for more on wilderness review of such units since 1964.)

...for such other purposes for which it may have been established as also to preserve its wilderness character." Thus, except for specified provisions in the legislation, wilderness areas are to be devoted to recreational, scenic, scientific, educational, conservation, and historical uses. SECTION 4(c) prohibits certain uses (unless specifically provided elsewhere in the act) that are inconsistent with wilderness preservation. With the exception of the minimum actions needed for administrative duties and emergency health and safety procedures, the act prohibits temporary roads, motor vehicle use, motorized equipment or motorboats, landing of aircraft, mechanical transport, structures, and installations.

SECTION 4(d) permits certain non-conforming wilderness uses. Under 4(d)(1), aircraft and motorboat use may continue where established prior to an area's designation as wilderness, and measures to control fire, insects, and disease may be taken subject to conditions that the Secretary of Agriculture finds desirable.

SECTION 4(d)(2) allows prospecting and gathering of information on minerals in national forest (and BLM) wilderness in a manner compatible with the preservation of the wilderness environment. The Secretary of

the Interior (whose department includes the Bureau of Mines and the U.S. Geological Survey) is directed to develop and conduct, in consultation with the Secretary of Agriculture, recurring surveys by the Bureau of Mines and the Geological Survey to determine the mineral values present in national forest (and BLM) wilderness areas and to make the results available and submit them to the president and Congress. The Wilderness Act requires that such surveys shall be conducted in a manner "consistent with the concept of wilderness preservation."

SECTION 4(d)(3) sanctioned the staking of mining claims and the operation of mineral laws in national forest wilderness areas until January 1, 1984, although Congress later blocked leasing of minerals in wilderness areas during 1982 and 1983. Wilderness areas are now closed to all new mineral leasing and mining claims. Only valid claims to hardrock minerals may be worked after January 1, 1984.

For a claim to be considered valid, it must have been properly located, recorded, and maintained and must have contained a discovery of a valuable, locatable mineral deposit within its boundaries prior to the deadline of midnight, December 31, 1983. The Forest Service and the BLM have no authority to approve mining operation plans unless a valu-

able deposit was discovered before the deadline.

Mineral development frequently defaces the landscape; requires destructive access methods; causes air, water, and noise pollution; and damages fish, wildlife, recreation, and watershed resources. Congress and the courts have recognized that activities associated with mineral development are incompatible with the concept of wilderness. It is the policy of The Wilderness Society that these activities, where allowed by law on valid claims, should be strictly limited in their impacts and that the federal government should acquire mining claims within wilderness when necessary to protect surface values.

Where mining activity is allowed on valid claims, the Wilderness Act requires restoration of land surfaces disturbed by mining activities. It also specifies that mining locations within the boundaries of wilderness areas shall be used solely for mining or processing operations and reasonably related uses. The Secretary of Agriculture is given authority to develop regulations governing ingress and egress consistent with the use for mineral location, development, and exploration. Patents issued under mining laws must reserve to the federal government all title "in or to the surface of the land and

products thereon." Any use of the surface of a claim or its resources that is not reasonably required for carrying out mining or prospecting is prohibited, unless otherwise provided by the Act.

Other provisions in SECTION 4 permit the president to allow the construction of reservoirs, transmission lines, or other facilities within wilderness areas on national forests, but only if such activity is deemed to be more in the public interest than the preservation of wilderness; to authorize the continuation of grazing within national forest wilderness where it is an established practice; to prohibit any commercial activity with the exception of outfitter and guide services; to recognize state water laws and their application to lands affected by the Act; and to provide for hunting and fishing on national forest wilderness areas under state regulations.

State and Private Lands within Wilderness

SECTION 5 provides that where state or private lands—called inholdings—exist in national forest wilderness areas, the state or private owner shall be afforded access or shall be given federal lands of equal value in exchange. Private owners of lands and

holders of valid mining claims within national forest (and BLM) wilderness areas are assured access under 'reasonable regulations' of the Secretary of Agriculture (or Interior) that are "consistent with the preservation of the areas as wilderness' and by means "which have been or are being customarily enjoyed with respect to other such areas similarly situated."

The Secretary of Agriculture (or Interior) is authorized to acquire private inholdings within national forest and BLM wilderness areas, if the owner concurs in such acquisition or the acquisition is authorized by Congress.

Gifts and Bequests

SECTION 6 authorizes the Secretary of Agriculture (or Interior) to accept gifts of bequests of land within designated wilderness areas. It also permits the Secretary to accept gifts of bequests of land adjacent to wilderness areas if a 60-day advance notice is given to Congress. Such land is added to the affected

wilderness areas.

The Secretary of Agriculture and the Secretary of the Interior are authorized to accept private contributions and gifts to be used to further the purposes of the Wilderness Act.

Annual Reports

In SECTION 7, the Secretaries of Agriculture and Interior are required to submit joint annual reports to the president for transmission to Congress. The reports are to contain information about the status of the National Wilderness Preservation System, with descriptions of areas, regulations in effect, and other pertinent data, together with any recommendations they wish to make. The reports are available from the Office of the Secretary, United States Department of the Interior, Washington, D.C. 20240.



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5. National Forest Wilderness



Of the four federal land systems, national forests have the longest wilderness tradition. The Wilderness Act of 1964 designated 9.1 million acres of wilderness—all of it within the National Forest System. Since then, Congress has designated an additional 25.6 million acres of national forest wilderness. Today the total stands at 34.7 million acres in 37 states.

Not surprisingly, the Forest Service has the most highly developed and visible wilderness management program within the four land management agencies. The Forest Service has the most experience, a long-standing commitment to wilderness training, and the most people allocated to wilderness management. Along with the BLM, the Forest Service also has a discrete budget line item for wilderness management. The agency also spearheaded

the formation of the Arthur Carhart Wilderness Training Center and the Aldo Leopold Wilderness Research Institute, both in Montana.

The task of designating wilderness on the national forests is far from over. It will continue to be played out as part of the legislative process, as well as the ongoing forest planning process established by the National Forest Management Act of 1976 (NFMA). Regulations were promulgated under NFMA to guide the review of roadless areas for wilderness designation in the forest planning process. The regulations in effect as of June 2000 are excerpted below. These regulations may be revised in the latter half of 2000. The latest version of the planning regulations (36 C.F.R. 219) can be obtained from the Forest Service website at "<http://www.fs.fed.us/forum/nepa/nfmalmpreg.htm>" or from any Forest Service office.

NFMA REGULATIONS

36 C.F.R. 219.17 Wilderness Designation

"(a) Unless otherwise provided by law, roadless areas within the National Forest System shall be evaluated and considered for recommendation as potential wilderness areas during the forest planning process, as provided in paragraphs (a)(1) and (2) of this section.

(i) Roadless areas including those previously inventoried in the second roadless area review and evaluation (RARE II), in a unit plan, or in a forest plan, which remain essentially roadless and undeveloped, and which have not yet been designated as wilderness or for nonwilderness uses by law. In addition, other essentially roadless areas may be subject to evaluation at the discretion of the Forest Supervisor.

(ii) Areas contiguous to existing wilderness, primitive areas, or administratively proposed wildernesses, regardless of which agency has jurisdiction for the wilderness or proposed wilderness;

(iii) Areas that are contiguous to roadless and undeveloped areas in other Federal ownership that have identified wilderness potential; and

(iv) Areas designated by Congress for wilderness study, administrative proposals pending before Congress, and other legislative proposals pending which have been endorsed by the President.

(2) For each area subject to evaluation under paragraph (a)(1) of this section the evaluation, and the determination of the appropriate detail and scope of evaluation, shall be developed with public participation. As a minimum, the evaluation shall include consideration of:

(i) The values of the area as wilderness;

(ii) The values foregone and effects on management of adjacent lands as a consequence of wilderness designation;

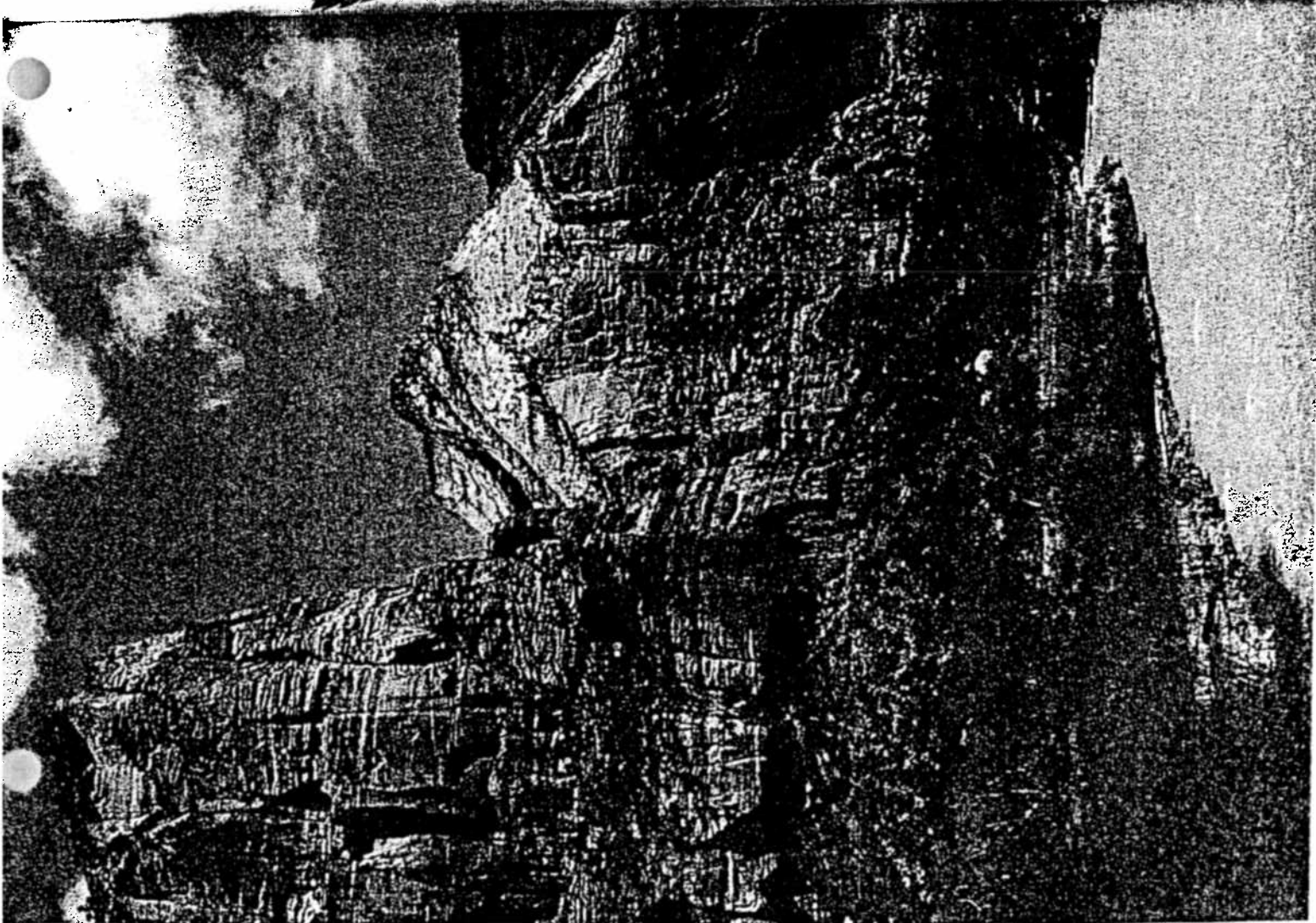
(iii) Feasibility of management as wilderness, in respect to size, nonconforming use, land ownership patterns, and existing contractual agreements or statutory rights;

(iv) Proximity to other designated wilderness and relative contribution to the National Wilderness Preservation System; and

(v) The anticipated long-term changes in plant and animal species diversity, including the diversity of natural plant and animal communities of the forest planning area and the effects of such changes on the values for which wilderness areas were created."

[For a thorough discussion of grazing in wilderness, see page 49.]

6. Bureau of Land Management Wilderness



The Bureau of Land Management is responsible for administering approximately 267 million acres of public land in 11 western states and Alaska. At the present time, of this total land base, 5.2 million acres is designated wilderness.

The Wilderness Act did not direct BLM to conduct a wilderness review on its land, in part because there was not yet legislation to settle the question of whether BLM lands would be retained in public ownership.

To get at this fundamental question, in 1976 Congress enacted the Federal Land Policy and Management Act (FLPMA), the first comprehensive "organic" law governing Bureau of Land Management lands. Section 603 of FLPMA directed the BLM to identify and inventory all the public lands having wilderness characteristics and values as defined in the Wilderness Act and to study them for possible recommendation as wilderness. Upon conclusion of the studies, the law required that reports be submitted to the president and then to

Congress for action. The inventory conducted by the BLM included 174 million acres in the contiguous 48 states. In 1980, the agency determined that 149 million acres did not qualify as potential wilderness, and this acreage was dropped from further study.

(The Alaska National Interest Lands Conservation Act left the discretion to conduct wilderness reviews with the Interior Secretary, and James Watt directed BLM not to conduct those reviews. At this writing, that order has not been rescinded, thus blocking reviews on almost 70 million acres in Alaska.)

The BLM classified approximately 27.5 million acres in 865 areas as Wilderness Study Areas (WSAs) for further consideration. FLPMA required that the studies be completed and submitted to the president by 1991. Since then, Congress has designated more than five million acres of BLM wilderness, in Arizona and the California Desert.

FLPMA also required the BLM to manage the WSAs "so as not to impair the suitability of such

areas for preservation as wilderness." This is to ensure that their wilderness values are not damaged before Congress has had an opportunity to decide whether they should be added to the National Wilderness Preservation System. While only Congress can release a WSA to development, FLPMA protects valid existing rights and certain established uses, which are allowed to continue in WSAs in a manner that minimizes impacts on wilderness values. FLPMA also stated that designated wilderness areas on BLM lands must be managed under the same principles set forth for national forest wilderness areas

in the Wilderness Act. At present, there are 17.2 million acres in WSA status. In June 2000, protected areas within the BLM received increased attention when the agency established the National Landscape Conservation System (NLCS), comprised of some of the BLM's most remarkable public land areas. This system will consist of BLM national monuments, national conservation areas, the Headwaters Forest Reserve, wilderness areas, wilderness study areas, wild and scenic rivers, and BLM-managed units of the National Trails System — both historic and scenic.

FEDERAL LAND POLICY AND MANAGEMENT ACT

Public Law 94-579 (43 U.S.C. 1701 et seq.)

94th Congress, 2nd Session

October 21, 1976

BUREAU OF LAND MANAGEMENT WILDERNESS STUDY

SECTION 603(a)

"Within fifteen years after the date of approval of this Act, the Secretary shall review those roadless areas of five thousand acres or more and roadless islands of the public lands, identified during the inventory required by section 201(a) of this Act as having wilderness characteristics described in the Wilderness Act of September 3, 1964 (78 Stat. 890; 16 U.S.C. 1131 et seq.) and shall from time to time report to the President his recommendation as to the suitability or nonsuitability of each such area or island for preservation as wilderness. Provided, That prior to any recommendations for the designation of an area as wilderness the Secretary shall cause mineral surveys to be conducted by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present in such

areas: Provided further, That the Secretary shall report to the President by July 1, 1980, his recommendations on those areas which the Secretary had prior to November 1, 1975, formally identified as natural or primitive areas. The review required by this subsection shall be conducted in accordance with the procedure specified in section 3(d) of the Wilderness Act.

(b) The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendations with respect to designation as wilderness of each such area, together with a map thereof and a definition of its boundaries. Such advice by the President shall be given within two years of the receipt of each report from the Secretary. A recommendation of the President for designation as wilderness shall become effective only if so provided by an Act of Congress.

(c) During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness, subject, however, to the continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on the date of approval of this Act: Provided, That, in managing the public lands the Secretary shall by regulation or otherwise take any action required to prevent unnecessary or undue degradation of the lands and their resources or to afford environmental protection. Unless previously withdrawn from appropriation under the mining laws, such lands shall continue to be subject to such appropriation during the period of review unless withdrawn by the Secretary under the procedures of section 204 of this Act for reasons other than preservation of their wilderness character. Once an area has been designated for preservation as wilderness, the provisions of the Wilderness Act which apply to national forest wilderness areas shall apply with respect to the administration and use of such designated area, including mineral surveys required by section 4(d)(2) of the Wilderness Act, and mineral development, access, exchange of lands, and ingress and egress for mining claimants and occupants."

[For a thorough discussion of grazing in wilderness, see page 49.]

7. National Park Wilderness

ment planning process. Furthermore, in legislation establishing new park system units, Congress frequently mandates that additional wilderness studies take place.

The Wilderness Act of 1964 significantly strengthened the protection of National Park System lands that are designated or under study for wilderness designation. The Park Service manages more than 44 million acres of wilderness—more than any other federal agency.

Indeed, wilderness is at the core of major ecosystems within the park system. Yet, historically within the National Park Service, wilderness has suffered an identity crisis.

In 1993, in recognition of this long-standing shortcoming, the director of the National Park Service established a "Wilderness Task Force" to develop recommendations on ways the Park Service could improve its wilderness stewardship and management performance. In 1994 this task force released a remarkably candid assessment of wilderness and the National

Section 2(c) of the
Wilderness Act required
the Secretary of the

Interior to review, during a ten-year period, roadless areas of 5,000 or more contiguous acres in the then-existing national parks and monuments. The department made those determinations and sent them to the president, who forwarded them to Congress. Congress has acted on some, but many still await legislation—including more than 7.1 million acres in 23 parks and monuments in the lower 48 states. The department also has studied—and made recommendations for—another 6.2 million acres in 17 parks, monuments, and national recreation areas, but the recommendations have not yet been sent to Congress by the president.

For park units established since 1964, the National Park Service has the affirmative obligation under the Organic Act, Wilderness Act, and National Environmental Protection Act to examine potential wilderness in the land-manage-

8. National Wildlife Refuge Wilderness

Park Service. The task force found that there had been no collective understanding of the relationship between the 1916 Park Service Organic Act and The Wilderness Act of 1964 and the implications this has on park management. Moreover, the task force found that institutionally, the importance of wilderness and its effect on management had not been separated from basic park management—the so-called “front-country, back-country,” syndrome.

To rectify this situation, the task force made strong recommendations on six major elements: wilderness leadership, conveying the wilderness message, investing in wilderness management training, improving wilderness planning, improving resource management, and unjamming the wilderness designation backlog.

The Park Service has made good on many of these recommendations, but still has some improvements it should make. On the positive side, the agency has established an internal National Wilderness Steering Committee and a Wilderness Policy Council, both of which

provide better leadership. An awards program has been established to recognize excellence in wilderness at the field level. The Park Service has also produced a set of Directors Orders to improve wilderness leadership, which is complemented by a set of refined wilderness policies and a Wilderness Managers Toolbox.

Finally, the agency is a full participant in the Arthur Carhart Wilderness Training Center in Huson, Montana.

Areas in which improvement is needed include training across the agency on wilderness and better staffing levels dedicated to wilderness in the Washington and regional offices. While 84 percent of all national park lands have been designated wilderness, wilderness management in the Washington office of the agency resides in a single, part-time position, and there is only one regional office with a wilderness staff position. Secondly, more than three decades after passage of the Wilderness Act, only 12 of 75 parks containing designated wilderness have approved wilderness management plans.

ingness by past administrations to recommend suitable lands, and a failure to study lands added to the Refuge System since the last wilderness reviews.

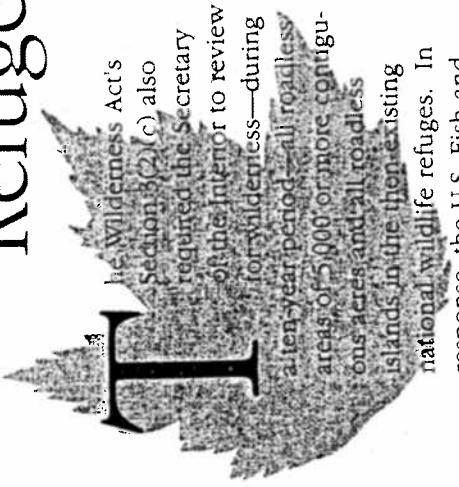
ANILCA designated nearly 19 million acres in Alaska refuges as wilderness and mandated wilderness study for 58 million acres on national wildlife refuges that were not so designated by the act. Unfortunately, these reviews were conducted during the days of Interior Secretary James Watt. The Fish and Wildlife Service completed its review in 1985, but as with the Park Service findings for park wilderness in Alaska, the Fish and Wildlife Service determinations were undermined by administration policies. While the agency found that 52 million acres qualified for wilderness designation, a mere 3.5 million acres were recommended for wilderness.

The Wilderness Act's Section 3(2)(c) also required the Secretary of the Interior to review for wilderness—during a ten-year period—all roadless areas of 5,000 or more contiguous acres and all roadless islands in the then-existing national wildlife refuges. In response, the U.S. Fish and Wildlife Service undertook and completed a study by 1974.

Congress has designated as wilderness 20.7 million acres on 66 wildlife refuges. Among these are the watery wilds of the 354,000-acre Okefenokee Refuge Wilderness in Georgia, the desert solitude of the 803,000-acre Cabeza Prieta Refuge Wilderness in Arizona, and thousands of rocks, reefs, islands, spires, and headlands covering more than 2.5 million acres of the Alaska Maritime Refuge.

Another 3.4 million acres on 10 refuges in Alaska and 2 million acres in 22 refuges outside Alaska have been recommended for wilderness, but Congress has not yet acted on those recommendations. Numerous areas that qualify for designation as wilderness have yet to be recommended. The problem is two-fold: an unwilling-

The Wilderness Society has long considered these current recommendations highly inadequate and contrary to the initial findings of the professionals at the Fish and Wildlife Service. Fortunately, under the Clinton Administration these recommendations will be



revisited as the Fish and Wildlife Service revises management plans for 16 national wildlife refuges in Alaska.

Designation of wilderness inside national wildlife refuges should help resolve some problems involving harmful uses of these areas. Under the National Wildlife Refuge Administration Act of 1966, the Secretary of the Interior may permit a number of uses (such as oil, gas, and mineral development, timber cutting, and farming) if they are determined to be "compatible" with the primary purpose of refuges: to protect fish and wildlife habitat.

In 1997, Congress passed and President Clinton signed the National Wildlife Refuge System Improvement Act, a long-overdue "organic act" for the Refuge System that clarifies the mission of the System, establishes clear standards for determining which activities to allow on refuges, and requires preparation of comprehensive conservation plans for each refuge. While The Wilderness Society hopes that this law will result in far fewer harmful commercial and recreational activities being allowed on refuges, wilderness designation precludes many of these activities outright. The result is greater protection of fish and wildlife, which otherwise may be subjected to the deleterious impacts of so-called "compatible" uses.

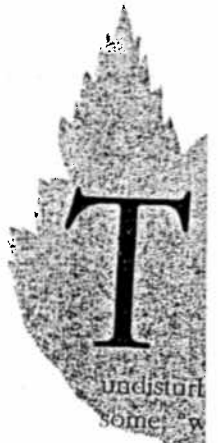
Among other provisions, the 1997 law directs the Fish and Wildlife Service to prepare

comprehensive conservation plans for each national wildlife refuge. As part of this planning process, The Wilderness Society believes that the Service should do wilderness reviews and recommend wilderness protection for those areas that qualify but have yet to be recommended.

In 2000, the U.S. Fish and Wildlife Service finalized its rules for preparing comprehensive conservation plans, which require the agency to conduct wilderness reviews as part of the plans. The agency will evaluate lands added to the Refuge System since wilderness reviews were completed in the 1960s, 70s, and 80s, and will review again those lands that were studied but which were not recommended for wilderness designation. Those areas that qualify for wilderness designation are to be recommended as part of these plans.

In addition to reinventorying the Refuge System to identify lands that qualify for wilderness designation, the Refuge System also must improve management of wilderness. On a number of refuge wilderness areas, the Fish and Wildlife Service has permitted motorized vehicles and mechanized equipment without demonstrating that these nonconforming activities are necessary to maintain the areas' wilderness character and are the minimum tool.

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Secretary Babbitt, *From Grand Staircase to Grand Canyon Parashant: Is There Monumental Future for the BLM?* available at <http://www.doi.gov/news/archives/000222b.html>. To help promote BLM's change in focus, Secretary Babbitt also established a new subagency within BLM known as the National Landscape Conservation System (NLCS). The NLCS was assigned responsibility not only for the monuments but also for the wilderness areas, wilderness study areas, national conservation areas, wild and scenic rivers, and national scenic and historic trails within BLM's jurisdiction. Secretary Babbitt hoped that the NLCS would give the Bureau a conservation mission distinct from the other land protection agencies such as the National Park Service. Does public choice theory suggest anything about whether these changes are likely to make BLM more preservation-minded? What are the potential benefits and risks of assigning the BLM to manage national monuments? For more information about the National Landscape Conservation System, including a map of the units in the system, see <http://www.blm.gov/nlcs>.

V. WILDERNESS

National parks and national monuments are both federal efforts to preserve wild nature from man's use and exploitation. And in casual conversation one can often hear such areas described as "wilderness," generally meaning an area that has seen little or no human development. There is nothing particularly wrong with calling a national park or a national monument "wilderness" because the meaning of the word is so often in the eye of the beholder. But in natural resources law, the word "wilderness" has a more particular definition. It is a legal term of art referring to those areas designated as wilderness by Congress and thereafter managed pursuant to the Wilderness Act of 1964, PUB. L. No. 88-577, 78 Stat. 890, 16 U.S.C. § 1131, et seq. Thus, a national park or monument may contain wilderness within its boundaries, but the park itself is not wilderness. The same is true for the "wilderness areas" on lands managed by the Bureau of Land Management, the Fish and Wildlife Service, and the Forest Service. Wilderness areas are managed on more protective terms than other federal lands. The sections of the chapter that follow briefly recount the evolution of the wilderness idea, the history of the Wilderness Act of 1964, its primary provisions, and the current debate over expansion of the wilderness system.

A. THE EVOLUTION OF THE WILDERNESS IDEA

From the perspective of preservationists such as John Muir, the creation of national parks, monuments and wildlife refuges was a triumph, but only an incomplete one. As roads, lookout points, developed campgrounds, lodges, and various concessions sprouted in the parks, monuments and refuges, and as the national forests became covered with logging roads and mining claims, preservationists began to argue that additional protec-

tive measures were necessary. Some land should be left in a wild state, roadless and undeveloped. In 1919, Arthur Carhart, a young Forest Service employee, was assigned to submit plans for a road and vacation home beside Trappers Lake, Colorado, in the White River National Forest. Upon surveying the area, however, Carhart recommended that the best use of the lake was for wilderness recreation. Going further, he recommended that the Forest Service manage more areas of spectacular wild scenery as wilderness. The next year Trappers Lake became the first area purposefully designated as roadless and off limits to development. About the same time Aldo Leopold, who was then a Forest Service employee in New Mexico, was developing a more broad-ranging conception of wilderness. Writing in the *Journal of Forestry* in 1921, Leopold attempted to give content to the notion of "wilderness," defining it as a "continuous stretch of country preserved in its natural state, open to lawful hunting and fishing, big enough to absorb a two weeks' pack trip, and kept devoid of roads, artificial trails, cottages, or other works of man." RODERICK NASH, *WILDERNESS IN THE AMERICAN MIND* 186 (1967). Leopold's vision bore fruit in 1924 when the Forest Service designated 574,000 acres of the Gila National Forest as "wilderness area" to be devoted primarily to wilderness recreation. In 1926, additional roadless areas were set aside in the Superior National Forest in Northern Minnesota and in 1929, the Forest Service issued regulations providing that certain areas within the national forests could be designated as "primitive areas," although the primitive areas still allowed some mining, grazing, and logging. Revised in 1939, the so-called U-Regulations prohibited roads, motorized vehicles, and timber cutting in these primitive areas and provided for the designation of additional wilderness areas like that in the Gila National Forest. See Michael McCloskey, *The Wilderness Act of 1964: Its Background and Meaning*, 45 *OR. L. REV.* 288, 296 (1966).

The U-Regulations were a product of a period of significant wilderness ferment. The Wilderness Society had been formed in 1935 and proved to be a persuasive advocate for the wilderness idea. The Society's founder, Robert Marshall, was a Ph.D. plant pathologist and an avid wilderness backpacker (The stories of Marshall's backpacking prowess are legendary. In the early 1930s he spent thirteen months alone in Alaska's Brooks Range exploring and collecting data on tree growth, and, according to his brother, by 1933 had done more than 200 hikes of thirty miles in a day, fifty-one forty mile hikes, and several trips up to seventy miles.) The effectiveness of The Wilderness Society was in no small part due to Marshall's ability to direct his energy and passion for the outdoors to the wilderness project. Although the push for wilderness went through a relatively quiescent period during World War II, by the 1950s, The Wilderness Society, led then by Howard Zahniser, began again to push for stronger legislative protection for roadless areas on the public lands. Legislation was necessary, he and others believed, because there were questions about whether the Forest Service really had authority to prohibit mining and other development in administratively designated wilderness and primitive areas. Zahniser's argument caught the attention of Minnesota Senator Hubert Humphrey, who encouraged Zahniser to draft a bill. Zahniser, assisted by the Sierra Club, the National Parks Association, the National Wildlife Federation and others

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prepared the first version of the Wilderness Act, which Senator Humphrey introduced in the Senate in 1956. RODERICK NASH, *WILDERNESS IN THE AMERICAN MIND* 200-26 (1967); Michael McCloskey, *The Wilderness Act of 1964: Its Background and Meaning*, 45 OR. L. REV. 288, 296-98 (1966). It took eight more years and sixty-five more versions of the bill but, in 1964, the Wilderness Act was enacted into law and the National Wilderness Preservation System was established. PUB. L. No. 88-577, 78 Stat. 890, 16 U.S.C. § 1131, et seq.

B. THE WILDERNESS ACT

The Wilderness Act stands as an important symbol of Americans' increasing preference for preservation of the public lands and, to some extent, of the idea that preservation is valuable for its own sake and not only for recreation, enjoyment, or other forms of use. The symbolic importance of the Act is evident in its declaration of congressional policy and its definition of wilderness.

16 U.S.C. § 1131. National Wilderness Preservation System

(a) In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as "wilderness areas," and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; and no Federal lands shall be designated as "wilderness areas" except as provided for in this chapter or by a subsequent Act. * * *

(c) A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Once designated, wilderness areas are managed by the federal agency that had jurisdiction over the land immediately prior to its inclusion in the system. 16 U.S.C. § 1131(b). Thus, the National Park Service, the Forest Service, the BLM, and the Fish and Wildlife Service all have management

responsibility for wilderness. The Wilderness Act describes the basic management responsibility as follows:

16 U.S.C. § 1133. Use of Wilderness Areas

(b) Except as otherwise provided in this chapter, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve the wilderness character. Except as otherwise provided in this chapter, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

(c) Except as specifically provided for in this chapter, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this chapter and, except as necessary to meet minimum requirements for the administration of the area, the purpose of this chapter (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

Having read these basic management responsibilities and the rather lyrical definition of wilderness above, one might assume that the Wilderness Act was a complete triumph for the preservation community. The truth is that in order to enact these provisions, wilderness proponents agreed to a number of compromises that increased the challenges for both designating and managing wilderness areas. Some of those compromises are detailed in the sections that follow, which divide consideration of the Wilderness Act and the wilderness debate into three basic issues: first, what public lands will be designated as part of the wilderness preservation system; second, how wilderness will be managed once it is designated; third, how areas with wilderness potential, but not yet officially designated as wilderness, should be managed.

1. DESIGNATING WILDERNESS

The Wilderness Act of 1964 designated as wilderness areas only the 3 million acres of land that had previously been set aside by the Forest Service as "wilderness," "wild," or "canoe" areas. 16 U.S.C. § 1132(a). In addition, however, the Act provided for a review, to be completed within ten years, of the wilderness potential of all the areas within the national forests that had previously been designated as "primitive areas," as well as a review of "every roadless area of five thousand contiguous acres or more in the national parks, monuments and other units of the national park system and every such area of, and every roadless island within, national wildlife refuges and game ranges." 16 U.S.C. § 1132(c). But lands were not mentioned in the Wilderness Act and their review began in 1976 with the passage of the Federal Land Policy Management Act (FLPMA) and its requirement of a wilderness review. 43 U.S.C. § 1702. Following the various reviews, the relevant Secretary was to report to the president and the president was to recommend to Congress which of the potential wilderness areas should actually be designated as wilderness.

As a result of the various reviews, Congress began expanding the system in 1968, adding four more areas within national forests and one in a national wildlife refuge. Two years later, the first National Park wilderness areas were established. The greatest expansion of the system came as a result of the 1980 Alaska National Interest Lands Conservation Act (ANILCA) which created 35 new wilderness areas in Alaska totaling more than 56 million acres. Today, the National Wilderness Preservation System contains 662 areas totaling 105.6 million acres. See The National Wilderness Preservation System, at [http://www.wilderness.net/index.cfm?fuse=NWPS](http://www.wilderness.net/index.cfm?fuse=NWPS&sec=fastFacts) & sec=fastFacts. For a clickable map identifying all of these wilderness areas including descriptions and photographs, see <http://www.wilderness.net/index.cfm?fuse=NWPS>.

This brief description of the designation process leading to the rather dramatic figure of 105.6 million acres of wilderness belies the complex and contentious process that actually produced those numbers. Although the process within national parks and wildlife refuges has not been particularly controversial because wilderness is not a dramatic departure from the existing preservation mandate for those land systems, within national forests and BLM lands, the process has been much more controversial because those lands would otherwise be available for multiple uses, which include logging, grazing, mining, and other extractive and commodity uses, as well as high intensity, motorized recreation. The controversies that have swirled around national forests and BLM lands are considered further below, but before doing so it is necessary to consider for a moment how the statutory definition of wilderness allows for such varying interpretations about what lands actually deserve the "wilderness" label.

The Wilderness Act's definition of wilderness is quite subjective. Wilderness is said to be an area "which (1) generally *appears* to have been affected *primarily* by the forces of nature, with the imprint of man's work *substantially* unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; . . . (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." 16 U.S.C. § 1132(c) (emphasis added). Even its most objective components—that a proposed wilderness area should be without permanent improvements or human habitation and should contain 5,000 roadless acres—have been subject to plenty of disagreement. The Act, for example, contains an explicit exception to the 5,000 acre requirement, allowing designation of areas that are "of sufficient size as to make practicable its preservation and use in an unimpaired condition." *Id.* And deciding what really constitutes a road or what counts as a permanent improvement has not been as straightforward as it may seem. The Forest Service, for example, has identified as wilderness, areas with fences, water troughs, small airstrips and abandoned mines; it has decided that the only roads that disqualify an area from wilderness consideration are those roads passable by standard, passenger-type vehicles; and in the eastern United States, the Forest Service, because there would otherwise be so few qualifying areas, has said that areas which contain no more than a half mile of improved road for each 1,000 acres have wilderness potential. See FOREST SERV., U.S. DEP'T OF AGRIC., FOREST SERVICE MANAGEMENT HANDBOOK (1909.12, ch. 7 (1992)). In the end, Congress is free to designate an area as

wilderness regardless of its physical characteristics, and Congress has occasionally been willing to designate areas which do not seem to fulfill the basic criteria enumerated in the Wilderness Act. Nevertheless, as a shorthand or working description, the requirements that an area be roadless, at least 5,000 acres, and without permanent improvements provide a fairly objective baseline for which areas may even be considered as wilderness. Once that baseline is established, the more subjective factors of opportunities for solitude and primitive recreation, and features of ecological, scenic or other value can be applied to the decision about wilderness quality.

a. *Wilderness in the National Forests*

Recall that the Wilderness Act required the Secretary of Agriculture to, within ten years of the Act's passage, "review, as to its suitability or nonsuitability for preservation as wilderness, each area in the national forests classified on September 3, 1964 by the Secretary of Agriculture or the Chief of the Forest Service as 'primitive' and report his findings to the President." 16 U.S.C. § 1132. The Act also specified that "[n]othing herein contained shall limit the President in proposing, as part of his recommendations to Congress, the alteration of existing boundaries of primitive areas or recommending the addition of any contiguous area of national forest lands predominantly of wilderness value." *Id.* On its face, the Forest Service's review obligations were quite modest. The Forest Service, however, voluntarily undertook a wider-ranging review, inventorying not just primitive areas (as required by the Act) and areas contiguous to those primitive areas (as allowed by the Act) but also all roadless tracts over 5,000 acres. This process, known as the Roadless Area Review and Evaluation (RARE I) found some 56 million acres of land in the national forests that could qualify as wilderness.

Although the Forest Service found 56 million acres of potential wilderness, it did not believe that it was obligated to preserve the wilderness characteristics of that entire acreage pending the president's recommendation to Congress. After all, a good portion of the acreage had been identified voluntarily. The courts, however, saw things differently. While the RARE process was ongoing, the Forest Service proposed to allow logging in an area contiguous to a primitive area. The Tenth Circuit, however, affirmed the district court's injunction against the timber harvest, reasoning that logging the area would prevent the president from proposing and Congress from designating the area as wilderness. *See Parker v. United States*, 309 F. Supp. 593 (D. Colo. 1970), *aff'd*, 448 F.2d 793 (10th Cir. 1971), *cert. denied*, 405 U.S. 989 (1972). The court reasoned that the Wilderness Act's provision that "[n]othing herein contained shall limit the president in proposing, as part of his recommendations to Congress, the alteration of existing boundaries of primitive areas or recommending the addition of any contiguous area of national forest lands predominantly of wilderness value" meant that the Forest Service could not do anything that would take away the president's discretion to designate such a contiguous area. The Forest Service primitive areas and contiguous areas were off-limits to logging until the president submitted his recommendation. With an eye on the "contiguous" language in the Act, the Forest Service had proposed a buffer

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...there would be no logging, between the primitive area and the area harvested. The court rejected this attempt to render the logging area contiguous, 448 F.2d at 796, thereby suggesting a broad interpretation of which lands were contiguous and had to be preserved pending the President's opportunity to recommend them as wilderness.

The obligation of the Forest Service to delay logging of potential wilderness was further strengthened in the next couple of years when the courts decided that any area identified as potential wilderness in the RARE process could not be logged until the Forest Service first prepared an environmental impact statement that looked at the impact of logging on the area's potential for wilderness designation. See *Wyoming Outdoor Coordinating Council v. Butz*, 484 F.2d 1244 (10th Cir. 1973); *Sierra Club v. Butz*, 3 Env'tl. L. Rep. 20071 (N.D. Cal. 1972). Logging the 56 million acres of potential wilderness identified in RARE I wasn't necessarily prohibited by these decisions, but it would certainly be more difficult.

Partly in response to the problems with the RARE I process and partly because the Carter administration was committed to more wilderness, the Forest Service in 1977 embarked upon a second wilderness review of its lands. The resulting RARE II report and its accompanying EIS, which took a somewhat more generous view of what lands had wilderness potential, identified about 62 million acres of potential wilderness. The report suggested that of those 62 million acres, 15 million be designated as wilderness, about 15 million be studied further, and that 36 million acres be made available for multiple use. Again, however, the Forest Service was blocked from logging any part of the 62 million acres. In what many in the Forest Service viewed as a case of no good deed going unpunished, in *California v. Block*, 690 F.2d 753 (9th Cir. 1982), the Ninth Circuit decided that the 36 million acres could not be released from wilderness management because the RARE II EIS had failed to adequately consider the implications of releasing the 36 million acres from wilderness consideration. The basic effect of the decision in *California v. Block* was that logging was enjoined on all 62 million acres of the RARE II inventory, an area that encompassed about one-third of the national forests. In response to the *Block* decision, the Forest Service, now operating under the Reagan administration, suggested in 1983 that it might simply drop RARE II and RARE III. Congress, however, intervened and in 1984 passed twenty statewide wilderness bills that designated wilderness and released unchose RARE II lands from wilderness management for at least one forest planning cycle. With the passage of these statewide wilderness bills, and several more in subsequent years, the small wilderness beachhead within the national forests seemingly envisioned by the Wilderness Act has grown to more than 33 million acres. See generally GEORGE CAMERON COGGINS & ROBERT L. GLICKSMAN, PUBLIC NATURAL RESOURCES LAW § 14B:9 (2003).

Wilderness on BLM Lands

Hewing to the old adage that the public lands managed by the BLM were the lands no one wanted, the Wilderness Act completely ignored BLM lands. As preservation sentiments continued to mount, Congress decided to

rectify that omission when it passed the Federal Land and Policy Management Act (FLPMA) in 1976. Section 603 of FLPMA provided that

Within fifteen years after October 21, 1976, the Secretary shall review those roadless areas of five thousand acres or more and roadless islands of public lands, identified during the inventory required by section 1711(a) of title as having wilderness characteristics described in the Wilderness Act of September 3, 1964 (78 Stat. 890; 16 U.S.C. 1131 et seq.) and shall from time to time report to the President his recommendation as to the suitability or nonsuitability of each such area or island for preservation as wilderness.

43 U.S.C. § 1782(a). Having received the recommendation from the Secretary of the Interior, the president was to make a separate recommendation to the Congress within two years with respect to what areas should be designated as wilderness. *Id.* at 1782(b). One of the linchpins of the current wilderness debate came in the next part of Section 603. There, Congress provided that the areas identified by the Secretary as potential wilderness (what are typically called "wilderness study areas" or "WSAs") were to be managed by the Secretary of the Interior, and therefore the BLM,

... until Congress has determined otherwise, ... in a manner so as not to impair the suitability of such areas for preservation as wilderness, subject, however, to the continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on October 21, 1976. Once an area has been designated for preservation as wilderness, the provisions of the Wilderness Act [16 U.S.C.A. § 1131 et seq.] which apply to national forest wilderness areas shall apply with respect to the administration and use of such designated area....

Id. § 1782(c). In basic terms, wilderness study areas are to be managed for nonimpairment of their wilderness characteristics until Congress decides to designate the WSAs as part of the wilderness preservation system or release them for multiple use management.

Like the RARE process for the national forests that preceded it, the inventory of the BLM's lands for wilderness proceeded on a state-by-state basis. By the conclusion of the initial inventory in November 1980, out of almost 174 million acres surveyed, BLM had identified 919 WSAs covering some 24 million acres. 45 Fed. Reg. 77,574 (Nov. 14, 1980). Its conclusions proved quite controversial. The focus of that controversy were disputes about whether BLM was identifying enough areas and acreage with wilderness potential. From the environmental community's perspective, the BLM was far too stingy in its views of what lands had wilderness quality. Moreover, they claimed, BLM had conveniently excluded from WSAs roadless areas that had significant mineral potential. Most of these concerns played out in administrative litigation before the Interior Board of Land Appeals (IBLA) and the BLM's inventory decisions were largely, although not entirely, upheld. One prominent dispute that did reach federal court was over Interior Secretary Watt's order not to designate as wilderness study areas any split estate lands or any roadless areas of less than 5,000 acres. A court invalidated both components of the order in *Sierra Club v. Watt*, 608 F. Supp. 305, 335-38 (E.D. Cal. 1985). Even though preservation advocates were able to fend off Secretary Watt's order which would have eliminated 1.5 million acres of potential wilderness, the inventory resulted in far less acreage in WSAs than many preservation advocates believed

isted. The gap between the two sides grew even greater when BLM recommended wilderness designation of only a percentage of the WSAs it had established. See generally Jim DiPeso & Tom Pelikan, *The Republican Divide on Wilderness Policy*, 33 GOLDEN GATE U. L. REV. 339 (2003) (accounting history of inventory process).

In the years following completion of the inventories, Congress added 7 million acres of BLM lands to the National Wilderness Preservation System, most prominently in the Arizona Desert Wilderness Act of 1990 (104 Stat. 4496), which designated 1.1 million acres, and the California Desert Protection Act of 1994 (108 Stat. 4471), which designated 3.5 million acres. However, since the Republicans' takeover of Congress in 1994, the wilderness situation on BLM lands has remained largely stalemated. In broad brush strokes, Western Republicans in whose states the wilderness study areas lie have proposed state-by-state wilderness bills that largely track the BLM's wilderness recommendations while congressional Democrats and like-minded Republicans have proposed wilderness bills that include not just the BLM's recommended wilderness, but also all WSAs and areas identified by preservation advocates as having wilderness potential that were rejected by the BLM in the inventory process. At first glance, the stalemate might seem odd—why not at least designate as wilderness those areas on which the two sides agree? One prominent source of the stalemate is disagreement about what is known as “release” language. So-called soft release language in wilderness legislation removes non-designated land from wilderness study area status but does not prohibit the area from being designated as wilderness in the future. The “hard release” language favored by some Western Republicans bars non-designated areas of the state from being considered for possible wilderness designation forever or for some fixed period of time. In essence, hard release language is designed to eliminate wilderness management from the range of multiple uses available to the BLM in its land use planning. For preservation advocates it makes little sense to compromise on release language when wilderness study areas must already be managed for non-impairment.

It was this congressional stalemate which in part prompted the Clinton administration to take the national monument route, discussed above, because the Antiquities Act allowed the President to circumvent Congress. The debate has left BLM lands with two pressing preservation issues: what are BLM's management obligations with respect to wilderness study areas; and what authority does BLM have outside of wilderness study areas to manage its lands so as to preserve their wilderness characteristics? Those issues are discussed below in section v.c..

QUESTIONS AND DISCUSSION

1. Why do you suppose that it took eight years and sixty-five bills to achieve passage of the Wilderness Act? In light of the management provisions ultimately included within the Act, what objections do you suspect may have been raised by the federal land management agencies? By public land resource users? Is the passage of the Wilderness Act compatible with public choice theory?

2. With reference to the definition of wilderness in 16 U.S.C. § 1131 quoted above, which of the following areas might be entitled to designation as wilderness:

- A remote 100,000 acre area of a national forest that was completely logged early in the twentieth century but that is now recovered with trees of roughly the same size?
- What if the same logged-over area of the National Forest had an abandoned logging road roughly bisecting it but the road was mostly overgrown with bushes and small trees?
- 4,000 roadless acres of spectacular alpine country in Glacier National Park?
- 65,000 acres of red rock desert country containing three small, abandoned uranium mines and several areas recently disturbed by zealous off-road vehicle users who abandoned the jeep trails that run adjacent to the 65,000 acre area?

3. Is "wilderness" real or is it simply a cultural construct? Recall the Cronon excerpt in Chapter 1. Cronon argues: "Far from being the one place on earth that stands apart from humanity, [wilderness] is quite profoundly a human creation—indeed, the creation of very particular human cultures at very particular moments in history." William Cronon, *The Trouble with Wilderness; or, Getting Back to the Wrong Nature, in UNCOMMON GROUND: TOWARD REINVENTING NATURE* 69, 69 (William Cronon ed., 1995). As Cronon sees it, "elite urban tourists and wealthy sportsmen projected their leisure time frontier fantasies onto the American landscape and so created wilderness in their own image." *Id.* at 471, 482. Do you agree? J. Baird Callicott has even more aggressively asserted that early wilderness thinkers imagined a fictitious pre-Columbian wilderness of a pristine, untouched nature. His view is that this concept of wilderness improperly ignores aboriginal peoples, separates all people from nature, and assumes that nature and ecosystems are static. J. Baird Callicott, *The Wilderness Idea Revisited, in THE GREAT NEW WILDERNESS DEBATE* 337 (J. Baird Callicott & Michael P. Nelson eds., 1998). Is this a fair critique of Leopold, Marshall, and others? As you read the language of the Wilderness Act does it give a warranty of pristineness?

4. An argument raised again and again by opponents of wilderness is that wilderness is elitist and caters to the young, healthy, and wealthy, and to those with enough leisure time to explore backcountry. One study found that "[b]lue-collar workers account for only 5 percent of all wilderness visits" and another found that "two thirds of wilderness users were college graduates and one-fourth of them had done graduate work." JOSEPH L. SAX, *MOUNTAINS WITHOUT HANDRAILS* 48 (1980). This elitist argument is believed somewhat by the polling which suggests widespread public support for more wilderness, even among those who may not use it. Economists' estimates of the existence and bequest value of wilderness also indicate that wilderness matters even to those who cannot use it. Nevertheless, the public perception of elitism is an issue that preservation advocates are constantly battling. Part of their response is the moral argument suggested by Professor Sax, *supra*, page 565. Consider these thoughts of Dr. Richard

The Great Alaskan Wilderness

Carving wilderness boundaries in the vastness of Alaska presented a new set of challenges. Congress responded with the Alaska National Interest Lands Conservation Act (ANILCA), which followed the definition of wilderness in the Wilderness Act while taking into account the special relationship between Alaskans and the wildlands on which they live and work.

A number of uses are permitted that are prohibited in the contiguous 48 states and

ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT (P.L. 96-487; 1980)

"Wilderness Management

Section 1315(a): Application only to Alaska. — The provisions of this section are enacted in recognition of the unique conditions in Alaska. Nothing in this section shall be construed to expand, diminish, or modify the provisions of the Wilderness Act or the application or interpretation of such provisions with respect to lands outside of Alaska.

Cabins

Section 1315(c-d): (c) Existing Cabins. — Previously existing public use cabins within wilderness designated by this Act, may be permitted to continue and may be maintained or replaced subject to such restrictions, as the Secretary deems necessary to preserve the wilderness character of the area.

(d) New Cabins. — Within wilderness areas designated by this Act, the Secretary or the Secretary of Agriculture as appropriate, is authorized to construct and maintain a limited number of new public use cabins and shelters if such cabins and shelters are necessary for the protection of the public health and safety. All such cabins or

shelters shall be constructed of materials which blend and are compatible with the immediate and surrounding wilderness landscape. The Secretary of Interior or the Secretary of Agriculture, as appropriate, shall notify the House Committee on Interior and Insular Affairs and the Senate Committee on Energy and Natural Resources of his intention to remove an existing or construct a new public use cabin or shelter. (See also Section 1303: Use of cabins on conservation system units.)

Use of aircraft, snowmobiles, and motorboats

Section 1110(a): (a) Notwithstanding any other provision of this Act or other law, the Secretary shall permit on conservation system units, national recreation areas, and national conservation areas, and those public lands designated as wilderness study, the use of snowmachines (during periods of adequate snow cover, or frozen river conditions in the case of wild and scenic rivers), motorboats, airplanes, and non-motorized surface transportation methods for traditional activities (where such activities are permitted by this Act or other law) and for travel to and from villages and homesites. Such use shall be subject to reasonable regulations by the Secretary to protect the natural and other values of the conservation system units, national recreation areas, and national conservation areas, and those public lands designated as wilderness study.

Section 811(a-b): (a) The Secretary shall ensure that rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on the public lands.

(b) Notwithstanding any other provision of this Act or other law, the Secretary shall permit on the public lands appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by local residents, subject to reasonable regulation.

Structures at hunting and fishing camps

Section 1316(a-b): (a) On all public lands where the taking of fish and wildlife is permitted in accordance

The Wilderness Society, The Wilderness Act Handbook, 4th Edition, Washington DC, 2001.

with the provisions of this Act or other applicable State and Federal law the Secretary shall permit, subject to reasonable regulation to insure compatibility, the continuance of existing uses, and the future establishment, and use, of temporary campsites, tent platforms, shelters, and other temporary facilities and equipment directly and necessarily related to such activities. Such facilities and equipment shall be constructed, used, and maintained in a manner consistent with the protection of the area in which they are located. All new facilities shall be constructed of materials which blend with, and are compatible with, the immediately surrounding landscape. Upon termination of such activities and uses (but not upon regular or seasonal cessation), such structures or facilities shall, upon written request, be removed from the area by the permittee.

(b) Notwithstanding the foregoing provisions, the Secretary may determine, after adequate notice, that the establishment and use of such new facilities or equipment would constitute a significant expansion of existing facilities or uses which would be detrimental to the purposes for which the affected conservation system unit was established, including the wilderness character of and wilderness area within such unit, and may thereupon deny such proposed use or establishment.

Access to private inholdings

Section 1110(b): (b) Notwithstanding any other provisions of this Act or other law, in any case in which State owned or privately owned land, including subsurface rights of such owners underlying public lands, or a valid mining claim or other valid occupancy is within or is effectively surrounded by one or more conservation system units, national recreation areas, national conservation areas, or those public lands designated as wilderness study, the State or private owner or occupier shall be given by the Secretary such rights as may be necessary to assure adequate and feasible access for economic and other purposes to the concerned land by such State or private owner or occupier and their successors in

Agriculture, as appropriate, by the head of the Federal department or agency undertaking such establishment, operation, or maintenance, and (2) in accordance with such terms and conditions as may be mutually agreed in order to minimize the adverse effects of such activities within such unit."

Mining Claims in Wilderness

Under Section 4(d) of the Wilderness Act, national forest wilderness areas were open to the staking of hardrock mining claims under the Mining Law of 1972 until January 1, 1984. Wilderness areas are now closed to new claims, but valid claims established before the 1984 closure may be worked at any time. As discussed earlier

at page 26, however, for a claim to be considered valid, it must contain a valuable deposit and must have been properly located, recorded and maintained.

The Forest Service requires claimants to submit notices and plans before conducting mining operations within wilderness areas. The agency's rules are excerpted below.

36 C.F.R. Section 252.15—

Operations Within National Forest Wilderness

"(a) The United States mining laws shall extend to each National Forest Wilderness for the period specified in the Wilderness Act [until midnight Dec. 31, 1983] and subsequent establishing legislation to the same extent they were applicable prior to the date the Wilderness was designated by Congress as a part of the National Wilderness Preservation System. Subject to valid existing rights, no person shall have any right or interest in or to any mineral deposits which may be discovered through prospecting or other information-gathering activity after the legal date on which the United States mining laws cease to apply to the specific Wilderness.

(b) Holders of unpatented mining claims validly established on any National Forest Wilderness prior to inclusion of such unit in the National Wilderness Preservation System shall be accorded the rights provided by the United States mining laws as then applicable to the National Forest land involved. Persons locating mining claims in any National Forest Wilderness on or after the date on which said Wilderness was included in the National Wilderness Preservation

interest. Such rights shall be subject to reasonable regulations issued by the Secretary to protect the natural and other values of such lands.

Section 1111(a-b): (a) In General—Notwithstanding any other provision of this Act or other law the Secretary shall authorize and permit temporary access by the State or a private landowner to or across any conservation system unit, national recreation area, national conservation area, the National Petroleum Reserve-Alaska, or those public lands designated as wilderness study or managed to maintain the wilderness character or potential thereof, in order to permit the State or private landowner access to its land for purposes of survey, geophysical, exploratory, or other temporary uses thereof whenever he determines such access will not result in permanent harm to the resources of such units, area, Reserve, or lands.

(b) Stipulations and Conditions—In providing temporary access pursuant to subsection (a), the Secretary may include such stipulations and conditions as he deems necessary to insure that the private use of public lands is accomplished in a manner that is not inconsistent with the purposes for which the public lands are reserved and which insures that no permanent harm will result to the resources of the unit, area, Reserve, or lands.

Aids to navigation

Section 1310(a-b): (a) Existing Facilities—Within conservation system units established or expanded by this Act, reasonable access to, and operation and maintenance of, existing air and water navigation aids, communications sites and related facilities and existing facilities for weather, climate, and fisheries research and monitoring shall be permitted in accordance with the laws and regulations applicable to units of such systems, as appropriate. Reasonable access to and operation and maintenance of facilities for national defense purposes and related air and water navigation aids within or adjacent to such areas shall continue in accordance with the laws and regulations governing such facilities notwithstanding any other provision of this Act. Nothing in the Wilderness Act shall be deemed to prohibit such access, operation and maintenance within wilderness areas designated by this Act.

(b) New Facilities—The establishment, operation, and maintenance within any conservation system unit of new air and water navigation aids and related facilities, facilities for national defense purposes, and related air and water navigation aids, and facilities for weather, climate, and fisheries research and monitoring shall be permitted but only after consultation with the Secretary or the Secretary of

System shall be accorded the rights provided by the United States mining laws as applicable to the National Forest land involved and subject to provisions specified in the establishing legislation. Persons conducting operations as defined in Section 252.3 in National Forest Wilderness shall comply with the regulations in this part. Operations shall be conducted so as to protect National Forest surface resources in accordance with the general purposes of maintaining the National Wilderness Preservation System unimpaired for future use and enjoyment as wilderness and to preserve its wilderness character, consistent with the use of the land for mineral location, exploration, development, drilling and production and for transmission lines, water lines, telephone lines, and processing operations, including, where essential, the use of mechanized transport, aircraft or motorized equipment.

(c) Persons with valid mining claims wholly within National Forest Wilderness shall be permitted access to such surrounded claims by means consistent with the preservation of National Forest Wilderness which have been or are being customarily used with respect to other such claims surrounded by National Forest Wilderness. No operator shall construct roads across National Forest Wilderness unless authorized in writing by the Forest Supervisor in accordance with Section 252.12.

(d) On all mining claims validly established on lands within the National Wilderness Preservation System, the operator shall take all reasonable measures to remove any structures, equipment and other facilities no longer needed for mining purposes in accordance with the provisions in Section 252.10 and restore the surface in accordance with the requirements in Section 252.8(g)....

(f) The Chief, Forest Service shall allow any activity, including prospecting, for the purpose of gathering information about minerals in National Forest Wilderness except that any such activity for gathering information shall be carried on in a manner compatible with the preservation of the wilderness environment as specified in the plan of operations."

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PART V

Environmental Impact Statements

CHAPTER 10

The National Environmental Policy Act

Passed in 1969, the National Environmental Policy Act (NEPA) was the first major statute of the modern era of environmental law.¹ A trailblazer, NEPA took a fundamentally different approach than the patchwork laws that had preceded it and the more prescriptive national pollution statutes that would follow. NEPA does not seek to ensure environmental protection through technology-forcing standards or market instruments, nor does it mandate conservation of endangered species or wetlands. Rather, NEPA relies on information, forcing agencies to consider the environmental impacts of their proposed actions and alternatives. This approach reflects a New Deal faith in agency management—the belief that a bureaucracy will do the right thing if it considers the proper issues. Without question, NEPA's influence has been far-reaching, with its progeny in the statute books of 19 states and over 130 of the world's nations.

NEPA requires that all federal agencies create an environmental impact statement (EIS) on a "recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment."² Preparing an EIS is a considerable undertaking. Occasionally reaching the size of a metropolitan phone book, the EIS analyzes the environmental impacts across a range of proposed actions. This analysis considers both unavoidable adverse impacts and mitigation alternatives. For example, concerned over the amount of traffic in Yosemite Valley, the National Park Service might propose closing parking lots in the Valley and creating a shuttle bus service. Before undertaking this action, the Park Service must first prepare an EIS that considers not only the environmental impacts from this approach but also the impacts from a range of other actions—perhaps charging additional car fees to enter the Valley, a light-rail system, a tradable permit system for entry, or doing nothing at all. While

1. 42 U.S.C. §§ 4321 et seq.

2. 42 U.S.C. § 4332(c); also known as NEPA Section 102(2)(c).



laying out the environmental impacts of all these options, an EIS is agnostic and leaves the final choice to the decisionmaker.

NEPA also created the Council on Environmental Quality (CEQ) to oversee the NEPA process and its implementation. Perhaps surprisingly, the CEQ does not have (nor does NEPA provide for) enforcement authority. In practice, enforcement has come through citizen suits under the Administrative Procedure Act and federal question jurisdiction. In simple terms, NEPA cases generally raise one of two questions—should the agency have prepared an environmental impact statement and, if so, was the EIS adequate? The general remedy for a NEPA violation is a remand to the agency to stay its proposed project until it prepares and considers a satisfactory EIS.

Perhaps surprisingly, there have been thousands of NEPA suits. It might seem strange that NEPA's seemingly innocuous requirement of preparing an EIS has led to more lawsuits than any other environmental statute. What purposes does this requirement serve, and why are litigants so eager to enforce it?

As described above, the fundamental goal of NEPA is to *educate* decisionmakers, ideally by sensitizing them to environmental issues and helping the agencies find easy, inexpensive means of mitigating environmental impacts. From an *advocacy* perspective, an EIS can provide a source of leverage for internal agency opposition. A study by the National Science Foundation in the 1980s, for example, concluded that EISs give agency personnel a tool "to resist political importunities to pursue environmentally harmful measures." Moreover, it provides information that can be used to fight an agency's decision in court, and the information is not easily dismissed. It's hard, after all, for an agency to explain why its own EIS is incorrect. In relying on the EIS, in some instances litigants may be able to show that an agency action is "arbitrary and capricious" under the Administrative Procedure Act. From a *political* perspective, the EIS can be used to educate the public and provide information that can be used to fight the decision through the legislature or voting booth. Finally, NEPA litigation can *delay* a project (particularly if the EIS must be done again), allowing time to organize opposition and, in some cases, making the project so costly that it expires on its own.

I. NEPA Grows Teeth

Calvert Cliffs' Coordinating Committee v. U.S. Atomic Energy Commission was the first significant decision that interpreted NEPA, and it provides a useful insight into agencies' lack of environmental concern at the time of NEPA's passage.³ In complying with the statute, the Atomic

3. *Calvert Cliffs' Coordinating Committee v. United States Atomic Energy Commission*, 449 F.2d 1109 (D.C.Cir.1971).

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4. *Strycker's Inc. v. Karlen*, 44-

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Energy Commission fully acknowledged that NEPA requires a "detailed statement" to be "prepared" and to "accompany" the licensing application for a nuclear plant. And amazingly, this is exactly what happened. The agency's staff prepared an environmental impact statement on the license application, and it accompanied the license throughout the process. In a brilliant example of form over substance, though, *the statement was never read or considered by the licensing board*. It simply went along for the ride. In his opinion, Judge Skelly Wright stated that the whole point of NEPA is to ensure that environmental considerations are taken into account by agency decision makers. Thus, to survive judicial review, agencies must prove that they have fully considered the detailed environmental statement "at every important stage in the decision making process."

In decisions that followed, particularly *Strycker's Bay Neighborhood Council, Inc. v. Karlen*, courts have gone to great lengths to make clear that NEPA is a procedural rather than a substantive statute.⁴ Once an agency has made a decision subject to NEPA's procedural requirements, the judge may only consider whether the agency was arbitrary and capricious in failing to prepare an EIS or consider the relevant environmental issues. The judge cannot make the substantive decision on behalf of the agency. So long as the agency complied with the NEPA process and fully considered the EIS, the decision must stand *even if* the agency did not choose the environmentally preferable option. As the legal realists made clear over 60 years ago, however, the distinction between procedural and substantive review quickly breaks down. After all, how can the court take a hard look to determine if the agency complied with NEPA's procedural requirements (i.e., whether it fully considered the relevant factors) unless the court assesses the agency's final decision (a substantive analysis)?

II. When Must An Agency Prepare An EIS?

The logic behind preparation of an EIS is straightforward—a better informed agency will make better decisions. To conserve resources, time and avoid hassle, though, it's equally obvious why, given the choice, some agencies would prefer not to create an EIS that questioned its proposed action, at all. Recall that an EIS must be prepared for a "recommendation or report on proposals for legislation and other major Federal actions significantly affecting" the environment. The threshold questions for an agency deciding whether it must create an EIA, then, is (1) whether it is dealing with legislative recommendations or major

4. *Strycker's Bay Neighborhood Council Inc. v. Karlen*, 444 U.S. 223 (1980).

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federal actions and (2) whether the environmental impacts are significant.

Most of the legal skirmishing has been over federal actions rather than proposed legislation. In court decisions, federal actions have been interpreted to include a wide range of activities—such as approval of specific projects (e.g., construction of a road in a national park), approval of rules, regulations, and other official policies (e.g., adopting a new set of regulations for concessionaires in national parks), adoption of formal plans or programs to guide agency decisions (e.g., a plan to permit local rangers greater discretion over their parks), and permitting or funding of private projects (e.g., approval of a river crossing for a power line).

Of course, not all federal actions trigger NEPA. Some statutes, such as the Clean Air Act and parts of the Clean Water Act, exempt preparation of an EIS, and the EPA need not comply with NEPA in other instances where EPA's decision-making process is functionally equivalent to NEPA's requirements. (Why do you think the National Park Service has not been able to take advantage of the same "functional equivalent" exemption?) Decisions not to act do not trigger NEPA, either. Thus neither the decision by the Department of Interior not to stop a planned wolf kill by Alaska nor the decision by the Forest Service to stop a decades-long practice of using herbicides to control vegetation in a National Forest triggered NEPA. Finally, an agency may provide indirect support (e.g., funding for a local group that undertakes a project with environmental impacts). In determining whether indirect action should constitute a federal action under NEPA, courts have considered whether the action could exist absent the support of the federal government.

A. Major Actions

Deciding whether there is a federal action is a straightforward judgment in most instances, but it can become complicated when considering NEPA's qualifying adjectives—that the federal action be *major* and that it *significantly* affect the environment. One could certainly imagine a major federal action that does not cause a significant environmental impact (e.g., providing a congressman for the District of Columbia) but, for actions that are environmental, one cannot practically determine if an action is major solely by focusing on the resources involved and ignoring its impacts. Consider, for example, an application for a federal right-of-way so a private power line can cross a navigable waterway. The crossing of the waterway will, in itself, have little environmental impact. But construction of the 67 mile power line will have significant impacts, and cannot be built unless it crosses the waterway.⁵ This looks like a

5. *Winnebago Tribe of Nebraska v. Ray*, 621 F.2d 269 (8th Cir.1980).

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6. *Marsh v Council*, 490 U

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minor federal action with significant consequential impacts and is known as a "small handle" problem, when federal permission or funding is only a small (though necessary) part of a much bigger project. Does it require an EIS? Small handle cases go both ways, with some courts focusing on the impacts of the entire project made possible by federal activity (EIS required) and others just focusing on the federal activity (no EIS).

Agencies may try to avoid NEPA's reach by dividing up or "segmenting" projects. At the extreme, for example, consider how the Forest Service might try to avoid preparing an EIS for its decision to build a 20-mile road in a National Forest. This 20-mile road certainly would seem to be a major federal action significantly affecting the environment. But what if, instead, the Forest Service transformed the project into twenty separate decisions to build 1-mile roads? By segmenting, the agency can transform major projects into innocuous minor ones. In isolation, none of these one-mile roads will likely trigger the requirements for an EIS. In scrutinizing examples like this, therefore, courts have asked whether the separate segments have independent utility. If the road segment along mile 16 makes no sense without miles 17 and 15, then they must be considered together.

A related problem concerns attempts to divide up separate types of actions. Imagine, for example, that the Forest Service decides to build a small road into a timber harvest area but does not prepare an EIS because the road will not have significant impacts. Soon after, the Forest Service approves two timber sales in the area but does not prepare an EIS because the timber harvest will not have significant effects.⁶ Should the road and timber sales be considered together in a joint EIS? "Connected actions" are interdependent parts of a larger action and cannot proceed unless other actions occur before or simultaneously. The timber sale cannot occur without the road, and the road makes no sense without the timber sales. As a result, the CEQ has stated that such actions must be considered together and many courts have ruled against such segmentation, stressing NEPA's role in having agencies consider broadly the impacts of its actions.

B. Significantly Affecting the Human Environment

In determining whether an action significantly affects the human environment (such as filling 30 acres of wetland), CEQ has directed agencies to consider the "context" and "intensity" of the proposed action. Put another way, the significance of the impact depends on the overall setting, particularly if it is in an environmentally sensitive or valued area. As a real estate agent would observe—location, location,

6. *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360 (1989).

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location. In considering intensity, is the action controversial or does it involve uncertain effects? Are its impacts short or long term? Does it involve endangered species or critical habitat? The rules for determining significance are, by necessity, far from bright lines and ultimately require agencies to consider a range of factors in making a judgment call. Moreover, the impact must primarily be physical rather than social or economic. In *Metropolitan Edison v. People Against Nuclear Energy*, for example, prior to restarting the companion reactor at 3-Mile Island, the Nuclear Regulatory Commission performed an EIS that considered the effects of fog from cooling towers, the possibility of low-level radiation, and the danger of an accident.⁷ Plaintiffs demanded that the EIS also consider the psychological trauma on the community of restarting the reactor. The court rejected this claim, stating that even if psychological injuries are genuine, they are too remote from challenged action. In other words, an EIS need not consider potential psychological harm caused by exposure to risk.

III. Timing

Unless it is obvious that an EIS must be prepared, agencies will often first develop a 10-15 page Environmental Assessment (EA). An EA operates as a quick and dirty review and, if it suggests no EIS is necessary, the agency will issue a FONSI (Finding Of No Significant Impact). This decision not to undertake an EIS can then be challenged in court as a challenge to a final agency action. If the agency proceeds to prepare an EIS, a draft EIS is distributed and made available for public comment for 45 days. The agency then prepares a final EIS as well as responds to categories of public comments. Once the EIS has been issued, there is a 30 day moratorium on agency action so that challenges can be filed. This timeline, however, says nothing about when the review process should commence.

To prove useful, an EIS must be considered before the agency decides on an action, early enough that it can meaningfully contribute to the decision making process. Otherwise it simply serves as a *post hoc* rationalization for a decision already taken. Equally, the agency must have something fairly concrete in mind, otherwise the scope of potential EISs would be limitless. CEQ has taken a pragmatic view of timing, acknowledging that, even without a formal report or recommendation, an agency proposal may exist in fact. CEQ regulations require preparation of an EIS when the agency commences developing a proposal. This is before a report or recommendation, but after mere contemplation or

7. *Metropolitan Edison Co. v. People Against Nuclear Energy* (PANE), 460 U.S. 766 (1983).

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8. *Kleppe* (1976).

study. In the context of connected actions, this means preparing an EIS before the first of the actions and assessing the cumulative impact. Challenging the timing of EIS preparation is difficult for outside parties because, without inside knowledge, they really cannot know the status of various initiatives under consideration and whether so-called proposals have already become *de facto* decisions. To provide a bright line standard, courts have required that preparation of an EIS commence "before irreversible and irretrievable commitment of resources."

Another way timing plays out is in the context of scope. The case, *Kleppe v. Sierra Club*, for example, dealt with coal development policy on federal lands in the Northern Great Plains area.⁸ It was clear to most observers during the Ford Administration in the mid-1970s that there was an ongoing plan to lease major areas in the northern Great Plains region to coal mining interests, but there was no official plan or announcement. The Department of Interior prepared EISs for its national coal leasing program and for individual leases. The Sierra Club, though, sued to force Interior to conduct a regional EIS, arguing that the national EIS was too general and the project-specific EISs too narrow to assess regional impacts. Impacts were greatest at the regional level and it was here that the Sierra Club argued alternative approaches should be considered. The problem from Interior's perspective, the government responded, was that there were many levels of decisionmaking at which one could reasonably prepare an EIS, and it was unreasonable to demand an EIS at every level.

The Supreme Court sided with Interior, stating that an EIS is required only where there is an actual "report or recommendation on a proposal for major federal action." A comprehensive EIS is appropriate, the Court declared, when there are significant cumulative or synergistic environmental effects, but it is left to the discretion of agency when this is the case. In other words, the Court defers to agency discretion over the proper scale of analysis. In practice, agencies have addressed this through the practice of "tiering," preparing successive EISs from broad scale to smaller. Thus an agency often prepares a "programmatic EIS" on an overall project, considering cumulative effects and overall alternatives, and then prepares site-specific supplemental EISs as they become appropriate. By tiering, an agency does not have to consider general effects each time it prepares an individual EIS, and does not need to be comprehensive in its programmatic EIS.

IV. Adequacy of the EIS

The issues raised above formed the basis for much of the early NEPA litigation. Much NEPA litigation focuses, as well, on the question

8. *Kleppe v. Sierra Club*, 427 U.S. 390 (1976).

of whether the EIS is adequate. A standard EIS will include an explanation of the purpose and need for action, a full description of alternative actions, an assessment of the environmental impacts of these actions, and possible mitigation measures to reduce adverse impacts of the proposed actions. In taking a hard look at such an EIS, courts have focused on questions of alternatives, adequacy, uncertainty, and new information. As we shall see, this has resulted in four main legal strategies to consider in challenging the adequacy of an EIS—(1) the EIS did not set forth responsible opposing views or alternatives, (2) it was not compiled in objective good faith, (3) it would not permit the decision-maker to fully consider and balance the relevant factors, or (4) the fact-finding did not have a substantial basis in fact.

According to CEQ regulations, the requirement that an EIS evaluate alternative actions is the "heart" of the EIS. This forces comparative assessment of the impacts and benefit of each action and, hopefully, show the agency how it can achieve its objective in a less environmentally harmful manner. Obviously, though, there is an endless number of potential alternatives an agency could consider. To address this, courts have required that agencies consider an array of alternatives that fairly represent the *range* of alternatives. In *California v. Block*, for example, plaintiffs challenged the EIS informing the U.S. Forest Service's decision over which portions of a 62 million acre national forest should remain roadless and designated wilderness.⁹ There was no lack of interest on the part of the public, and the Service's draft EIS drew 264,000 public comments. In its final EIS, the Service considered 11 alternatives, ranging from the extremes of all wilderness to no wilderness. So far, so good. In between the extremes, however, none of the alternatives considered allocating more than 33 percent of the roadless area to wilderness. In holding that this was inadequate, the Ninth Circuit emphasized that an agency need not consider every alternative or alternatives that are unlikely to be implemented for legitimate reasons but, equally, it must not ignore important alternatives or bias its evaluation by arbitrarily narrowing the range of options considered. While NEPA remains a procedural statute, this type of analysis skates a very close line to substantive review.

It goes without saying, but the quality of an EIS analysis is obviously subject to judicial review, as well. In practice, this means the agency has to address the issues seriously. In *Sierra Club v. U.S. Army Corps of Engineers*, for example, the Corps prepared an EIS for filling part of the Hudson River to build a highway.¹⁰ The EIS described the area to be filled as a "biological wasteland," despite objections by EPA and the Fish

9. *California v. Block*, 690 F.2d 753 (9th Cir.1982).

10. *Sierra Club v. United States Army Corps of Engineers*, 701 F.2d 1011 (2d Cir. 1983).

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11. *Sierra*
(7th Cir.1995)

& Wildlife Service. In requiring the Corps to prepare a supplemental EIS, the 2nd Circuit concluded that by ignoring the views of other expert agencies, and by not adequately compiling relevant data and analyzing it reasonably, the Corps had reached a "baseless and erroneous factual conclusion" that "cannot be accepted as a 'reasoned' decision." In most cases, though, wary of appearing to engage in substantive review, courts are reluctant to reverse agencies on this ground. Thus in *Sierra Club v. Marita*, plaintiffs sued the Forest Service, claiming that its EIS needed to employ an ecosystems approach based on advanced principles of conservation biology.¹¹ Despite the testimony of 13 distinguished scientists, the court rejected the plaintiffs' argument. According to the 7th Circuit, agencies must use "high quality" science and ensure the "scientific integrity" of their analysis. But they don't have to use any particular methodology.

As described in Chapter 2, scientific uncertainty is an unavoidable aspect of environmental decision making. This arises in the context of NEPA when agencies must decide what to do if there is insufficient information to predict the impacts of specific options. In particular, when do agencies have to conduct more research? CEQ Regulations require that an agency make "reasonable efforts" to obtain relevant information, but obtain information that is "essential" to a reasoned choice among alternatives unless the overall costs of doing so are exorbitant. In practice, this requires that agencies at least consider the tradeoffs between the costs of getting more information and the value of getting it. When possible, an agency should rely on credible scientific evidence and, if information is unavailable, admit that the effects are uncertain and unknown.

A related question is whether an agency must prepare a supplemental EIS when new information becomes available, perhaps significantly changing the range of impacts considered. Imagine, for example, that the area to be filled in the Hudson River really was a "biological wasteland." Soon after the filling of the river, though, a local fisherman caught an endangered species and it now appears that a population of the fish lives nearby. Must the Corps stop construction and prepare a supplemental EIS? Recall that NEPA's goal is to ensure the agency makes decisions based on complete information. Thus CEQ regulations require preparation of a supplemental EIS if "significant new circumstances or information relevant to environmental concerns" becomes available. As with other stages of the EIS process, this is subject to the rule of reason. Surely such a "post-decision" supplemental EIS is not necessary every time new information comes to light. Rather, an agency must look to the

11. *Sierra Club v. Marita*, 46 F.3d 606 (7th Cir.1995).

significance of the new information, its value to the decision making process, and how much of the federal action remains to be done.

NEPA also applies to international actions when there are impacts in the United States. In perhaps the most creative of all NEPA challenges, in *National Organization for the Reform of Marijuana Laws (NORML) v. U.S. Dep't of State*, NORML alleged that a U.S.-supported narcotics program in Mexico that sprayed herbicide on marijuana and poppy plants would have significant health effects (by Americans smoking the herbicide laden weed) in the United States and that an EIS must be prepared.¹² The government agreed to conduct an EIS. By contrast, an EIS is not required when environmental impacts occur *exclusively* in a foreign jurisdiction. The case law regarding environmental impacts in the global commons such as the high seas or Antarctica, though, is less clear. President Carter signed Executive Order 12114 in 1979, providing for analysis of environmental impacts abroad from major federal actions, including impacts in the global commons. The Order exempts, however, actions taken by the president or when national security is involved. Moreover, as with all Executive Orders, it does not create a cause of action and noncompliance cannot be challenged in courts. More recently, President Clinton required environmental reviews for major trade agreements.

V. Does It Work?

Determining the effectiveness of NEPA is hard to do. Unlike the Clean Air Act or Clean Water Act, where one can simply measure air quality or water pollution over time, measuring the influence of environmental information on agency decision making is no easy matter. At one extreme, the EIS could simply serve as a *post hoc* rationalization for decisions already taken—simply going through the bureaucratic motions. And there certainly is reason to fear that this may happen in some instances. After all, conflicts of interest run to the very core of NEPA. Placing agencies in charge of conducting an EIS that may challenge their proposed actions, some have commented, is like placing the fox as guard of the hen house. As Joe Sax has memorably commented on NEPA, "I think the emphasis on the redemptive quality of procedural reform is about nine parts myth and one part coconut oil." Given the concrete statutory mission of an agency with dedicated budgets, organized lobbies, and congressional pressure, on the one hand, and the requirements of NEPA to consider environmental impacts of a range of actions, on the other, one might reasonably be doubtful of NEPA's influence. After all,

12. *National Organization for Reform of Marijuana Laws (NORML) v. United States Dep't of State*, 452 F.Supp. 1226 (D.D.C. 1978).

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there have traditionally been few political rewards for forests not cut or range lands not grazed.

Despite all these reasons to dismiss NEPA, it has achieved a great deal and continues to do so. Compared to the state of agency transparency at the time of its passage, NEPA has played an important role in opening agency decision making to the public. NEPA has provided constant pressure on agencies to broaden their missions to consider and adopt environmental values. And it has spurred agencies to modify proposals and mitigate adverse impacts.

The experience of the Atomic Energy Commission, preparing an EIS and refusing even to read it, simply could not happen today. Indeed the numbers bear this out. Courts issued 202 NEPA injunctions in 1977, yet only 3 in 1987. Environmental impact analysis has become a standard part of federal decision making. Moreover, mindful of what an EIS will likely show, many projects are dropped before even conducting an EA, thus escaping measurement. Talk to environmental group litigators about NEPA and many say it is critical in providing data on agency actions they could not otherwise obtain or use. Does NEPA ensure agency decisions will be environmentally responsible? No. But it does ensure they will be informed and, in a field with such strongly conflicting interests and values, that is no small feat.

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(CQ Press, Washington DC, 1994).

8

Evaluating Environmental Policy Success and Failure

Robert V. Bartlett

All you need in this life is ignorance and confidence; then success is sure.

—Mark Twain

A quarter of a century ago, in great ignorance yet with considerable confidence, governments worldwide began responding to the concerns raised by the then-coalescing environmental movement. The result has been an outpouring of environmental policy declarations, legislation, programs, regulations, and reorganizations. But has all this activity and investment been worth it? Has environmental policy as a whole succeeded? Have individual environmental policies, programs, or efforts failed?

Success for environmental policy has been much less sure than Mark Twain cynically suggested was the case for ignorant but confident individuals. All of these new, sometimes bold, environmental policies were implemented in an era when general confidence in government as problem solver was declining, such that by the 1980s policy failure had become conventional wisdom among voters, journalists, and politicians.¹ Particularly in the United States, where the dominant public ideology has always been pragmatism, demand for evidence of success has become increasingly insistent, impatient, and narrowly focused. Environmentalists have found failure because policy initiatives so far have been inadequate to the challenges raised by the environmental *problematique*, but others have been quick to allege more thoroughgoing policy failure.

For example, the Comprehensive Environmental Response, Compensation, and Liability Act, known as CERCLA or Superfund, which was passed with high hopes in 1980, has been judged a "superfailure."² Analysts have found that U.S. hazardous and toxic waste policies have cleaned up few dump sites, prevented few spills and accidents, and led to the expenditure (waste) of billions of dollars on litigation and administration.³

Another example might be the Endangered Species Act, labeled a failure by some because the protection procedures it establishes have

been cumbersome and susceptible to politically influenced delay, resulting in few species being listed and inadequate steps being taken to protect those so designated. For others, the act is a failure because it does not permit, except as an extraordinary last resort, explicit consideration of costs, benefits, or other compelling social values. Like CERCLA, the few concrete achievements of the Endangered Species Act are accomplished inefficiently and ineffectively, and the act is unreasonably costly in its effect on the efficiency of the overall economy.⁴

Even the environment's Magna Carta,⁵ the National Environmental Policy Act of 1969 (NEPA)—which established the Council on Environmental Quality (CEQ), declared a national policy for the environment, revised the missions of all federal agencies, and originated the environmental impact assessment process—has been labeled ineffective. According to one evaluation, its “significance is hollow and ephemeral, of a figurhead quality.”⁶ Another judged it to be a “disaster in the environmental movement.”⁷

Damning evaluations are not limited to these three illustrative, but hardly representative, environmental policies. A. Myrick Freeman, for example, finds policy failure in estimates that federal water pollution control policy costs in excess of \$30 billion per year (if estimated in 1992 dollars), costs that exceed estimated benefits. Paul Portney argues that the annual costs of complying with the Clean Air Act may be in excess of \$50 billion and that those costs could be substantially reduced.⁸ (Other negative assessments of environmental policies are discussed in chaps. 1 and 9.)

These negative evaluations pose a vexing problem for analysts making them: “How can a program that is inefficient and inequitable survive and even thrive in lean budgetary times?” The cynical answers proffered are several. Such programs continue to have “strong public support—particularly from wealthy and well-educated communities that are more likely to vote and contribute money.”⁹ Fingers are pointed at lawyers and the news media, and allusions are made to fashion, irrationality, selfishness, ignorance, and unholy political alliances.¹⁰ But there may be deeper reasons that point to problems with the findings of policy failure themselves.

Not all evaluators agree that these and other programs and policies have indeed failed, or mostly failed. For example, some other analysts have found that CERCLA provides “strong incentives to mitigate the effects of past contamination and to prevent future contamination.”¹¹ Similarly, the Endangered Species Act has been found to have “worked rather well” as developers “by and large, have found mitigating strategies to protect species their projects might otherwise eradicate.”¹² As for the National Environmental Policy Act, many have pronounced it to have been a profoundly influential piece of legislation. For example, Russell Trautman, who in the 1970s served first as chairman of CEQ and later as administrator of EPA, has declared, “I can think of no other initiative in

our history that had such a broad outreach, that cut across so many functions of government, and that had such a fundamental impact on the way government does business.”¹³

Can we make sense of such widely and wildly divergent evaluations? The answer is yes—but it does require some skill and insight. What we need is appreciation for how, in the rush to judgment, the slippery concepts of success and failure may be used in ways, to paraphrase George Orwell, that give the appearance of solidity to pure wind.¹⁴ Both success and failure are variably defined, often implicitly. Claims are often consciously crafted to be consistent with some ideological standpoint and perspective or to support or attack some a priori political position. Such claims, forcefully advanced, may be persuasive in environmental policy debates if definitions of failure are not questioned, criteria of success are not articulated, and the process of evaluation is conceived as a narrow, technical one reserved to experts of one particular stripe.

Yet even evaluations that are intended to be careful, thorough, serious efforts frequently conceptualize and define success simplistically. Thus, claims made by persons with impressive analytic and scholarly credentials are nevertheless often based on a single narrow criterion, limited measures, a short-term perspective, and a social scientific and cultural bias toward findings of no effect. It is *not* a firm scientific conclusion of no effect if careful investigation is unable to link outcomes to a policy—yet it is often interpreted as a finding of policy failure. Obsession with fitting everything into the categories of “success” and “failure” blinds us to the richer, more fruitful possibilities of environmental policy evaluation. In short, the question being answered may have only a slight connection with the simple but broad and demanding question being asked: what is the merit or worth of a policy?

The challenge of identifying environmental policy success and failure has been insufficiently recognized. The problems are partly political, partly theoretical, and partly methodological. Some difficulties are inherent in the business of policy, others in the task of evaluation. Still others stem from a lack of understanding and lack of a broader vision—whether a vision of politics and policy, of the “transdiscipline” of evaluation, or of the environmental *problematique* itself and the ecological complexity of the cumulative, interactive, sleeper, and threshold effects with which environmental policy must contend. Some problems could be overcome with better design of policy research and the allocation of greater resources to evaluation, whereas others demand a reorientation of social expectations regarding policy success and failure. What we need is to cultivate a broader appreciation of how reality is defined by the questions we ask. If nothing succeeds like immediate, unqualified, obvious success, can anything at all succeed? If the kind of evaluation of environmental policy we undertake largely determines our judgments, then indeed—we have no

Kinds and Levels of Evaluation: Structuring the Questions

Evaluation is, simply, "the process of determining the merit, worth and value of things, and evaluations are products of that process."¹⁵ Michael Scriven points out that the intellectual process of evaluation is ubiquitous, permeating all areas of thought and practice. We may say, then, that the evaluation of environmental policy is routinely engaged in by politicians, bureaucrats, journalists, environmentalists, students, and other ordinary citizens. But systematic, disciplined evaluation, or evaluation based on a body of theory, methodology, and analytical skills, is more rare and is typically undertaken by professional analysts who may be employed in academia, bureaucratic agencies, legislatures, lobbying organizations, or consulting firms.

There is a tendency to think of evaluations as an assessment of merit or worth after the fact, soon after a project has been completed, a program executed, a policy implemented. But frequently proposals, plans, and alternatives—mere ideas with no tangible manifestations beyond paper—are also the subjects of anticipatory evaluation at all levels. Evaluation may also be conducted while a project is under way, with an intent to improve it or stop it, or it may be done by historians long after completion.

At least three general categories of systematic environmental policy evaluation can be identified: (1) outcomes, (2) process, and (3) institutional. Each encompasses an enormous variety of evaluation criteria, methods, and practices. But the fundamental differences among the categories hobble discourse about evaluation itself, leading ultimately to arrogant claims about values and flawed arguments about the merit of environmental policies.

Outcomes Evaluation

Traditionally, outcomes evaluation is seen as performing a small number of functions, the most important of which is assessing "the extent to which needs, values, and opportunities have been realized through public action" and making "practical inferences about the degree to which policy problems have been resolved."¹⁶ Outcomes evaluation is based on the seemingly unassailable assumption that policy is purely instrumental, comprising means for producing results or effects—e.g., improved water quality, preserved habitats, reduced waste generation. One difficulty, however, is that outcomes may not be directly or reliably measured, or even measurable. Worse, we often have little understanding of how outcomes are caused. These can be particularly intractable problems for environmental policy where there is little meaningful agreement on what constitutes environmental quality and only spotty monitoring of environmental variables (chap. 6). For exam-

ple, as Walter Rosenbaum points out, EPA cannot adequately measure the impact of many, if not most, of its programs:

A recent internal agency document asserts that among the twenty-three environmental problem areas for which EPA has some program responsibility, only three appear to be currently monitored with technically appropriate indicators for measuring change. A large segment of [the] Agency's technical staff and scientific advisors believe that many traditional indicators now used to measure environmental quality are unreliable or inappropriate.¹⁷

In the absence of good evidence about substantive policy consequences, outcomes evaluation must rely on counts or measures of outputs, or immediate administrative actions—such as hazardous waste sites inspections, habitat protection actions, approved species recovery plans, or environmental impact statements. Sometimes even output information is not available and evaluation must be even more tenuously based on quantity and quality of resources used, assuming a definite relation between inputs and outcomes.

The practice of outcomes evaluation is usually directed at one of three levels: (1) the project, (2) the program, or (3) some broader, more encompassing aspect of policy. Much of the literature on outcomes evaluation is directed at only one or another of these levels, although they share theoretical frameworks, analytic tools, and methods and may in fact overlap in practice.

Project evaluation. A project is a time-bound effort that may be a component of a more general continuing program. A great deal of environmental policy evaluation occurs at the project level, where the analytic tools of evaluation are most fully developed, conceptual complications are fewest, and the relationship between systematic evaluation and political action is most apparent. Evaluations of projects are undertaken by virtually all government agencies, by organized private proponents and opponents of projects, and, less often, by dispassionate independent analysts such as academic researchers. Indeed, much project evaluation is mandated and institutionalized, and thus is done routinely in accordance with legal requirements for planning, monitoring, and auditing government projects.

Project evaluations of CERCLA, for example, have focused on the identification, designation, and cleanup of particular hazardous waste sites (projects).¹⁸ These evaluations may address the effectiveness of EPA's management of the investigation and cleanup of an individual site, pointing out deficiencies in site studies, selection of remedies, determination of cleanup levels, imposition of monitoring requirements, and determination of financial responsibilities of remediation. A project evaluation under the Endangered Species Act might assess, say, the Fish and Wildlife Service's project of translocating southern sea otters from the California coast to

Beginning with identifiable goals seems to many professional evaluators and consumers of evaluation to be an obvious and necessary first step. The necessity of basing evaluation on achievement of goals is seldom questioned in published evaluations, and may even be stated baldly as a truism; for example: "The first step in any evaluation involves a determination of goals or objectives."²⁴

Yet basing an evaluation primarily on goal accomplishment may make it unnecessarily limited, biased, and narrow. A goals-based evaluation may also look at goals critically, undertake comparisons, analyze unexpected and unintended consequences, and explore ethical dimensions of program activities. But if the evaluation turns on measuring goal achievement, then all of these are likely to be examined only in connection with the accomplishment of identified program goals. The evaluation will still be afflicted with "serious problems such as identifying these goals, handling inconsistencies in them or false assumptions underlying them and changes in them over time, dealing with outcomes that represent shortfall and overrun on the goals, and avoiding the perceptual bias of knowing about them."²⁵

Programs seldom have clear, consistent, and realistic goals that are explicitly stated, and programs are rarely able to achieve whatever vague, contradictory, and idealistic goals that can be identified. Statutory goals often express wishes at variance with the inevitable. Consequently, a goal-based approach to evaluation is almost always biased toward a conclusion of policy failure. The conclusions of Tobin regarding the U.S. endangered species program, for example, are typical:

The program can point to few successes, at least when measured against its statutory goal. Only a handful of listed species have been recovered after more than two decades of effort and expenditure. Of these successes, few are due to program-related activities. During the program's life, in contrast, a larger number of species [have] become extinct.²⁶

The state of the art in program evaluation, however, has progressed far beyond this simplistic goal-achievement approach.²⁷ The outcomes of programs can be evaluated according to independently determined needs or validated standards, the sources of which might be legal, moral and ethical, esthetic, economic, logical, political, scientific, managerial, technical, social, or ecological. Evaluation standards might be derived from intrinsic values (integrity, sustainability, creativity, autonomy, dignity, distribution), professional standards, or the value of something to an institution or collective.²⁸

Perhaps most common non-goal-based evaluations are by economists, who assess programs using such values as efficiency, cost-effectiveness, and cost minimization—all criteria promoted by the evaluators independently of the explicit goals of the program being evaluated. Such evalua-

San Nicolas island.¹⁹ An environmental impact assessment, mandated by NEPA, is an evaluation of a possible set of actions, usually a project, and is one of several project appraisal techniques used in project planning and decisionmaking. And a particular environmental impact assessment effort might itself be a project subjected to evaluation.

Program evaluation. Evaluation of a project is most often aimed at assessing the merit or worth of that project only, but in many cases it may be a research strategy for evaluating a whole program. In this case the claim is made, explicitly or implicitly, that the project being evaluated represents a class of projects that collectively constitute a government program. Programs usually have official titles or labels and readily identifiable boundaries; typically they are formally created by executives or legislators, have (often poorly) defined goals, and are administered by a single agency or a relatively small, designated group of agencies. Program evaluation, then, refers to either the process or the result of evaluating programs or subprograms, for example, the EPA program for identifying and cleaning up hazardous waste sites.

Program evaluation has a long history, but it only began to be recognized as a field in the 1960s, its growth stimulated by government funding of large-scale evaluations of social programs. The field of program evaluation research expanded further in the 1970s such that it came to be identified, or misidentified, as synonymous with evaluation generally.

Because the doctrine of value-free science was dominant in the social sciences in the 1960s and 1970s, social scientists coming to program evaluation brought this intellectual heritage with them.²⁰ The result is a dominant model of program evaluation that accepts only the specified a priori goals of a program as legitimate criteria for assessing that program. Identifying program goals is presumed, therefore, to be the first step of any evaluation. Data collection and analysis is then planned to produce empirical evidence of "whether or not programs or policies are achieving their goals and purposes," with effectiveness defined accordingly.²¹

Thus, if the "worthwhile" and "highly laudable goal" of CERCLA is the cleanup of the most dangerous toxic waste sites, then CERCLA is properly evaluated according to how thoroughly, accurately, and rapidly dangerous sites are identified and by the number of such sites actually cleaned up. Numerous evaluations of CERCLA of these sorts have been produced by EPA itself, the General Accounting Office, the Office of Technology Assessment, and nongovernmental consultants and think tanks.²² Likewise, in a recent scholarly evaluation of the Endangered Species Act, Richard Tobin begins with identifying the "clear and unambiguous" ultimate goal of the legislation—the recovery of all species threatened with extinction.²³ Similarly, a goals-based evaluation of NEPA would begin with the goals apparent in the wording of the act (possibly also considering goals articulated during the legislative history) and then also empirical evidence bearing on their accomplishment.

tions frequently find environmental programs to be failures. Economic-based evaluations, for example, have tended to find policy failure built into CERCLA, which provides few incentives to minimize costs or to relate marginal expenditure of dollars to marginal benefits. Overall costs of cleaning up toxic waste sites are high and the benefits low as compared with other programs for reducing environmental risk. NEPA has been assessed according to the transaction costs of producing and circulating environmental impact statements versus the benefits of risk reduction. Endangered species preservation has been evaluated by economists using innovative methods to determine the value in economic terms of species preservation and ecological diversity compared with the costs of doing so. Not surprisingly, the costs have often been found to far exceed the economically measurable benefits.

Alternatively, endangered species preservation might be evaluated according to ethical commitments and moral obligations that a program seeks to honor, evaluations that find achievements in entirely different outcomes evidence. NEPA might be assessed in light of the organizational and managerial changes it stimulated in bureaucratic agencies. The scientific foundation of hazardous waste site cleanup might be evaluated.

Of course, nothing prevents the use of multiple values and criteria in evaluations, in which "identifiable goals" are only one source of values and "goal achievement" just one of many valid criteria. This is an approach recommended by many evaluation theorists. Even the General Accounting Office, which has become the major evaluation agency of the U.S. government, uses a checklist for program evaluation that lists ten criteria, of which only one is goal achievement.²⁹

Still, however broadly evaluation is conceived, program evaluation is circumscribed by its focus on programs. The usefulness of program evaluation is thus limited to management issues and other immediate concerns rather than broader concerns of how a political system can take action to address social issues. Quite often the desired subject of evaluation is considerably broader than, or just different from, a formally bounded government program, requiring a broader level of evaluation.

Policy performance evaluation. Project evaluation, program evaluation, and policy performance evaluation (usually just called "policy analysis") overlap considerably in practice and in the literature on each, as they share a number of theoretical and methodological concerns. Project evaluation and program evaluation are in fact kinds of policy analysis. But policies or potential policies are often more than mere collections of projects or coordinated programs, and policy analysis may need to be more encompassing.

Policy performance evaluation tends to be conceptually organized around problem analysis and problem solving and is not necessarily bounded by formal program descriptions. If public policy is understood as an intended and actual course of action by government, then a policy

might entail multiple whole programs or parts of many programs, or the interaction of rules and programs. It might have a substantial symbolic component. Policy analysis then usefully addresses strategies, issues, or problems.

For example, unlike program evaluation that would focus on evaluating CERCLA or some part of CERCLA, a policy analysis might address the problem of hazardous wastes and the interrelated policies for addressing that problem, which would include among others CERCLA, the Resource Conservation and Recovery Act, the Safe Drinking Water Act, and the Nuclear Waste Policy Act.³⁰ Or, alternatively, a policy analysis might address some feature that characterizes several related policies or programs, such as the provisions for criminal penalties found in CERCLA, the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, the Toxic Substances Control Act, and the Federal Insecticide, Fungicide, and Rodenticide Act.³¹ Likewise, rather than a focus on NEPA per se, a policy analyst might examine environmental impact assessment as a particular policy innovation; rather than evaluate the Endangered Species Act alone, a policy analyst might consider it as one component of a larger policy to protect wildlife.³²

Much policy performance evaluation, like project and program evaluation, is dominated by what Giandomenico Majone calls the "received view" of policy analysis or what Allen Schick and William Dunn call an "analytic perspective."³³ Underlying this approach to evaluation are several assumptions, among others, that: (1) politics and policy are primarily about problem solving, (2) policymaking is synonymous with decisionmaking, (3) optimal policy is achieved only through application of rationality, which is purely intellectual, utilitarian, and instrumentalist, and (4) policymaking is instrumentalist, concerned primarily with outcomes or end results.

Evaluation of policy for cleanup of hazardous waste sites would then assume that hazardous waste sites can be objectively defined as a "real" problem, that policy consists of "big" decisions about how the problem should be solved or addressed, that any policy must have as its sole aim cleaning up waste sites to an optimal level at an optimal speed and cost, and that the only way to arrive at policies producing the best outcomes is through rational analysis of means.

Not surprisingly, evaluations of CERCLA using any of these assumptions find current policy to be a near-complete failure. But each of these assumptions is problematic—politics and policy may only secondarily be concerned with problem solving, policymaking entails a great deal more than decisions, policymaking is partly nonrational and also involves multiple rationalities, and policymaking is concerned with a great deal more than substantive outcomes. The validity and applicability of policy evaluation based on such a model are more limited than is commonly appreciated.

As a consequence, not all evaluations by policy analysts focus on policy performance alone. Policy analyses also frequently attempt to contribute to the clarification and critique of values that underlie policy design and implementation itself, as well as to offer arguments for redefining and restructuring problems. For example, EPA's own analyses of efforts to clean up hazardous waste sites have contributed to the agency's attempts to reorder its strategies and priorities in implementing CERCLA and with respect to environmental policy generally.³⁴

But to go beyond a problem-solving conception of policy evaluation, and to forgo insistence on tangible, measurable outcomes as the sole basis for assessing the merit or worth of environmental policy, requires a whole reorientation of evaluative framework. Policy process evaluation offers a framework quite different from those of outcomes evaluation.

Policy Process Evaluation

Simply assessing whether outcomes, or often inputs and outputs, are satisfactory does not always tell very much about what ought to be done (chap. 11). Majone notes that "in many situations this type of evaluation gives policymakers, program managers, and interested citizens very little information upon which to act." What is missing in this "black box" approach to evaluation is information about what produced the observed outcomes, and how.³⁵

Policy process evaluations are assessments of the merit or worth of policy processes themselves. The instrumental, utilitarian purposes and accomplishments of policy are incidental values in process evaluation. What is central, in this view, are the values of the processes used to define problems, set agendas, formulate alternatives, select actions, and govern implementation. The merit or worth of policy processes may be judged according to many criteria, such as responsiveness, coordination, legitimacy, leadership, participation, efficiency, representation, fairness, integration, practicality, and pluralism.

Because evaluation is itself a political activity and part of any policy process, evaluation of policy processes may focus on claims made regarding the role of evaluation in policymaking. A number of scholars have offered cogent critiques of the idea that rational analysis should determine how policy is made. Most influential, perhaps, has been Charles Lindblom, who has argued in several books and articles that real world public decisions cannot be made purely by rational analysis and evaluation and moreover that this would be undesirable even if it were possible.³⁶

Lindblom's criticisms call into question the basic assumptions and premises of the analytic approach, arguing that the policy process is essentially one of political and social interaction, to which formal analyses and evaluations may contribute but for which they cannot substitute. The policy process, with its diversity of interests, it is not possible for goals

to be clear, precise, and agreed on in advance. To strive unnecessarily for clarity, specificity, and agreement with regard to goals is in fact to invite unresolvable conflict, limit opportunities, and risk paralysis. In the real political world, means-ends analysis always gets turned on its head as means and ends are closely intertwined—objectives evolve as agreement is sought on means.³⁷

Even the orientation of policy analysis toward finding solutions to problems does not fit the real political world terribly well. Policy does not always, or even usually, begin with a problem. Much policymaking is not problem directed. In fact, policy entrepreneurs, like citizens, often have solutions in mind as they look for problems to which they may be applied. An example of this was the initial drafting of CERCLA by EPA, when the public controversy over the Love Canal site from 1978 through 1980 was seized as an opportunity for EPA to implement a "public health" strategy for strengthening its legislative base. According to Landy, Roberts, and Thomas:

Comparing the chronology of Love Canal with that of the Superfund legislation makes it clear that the former did not cause the latter. . . .

Except for the very first national attention it received in the summer of 1978, each subsequent wave of publicity appeared to serve less as the source of new initiatives than as the occasion for mobilizing support for those already underway. To find the source of Superfund, one must look within EPA itself.³⁸

If, as Deborah Stone contends, the essence of policymaking is not the production of problem-solving policies *per se* but instead a struggle over ideas, then evaluation of processes—processes that give rise to a policy and then to new processes created by the policy—may provide the kind of information most needed by citizens and policymakers as they "struggle over the criteria for classification, the boundaries of categories, and the definition of ideals that guide the way people behave."³⁹

Similarly, Majone argues for a dialectic conception of policy analysis that has less to do with problem solving than with the process of argument and the aim of persuasion: "Professional evaluation is only a small part of the general process of criticism and appraisal of public policies to which all politically active members of a democratic community contribute in different but equally useful ways." From this perspective, because of inescapable disagreement about the meaningfulness, fairness, or acceptability of evaluative criteria, "much evaluation analysis is really concerned with the merits of various standard-setting proposals rather than with the application of particular standards of merit to a given program."⁴⁰ All environmental policies, *de facto*, are about determining and expressing values, setting norms, and problem definition, as are environmental policy evaluations.

For example, NEPA explicitly seeks to change the substantive values by which all agency decisions would henceforth be made, by declaring norms and precepts that are binding on all the policies, regulations, and public laws of the United States. NEPA further mandates certain processes that must be followed in making decisions (e.g., "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking"), thereby fundamentally changing procedural norms of policymaking. Much of what passes for evaluation of NEPA is really a contribution to a policy debate about the merits of these policy standards.

Likewise, the Endangered Species Act is a product of a decades-old debate about nature and wild animals that has progressed from ideas to organizations to public policy.⁴¹ Bureaucratic actions under this legislation provide a catalyst and forum for further evaluative debate.

Process evaluation is crucial to assessing CERCLA as well. CERCLA profoundly restructured hazardous waste policy processes around liability determination and right-to-know rules. The liability for the costs of hazardous waste site cleanups can no longer be easily evaded by corporate restructuring, poor record keeping, a legal necessity to prove harm, or even bankruptcy or foreclosure. Certain kinds of information about potentially hazardous substances must now be made available by governments and businesses. Whole new political, financial, legal, and managerial incentives—and processes—have been created, thus recasting both the debate *within* hazardous waste policy and *about* hazardous waste policy.

Moreover, public policy processes "have an intrinsic moral element which exists apart from their instrumental value."⁴² The Endangered Species Act, for example, can be said to be good because it codifies a collective ethical judgment and declares a responsibility, and because in doing so it creates a cognitive dissonance between moral commitment and political action that forces perpetual reconsideration of both ethics and action.

Dialogue is an end in itself, as is public participation. Yet environmental policy cannot ever be only about debate, participation, and problem definition. For one thing, process evaluation does not replace the purposes served by outcomes evaluation. Substantive values ought not be neglected. As William Gormley points out, "If we confine our attention to such values as democracy, accountability, coordination and administrative efficiency, we forfeit the opportunity to design institutions that promote other important goals."⁴³ Moreover, both process evaluation and outcomes evaluation may direct attention away from evaluation of the institutional contexts of public policy. But it is only in relation to institutional transformation that any lasting merit or worth of environmental policies can be ascertained, and it is the transformation of institutions to be ecologically rational and sustainable that poses the ultimate test for environmental policy.

Institutional Evaluation

Institutional evaluation assesses how processes work and outcomes are produced within a larger institutional framework created in part by policies and within which policies are made and remade. In short, what is evaluated is "political architecture,"⁴⁴ architecture that influences outcomes, structures processes, and constructs and elaborates meaning. Institutional analysis, according to March and Olsen, sees policy as "conspicuously influenced by the institutional structure within which politics occurs."⁴⁵ Without denying the importance of both the social context of politics and the motives of individual actors, institutional analysis posits a more independent role for political institutions as they define the framework within which politics takes place. Thus, institutional evaluation uses a broad range of procedural criteria and substantive criteria, but must also wrestle with assessing the social creation of reality. Institutional evaluation requires an appreciation for the ways that political action is governed primarily by rules rather than by rational calculation and for how policy-making constructs meaning through institutions.

March and Olsen argue that much of the behavior observable in political institutions is rule based. By rules they mean routines, procedures, conventions, roles, strategies, and organizational forms, as well as "the beliefs, paradigms, codes, cultures, and knowledge that surround, support, elaborate, and contradict those roles and routines."⁴⁶ Rules are independent of individual actors and are capable of surviving considerable turnover of individuals. Rules are followed even when it is not obviously in the narrow self-interest of the person doing so. Most choices of action are governed by identifying a normatively appropriate behavior, rather than by utilitarian, instrumental, rational calculation of values, alternatives, and anticipated consequences as assumed by the decisionist model of politics and policy analysis.

Institutions shape politics not only by reducing chaos and bringing order through rules but also through the construction and elaboration of meaning. Political values and preferences are not independent of political institutions. We construct our political expectations, preferences, policy experience, and interpretations of actions *within* political institutions. Through institution-based politics, individuals also develop their identities and their sense of purpose, direction, and belonging. Meanwhile, institutions in part create their own environments, as the actions of each political actor become part of the environments of others and each reacts to the others.

Any policy change that is more than superficial, then, entails institutional change. Even though transformations cannot be controlled with any great precision, change in a desired direction can be initiated intentionally by exploiting processes for mundane adaptiveness, by exploiting the incompleteness of rules and routines, and, less predictably, by administer-

Such evaluations are certain to miss the most important consequences of institutionalized environmental impact assessment, seriously misunderstanding how such a policy works or does not work.

In fact, environmental impact assessment systems do not work merely or even primarily by changing informational inputs to political decisionmaking. NEPA shapes bureaucratic politics and economic development politics through the construction and elaboration of meaning and the establishment of new policy rules. Comprehending the significance of NEPA and environmental impact assessment requires appreciation for the complexity of the ways that choices are shaped, channeled, learned, reasoned, and structured before they are officially made:

[NEPA] requires consideration of particular sets of factual premises (ecological especially) and otherwise precarious values, and it demands the kinds of reasoning associated with those values and factual premises. It changes patterns of relationships among organizations and among individuals inside and outside of organizations. It creates powerful incentives, formal and informal, that thereafter force a great deal of learning and self-regulation upon individual and organizational actors. And it provides opportunities for individuals to develop and affirm environmental values and to press for innovative adaptation of structures and processes to a changing political world.⁴⁷

The analyst who looks only for dramatic direct effects is likely to be disappointed. NEPA must be understood as meta-policy, or a policy on policymaking, and as such must be understood and evaluated on an institutional level. NEPA imbeds ecological rationality—a way of thinking about actions, organizations, and ultimate ends and values—in political institutions, and its worth or merit must be evaluated with regard to that institutional transformation.⁴⁸

Opportunities for useful institutional evaluation in environmental policy extend well beyond analysis of existing policies; they exist in policy design as well. Institutional evaluation is based on analysis of how institutions can produce outcomes indirectly. It requires insight into and appreciation for how changes in rules can in turn force further changes—which can be only imperfectly anticipated—in other rules and the interpretation of reality, thus fundamentally transforming an institution. It also demands considerable sophistication from the users and consumers of evaluation. In public policy debates in which glibness, simple intuitive appeal, and brevity make an argument more persuasive, institutional evaluation is inherently disadvantaged.

Evaluating Environmental Policy Evaluation

There is no need to argue that one level or kind of evaluation is superior to the others. Nor does it make sense to think of combining the

ing some kind of radical shock to an institution or political system.

What are the implications of this institutional perspective for evaluating environmental policy? For the most part, environmental policy analysts have been unimaginative in analyzing the institutional frameworks that are created by environmental policies and within which policies are made as they are implemented. A blindered focus on action and outcomes, or for that matter on process, leads policy evaluators to find policy failure everywhere, without any careful analysis of the appropriate criteria for evaluating institutions, much less integrative institutions.

If, for example, CERCLA is analyzed in terms of changes it has wrought in rules, routines, and roles, as well as the beliefs, cultures, and knowledge that surround and support those roles and routines, then (in conjunction with the Safe Drinking Water Act, the Toxic Substances Control Act, and the Resource Conservation and Recovery Act) it can be seen to have been immensely consequential and likely to become more so. Although not mentioned in the legislation, CERCLA can be credited with causing the following institutional transformations, among others, over a very short time: establishment of extensive separation, collection, and recycling programs by state and local governments across the United States; profound changes in commercial lending practices and norms; reversal of longstanding packaging policies by McDonald's and other marketers of fast food; and growth in environmental auditing as an accepted good business practice.

These profound transformations were not specified as program goals by drafters of the original legislation, nor do they solve "the" problem of cleaning up existing environmental degradation. But waste reduction, hazardous waste disposal, landfills, and recycling all mean something different now throughout American society, and different rules for handling wastes have been quickly entrenched. Indeed, this set of legislation has begun a wide-ranging and complex process of institutional change that extends beyond the borders of the United States. These kinds of consequences of policy are overlooked by traditional outcomes or process evaluation, whatever the valuation criteria used.

Likewise, only institutional evaluation can do justice to assessing the merit or worth of NEPA. Outcomes assessment of a law that makes a broad policy declaration and mandates a planning and decision process is an extraordinarily difficult task, one unlikely to produce any unambiguous evidence. Given our inability to say what would have been if not for NEPA, outcomes evaluations could tell us little after the first few years of its implementation. Most evaluations instead focus on process, namely the environmental impact assessment process mandated by NEPA, seen purely as a set of mandated procedures unconnected with substantive purposes and institutional transformations. To do so, however, is to evaluate an eviscerated, truncated requirement that has only the obvious purpose of improving decisionmaking by increasing the information avail-

into one grand, all-purpose evaluation model. Each is appropriate to different kinds of questions, and each may be more or less appropriate for different kinds of policies. But there is a serious imbalance in the kinds of evaluations of environmental policy that we have sought and done over the past quarter-century. If current environmental policies are our response to the thoroughgoing, fundamental challenge that the environmental *problematique* poses for the institutions of modern society, then finding out if objective outcome indicators have changed or whether our processes have become more participatory can only tell a part of what we really want to know. Only institutional evaluation looks at the change in the system that environmental policy may have effected and attempts to appraise its merit. Yet institutional evaluations may be critically dependent on outcomes and process evaluations that provide indispensable insights and through which invaluable evidence is generated.

The outcomes evaluations most needed, however, are those based on complex and expensive monitoring systems that will require considerable, repeated, stable investment of resources over long periods of time. This kind of investment has not been politically attractive to either politicians or a public eager to find new problems, make quick judgments, and apply easy solutions. Unfortunately, easy evaluations are likely to be about as useful to us in the long run as easy policy answers to what are patently tangled, wicked environmental policy problems. Because of their strong bias toward findings of no impact, simple outcomes evaluations almost always play into the hands of the do-nothing crowd and the undo-what-we've-done-right wingers. The political effect is to retard environmental policy progress by arming critics with *apparently* rigorous ammunition.

What can we learn from our experience in evaluating environmental policies that could help us to do better? That is, to help us to do better evaluations and, informed by these evaluations, to design better policies? There is no reason to believe that we are necessarily condemned to failure, either of policies or evaluations, although we may yet prove to be damned by our unrealistic expectations for policy success, especially in the extraordinarily complex and still young field of environmental policy. Unadulterated environmental policy failure is actually quite rare, in spite of the impression offered by the popular press and the cautious, dismal conclusions of untold numbers of policy evaluators. We must begin to appreciate that unambiguous policy failure is, like unalloyed success, a rare phenomenon, leaving us most of the time trying to make sense of a very mixed and muddy picture of the policy world. To make sense of this world often means assessing the merit or worth of arbitrarily sectioned pieces of it, but it is not desirable that we always go one step further and force our assessments into simplistic categories such as "success" and "failure."

The difficulties of good evaluation, however, are not an excuse for living with bad or mediocre policy without attempting to judge it or im-

prove it. Clearly desirable are multiple evaluations, done with a keen appreciation of the strengths and limitations of each approach and a frank recognition of the advantages of others. As Majone argues, a shared level of understanding and appreciation of multiple perspectives that is more than the sum of separate evaluations ought to be possible. There is "no reason why the larger understanding of public policy to which these separate perspectives are contributing should remain forever invisible to the different evaluators, as the coral atoll is to the polyp."⁴⁹

At every level, then, we must somehow overcome the widespread and dangerous affection for quick and simple judgments. Evaluation, particularly environmental policy evaluation, is a difficult and challenging business, and we must begin to take it more seriously than we do. Politics, including environmental politics, is truly messy, which is perhaps an unfortunate virtue but, nevertheless, a given. There is little point to bemoaning the failure of politicians to provide clear, precise, and easily evaluated goals for programs and policies. Aside from the debatable point of whether such goals are desirable, they are seldom possible even with the best of intentions. Programs, policies, processes, and institutions, particularly environmental ones, are messy things, and environmental policy evaluation must develop richer theories, concepts, and methodologies to provide useful information for further policymaking in spite of that messiness.

Our addiction to simple judgments will be no easier to shake than our compulsive affection for simple, complete answers to complex sets of policy problems. Environmental policy, whether dealing with hazardous wastes, endangered species, or the impacts of government actions, addresses policy problems and issues with which government does not have long experience. We ought, for example, to have some sympathy for a remark of an EPA official responsible for implementing CERCLA: "It took forty years to build an interstate highway system, but we are expected in only four years to clean up hazardous waste sites that were 100 years in the making."⁵⁰ Because our current policies have not yet solved our environmental problems, and no true solution is in sight, does not necessarily mean that doing nothing would be a better choice.

In conclusion, then, the implications are not that we can learn how to engineer real solutions to our policy problems, or that we can learn to create policy processes that engage us in some ideal way in search and interaction. Nor is good environmental policy, or governance generally, impossible. But we have become accustomed to thinking about policy as a problem of engineering or production on the one hand, and policymaking as a game or drama on the other, and we have sought to understand and direct it accordingly. These are all inappropriate metaphors, and the models we base on them are all fatally flawed. Policy, especially environmental policy, is more a matter of gardening than engineering or building; it is cultivating than participating or acting.

Like gardening, policymaking involves neither playing nor controlling but rather the constant discovery and shaping of potential. Environmental policy cannot be constructed in a mechanistic way to precise specifications, and certainly more is at stake than how the game is played or whether a particular policy contest is won or lost. Policy is a result of organic interactive processes that can be partially understood and directed, processes that ultimately are dependent on an institutional environment being changed by policy. Old policies contribute to the soil in which new policies are sown and nurtured. Even outcomes and process evaluation of environmental policy, both badly needed, should be seen as aids in starting, pruning, and weeding policies given the existing political landscape, not as means to solve problems once and for all or as ways to devise a utopian policy system.

Accordingly, success and failure, as traditionally understood in policy evaluation, are concepts of very limited applicability or usefulness. They are wholly dependent on their terms of reference for meaning, and dangerous in their potential for abuse. At best, they allow us to think too simplistically about the value, merit, or worth of our environmental policies, indeed all our public policies, and what they accomplish. It makes little sense to call NEPA, CERCLA, or the Endangered Species Act—or environmental policy generally since 1968—a failure, although disappointments abound and should be recognized. But success is a term few should be comfortable with either. Both success and failure suggest a level of ignorance and confidence that is unjustified. Richer yet more modest judgments, and more of them, are needed and need to be used if we are to cultivate more reliably fruitful environmental policy in the 1990s and beyond. In this sense, success can have a more organic meaning, as “a process, a quality of mind and way of being, an outgoing affirmation of life.”⁵¹ The challenge of environmental policy in the 1990s is to secure the continuity of this kind of success.

Notes

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35. Giandomenico Majone, *Evidence, Argument, and Persuasion in the Policy Process* (New Haven: Yale University Press, 1989), 173; see also Michael Quinn Patton, *Utilization-Focused Evaluation*, 2d ed. (Newbury Park, Calif.: Sage, 1986), 129-131.
36. Charles E. Lindblom, "The Science of Muddling Through," *Public Administration Review* 19 (1959): 79-88; David Braybrooke and Charles E. Lindblom, *A Strategy of Decision: Policy Evaluation as a Social Process* (New York: Free Press, 1963); Charles E. Lindblom, "Still Muddling, Not Yet Through," *Public Administration Review* 39 (November-December 1979): 517-526; Charles E. Lindblom, *Inquiry and Change* (New Haven: Yale University Press, 1990).
37. Robert Gregory, "Political Rationality or 'Incrementalism'?" Charles E. Lindblom's Enduring Contribution to Public Policy Making Theory," *Policy and Politics* 17 (1989): 139-153.
38. Marc K. Landy, Marc J. Roberts, and Stephen R. Thomas, *The Environmental Protection Agency: Asking the Wrong Questions* (New York: Oxford University Press, 1990), 140.
39. Deborah A. Stone, *Policy Paradox and Political Reason* (Glenview, Ill.: Scott Foresman, 1988), 7.
40. Majone, *Evidence, Argument, and Persuasion in the Policy Process*, 168-169.
41. Thomas R. Dunlap, *Saving America's Wildlife* (Princeton, N.J.: Princeton University Press, 1988).
42. Richard I. Hofferbert, *The Reach and Grasp of Policy Analysis: Comparative Views of the Craft* (Tuscaloosa: University of Alabama Press, 1990), 156.
43. William T. Gormley, Jr., "Institutional Policy Analysis: A Critical Review," *Journal of Policy Analysis and Management* 6 (Winter 1987): 156-157.
44. Charles Anderson, *Statecraft: An Introduction to Political Choice and Judgment* (New York: John Wiley, 1977).
45. March and Olsen, *Rediscovering Institutions: The Organizational Basis of Politics* (New York: Free Press, 1989), 16. Most of the next four paragraphs draw heavily from March and Olsen, 17-18, 39, 46-48, 58-65.
46. *Ibid.*, 22.
47. Robert V. Bartlett, "Ecological Reason in Administration: Environmental Impact Assessment and Administrative Theory," in *Managing Leviathan: Environmental Politics and the Administrative State* (Peterborough [Ont.]: Broadview, 1990), 92; see also Robert V. Bartlett, "Rationality and the Logic of the National Environmental Policy Act," *Environmental Professional* 8 (1986): 105-111.
48. Robert V. Bartlett, "Ecological Rationality: Reason and Environmental Policy," *Environmental Ethics* 8 (Fall 1986): 221-239; James P. Boggs, "Procedural vs. Substantive in NEPA Law: Cutting the Gordian Knot," *Environmental Professional*, 15 (1993): 25-33.
49. Majone, *Evidence, Argument, and Persuasion*, 9.
50. Not an exact quote; remark reported on "Morning Edition," National Public Radio, September 25, 1991.
51. Alex Noble, "In Touch With the Present," *Christian Science Monitor*, March 6, 1979.

as legislation creating a particular national park, is specific to a particular state. In recent years, something of a trend has emerged to package certain kinds of legislation (such as that designating lands of a particular agency as wilderness, or designating a cluster of wild and scenic rivers) on a state-wide basis. By a strong congressional tradition, public land legislation that primarily affects a single state is very difficult to pass without the support (or at least the acquiescence) of most if not all of the state's congressional delegation. The 1980 Alaska legislation recounted immediately below was a very rare exception; the Alaska congressional delegation stoutly resisted it but in the end was defeated by a broad national coalition spearheaded by environmental groups.

E. THE SPECIAL CASE OF ALASKA

The public land law eras that played themselves out over the course of two centuries in the Lower 48 States were recreated, compressed, and intensified in Alaska. The high-stakes events in the largest public lands state—"The Last Pork Chop," as one writer dubbed it—can only be briefly summarized here.

The word Alaska means "Great Land," but the territory was long known as "Seward's Folly" after the Secretary of State who engineered its purchase from Russia in 1867. Because of Alaska's daunting remoteness and climate, the new sovereign did little with it for many decades. Alaska became a federal judicial district in 1884 and a territory in 1912. Alaskans, like other territorial residents before them, chafed under rule from Washington, D.C. but their cries of "colonialism" were perhaps even stronger. When statehood came to Alaska in 1959, its 375 million acres of land remained almost completely in federal ownership because only a relatively negligible amount of land was suitable for homesteading or other disposition under the public land laws then existing. Meanwhile, over the years since Alaska was purchased, Congress had given almost no attention to Alaska Natives. No treaties with them had been negotiated and almost no reservations had been established by statute or executive order.

Alaskans drove the most successful statehood bargain of all. Under the Alaska Enabling Act, the new state government won the right to select 104 million acres of federal land. State officials promptly ordered surveys to determine the choicest parcels. At about the same time, rumors of extensive oil and gas deposits were bruited about as mineral companies conducted exploration programs. In the mid-1960's, Alaska Natives began to protest in earnest, taking the position that their aboriginal title had never been disturbed and that any administrative transfers of title to the state or the mining industry would violate Native property rights. (On Indian title, see *supra* at pp. 40-46.) Interior Secretary Stewart Udall listened and, in 1966, acted. In a bold stroke he suspended the issuance of almost all patents and mineral leases. The pressure heightened in 1968 when the discovery of massive oil deposits on state-selected lands at Prudhoe Bay on Alaska's north slope was confirmed. Udall then withdrew all unreserved

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lands in Alaska from all forms of entry (Public Land Order 4582, the 1968 "Superfreeze") until Congress had resolved the Native claims.

It took three more years before the Alaska Native Claims Settlement Act of 1971 (ANCSA), 43 U.S.C. §§ 1601-1624, became law. Paving the way for the Alaska Pipeline, ANCSA extinguished all Native title, granted Alaska Natives the right to select 44 million acres of federal land in the state, provided Natives nearly \$1 billion in federal funds, and allowed state selections to resume. The 1971 Act also reflected the emerging power of the modern environmental movement. ANCSA's so-called "d(2)" provision, 43 U.S.C. § 1616(d)(2), authorized the Secretary of the Interior to withdraw up to 80 million acres of land that might merit inclusion in the four "national interest" systems (national parks, forests, wildlife refuges, and wild rivers). Thus, after ANCSA, four major potential sets of landowners—the state, Alaska Native corporations, the mineral companies, and the United States—were undergoing overlapping and conflicting selection processes involving hundreds of millions of acres. The d(2) "national interest" withdrawals were frustrating to those Alaskans who wanted no impediments to mineral development. See, e.g., Joseph Rudd, *Who Owns Alaska?—Mineral Rights Acquisition Amid Rapidly Changing Land Ownership*, 20 Rocky Mtn. Min. L. Inst. 109 (1975). On the passage of ANCSA, see Mary Clay Berry, *THE ALASKA PIPELINE* (1979); Barry Lopez, *ARCTIC DREAMS* (1986).

By the terms of ANCSA, the d(2) withdrawals expired on December 16, 1978. Although Congress had labored hard, it had failed to complete work on conservation legislation that would have protected the lands permanently. Faced with the prospect of these lands being opened back up to exploitation, President Jimmy Carter and Secretary of the Interior Cecil Andrus executed massive, overlapping withdrawals and Antiquities Act reservations that effectively extended the d(2) withdrawals and staved off mineral development and state selections of these federal lands. Congress finally finished the legislation in a lame-duck session after the 1980 elections and on December 2, 1980, President Carter signed the Alaska National Interest Lands Conservation Act (ANILCA) into law. This major and complex legislation (it encompasses 181 pages in statutes-at-large) is found at 16 U.S.C. §§ 3101-3233 and in scattered sections of titles 16 and 43.

Superseding (but confirming the effectiveness of) the Carter withdrawals, ANILCA allocated more than 103 million acres, mostly former BLM lands, to the federal conservation systems. It added 43.5 million acres to the National Park System, 53.7 million acres to the National Wildlife Refuge System, and 56.4 million acres to the National Wilderness Preservation System. Thirteen rivers were added to the National Wild and Scenic Rivers System. Congress made two special designations for BLM lands, the 1.2 million acre Steese Conservation Area, and the 1 million acre White Mountains National Recreation Area. The acres allocated to specific preservation systems far exceeded the 103 million acres actually affected because of some double classifications; for example, large amounts of the new

national parks and wildlife refuges were also simultaneously designated as wilderness.

ANILCA multiplied several times over the size of the major preservation systems. In one fell swoop it doubled the size of the national park system; tripled the size of the national wildlife refuge system, and quadrupled the size of the national wilderness preservation system. Similarly, ANILCA made significant alterations in the amount of lands administered by federal agencies nationally. The following changes in total agency land holdings, according to the most recent available figures, have been wrought primarily by ANILCA and by state and Native selections of BLM lands in Alaska:

Federal Agency Land Holdings (by millions of acres) *

Agency	1978	2000
Bureau of Land Management	480.5	264.4
Forest Service	188.9	192.4
Fish and Wildlife Service	31.3	95.0
National Park Service	26.6	83.6
All other agencies	<u>47.7</u>	<u>17.2</u>
TOTAL PUBLIC LANDS	775.9	652.6

ANILCA also includes many provisions dealing with Alaska public lands generally, not just lands added to the preservation systems. It implements a preference for rural residents to engage in subsistence hunting and fishing, including traditional uses of snowmobiles and motorboats, on federal lands in Alaska. It allows many existing uses in the new wilderness areas, including cabins and access by airplanes and motorboats, to continue. Detailed provisions govern mineral development on ANILCA lands. See generally Sandy Sagalkin & Mark Panitch, Mineral Development Under the Alaska Lands Act, 10 UCLA-Alaska L.Rev. 117 (1981); Comment, Preservation and Strategic Mineral Development in Alaska: Congress Writes a New Equation, 12 Env'tl.L. 137 (1981). The timber industry obtained a provision that "the Secretary of the Treasury shall make available" to the Forest Service at least \$40 million annually to maintain the timber harvest for the Tongass National Forest at 4.5 billion board feet per decade, but that was substantially modified, after much criticism from environmental groups, by legislation enacted in 1990. See 16 U.S.C. § 439d; Jim Grode, The Tongass Timber Reform Act: A Step Towards Rational Management of the Forest, 62 U.Colo.L.Rev. 873 (1991).

Senator Paul Tsongas called ANILCA "perhaps the greatest conservation achievement of the century;" environmentalists harkened back to the poet Horace (ANILCA is "a monument more lasting than bronze," Sierra 5 (Jan./Dec.1981)). See generally Robert Cahn, THE FIGHT TO SAVE WILD

* Sources: Bureau of Land Management, U.S. Department of the Interior, PUBLIC LAND STATISTICS (1978), (2000); telephone survey of other federal agencies. Figures given in various reports for land managed by various agencies can differ, largely

because some compilations include all land within, say, a national forest or park, including non-federal inholdings, while others include only acres to which the United States holds title.

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F. A MODERN LEGACY OF PUBLIC LAND HISTORY: ACCESS TO AND ACROSS FEDERAL LANDS

As this chapter has illustrated, federal public land policy has been gradually but thoroughly revised in the Nation's second century. The age of wholesale disposition is over; the age of retention and management is middle-aged; and the age of conservation and recreation is well underway. Preserving that old enemy of the settler, wilderness, has become a prominent goal of national policy.

The foregoing recitation of public land law history was intended for more than general information. Two centuries of legal development cannot be ignored, even as change accelerates. The rights, interests, and liabilities created over the past two hundred years are established, and modern systems must recognize them. Century-old cases still are persuasive precedent. And some century-old statutes, enacted with a view of the future that did not always prove out, continue to pose legal problems in modern public land management.

To illustrate the importance of this history, it is useful to examine a set of important modern problems in public land law that grow directly out of that historical legacy. These stem largely from the patchwork, haphazard character of federal disposal policies, and the sometimes dizzying patterns of land ownership that have resulted. It may seem surprising that for a long time court disputes over access questions involving federal lands were rare. But no longer—more such litigation has been brought in the past couple of decades than in the previous ten. Many of the issues raised, as in the following cases, result from the collision of ancient and modern law and policy. History can be determinative when the rubber meets the road, as it were, on access. The discussion that follows is divided into two parts: Access across non-federal land to federal land, and access across federal land.

1. ACCESS ACROSS NONFEDERAL LAND TO FEDERAL LAND

Leo Sheep Co. v. United States

Supreme Court of the United States, 1979.
440 U.S. 668.

■ MR. JUSTICE REHNQUIST delivered the opinion of the Court.

This is one of those rare cases evoking episodes in this country's history that, if not forgotten, are remembered as dry facts and not as adventure. Admittedly the issue is mundane: Whether the Government has implied easement to build a road across land that was originally granted

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ANCSA: THE ALASKA NATIVE CLAIMS SETTLEMENT ACT

I. Introduction¹

The Alaska Native Claims Settlement Act was enacted on December 18, 1971,² and has been amended by every Congress since.³ It was preceded by more than 100 years of at least theoretical uncertainty about the legal status of the Alaska Natives. The uncertainty was the product of vacillating judicial decisions, ineffective implementation of federal policies and entrenched political opposition among Alaska's territorial and state leaders to the idea of aboriginal title and tribal status.⁴

Article III of the 1867 Treaty of Cession between Russia and the United States distinguished the "uncivilized tribes" from the other "inhabitants" of the territory and as to the former provided:

The uncivilized tribes will be subject to such laws and regulations as the United States may, from time to time, adopt in regard to the aboriginal tribes of that country.⁵

This statement placed the Alaska Natives on the same legal footing as other Native American tribes, but it was often ignored, and another provision of the treaty confused the issue.

Article VI ceded to the United States "territory and dominion" of "all the rights, franchises, and privileges" then belonging to Russia in its Alaska territory. Moreover, the cession was specifically:

declared to be free and unencumbered by any reservations, privileges, franchises, grants or possessions, by any associated companies, whether corporate or incorporate, Russian or any other, or by any parties, except *merely private individual property holders*. (emphasis added)

Because the treaty did not specifically mention the treatment of aboriginal land claims, it offered an opening for the courts to interpret what the treaty did (or did not) do in that regard.

In equally ambiguous language, the federal Organic Act of 1884 only added to the confusion where it provided:

the Indians or other persons in said district shall not be disturbed in the possession of any lands *actually in their use or occupation or now claimed by them* but the terms under which

1. Portions of this chapter first appeared in *The Way Forward: Collaboration and Cooperation 'In Country'*, D. Case, "In a Twinkling—The Alaska Native Claims Settlement Act and Agreements Relating to the Use and Development of Land," AUSTRALIAN NATIONAL NATIVE TITLE TRIBUNAL (1995).
2. Act of December 18, 1971, Pub. L. No. 92-203, 85 Stat. 688, 43 U.S.C.A. §§ 1601 *et seq.*
3. Each United States Congress lasts for a two-year period and is divided into two one-year sessions. Thus, ANCSA has been amended at least once every two years since the date of its enactment.
4. See F.P. PRUCHA, *THE GREAT FATHER* 1129 (1984).
5. Treaty of March 30, 1867, 15 Stat. 539.

such persons may acquire title to such lands is reserved for *future legislation* by Congress. (emphasis added)⁶

In 1947, a federal circuit appeals court interpreted article VI of the treaty to have extinguished communal, aboriginal title and section 8 of the Organic Act to have recognized individual Indian title to relatively small plots of land.⁷ The case was never appealed, but eight years later, in 1955, the United States Supreme Court specifically disapproved this reasoning, holding that Alaska Natives, like other Native Americans, held their property by claim of aboriginal title and not as constitutionally compensable property interests.⁸

Alaska was admitted as a state on January 3, 1959.⁹ Section 4 of the Statehood Act required that the state "forever disclaim all right and title...to any lands or other property (including fishing rights), the right or title to which may be held by any Indians, Eskimos, or Aleuts." Section 4 went on to reserve to the United States the "absolute jurisdiction and control" of such property until Congress should dispose of it. Section 6 of the Statehood Act authorized the state to select a little over 103 million acres from the "vacant, unappropriated and unreserved" public lands of the United States.¹⁰ Late in 1959, the Tlingit and Haida Indians obtained a favorable judgment from the United States Court of Claims finding that, prior to the federal withdrawals of the Tongass Forest and other lands, the Indians had held most of southeast Alaska by claims of aboriginal title.¹¹ The decision set the stage for Natives throughout Alaska to assert similar claims.

In the late 1960s, as the state began to make its land selections under the Statehood Act, many Alaska Natives became alarmed that their aboriginal claims would be compromised by the state's selections. A massive dam that would have flooded millions of acres and several villages on the Yukon River and a plan to detonate an atomic bomb in the vicinity of the village of Point Hope were other alarming proposals which galvanized Alaska Natives politically.¹² They protested the state's selections to virtually all of Alaska, and in 1966 U.S. Secretary of the Interior Stewart Udall imposed a land freeze suspending issuance of federal patents and federal approval of state land selections in Alaska until the Native claims were resolved.¹³

The state sued to compel the Secretary to resume the conveyances and an Alaska Native village joined in the lawsuit in support of the Secretary's position.¹⁴ The village contended that the state was prohibited from making its selections because the federal lands it was

6. Act of May 17, 1884, ch. 53, § 8, 23 Stat. 24, 26. Among other things, the 1884 Organic Act extended federal laws relating to mining claims to Alaska and established the first framework for territorial, civil government. Prior to the 1884 Organic Act, Alaska had been governed as a federal military district. See generally Chapters 1 and 2, discussing the 1884 Organic Act.

7. *Miller v. United States*, 159 F.2d 997 (9th Cir. 1947).

8. *Tee-Hit-Ton Indians v. United States*, 348 U.S. 272, 279 (1955). See Chapter 2 for a full discussion of the tangled legal history of aboriginal title in Alaska.

9. Alaska Statehood Act of July 7, 1958, Pub. L. No. 85-508, 72 Stat. 339, as amended, and Presidential Proclamation of January 3, 1959, 72 Stat. 339.

10. See 72 Stat. 339 at 340.

11. 147 Cl. Cls. 315, 177 E. Supp. 452 (1959). The Tlingit and Haida Indians had been authorized by an act of Congress in 1935 to pursue a claim of aboriginal title in the U.S. Court of Claims and compensation for prior federal land withdrawals of their aboriginal lands. Act of June 19, 1935, 49 Stat. 388.

12. See R.D. ARNOLD, ALASKA NATIVE LAND CLAIMS 94-103 (1974) (hereinafter "ARNOLD").

13. *Id.* at 118.

14. *Id.*, describing the role of the Nenana Native Council in the litigation.

selecting were subject to claims of aboriginal title and were therefore not "vacant, unappropriated, and unreserved" as required under the Statehood Act so as to be available for state selection. The federal circuit court upheld the Secretary's continued refusal to process state land selections, largely on the strength of the Natives' argument.¹⁵

The Secretary's freeze on further state selections coincided with the discovery of the immense Prudhoe Bay oil field on the North Slope of Alaska and the need to construct an 800-mile pipeline to develop the oilfield. This could not be done without risking prolonged litigation and trespass damages. Based on claims of exclusive aboriginal use and occupancy, those damages were potentially equal to the profits to be derived from the oil production.¹⁶ Legislation was introduced in 1968 to resolve the claims, and it became law in 1971.¹⁷

II. Background: ANCSA's Compromises

In a twinkling, but not without stunning complexity, ANCSA converted the communal, aboriginal claims of the Alaska Natives into individual private property, represented by shares of stock in more than 200 Native regional, village, urban, and group corporations. It also set in motion the further allocation of Alaska's land among the state of Alaska, the Native corporations, and the federal government. This land allocation process began with the Statehood Act in 1959, was brought to midpoint by ANCSA in 1971 and was perhaps finalized with the enactment of the Alaska National Interest Lands Conservation Act (ANILCA) in 1980. Between the Statehood Act and ANILCA were more than twenty years of legal maneuvering and political compromises to determine who would control Alaska's lands. ANCSA was pivotal to those determinations and set the stage for the state's long-term economic and political development.

Before discussing ANCSA's provisions, it is helpful to analyze ANCSA as a historic compromise among four sometimes competing interests for a share of Alaska's lands.¹⁸ Understanding these interests and how ANCSA was written to accommodate them is one key to understanding (rather than just memorizing) the Claims Act. First were the Alaska Natives, represented by over 200 villages or tribes, which held the aboriginal claim to some 365 million acres of land.¹⁹ Under ANCSA, Native corporations will own about 45 million of these acres.²⁰ Second was the state of Alaska, to which the federal government had granted

15. *State of Alaska v. Udall*, 420 F.2d 938 (9th Cir. 1969).

16. See *United States v. Santa Fe Pacific Railroad*, 314 U.S. 339, 344 and 359 (1941) (Indians held entitled to an accounting "for all rents, issues and profits derived from the leasing, renting or use of the lands subject to [the Indian] right of occupancy" if the right of occupancy had not been extinguished). See also F. COHEN, HANDBOOK OF FEDERAL INDIAN LAW 488-489 (1982).

17. PRUCHA at 1130-1131.

18. Cf. T. BERGER, VILLAGE JOURNEY 24 (1985). Tom Berger, a Canadian jurist, was commissioned by the Inuit Circumpolar Conference (a nongovernmental organization of the United Nations) to review and analyze the implementation of ANCSA. Over a period of two years, Berger traveled to about eighty Alaska villages as the one person "Alaska Native Review Commission." He took grass roots testimony in these villages and convened four round table discussions of national and international authorities on the settlement of aboriginal claims. VILLAGE JOURNEY is his report. David Case was counsel to Berger's commission.

19. The tribal status of the villages was vigorously disputed until 1993 when the U.S. Department of the Interior published its definitive list of federally recognized tribes in Alaska. See 58 Fed. Reg. 54364, 54368 (October 21, 1993). Congress effectively ratified the tribal list with the enactment in 1994 of the Tribal List Act, November 2, 1994, Pub. L. No. 103-454, 108 Stat. 4791, 25 U.S.C.A. §§ 479a, 479a-1 (hereinafter "Tribal List Act").

20. Technically, the villages (as tribes) held the claim to aboriginal title, because aboriginal title by definition is a tribal (or communal) claim of exclusive use and occupancy. See Chapter 2, above, discussing aboriginal title.

some 103 million acres under the Statehood Act. Third was the federal government itself, which held the remaining approximately 217 million acres. Finally, there were the environmental interests, which became increasingly concerned about the effect of these land settlements on wildlife and other ecological values.²¹

Both before and after ANCSA, each of these interests would be allied or opposed (but seldom ambivalent) to one another. ANCSA seemingly resolved the conflict between the state's land selections and aboriginal claims, but one of ANCSA's provisions called for a later set aside of federal lands for various environmental purposes such as parks, wildlife refuges, and other conservation system units. These lands were set aside in 1980 with the enactment of ANILCA.²² The seed that was to become ANILCA was section 17(d)(2) of ANCSA,²³ or as it became known in the ANILCA debate, simply "d-2."

Section 17(d)(2) required that within two years after the enactment of ANCSA, the Secretary of the Interior would identify lands suitable for inclusion in the national conservation system. These lands were then to be withdrawn from development until 1978, by which time Congress was to have enacted legislation to identify permanent conservation withdrawals. Political forces stalled the withdrawals in Congress, characterizing them as an attempt to lock up Alaska. In late 1978, with the withdrawals stalled and the d-2 deadline approaching, President Jimmy Carter withdrew more than 100 million acres as national monuments under a little-used provision of the Antiquities Act.²⁴ This truly did come close to locking up Alaska under the restrictive provisions of the presidential proclamations creating the monuments.²⁵ Congress finally resolved the impasse in 1980 with the enactment of ANILCA, which set aside approximately 90 million acres in Alaska for the various conservation system units.²⁶

ANCSA extinguished the aboriginal title of the villages and transferred the ANCSA lands to state chartered Native corporations. In a landmark 1998 decision, the U.S. Supreme Court noted that by transferring the land to the ANCSA corporations, ANCSA had left the Alaska tribes intact as governments, but as governments "without territorial reach." See *Alaska v. Native Village of Venetie*, 522 U.S. 520, 526 (1998). The status and jurisdiction of Alaska Native tribal governments is discussed below in Chapter 10.

21. Private enterprise (particularly in the form of the multinational oil companies) also played a critical role in facilitating a rapid settlement. See *Between Worlds: A Juneau Empire Special Report*, JUNEAU EMPIRE at 4 (1999). See generally M.C. BERRY, *THE ALASKA PIPELINE: THE POLITICS OF OIL AND NATIVE LAND CLAIMS* (1975). Generally, the state of Alaska championed these development interests, and after 1971 several Native regional corporations developed substantial business relationships with oil, mining and other resource development industries. See generally JUNEAU EMPIRE, *supra* at 6-29, profiling specific regional corporations.
22. Act of December 2, 1980, Pub. L. No. 95-487, 94 Stat. 2371, 16 U.S.C.A. §§ 3101 *et seq.*
23. 43 U.S.C.A. § 1616(d)(2).
24. Act of June 8, 1906, 34 Stat. 225, 16 U.S.C.A. §§ 431-433.
25. See Presidential Proclamations, 4611-4627, 93 Stat. 1446 (December 1, 1978); reprinted in note following 16 U.S.C.A. § 431.
26. Title VIII of ANILCA attempted to resolve the long-festering Alaska subsistence issue by providing a preference to Native and non-Native rural residents for the subsistence taking of fish and game. This was a form of cooperative federalism in which the federal government imposed a subsistence preference on all of its lands within Alaska, but allowed the state to enforce Alaska fish and game laws on most federal lands if it would adopt a similar rural resident subsistence preference governing state and private lands (including ANCSA corporate lands). The state did so, but in 1989, the Alaska Supreme Court held the rural resident preference under state law to be unconstitutional under the Alaska Constitution. *M. Donnell v. State of Alaska*, 785 P.2d 1 (Alaska 1989). This led to a federal take-over of subsistence fish and game management on federal lands, continuing litigation over the scope of the federal authority and a political logjam over the issue within the state. The Alaska subsistence issue was a complex web of legal, political, social and cultural issues discussed further in Chapter 8.

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ANCSA's d-2 compromise is one of several compromises within the Settlement Act which limit Native claims in favor of environmental or other interests. For example, the Native village corporations were prohibited from selecting lands patented to the state or lands within the boundaries of any national park or military reserve²⁷ and could not be conveyed more than three townships within a federal fish and wildlife refuge, a national forest, or lands selected by or tentatively approved by the state under the Statehood Act.²⁸ Regional corporations generally received title to the subsurface estate of lands conveyed to the village corporations, but were prohibited from taking title to the subsurface of fish and wildlife refuge lands.²⁹

On the development end of the spectrum, village corporations were allowed to select their surface estate within the National Petroleum Reserve on the North Slope of Alaska, but the North Slope regional corporation was prohibited from selecting the subsurface of these lands, because they were set aside by the federal government for possible petroleum development.³⁰ With compromises such as these, ANCSA cleared the way for the state to continue its selections, the Natives to select their lands (with a limited priority over the state), and for the oil to be drilled, pumped, and exported from Prudhoe Bay.

III. ANCSA's Provisions

A. GENERALLY

Unlike prior United States aboriginal claims settlements, the lands and other assets conveyed to the Natives under ANCSA were not initially held in trust or any other form of permanent protection. Instead, they were conveyed to state-chartered business corporations, subject to the sole restriction that the stock in those corporations could not generally be sold or otherwise disposed of until December 18, 1991, twenty years after ANCSA's enactment.³¹ Unlike stock in other American business corporations, the stock in the ANCSA Native corporations had not been purchased in arm's length transactions. Instead, it was issued without charge in blocks of 100 shares each to approximately 80,000 individual Alaska Natives who were alive on the date of ANCSA's enactment, December 18, 1971.³² Natives born after that date were not entitled to receive ANCSA stock, except by inheritance or court order in a divorce or

27. See 43 U.S.C.A. § 1610(a)(1) (excluding these lands from the federal withdrawals from which the Native selections were to be made). Lands patented to the state were automatically excluded from federal withdrawal, because they were no longer in federal ownership. See 43 U.S.C.A. § 1610(a)(2).

28. 43 U.S.C.A. § 1611(a)(1). The state received its lands under the Statehood Act in a three-step process which involved first selection of lands, second tentative approval (or "TA"), and finally patent of the lands to the state. The Statehood Act specifically allowed the state to lease its TA'd lands prior to patent. There was therefore some debate whether the federal government could constitutionally deprive the state of its TA'd lands. ANCSA compromised this dispute by limiting the Natives to three townships of state-selected or TA'd lands per village. In addition, under 43 U.S.C.A. § 1602(e), lands selected by the state prior to January 17, 1969, were excluded from the definition of "public lands" from which Native selections could be made.

29. 43 U.S.C.A. §§ 1611(a)(1) and 1613(f). The fish and wildlife limits on village and regional conveyances reflect a compromise to protect federal and environmental concerns.

30. *Id.*

31. Section 7(h) of Pub. L. No. 92-203, 85 Stat. 688, 692, subsequently amended to perpetuate the restrictions unless removed by a vote of the individual ANCSA corporation shareholders. See 43 U.S.C.A. § 1606(h), (describing the characteristics of "Settlement Common Stock").

32. Telephone conversation with Timothy DeAsis, Juneau BIA Tribal Operations Officer (November 11, 1999), and undated listing of enrollment as of 12-31-85 showing a total of 80,231 enrollees.

child custody dispute.³³ The likelihood of the alienation of ANCSA stock after 1991 carried a real risk that individual Natives would sell their stock, and that control of the Native corporations and their lands would pass out of Native hands.

Natives who resided in the Native villages were enrolled as shareholders to their village corporations as well as shareholders in one of twelve regional corporations in whose region the village was located. Of course, not all Natives lived in villages; thousands lived in Alaska's cities. These did not receive village stock, but were enrolled and issued stock only as at-large shareholders in one of the twelve regional corporations located in Alaska.

A majority of Natives who lived outside of Alaska chose to form and be issued stock in the 13th Regional Corporation, headquartered in Seattle. It participated only in ANCSA's cash settlement and did not receive any ANCSA lands or other ANCSA benefits.³⁴ Natives in four historically Native communities (Sitka, Juneau, Kenai, and Kodiak) were located in large cities and did not meet the requirements to form village corporations.³⁵ Instead, they formed four "urban" corporations.³⁶ Finally, nine or ten communities that were too small to form village corporations were organized as group corporations.³⁷

Issuing the stock had the immediate (though perhaps not obvious) effect of dividing the communal claims of aboriginal title into individual shares of property. Section 4 of ANCSA extinguished the aboriginal claims and section 6 authorized payment of approximately \$1 billion for those claims.³⁸ Sections 7 and 8 authorized establishment of the thirteen regional and more than 200 village corporations to receive the land and money to be conveyed and paid under the terms of the settlement. Section 7 also authorized stock to be issued to the eligible Natives. Sections 11, 12, 13, and 14 provided respectively for the withdrawal, selection, survey, and conveyance of some 45 million acres of land to the Native corporations.³⁹

33. Later amendments allowed limited transfers as gifts to certain family members and for other limited purposes. See 43 U.S.C.A. § 1606(h)(1)(C).

34. See 43 U.S.C.A. § 1604(c) (election to enroll in 13th Region); § 1605(c) (distribution of Native Fund to regions), and § 1606(c)(establishment of 13th Region).

35. A village required a minimum population of 25 residents, the majority of whom were Natives and could not be of a "modern and urban character." Section 11(b)(3), 43 U.S.C.A. § 1610(b)(3).

36. See 43 U.S.C.A. § 1613(h)(3). The urban corporations differ in several respects from the village corporations. First, they received only one township of land (23,040 acres). Second, their shareholders were enrolled as a separate class of shareholders in the regional corporations in whose geographic region the urban corporation was located. As described later, this had the effect of depriving the urban corporations of both start-up capital and of the continuing revenue village corporations receive from the § 7(i) revenue distributions. Instead, ANCSA required both the money from the settlement and the 7(i) distributions to be paid directly to the nonvillage (at-large, urban, and group) shareholders. See 43 U.S.C.A. § 1606(m). See ARNOLD at 219-221.

37. See 43 U.S.C.A. § 1613(h)(2). BLM's 1998 ANCSA Program Summary notes that there are nine eligible groups and a tenth (Lake Minchumina) was still on appeal. Group corporations could receive up to a township of land, but some received less, because of limited available land. As with the urban corporations, the shareholders of group corporations are also a separate class of at-large shareholders in the regional corporations. Other miscellaneous conveyances were allowed as cemeteries and historical sites, primary places of residence and allotments. See ANCSA Entitlements by Authorizing Section, Table 5.1 *infra*.

38. The ANCSA extinguishment was comprehensive, but ANCSA does not directly acknowledge the legitimacy of the aboriginal claims. Section 4 extinguishes all claims "if any" based on aboriginal title, use, and occupancy or prior federal statutes or treaties. See 43 U.S.C.A. § 1603. This has been held to include extinguishment of claims for trespass to aboriginal title. See *United States v. ARCO*, 612 F.2d 1132 at 1134 (9th Cir. 1980) *cert. den.* 499 U.S. 888 (1980).

39. The ANCSA section numbers are references to the original sections of the 1971 Act (Pub. L. No. 92-203) and are hereafter used as a shorthand to describe ANCSA's major provisions. They are codified, beginning with

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B. LAND ALLOCATIONS

Of the 45 million acres, the surface estate of 22 million acres was to be divided among the village corporations.⁴⁰ Most of these lands would be selected by the villages, with more populated villages receiving more land than less populated villages,⁴¹ but it was understood that the village selections would not use up the entire 22 million acres. These leftover village selections were then allocated on the basis of population among eleven of the regions in Alaska (excluding Southeast) and the eleven regions were allowed to distribute the lands "on an equitable basis" to the villages.⁴² The twelve regional corporations located in Alaska generally received conveyance to the subsurface estate of all lands conveyed to the village corporations.⁴³ Where ANCSA prohibited regions from selecting the subsurface estate of the village lands, it allowed the regions to make in-lieu subsurface selections elsewhere. This restriction affected five regions.⁴⁴

The village and region land allocations were largely population driven. That is, the larger the population in the region (or village), the more land the village and region received. However, six regions had relatively large land claims, but relatively small populations. They therefore gave up or lost more land in the settlement than regions with large populations. Section 12(c) of ANCSA was intended to correct this inequity by allowing these regions to select an additional 16 million acres. Unlike the village selections, these six regions received title to both the subsurface and surface of these 16 million acres.⁴⁵

Finally, a remaining 2 million acres were allocated among the four "urban" Native corporations, nine or ten Native groups, cemeteries and historical sites, Native primary places of residence, and some Native allotments.⁴⁶ After these distributions, any land remaining was to be allocated among all but the 13th Regional Corporation on the basis of population. This enabled all of the twelve regional corporations located in Alaska to obtain

§ 2, at 43 U.S.C.A. §§ 1601 *et seq.* Dropping "16" from the 43 U.S.C.A. citation and adding "1" to the last two numbers is a quick way to translate the 43 U.S.C.A. citations to the original ANCSA section numbers. Thus, 43 U.S.C.A. § 1601(b) is ANCSA § 2(b); 43 U.S.C.A. § 1613(c) is ANCSA § 14(c), etc. This method of "translation" does not necessarily apply to ANCSA's many amendments.

40. ANCSA § 12(b), 43 U.S.C.A. § 1611(b).

41. ANCSA § 14(a), 43 U.S.C.A. § 1613(a). The village land entitlements ranged from 69,120 acres (3 townships) for villages of between 25 to 99 Natives to 161,280 acres (7 townships) for villages with 600 or more Natives. The selections were also required to be "compact and contiguous" and taken from roughly 500,000 acres of land withdrawn around each village under § 11(a), 43 U.S.C.A. § 1610(a).

42. ANCSA § 12(b), 43 U.S.C.A. § 1611(b).

43. ANCSA § 14(f), 43 U.S.C.A. § 1613(f). There has been significant litigation to define the scope of village surface and regional subsurface rights. Generally, anything that might be considered to be part of the mineral estate is considered "subsurface." See *Koniag, Inc. v. Koncor*, 39 F.3d 991 (9th Cir. 1994). Also, *Chugach Natives, Inc. v. Doyon, Ltd.*, 588 F.2d 723 (9th Cir. 1978). However, in 1998 Congress exempted regional gravel revenues from the 7(i) mineral income-sharing requirements. See ANCSA Land protection Act of October 31, 1998, § 7, 43 U.S.C.A. § 1606(i)(B).

44. As noted earlier, regions were prohibited from selecting subsurface lands in the National Petroleum Reserve on the North Slope and in the then-existing federal fish and wildlife refuges. See 43 U.S.C.A. §§ 1611(a)(1) and 1613(f). The five regions within in-lieu selections are Aleut, Arctic Slope, Calista, Cook Inlet, and Koniag.

45. ANCSA § 12(c), 43 U.S.C.A. § 1611(c). Ahtna, Arctic Slope, Chugach, Cook Inlet, Doyon and NANA regional corporations share this entitlement. They are sometimes called the "land lost" regions because, as described in the text, they lost more land relative to their populations.

46. Allotments were to be deducted from the 2 million acres if conveyed within two years after ANCSA's enactment. As near as can be determined, no allotments were conveyed under this provision. See 43 U.S.C.A. § 1613(h)(6).

some surface lands,⁴⁷ which amounted to several hundred thousand acres in the case of the more populous regions. These lands were especially valuable if they included mature forests. In the case of Sealaska, the southeast Alaska regional corporation, this turned out to be a particularly important source of old-growth timber.

The Natives living in southeast Alaska were beneficiaries of the earlier Tlingit and Haida land claims case, which in 1968 had resulted in a \$7.2 million monetary award.⁴⁸ As a result, the ten southeast Alaska villages were limited to one township (23,040 acres) each.⁴⁹ Generally, the lands conveyed to the southeast Alaska regional, village, and urban corporations were located in the Tongass National Forest, which enabled some of them to derive considerable wealth from the sale of timber.

ANCSA originally contemplated a total settlement of 40 million acres. Nonetheless, the eventual settlement amounted to about 45.5 million acres. That is largely because section 19 of ANCSA extinguished all of the existing Indian reservations in Alaska (except the Annette Islands Reserve) and allowed the village corporations on those former reservations to select the surface and subsurface estate of those lands and forego all other ANCSA benefits (including the cash payments) in settlement of their land claims.

Altogether, four large reservations took advantage of this provision with combined total land claims of some 4 million acres.⁵⁰ These lands were in addition to the 40 million acres conveyed to the other Alaska Native village and regional corporations. The in-lieu subsurface selections of five regional corporations account for another 1.6 million acres. These were the lands available to those five regional corporations in lieu of subsurface rights to lands in the National Petroleum Reserve and various federal fish and wildlife refuges. The various ANCSA land entitlements are summarized in Table 5.1.

C. "SURFACE" AND "SUBSURFACE"

It took years of litigation to define what Congress meant when it described the lands conveyed to the village, group, and urban corporations as the "surface estate"⁵¹ and those conveyed to the regions as the "subsurface estate."⁵² Controversy arose between village and regional corporations over the question of whether common varieties of sand, gravel, stone, pumice, peat, clay, or cinders were part of the surface or subsurface estates. The courts held

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47. The twelve regional corporations located in Alaska and their commonly used names or acronyms are: Ahtna, Incorporated (Ahtna); The Aleut Corporation (Aleut); Arctic Slope Regional Corporation (ASRC); Bering Straits Native Corporation (BSNC); Bristol Bay Native Corporation (BBNC); Calista Corporation (Calista); Chugach Alaska Corporation (Chugach); Cook Inlet Region, Inc. (CIRI); Doyon Ltd. (Doyon); Koniag, Incorporated (Koniag); NANA Regional Corporation (NANA); and Sealaska Corporation (Sealaska).

48. *Tlingit and Haida Indians of Alaska v. United States*, 389 F.2d 778 (1968).

49. ANCSA § 16(b), 43 U.S.C.A. § 1615(b). Another possible reason for limiting the scope of the southeast Alaska land awards was to limit the extent to which lands lying within the Tongass National Forest (virtually all of Southeast Alaska) would be opened to large-scale Native timber harvesting.

50. See 43 U.S.C.A. § 1618. The four large reservations (and associated villages) were: St. Lawrence Island (Gambell and Savoonga), Elim (Elim), Chandalar (Venetie and Arctic Village), and Tetlin (Tetlin). Klukwan (Chilkat Indian Village) was the fifth, much smaller reserve (800 acres). In 1976 Congress amended ANCSA to allow the village corporation (Klukwan, Inc.) to select a township under ANCSA if it conveyed the lands of the former reserve in fee to the Chilkat Indian Village tribal government. See Pub. L. No. 94-456, October 4, 1976, 90 Stat. 1934, 43 U.S.C.A. § 1615(d).

51. See 43 U.S.C.A. § 1613(a) and (b)(2) and (3).

52. See 43 U.S.C.A. § 1613(f).

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Other provisions of section 14(c) require the village corporations to convey lands occupied by nonprofit organizations and "no less than" 1,280 acres (two square miles) to the municipal corporation formed for the village or to the state of Alaska in trust for a village municipal corporation.⁶¹ This latter provision was later amended to permit the village corporations and municipalities (or the state in trust) to agree on a lesser amount. These provisions have proven to be difficult and controversial to implement in the villages. More than twenty-five years after ANCSA's enactment, relatively few of the 14(c) conveyances had actually been made. When controversies arose, the courts generally favored individual 14(c) claims and denied village legal arguments to restrict them.⁶²

Congress also recognized the necessity for including some flexibility in the Settlement Act to permit the United States, Native corporations, the state of Alaska, municipalities, and even individuals to exchange lands (and various interests in lands) to adjust land ownership patterns or for other purposes.⁶³ The exchange authority has not often been used, unless the lands have been of significant monetary value or involved important wildlife, park, or other ecological values. Most of the exchanges to date between the Native corporations and the United States involved lands held by the Native corporations that had important wildlife or habitat values being exchanged for lands held by the United States that had subsistence or commercial values, including resource development.

E. THE MONETARY SETTLEMENT

The ANCSA monetary settlement was based on a per capita or population formula. The United States and Alaska contributed \$462.5 million and \$500 million respectively to the \$962.5 million Alaska Native Fund.⁶⁴ This fund was divided among the thirteen regional corporations based on the number of shareholders in each region. Fifty percent of the money distributed to each regional corporation located in Alaska was required by ANCSA section 7(j)⁶⁵ to be redistributed by the regions to the village corporations within each region, based on the number of original shareholders in each village per capita and to the original stockholders of the region who were *not* shareholders of the village corporations.⁶⁶

61. See ANCSA § 14(c)(1), (2) and (3), 43 U.S.C.A. §§ 1613(1), (2), and (3) (describing the 14(c)(1) (individual), 14(c)(2) (nonprofit) and 14(c)(3) [municipal] reconveyance requirements).
62. See generally *Hakala v. Arxam*, 753 P.2d 1144 (Alaska 1988). See also *Buettner v. Kavilco, Inc.*, 860 F.2d 341 (9th Cir. 1988) (granting 14(c) claim in spite of argument that applicant only had a claim limited to a Forest Service cabin permit). See also *Capener v. Tanadgusix Corp.*, 884 P.2d 1060 (Alaska 1994) (Upholding 14(c) occupancy even if claimant was successor in interest to original permittee and using the land inconsistent with the permit). See *Swiss v. Chignik River Ltd.*, 951 P.2d 433 (Alaska 1998) (applicant could be entitled to more than one subsistence camp site). But see *City of Ketchikan v. Cape Fox Corp.*, 85 F.3d 1381 (9th Cir. 1996) (holding that electric utility power site did not qualify as "primary" place of business because utility business offices were located elsewhere). See also *Ogle v. Salamatoff Native Assn.*, 906 F. Supp. 1321 (D. Alaska 1995) (requiring notice to 14(c) claimants sufficient to satisfy due process).
63. ANCSA §§ 21(d)(2) and 22(f), 43 U.S.C.A. §§ 1620(d)(2) and 1621(f). See also § 1302(h) of ANILCA (16 U.S.C.A. § 3192) (allowing exchanges to permit the federal government to acquire lands "for the purposes of" ANILCA).
64. ANCSA § 6, 43 U.S.C.A. § 1605. The Alaska Natives viewed this as payment for extinguishment of their aboriginal claim to about 365 million acres of Alaska's lands. Excluding the approximately 45 million acres conveyed to the Natives, this amounts to about \$3 per acre for extinguishment of the claims to the remaining 320 million acres.
65. 43 U.S.C.A. § 1606(j).
66. 43 U.S.C.A. § 1606(m). For example, suppose a region had 2,500 shareholders, 500 of whom were nonvillage shareholders and 2,000 of whom were village shareholders, divided among five village corporations. If the region received a \$200,000 7(j) distribution, it would have distributed \$100,000 on a per capita basis among the 5

ANCSA section 7(i)⁶⁷ carries this revenue distribution arrangement out perpetually. It requires 70 percent of "all revenues received" by each regional corporation from the "timber resources and subsurface estate patented to it" to be divided annually among all twelve of the land-owning regional corporations (including the corporation from which the revenue is derived) on a per capita basis. This revenue is then required to be redistributed to the village corporations under section 7(j) and the nonvillage shareholders under section 7(m).⁶⁸

The 7(i) revenue sharing led to drawn-out litigation among all twelve regional corporations located in Alaska and eventually to a complex "7(i) Settlement Agreement."⁶⁹ It is widely believed that ANCSA's 7(i) revenue sharing provision has meant the difference between life and death for many village corporations, at least over the first twenty-five years of ANCSA's history. Figures 5.1 and 5.2 illustrate the ANCSA monetary distribution and revenue sharing provisions and their effect on the village and nonvillage shareholders. Figure 5.1 illustrates both the original distribution of the settlement fund under section 7(j) and the perpetual revenue sharing required under section 7(i). Figure 5.2 illustrates the financial benefits individual, nonvillage, and village shareholders received from the \$962.5 million settlement and the original per capita distributions of start-up capital to the village and regional corporations.

F. POST-ANCSA INSTITUTIONS

ANCSA created and set in motion the evolution of several Alaska Native and other uniquely Alaskan institutions. First, it superimposed on Alaska Native life an entirely new type of organization—the for-profit corporation. The Settlement Act did not abolish the preexisting tribal governments. This became a source of significant litigation in the 1980s and 90s as the tribes, left without any land, struggled for recognition and definition of their political existence and jurisdiction.⁷⁰ There are also regional nonprofit corporations in each of the twelve Alaska Native regions, in addition to the regional ANCSA for-profit Native corporations. The regional nonprofit Native corporations were the advocacy organizations which pursued the settlement of the Alaska Native claims as well as the ANCSA-designated incorporators of the regional profit corporations.⁷¹ Subsequently, the Native nonprofit corporations became service delivery

village corporations and 500 nonvillage shareholders. Each shareholder would be allocated \$40 (100,000 + 2,500). Each original, nonvillage shareholder would receive \$40, but a village corporation with 100 original shareholders would receive \$4,000. Shareholders who had inherited nonvillage stock would receive their proportionate share of the original shareholders' entitlement. The nonvillage shareholders may be classified differently in different regions. Shareholders who only hold shares in the region and who were not issued shares in a village, urban or group corporation are called "at large" shareholders. Shareholders in urban and group corporations also participate in the 7(m) distributions to nonvillage shareholders, and are issued at-large stock by some regions. Phone conversation of August 26, 1999, with Theresa Williams, CIRI Attorney. Other regions issue separate classes of shares for at-large, urban, and group shareholders. See, e.g., Sealaska Website, <http://www.sealaska.com>.

67. 43 U.S.C.A. § 1606(i).
68. The courts have noted that the purpose of the 7(i) revenue sharing was to even out somewhat the resource wealth of the Alaska Native regions by requiring redistribution of timber and mineral revenues from regions with more resources to those with less. See *Aleut Corp. v. Arctic Slope Regional Corp.* (Aleut IV), 484 F. Supp. 482 (D. Alaska 1980).
69. See *Aleut Corp. v. Arctic Slope Regional Corp.* (Aleut I), 410 F. Supp. 1196 (D. Alaska 1976); *Doyon Ltd. v. Bristol Bay Native Corp.*, 569 F.2d 491 (9th Cir. 1978); cert. den. 439 U.S. 954 (1978); and *Aleut Corp. v. Arctic Slope Regional Corp.* (Aleut IV), 484 F. Supp. 482 (D. Alaska 1980).
70. These events are discussed in Chapter 10.
71. ARNOLD at 158. See also ANCSA § 7(a), 43 U.S.C.A. § 1606(a) (listing these organizations as the profit corporation incorporators). See also Chapter 9, discussing the organization and functions of several regional nonprofit corporations.

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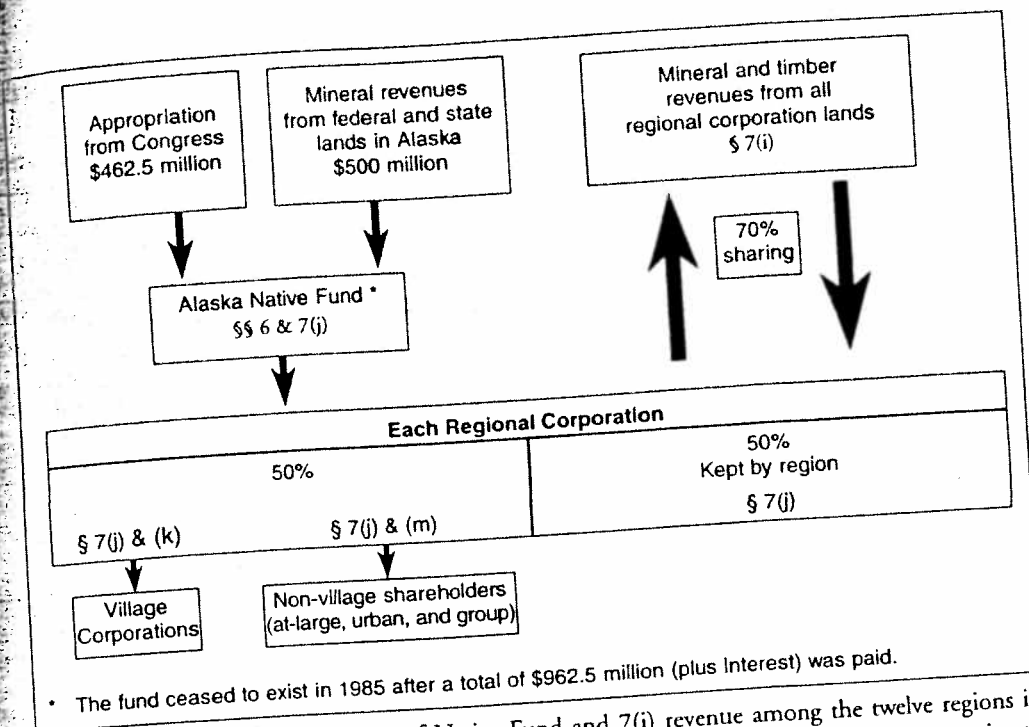


Figure 5.1. Mandatory distribution of Native Fund and 7(i) revenue among the twelve regions in Alaska. Village shareholders received a small monetary distribution in the first five years amounting to about \$375 per person. See Figure 5.2. The thirteenth region received money only from the Alaska Native Fund under ANSCA § 6(c), 43 U.S.C.A. § 1605(c). It does not receive any money under § 7(i). Adapted with permission from ALASKA NATIVE LAND CLAIMS (Alaska Native Foundation, 1978).

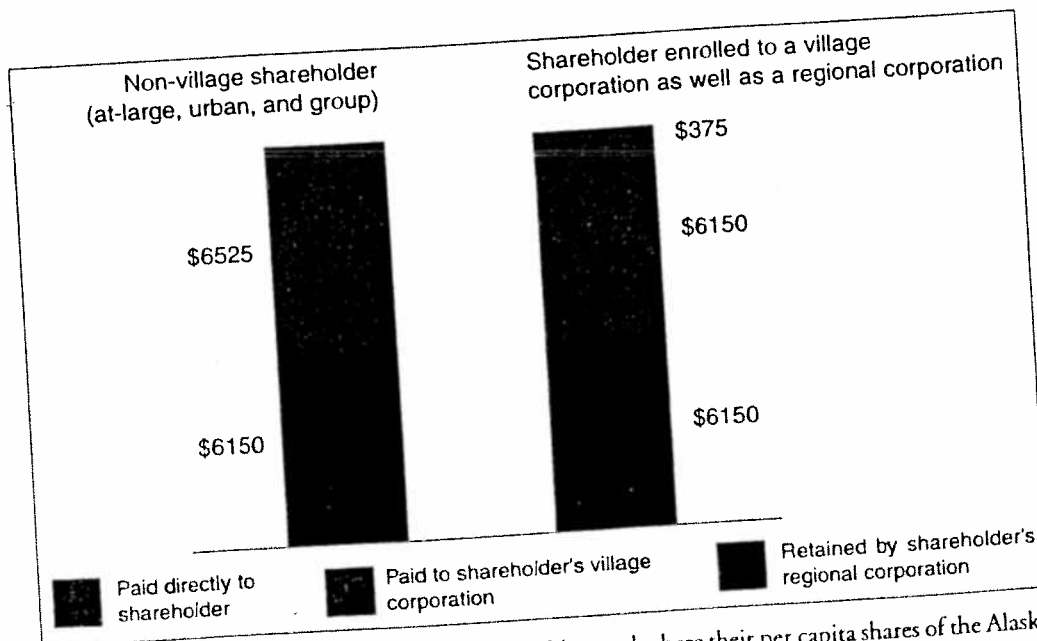


Figure 5.2. Two classes of original ANSCA shareholders and where their per capita shares of the Alaska Native Fund went. Note: Per capita share of the entire cash settlement was about \$12,675, distributed among individuals, regional and village corporations. Adapted with permission from ALASKA NATIVE LAND CLAIMS (Alaska Native Foundation, 1978).

vehicles primarily for Bureau of Indian Affairs and Indian Health Service programs in rural Alaska under provisions of the Indian Self-Determination Act.

Outside the Native corporations are Alaska municipal governments formed under state law, but often owing their financial viability to local taxes derived from the exploitation of oil, timber, and minerals made possible by the enactment of ANCSA. In some cases, the oil, minerals, and timber are owned by ANCSA corporations. The most notable of these municipal governments are the boroughs, which are like an American county in many respects but quite different in others.

First, their potential size is immense. The North Slope Borough on the North Slope of Alaska occupies a geographic area approximately the size of the state of Montana (85,000 square miles or 54,400,000 acres), with a population of only 8,500 people, living in eight villages. Immediately to the southwest of the North Slope is the Northwest Arctic Borough, centered on the community of Kotzebue and the surrounding ten villages, and encompassing an area the size of the state of Oregon (37,300 square miles or 23,872,000 acres) together with some 6,000 residents.⁷²

The North Slope Borough's principal tax base is the vast oil development infrastructure at Prudhoe Bay, made possible by the enactment of ANCSA. The Northwest Arctic Borough is largely financed by a unique revenue-sharing agreement with the mining company operating the Red Dog lead and zinc mine, which is owned by the NANA Regional Corporation. Much of the rest of Alaska is in what is known as the "unorganized" borough, which is a euphemism for areas without a regional, municipal government.⁷³ The Alaska Natives have used all of these institutions to implement ANCSA and to exert control over the pace and type of development occurring both in and around the lands they own or use.⁷⁴

IV. ANCSA's Evolution

A. GENERALLY

ANCSA embodied a novel and experimental approach in the settlement of Native claims.⁷⁵ Section 2(b) of ANCSA embodied the congressional hope that:

the settlement should be accomplished rapidly, with certainty, and conformity with the real economic and social needs of Natives, without litigation, with maximum participation by Natives and decisions affecting their rights and property.⁷⁶

In 1987, the U.S. House Committee on Interior and Insular Affairs concluded that, fifteen years after ANCSA's enactment, few of these goals had been achieved.⁷⁷ A few of the regional Corporations could be viewed as successful, but most were only moderately so and a few

72. Community and Borough map, State of Alaska Department of Community and Regional Affairs (1998).

73. See generally T.A. MOREHOUSE AND G.A. MCBEATH, ALASKA'S URBAN AND RURAL GOVERNMENTS 27-28 (1984), for a brief discussion of the function of the unorganized borough under Article X, § 3 of the Alaska Constitution.

74. S. CORNELL, V. FISCHER, ET AL., ACHIEVING ALASKA NATIVE SELF-GOVERNANCE, FINAL REPORT—AFN VERSION, The Institute of Social and Economic Research, University of Alaska, Anchorage 14-37 (1999) (describing the many institutions together with the advantages and limits of the current institutional structure).

75. See T. BERGER, VILLAGE JOURNEY (1984), for a general critique of ANCSA's implementation and effect as of the mid-1980s.

76. 43 U.S.C.A. § 1601(b).

77. H.R. REP. NO. 100-31, 100th Cong. 1st Sess. (March 27, 1987) at 3. Hereafter "H.R. REP. NO. 100-31."

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D. ANILCA

The Alaska National Interest Lands Conservation Act¹⁹⁴ is, among other things, a massive land withdrawal and classification scheme which originated in sections 17(d)(1) and (2) (43 U.S.C.A. § 1616(d)(1) and (2)) of ANCSA. Beginning on December 18, 1971, section 17(d)(1) automatically withdrew all unreserved public lands for ninety days and permitted the Secretary of the Interior to classify such lands for any authorized purpose in order to protect the public interest in those lands. Section 17(d)(2) directed the Secretary to withdraw up to 80 million acres for possible inclusion in the national parks, forests, wildlife refuges or wild and scenic rivers systems. Lands withdrawn under 17(d)(2) came to be called "national interest" lands.

The Secretary had nine months after ANCSA to make the d-2 withdrawals and two years to make recommendations to Congress for the disposition of those lands. Congress had an additional five years to act on the Secretary's recommendations. In short, ANCSA set a clock ticking giving the federal government seven years to decide on the inclusion of up to 80 million acres of Alaska lands in traditionally restrictive public lands classifications. The Secretary withdrew 79.3 million acres under 17(d)(2) for the "national interest" and 60 million additional acres under 17(d)(1) for possible "public interests." About 140 million acres were thus withdrawn for possible inclusion in several restrictive federal land management schemes.¹⁹⁵

The Secretary made his final (d)(2) recommendations in December 1973, which gave Congress until December 1978 to classify the lands permanently in one of the restrictive federal land management systems. It was obvious toward the end of 1978 that Congress was not going to pass the necessary legislation, so Secretary of the Interior Cecil Andrus exercised his emergency withdrawal authority under the Federal Lands Policy and Management Act¹⁹⁶ to set aside 110 million acres in temporary three-year withdrawals. Shortly thereafter, President Carter exercised his authority under the Antiquities Act¹⁹⁷ to designate an additional 56 million acres as national monuments—a very restrictive land classification.

Although the state filed a lawsuit to overturn these federal actions,¹⁹⁸ their practical effect was to delay indefinitely ANCSA's (d)(2) deadline and to preclude further development on nearly half the lands in Alaska.¹⁹⁹ This set the stage for the next two years of political debate over the fate of much of the state's public land. During the course of this debate, Alaska Natives and other Alaska subsistence advocates were able to trade their support of ANILCA's environmentally oriented land classifications for environmentalist support of ANILCA's title VIII subsistence provisions.

194. Act of December 2, 1980, Pub. L. No. 96-487, Title VIII, 94 Stat. 2371, 2422, 16 U.S.C.A. §§ 3111 et seq.

195. The 17(d)(1) and (2) withdrawals were the result of a political compromise among environmental, business and Native interests necessary for passage of ANCSA. See generally R. ARNOLD, ALASKA NATIVE LAND CLAIMS at 266-269. See also S. REP. NO. 96-413 (Energy and Natural Resources Committee, November 14, 1979), at 134, reprinted in 1980 U.S. Code Congressional and Administrative News (U.S.C.C.A.N.) 5070, at 5073. There is a discrepancy between the Senate Report and Arnold as to the amount of land withdrawn in the national interest under 17(d)(2). The 79.3-million-acre figure is the one cited in the Senate report.

196. Federal Lands Policy and Management Act (FLPMA) of October 21, 1976, § 204(e), Pub. L. No. 94-320, 90 Stat. 2744, 43 U.S.C.A. §§ 1701 et seq.

197. Act of June 8, 1906, 34 Stat. 225, 16 U.S.C.A. § 431.

198. *Alaska v. Carter*, A78-291 (D. Alaska 1978) (dismissed after passage of ANILCA).

199. See generally S. REP. NO. 96-413, n.195, above, in 1980 U.S.C.C.A.N. at 5076-5078 for a discussion of the events.



By its terms, title VIII of ANILCA is intended to carry out the subsistence-related policies and fulfill the purposes of ANCSA. In this respect, it is in some sense a settlement of the Alaska Native aboriginal hunting and fishing claims, seemingly extinguished in ANCSA. Unlike previous such settlements in the lower forty-eight states, ANILCA does not afford Alaska Natives off-reservation or other exclusive rights to hunt and fish because of their membership in a particular tribe. Instead, bowing to a perceived political reality, ANILCA established subsistence protections for most rural Alaska residents—Native and non-Native. Construing section 810 of ANILCA, the Ninth Circuit Court of Appeals has held that “Congress was not passing Indian legislation” when it enacted Title VIII of ANILCA and that language in section 810 was not entitled to liberal construction to resolve doubtful expressions in favor of the Indians.²⁰⁰

ANILCA also seemed to be a comprehensive approach to the legal, political, and economic issues that plagued the state’s subsistence policy. Its “Findings” provide the legal justification for federal protection of Native subsistence culture (and non-Native subsistence society). Its administrative scheme required the state to provide for the subsistence uses of rural Alaska residents with a priority for those uses and a “system of local advisory committees and regional advisory councils.” It also restricted the authority of the Alaska fish and game boards to make policy contrary to the recommendations of the regional advisory councils with respect to subsistence uses. Finally, the law provided for federal funding for up to 50 percent of the cost of the advisory committee/council administrative structure. Beyond these essentials, Title VIII also provided for federal oversight and judicial enforcement of state and federal compliance with its provisions. Finally it provided for subsistence use of public lands restrictively classified as parks or park monuments and full consideration of the effect any future disposition of public lands might have on the subsistence value of those lands.

1. *The Legal Issues*

Section 801 of ANILCA (16 U.S.C.A. § 3111) invokes the historic federal authority over Native affairs to protect Native “physical, economic, traditional, and cultural existence.”²⁰¹ Because the relationship of the federal government to Native Americans is a political one, federal law can reach out to protect Native cultural values without running afoul of the U.S. Constitution’s prohibitions against racial discrimination.²⁰² Furthermore, as the “supreme law of the land,”²⁰³ federal legislation based on this relationship preempts contrary provisions of Alaska’s Constitution or other laws.²⁰⁴ However, Title VIII of ANILCA stops short of

200. *Hoonah Indian Ass’n v. Morrison*, 170 F.3d 1223, 1228–1229 (9th Cir. 1999).

201. Section 801. The Congress finds and declares that—

(1) the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives, on the public lands and by Alaska Natives on Native lands is essential to Native physical, economic, traditional, and cultural existence and to non-Native physical, economic, traditional, and social existence;

• • • •

(4) in order to fulfill the policies and purposes of the Alaska Native Claims Settlement Act and as a matter of equity, it is necessary for the Congress to invoke its constitutional authority over Native affairs and its constitutional authority under the property clause and the commerce clause to protect and provide the opportunity for continued subsistence uses on the public lands by Native and non-Native rural residents.

202. U.S. CONST., amend. XIV. See *Brown v. Board of Education*, 347 U.S. 483 (1954) (prohibiting racial segregation in education). Compare *Morton v. Mancari*, 417 U.S. 535 (1974) (upholding Indian preferential employment practices).

203. U.S. CONST., Art. VI, cl. 2.

204. See, e.g., *Missouri v. Holland*, 252 U.S. 416 (1920).

invoking Congress's constitutional authority to preempt state law to protect Native subsistence. Instead Congress, at the behest of the state of Alaska, fashioned what proved to be a flawed political compromise based on rural residency and cooperative federalism. The Alaska Supreme Court rejected the compromise with its 1989 decision in *McDowell v. State of Alaska*.

ANILCA gave the state a strong incentive to manage fish and game resources according to federal subsistence requirements as the price to be paid for state management of fish and game on federal (public) lands.²⁰⁵ ANILCA provided a substantial incentive to conform state subsistence policy and procedures to the federal subsistence preference for rural residents in order to maintain Alaska's statewide fish and game management authority. The initial result, from the rural point of view, was an improvement in the policies and procedures the state followed in implementing its own subsistence program.

Three sections in Title VIII, taken together, gave substantial incentives to the state to manage its fish and game resources in a way that protects subsistence uses by rural Alaska residents: section 803 (Subsistence Uses Definition), section 804 (Subsistence Preference) and section 805(d) (State Compliance). By May 1982, the state had conformed its laws to the federal requirements either by regulation or regulatory interpretation of prior state subsistence statutes, but therein lay the beginning of the unraveling of ANILCA's rural resident compromise.

a. Section 803 (Subsistence Uses Definition)

Section 803 (16 U.S.C.A. § 3113) defines "subsistence uses" as:

the customary and traditional uses by *rural Alaska residents* of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal family consumption; and for customary trade. (emphasis added)

The section further defines "family" and "barter,"²⁰⁶ and, with two significant exceptions, was the same as the original parallel state definitions for all these terms.²⁰⁷

Unlike the original state statutory definition, "subsistence uses" under the ANILCA scheme were restricted to "rural Alaska residents."²⁰⁸ The first state statutory definition of

205. Denying the state the authority to manage fish and game resources on federal public lands arguably impairs the state's ability to manage these resources on state or private lands, since animals do not respect artificial, human, land boundaries. Nonetheless, a dual system of state and federal regulation evolved after *McDowell*.

206. (1) "family" means all persons related by blood, marriage, or adoption, or any person living within the household on a permanent basis; and (2) "barter" means the exchange of fish or wildlife or their parts, taken for subsistence uses—

A. for other fish or game or their parts; or

B. for other food or for nonedible items other than money if the exchange is of a limited and noncommercial nature.

207. ALASKA STAT. § 16.05.940 (am. § 15 ch. 151 SLA 1978), subsequently amended, by § 4 Ch. 9 SLA 1994 and codified at ALASKA STAT. § 16.05.940 (1996). As originally enacted in 1978, the state statute defined "subsistence uses" as:

(26) "subsistence uses" means the noncommercial customary and traditional uses in Alaska of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter or sharing for personal or family consumption. . . .

The terms "family" and "barter" are defined in the state statute in the same terms as in ANILCA. See *supra*, n.206.

208. See generally S. REP. NO. 96-413 (Energy and Natural Resources Committee) (November 14, 1979), at 233 (reprinted in 1980 U.S.C.A.N. at 5177) (discussing the reasons for limiting subsistence uses to rural residents).

"subsistence uses," then found in Alaska Stat. § 16.05.940(26), was not similarly restricted, although it had been interpreted in state fish and game regulations as applying only to rural residents. The omission of rural residents from the original state definition was apparently a drafting error which arose out of the state's efforts in 1978 to enact subsistence legislation identical to the ANILCA subsistence provisions in the bill then being considered by the U.S. Congress. The original ANILCA definition was not limited to "rural residents" either, an oversight that was corrected prior to final passage. By that time, the state had already adopted its definition which omitted rural residents.²⁰⁹ In order to conform the state and federal definitions, the Alaska fish and game boards adopted regulations in 1982 restricting subsistence uses to rural residents. This regulatory approach also appeared consistent with the federal law which contemplated that the state rulemaking will be part of a "dynamic process for the regulation of subsistence resources and other uses."²¹⁰

The treatment of "customary trade" in the federal definition was the other point at which the state and federal subsistence schemes differed. Under the state definition, customary trade (along with barter and sharing) had to be for "personal or family consumption." Under Title VIII, only barter and sharing are required to be for personal or family consumption; customary trade is not linked to any particular purpose. This opens the possibility that under federal law some forms of trade (e.g., the fur trade) can be classified as a subsistence use even though they might involve money and commerce. However, it is clear from ANILCA's legislative history that customary trade should not result in the "establishment of significant commercial enterprises," which suggests that at least the form of such trade must exist before ANILCA (i.e., be customary or long established).²¹¹

b. Section 804 (Subsistence Preference)

Section 804 (16 U.S.C.A. § 3114) establishes the ANILCA subsistence preference in the following terms:

Except as otherwise provided in this Act and other Federal laws, the taking on *public lands* of fish and wildlife for *nonwasteful* subsistence uses shall be accorded priority over the taking on *such lands* of fish and wildlife for other purposes. Whenever it is necessary to restrict the taking of populations of fish and wildlife on such lands for subsistence uses in order to *protect the continued viability* of such populations, or to continue such uses, such priority shall be implemented through appropriate limitations based on the application of the following criteria:

1. customary and direct dependence upon the populations as the mainstay of livelihood;
2. local residency; and
3. the availability of alternative resources. (emphasis added)

The preference contains at least two important qualifications. First, it applies only to subsistence uses on federal "public lands" as that term is defined in ANILCA. Second, it

209. Personal interview from Don Mitchell (May 1983). See also S. REP. NO. 96-413 at 268 (1980 U.S.C.C.A.N. at 5212) (discussing the relationship between the state and federal definitions). But see, *Madison v. Alaska Dept. of Fish and Game*, 696 P.2d 168 (Alaska 1985) (rejecting the state's regulations attempting to rectify the statutory omission).

210. S. REP. NO. 96-413 at 269 (1980 U.S.C.C.A.N. at 5213).

211. *Id.* at 233-234 (1980 U.S.C.C.A.N. at 5177-5178). The term "uses" also appears to include other forms and purposes of taking wildlife other than hunting and fishing for food. The state incorporated "customary trade" as one of the regulatory criteria for identifying subsistence uses in 5 AAC 99.010(b)(7)(1995). See also *United States v. Alexander*, 938 F.2d 942 (9th Cir. 1991) (upholding sale of herring roe as customary trade and a defense to federal Lacey Act prosecution, discussed in text accompanying n.312 below).

only permits restrictions on subsistence uses when it is necessary to restrict the taking of fish and wildlife either to protect the continued viability of the resource or to permit continued subsistence uses.²¹² The plain language and structure of section 804 requires that subsistence uses (i.e., customary and traditional uses) always be provided for on public lands, unless they must be restricted either to protect viability of specific fish or game populations or to continue subsistence uses.

i. Public Lands

As defined in section 102 of ANILCA, "public lands" include only "lands, waters, and interests therein" the title to which (after December 2, 1980) "is in the United States." State selections that have been tentatively approved or selected but not conveyed, Native corporation selections made under ANCSA that have not been conveyed, and the lands of the former reserves mentioned in section 19(b) of ANCSA (43 U.S.C.A. § 1618(b)) are all specifically excluded from this definition.²¹³ This means that as a matter of federal law the ANILCA subsistence preference applies only to renewable resource use on lands or waters, or interests in lands or waters, owned by the federal government that have not been selected by the state or Native corporations. The preference does not apply to state or private lands (including lands owned by Native corporations) unless the state incorporates the preference into state law. As discussed further below, the Alaska Supreme Court's invalidation of the state law incorporating ANILCA's rural resident subsistence preference resulted in further federal and state litigation to clarify the scope of federal jurisdiction over water.

ii. Different Priorities

Differing interpretations of the subsistence priority have emerged under diverging systems of state and federal fish and game management. Under the state law, the subsistence priority (e.g., when limits are imposed on nonsubsistence uses but not on subsistence uses) is required only when both subsistence and nonsubsistence uses cannot be accommodated. Unless there is a scarcity of the resource, state law has been interpreted to require only a "reasonable opportunity" for subsistence harvest of resources.²¹⁴ Moreover, under the Alaska Supreme Court's interpretation, the state fish and game boards may (but are not required to) accommodate custom and tradition in regulating methods of hunting and fishing.²¹⁵ Under the federal scheme, section 804 of ANILCA is interpreted to require that customary and traditional (i.e., subsistence) uses be provided first and that nonsubsistence uses be regulated in such a manner as to have the least adverse impact on subsistence. Accordingly, the federal courts have required that accommodation must also be made to customary and traditional methods of fishing and hunting.

212. Subsistence use must also be nonwasteful as provided in § 804, although the term is not further defined.

213. See §§ 102(1), (2) and (3) (16 U.S.C.A. §§ 3102(1), (2) and (3)) (defining "land," "Federal land" and "public lands," respectively).

214. ALASKA STAT. § 16.05.258(f) (defining reasonable opportunity as providing a normally diligent participant with a reasonable expectation of success of taking fish or game).

215. ALASKA STAT. § 16.05.258(a), § 3, ch. 1, SSSLA 1992, effective October 1, 1995. See also *State of Alaska v. Morry*, 836 P.2d 358 (Alaska 1992) (State subsistence law provides a preference only by giving subsistence users "reasonable opportunity to harvest the resource," unlike federal law which establishes a "least adverse impact" standard for management of subsistence resources). See W.E. Caldwell, "Reasonable Opportunity" v. "Customary and Traditional" in Lime Village, CULTURAL SURVIVAL QUARTERLY 63 (Fall 1998), for an account of the different priorities under state and federal law.

Under either scheme, it is also important for the fish and game boards to give specific consideration to subsistence uses in each rule they make, even if no true priority is necessary. If the boards do not specifically consider (on the record) the relationship of the rules to subsistence uses, then the boards may expose the rules they do adopt to claims that they did not take subsistence uses into account.²¹⁶ Moreover, unless they are consistently careful in their rulemaking, it is likely that the boards will fail to implement a true priority in circumstances where it is warranted.

Both the state's implementing regulations and the plain language of section 804 require the fish and game boards to give specific consideration to the effect of their rules on subsistence uses "on an ongoing basis," even when no priority is required.²¹⁷ It is also clear under the federal scheme that nonsubsistence uses are not to be restricted unless it is necessary either to preserve the resource or to protect subsistence uses.²¹⁸

c. Section 805(d) (State Compliance)

Although it was part of ANILCA's larger political solution, discussed below, section 805(d) (16 U.S.C.A. § 3115(d)) was crucial to statewide implementation of the federal subsistence definition and preference as well. Section 805(d) required the state, through "laws of general applicability," to implement the ANILCA subsistence definition and preference on federal public lands by December 2, 1981. Failure to do so would transfer subsistence management of those lands to the federal government, thus depriving the state of or preempting a substantial amount of its fish and game management authority. The state went a few months past the deadline, but the boards of fish and game did adopt general regulations, effective July 1982, which appeared to incorporate fully the federal subsistence definition and preference.²¹⁹ In 1983, Sam McDowell and a few disgruntled sportsmen filed a lawsuit challenging the state's compliance with ANILCA's rural resident compromise. In 1989, the Alaska Supreme Court agreed with the *McDowell* plaintiffs, invalidating the state's compliance with ANILCA. In response the federal government reassumed management of subsistence uses of fish and wildlife on public lands.²²⁰

216. *Bobby v. Alaska*, 718 F. Supp. 764, 779-780 (D. Alaska 1989) (overturning Board of Game regulations for lack of evidence in the record and lack of clearly articulated analysis substantiating the board's decisions). Also, telephone interview with Bob Wolfe, Alaska Division of Subsistence (October 16, 1995).

217. S. REP. NO. 96-413 in 1980 U.S.C.C.A.N. generally at 5213 and also at 5354-5355, the additional views of Senators Metzenbaum, Matsunaga, and Tsongas, noting that the preference is to be applied "on an ongoing basis" and not just when there is a threat to the resource. Compare 5 AAC 99.010(c) (requiring only regulations "that provide a reasonable opportunity [for subsistence]").

218. S. REP. NO. 96-413 at 233, 235, and 269 (1980 U.S.C.C.A.N. at 5177, 5179 and 5213) (discussing, respectively, the reasons for the addition of "rural resident" to the § 803 subsistence definition, the provisions limiting restrictions on nonsubsistence taking in § 815(3) and the nature of the preference under § 804). See also Op. Alaska Atty. Gen., "Subsistence law: real and perceived problems" (File No. 166-448-83, February 25, 1983), at 12 (concluding that the "priority becomes active if it is necessary to restrict the taking of fish and game"). Compare H.R. REP. NO. 97-228 (September 16, 1981), at 28 (1981 U.S.C.C.A.N. at 1478) (comparing the ANILCA priority to the similar subsistence priority established under the 1981 amendments to the Marine Mammal Protection Act).

219. 5 AAC 99.010 *et seq.* (1982). Approved pursuant to § 805 (d) of ANILCA by Secretary of the Interior Watt (letter of May 14, 1982 to Alaska Governor Hammond). Since repealed.

220. *McDowell v. State of Alaska*, 785 P.2d 1 (Alaska 1989). The suit also appears to have been filed in the wake of the 1982 defeat of Ballot Measure No. 7, to repeal the state's subsistence management program, which had been enacted in response to ANILCA.

d. *The State Court Response to ANILCA*

The Alaska fish and game boards' regulations were first challenged in *Madison v. Alaska Department of Fish and Game*.²²¹ In *Madison*, the Alaska Supreme Court overturned the state regulations that limited subsistence uses to rural residents on the grounds that the Alaska subsistence statute did not in fact include any such limiting provision.²²² The court interpreted the state's subsistence statute as applying to all state residents who used fish and game for personal consumption.²²³ Since it held that the state subsistence protections were not limited to rural residents, the *Madison* decision placed the state subsistence law in jeopardy of being found in noncompliance with the explicit requirements of Title VIII of ANILCA. Faced with the prospect of a federal takeover of fish and game management on the federal lands in the state, the Alaska legislature amended the state subsistence statute in 1986 to include rural residence in the definition of "subsistence uses," and to limit the subsistence priority to "residents of a rural area."²²⁴

The Alaska legislature defined a "rural area" to mean "a community or area of the state in which noncommercial, customary, and traditional use of fish or game for personal or family consumption is a principal characteristic of the economy of the community or area."²²⁵ This definition had the effect of excluding certain Native communities that were located near urban areas where the principal characteristic of the economy was cash, but where Natives nevertheless depend on subsistence resources. The Kenaitze Indians reside on the Kenai Peninsula, an area dominated by a cash economy, and they challenged the new "rural area" definition in federal court in *Kenaitze Indian Tribe v. Alaska*.²²⁶

In its 1988 *Kenaitze* decision, the Ninth Circuit Court of Appeals held that even though its economy was "no longer dominated by subsistence and barter," the Kenai Peninsula was nevertheless rural under the ordinary meaning of the term.²²⁷ The court reasoned that the Kenai Peninsula included areas that are sparsely populated, vast areas of countryside that are the opposite of urban.²²⁸ The court concluded that the state of Alaska, in trying to redefine "rural," was simply trying to find a way to "take away what Congress has given, adopting a creative redefinition of the word rural, a redefinition whose transparent purpose is to protect commercial and sportfishing interests."²²⁹

The year following *Kenaitze*, the Alaska Supreme Court invalidated the state subsistence statute's rural residency preference altogether in *McDowell v. State of Alaska*.²³⁰ In *McDowell*,

221. *Madison v. Alaska Dept. of Fish & Game*, 696 P.2d 168 (Alaska 1985).

222. *Id.* at 174-176.

223. *Id.*

224. ALASKA STAT. §§ 16.05.258(c) and 16.05.940(30) (enacted as § 6, ch. 52 SLA 1986, subsequently repealed and conditionally reenacted in §§ 2 and 3, ch. 1 SSSLA 1992. As of 2001, ALASKA STAT. § 16.05.258(c) replaced the rural limitations on the subsistence priority with subsistence and nonsubsistence areas. Also, "subsistence uses" are defined in ALASKA STAT. § 16.05.940(32).

225. ALASKA STAT. § 16.05.940(32), § 11 ch. 52 SLA 1986 (definition of "rural area" subsequently renumbered as "(27)").

226. 860 F.2d 312 (9th Cir. 1988), *cert. denied*, 491 U.S. 905 (1989).

227. *Id.* at 314-318.

228. *Id.*

229. *Id.* at 318.

230. 785 P.2d 1 (Alaska 1989). See generally Stephan M. White, "Equal Access to Alaska's Fish and Wildlife," 11 ALASKA L. REV. 277 (December 1994), discussing *McDowell* and the Alaska Supreme Court decisions interpreting the unique provisions of article VIII of the Alaska Constitution.

two Alaska residents who engaged in subsistence hunting and fishing but resided in areas classified as nonrural by the joint boards of fish and game, challenged the constitutionality of the state subsistence statute under the Alaska Constitution.²³¹ The Alaska Supreme Court found that several clauses in article VIII of the Alaska Constitution prohibited exclusive or special privileges to take fish and wildlife.²³² The court went on to hold that the rural residency criterion used in the 1986 subsistence statute passed in response to *Madison*, which conclusively excluded all urban residents from subsistence hunting and fishing, was unconstitutional as a denial of the "equal access" clauses of the Alaska Constitution.²³³ In the face of this constitutional dilemma, the governor of Alaska convened the first of many special sessions of the legislature to deal with the subsistence issue in June of 1990; however, the legislators found no solution to the problem.²³⁴ Later, an Alaska superior court ruled that the rural limitation was severable from the remaining portions of Alaska's subsistence law, and that the state law (as judicially revised) was viable and would apply to state-owned and private lands.²³⁵ After *McDowell*, the joint boards of fish and game issued a policy statement providing that all Alaskans were eligible to engage in subsistence harvests anywhere in Alaska.²³⁶ In 1992 the Alaska Supreme Court sustained this policy in *State v. Morry*.²³⁷

State v. Morry incorporates four important holdings related to subsistence under state law. First, the court held that state law required the board of game to adopt subsistence regulations for each wildlife population where a harvestable portion of the population is determined to exist. In *Morry*, the state had failed to promulgate brown bear regulations that took subsistence into account, but applied trophy hunting regulations to subsistence harvesters. The court held that these trophy regulations did not comply with the requirements of state law, and further that they were adopted without the appropriate public notice.²³⁸ The court then invalidated the brown bear trophy-hunting regulations as subsistence regulations and ordered the board of game to promulgate appropriate subsistence regulations in accordance with the procedural requirements of the state Administrative Procedures Act.²³⁹

Second, the court held that the superior court erred in applying the "least intrusive standard" to regulation of subsistence harvests and that the state subsistence law only provides a preference to subsistence uses by providing harvesters a "reasonable opportunity" to gather the resource.²⁴⁰ Third, the court reaffirmed its "all Alaskans" ruling in *McDowell v. State*:

231. *McDowell*, 785 P.2d *supra*, at 2.

232. *Id.* at 6.

233. *Id.* at 9. The court held the statute was both underinclusive because it excluded urban subsistence users and overinclusive because it included rural residents who were not truly subsistence users. See *supra* n.180, and accompanying text, describing the "equal access" clauses of Article VIII of the Alaska Constitution.

234. *Katie John v. United States*, Nos. A90-0484-CV (HRH), A92-0264-CV (HRH), 1994 WL 48730, at 4 (D. Alaska March 30, 1994).

235. *Id.*

236. Policy Statement #90-18-JB (October 28, 1990).

237. 836 P.2d 358 (Alaska 1992).

238. *Id.* at 362-364, interpreting ALASKA STAT. § 16.05.258(c), as enacted in § 6 ch. 52 SLA 1986. ALASKA STAT. § 16.05.258(c) has been subsequently amended.

239. *Id.* at 371. Procedural requirements are found at ALASKA STAT. §§ 44.62.190(a), 16.05.255, 16.05.258(b).

240. *Id.* at 365.

Simply stated, after *McDowell* there are no statutory standards for determining those individuals who are ineligible to participate in subsistence hunting and fishing. . . . *all Alaskans* are once again eligible to participate in first tier subsistence harvests and uses. (emphasis added).²⁴¹

Last, the *Morry* court held that the joint boards of fish and game have the discretion, but are not mandated, to take into consideration the customary and traditional methods of subsistence harvesting when formulating their subsistence regulations.²⁴²

The *McDowell* and *Morry* decisions rewrote the state subsistence statutes so that under state law subsistence hunting and fishing is open to all Alaskans, regardless of where they live, on state and private lands, including state and Native corporate selections and landholdings.²⁴³ The state is required to promulgate subsistence regulations where there is a harvestable population of fish or game, but those regulations need only supply a reasonable opportunity for a subsistence harvest. Finally, the boards may, but are not required to, take customary and traditional harvest methods into account when developing subsistence regulations. As we shall see, several of these interpretations are inconsistent with the federal approach to the same questions.

e. The Federal Response to McDowell

In response to the *McDowell* ruling and Alaska's inability to comply with the requirements of Title VIII of ANILCA, the cognizant federal agencies took over management of subsistence uses on federal lands in 1990.²⁴⁴ Citing the shortness of time available for deliberation, the Secretary of the Interior adopted the former state subsistence hunting and fishing program.²⁴⁵ Over time, the Secretary's measures were replaced by permanent regulations which created a federal subsistence board and invested it with authority to adopt regulations for the day-to-day management of subsistence activities on public lands in Alaska.²⁴⁶

However, the federal government did not assume control over most navigable waters (only those overlying submerged lands withdrawn prior to statehood) and thus virtually all fishing management was left under state control.²⁴⁷ Although navigability determinations

241. *Id.* at 368.

242. *Id.* at 370-371.

243. *Id.* at 368.

244. 55 Fed. Reg. 27,114 (1990). The cognizant federal agencies are the Forest Service, in the Department of Agriculture; and the Bureau of Indian Affairs, Bureau of Land Management, Fish and Wildlife Service, and Park Service, all agencies of the Department of the Interior.

245. *Katie John*, 1994 WL 487830, at 4, citing to 55 Fed. Reg. 27114.

246. 57 Fed. Reg. 22940 (1993), codified at 50 C.F.R. 5.100-3(b).

247. The July 1, 1997, Subsistence Management Regulations list the following prior withdrawals to which federal management applied:

The regulations in this booklet apply to all non-navigable waters located on federal public lands. On certain federal public lands that were withdrawn for federal purposes before Alaska's statehood, these regulations apply to all waters, including those that are navigable. These areas include:

- The submerged land and waters, which lie north of a line beginning at a point on the boundary between the United States and Canada on the Continental Divide at approximately latitude 65° 30' N, north a parallel 100,000' west, thence westerly with the Continental Divide along the crest of portions of the Brooks Range and the De Long Mountains to Cape Elishew.
- The area north of 61° north latitude, south of 121° west longitude, west of 130° west longitude and east of the 140° west longitude including the Hazen Pass region of the Yukon Delta National Wildlife Refuge.
- Some of the land and waters of the Bristol Bay National Monument, De Long Mountains National Monument,

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had not yet been made on most of Alaska's waterways, it was probable that few waterways of significance to fisheries would be classified as nonnavigable due to the expansive definition of navigability.²⁴⁸

The Secretary of the Interior took the position that generally navigable waters within the state of Alaska are not public lands for purposes of ANILCA, and that the federal subsistence board lacked subsistence management jurisdiction over Alaska's navigable waters and hence the important fishery resources that composed the majority of the subsistence harvest.²⁴⁹ The Secretary's decision turned on ANILCA's statutory definition of the term "public lands". As previously stated, Title VIII of ANILCA governs the taking of fish and wildlife on *public lands*. ANILCA defines "land" to mean lands, waters, and interests therein. "Public lands" are federal lands, waters, and interests therein situated in Alaska to which, after December 2, 1980, the United States holds title.²⁵⁰ The Secretary of the Interior interpreted this language to exclude all of Alaska's navigable waters, "[b]ecause the United States does not generally own title to the submerged lands beneath navigable waters in Alaska."²⁵¹ The Interior Department's interpretation fell into the troubled waters of a lawsuit filed earlier by Katie John, a Native Elder living near the Copper River.

f. Katie John I

In *Katie John v. United States*,²⁵² Alaska Native Elders fishing near the Copper River at a place called Batzulnetas challenged the Secretary's position that navigable waters within the state of Alaska were not public lands as defined in ANILCA. The *Katie John* litigation was catalyzed by state subsistence regulations that allowed only for limited subsistence fishing at Batzulnetas. After the *McDowell* decision, which put Alaska out of compliance with

- The area west of the easternmost tip of Unimak Island to the terminus of the Aleutian Islands, except the area between Akutan Pass and Samalga Island (Aleutian Islands Unit, Alaska Maritime National Wildlife Refuge);
- Simeonof Island and all waters of the Pacific Ocean within one mile of Simeonof Island;
- The Semidi Islands and all waters of the Pacific Ocean lying between parallels 55°57'00"–56°15'00" north latitude and 156°30'00"–157°00'00" west longitude;
- Kodiak National Wildlife Refuge and waters on Kodiak Island within the refuge boundary;
- Waters of the Pacific Ocean enclosed by the boundaries of Womans Bay, Gibson Cove (near the community of Kodiak) and an area defined by a line one-half mile on either side of the mouth of Karluk River, and extending seaward 3,000 feet (offshore of the community of Karluk on Kodiak Island);
- Afognak Island and all waters of the Pacific Ocean within 3 miles of the shoreline;
- The portion of the Kenai National Wildlife Refuge within the former Kenai National Moose Range boundary.

See also Alaska v. United States, 521 U.S. 1, 117 S. Ct. 1888 (1997) (original action in U.S. Supreme Court confirming federal title to submerged lands generally offshore of the North Slope).

248. *Native Village of Quinhagak v. United States*, 35 F.3d 388, 394, n.4 (9th Cir. 1994), *citing to Alaska v. Ahna, Inc.*, 891 F.2d 1401, 1402–05 (9th Cir. 1989), *cert. denied*, 495 U.S. 919 (1990) (holding that a rivet with depths of 1 to 3 feet and usable by inflatable rafts and small motorboats was navigable).
249. *Id.*, *Native Village of Quinhagak*, 35 F.3d at 390; *see also* 57 Fed. Reg. 22940 (1992).
250. 16 U.S.C.A. § 3102(1). *See also Amoco Production Co. v. Village of Gambell*, 480 U.S. 531, 548, n.15 (1987) (describing ANILCA's use of these terms).
251. 55 Fed. Reg. 27,114 at 27,115 (June 29, 1990). The final regulations did not differ significantly. *See* 57 Fed. Reg. 22,940 at 22,942 (May 29, 1992) and *Alaska v. Babbitt (Katie John II)*, 72 F.3d 698, 701 (9th Cir. 1995).
252. *Katie John v. United States*, No. A90-0484-CV (HRH), 1994 WL 487830, at 4 (D. Alaska March 30, 1994), *Consolidated with Alaska v. Babbitt*, Nos. A92-0264-CV (HRH), 94-35480 (D. Alaska April 20, 1995) (upholding the Secretary of the Interior's authority to implement ANILCA on public lands).

ANILCA, the plaintiffs petitioned the federal subsistence board to open full-time subsistence fishing. The board concluded that its jurisdiction did not encompass the river near Batzulnetas because it was a navigable waterway, and that the management of the fisheries remained with Alaska.²⁵³

The federal district court concluded that for purposes of Title VIII of ANILCA, the United States held title to an interest in the navigable waters of Alaska as an element of the so-called federal navigational servitude.²⁵⁴ Since the United States held an interest in the navigable waters of Alaska, they fell under ANILCA's definition of public lands and the Secretary of the Interior was charged with the management of subsistence fishing in the navigable waters of Alaska. The court went on to hold that the Secretary's construction of ANILCA's definition of public lands was too narrow:

By limiting the scope of Title VIII to non-navigable waterways, the Secretary has, to a large degree, thwarted Congress' intent to provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so. Much subsistence fishing and much of the best fishing is in the large navigable waterways where one has access to the most fish as opposed to the smaller tributaries or lakes where, for example, salmon go to spawn.²⁵⁵

g. Katie John II

The United States and the state appealed this decision to the Ninth Circuit Court of Appeals. Prior to the appeal, the federal government changed its position and conceded that public lands included *certain* navigable waters, defined by the reserved water rights doctrine as opposed to the more expansive navigation servitude on which the district court relied.²⁵⁶ Under the reserved water rights doctrine, when the United States withdraws lands from the public domain and reserves them for a federal purpose, the United States implicitly reserves waters then unappropriated to the *extent needed to accomplish the purpose of the reservation*.²⁵⁷ The authority to reserve these unappropriated waters derives from the Commerce Clause and the Property Clause of the United States Constitution.²⁵⁸

The Ninth Circuit found the federal government's position to be a permissible construction of ANILCA and held that the definition of "public lands" with regard to ANILCA includes those navigable waters in which the United States has an interest by virtue of the reserved water rights doctrine. The federal agencies that administer the ANILCA subsistence priority were therefore charged with the responsibility for identifying these waters.²⁵⁹ The Ninth Circuit recognized the great administrative burden that this ruling created and concluded its opinion with a plea for a legislative solution:

The issue raised by the parties cries out for a legislative, not a judicial, solution. If the Alaska Legislature were to amend the state constitution or otherwise comply with ANILCA's rural subsistence priority, the state could resume management of subsistence uses on public

253. *Katie John*, 1994 WL 487830, at 11.

254. *Id.* at 17.

255. *Id.* at 18.

256. *Alaska v. Babbitt (Katie John II)*, 72 F.3d 698, 701 (9th Cir. 1995) (this position was first forwarded by the United States at oral argument in the district court).

257. *Id.* at 703, citing to *Cappaert v. United States*, 426 U.S. 128, 138 (1976), emphasis added.

258. *Id.*

259. *Id.* at 703-704.

lands including navigable waters. Neither the heavy administrative burden nor the complicated regulatory scheme that may result from our decision would be necessary. If Congress were to amend ANILCA, it could clarify both the definition of public lands and its intent. Only legislative action by Alaska or Congress will truly resolve the problem.²⁶⁰

h. The State Court Response to Katie John

Within months, the Alaska Supreme Court issued a response to the Ninth Circuit's *Katie John* decision. In *Totemoff v. State*,²⁶¹ the Alaska Supreme Court unanimously rejected the holding in *Katie John* and asserted that the federal government lacks authority to manage subsistence hunting and fishing on navigable waters in Alaska.²⁶² In *Totemoff*, the state of Alaska prosecuted a hunter who shot deer in violation of state regulations. Totemoff challenged the state's jurisdiction because the deer were taken on federal public lands. While the decision has ramifications for the so-called subsistence defense under state law (see subsection F below), its main thrust is directed toward jurisdiction on federal public lands and navigable waters.

The lengthy opinion begins with the maxim that a state is free to enforce its civil or criminal laws on federal land within its boundaries unless the state consents to the exercise of exclusive federal jurisdiction or the state's laws are preempted by federal law.²⁶³ The court held that since Alaska had not ceded or consented to exclusive federal control over hunting and fishing on federal lands, and:

since the language of ANILCA did not demonstrate a clear and manifest Congressional intent to preempt all state regulation affecting subsistence hunting and fishing . . . we hold that Congress did not intend for the federal government to exclusively occupy the field of subsistence hunting and fishing regulation.²⁶⁴

With regard to which government has jurisdiction over the navigable waters in the state, the court found:

based on the navigational servitude on the reserved water rights doctrine. . . . We are not obliged to follow *Katie John*, since this court is not bound by decisions of federal courts other than the United States Supreme Court on questions of federal law.²⁶⁵

The court cited a number of reasons for its decision, concluding that both the navigation servitude and the reserved water rights doctrine (doctrines proffered as support for federal management of subsistence over navigable waters in the *Katie John* litigation) fail to give the federal government the power to manage fish and game in navigable waters. The *Totemoff* decision at first blush places the law of Alaska in conflict with federal laws as interpreted by the Ninth Circuit Court of Appeals, necessitating resolution in the Congress or United States Supreme Court. The Supreme Court has refused to hear both the federal *Katie John* and the

260. *Id.* at 704. *Katie John II* was reaffirmed by the Ninth Circuit, sitting *en banc* in *Katie John v. United States (Katie John II)* 247 F.3d 1032 (9th Cir. 2001). The decision was not appealed and therefore is final.

261. 905 P.2d 954 (Alaska 1995); *cert. den.*, 116 S. Ct. 2499 (1996).

262. David Hulén, *Court Ties A New Knot In Subsistence Tangle: State Justices Defy Federal Waterway Rulings*, ANCHORAGE DAILY NEWS, August 9, 1995, at A1. Technically the rejection is *dictum* and not a holding in the case, because the issue of federal authority was not really before the state supreme court.

263. 905 P.2d *supra*, at 958.

264. *Id.* at 960 (further, in Totemoff's case, there was no conflict between the state regulation and federal regulations).

265. *Id.* at 963 citing to *In Re FP*, 843 P.2d 1214, 1215, n.1 (Alaska 1992), *cert. denied*, 113 S. Ct. 2441 (1993). The United States Supreme Court declined to review the case, so the conflict remains.

state *Totemoff* case, allowing popular confusion to persist over which precedent is controlling.²⁶⁶ However, after the smoke clears, it is evident that *Katie John* still stands and federal agencies are extending the dual management scheme for subsistence to navigable waters that are reserved for the purpose of federal land withdrawals in Alaska. Further, because the *Totemoff* defendant's hunting activity was prohibited under both state and federal regulations, the facts in *Totemoff* do not thresh out the issue of federal preemption of state law under Title VIII of ANILCA.²⁶⁷

i. The Alaska Legislative Response to McDowell

Following *McDowell* and its progeny, the Alaska legislature again revised the state subsistence statute in 1992. As revised, the statute continues to grant subsistence a priority over other consumptive uses and continues to provide for two tiers of subsistence users in times of scarcity.²⁶⁸ The legislature also authorized the joint boards of fish and game to identify nonsubsistence areas where subsistence hunting or fishing is not permitted in order to relieve some of the pressure on wildlife resources created by the treatment of all Alaskans as subsistence harvesters.²⁶⁹ The definition of a nonsubsistence area is "an area or community where dependence upon subsistence is not a principal characteristic of the economy, culture, and way of life of the area or community."

This is essentially the negative of the definition of rural area which is still defined as "a community or area of the state in which noncommercial, customary, and traditional use of fish or game for personal or family consumption is a principal characteristic of the economy of the community or area."²⁷⁰ The state's new approach once again came under constitutional attack, this time by the Kenaitze tribe and other subsistence users. On appeal in *State of Alaska v. Kenaitze Indian Tribe*, the tribe argued that the new nonsubsistence areas effectively reestablished the rural/urban residency-based classification scheme struck down in *McDowell*.²⁷¹

The Alaska Supreme Court, on its own motion, first dealt with what might be called the "Tier II proximity to the domicile factor," even though no party had challenged this issue. Tier II classification is invoked when the subsistence resources are insufficient to satisfy the needs of all Tier I—subsistence—users, and restrictions must be placed on subsistence harvests. Tier II restrictions require a differentiation among subsistence users, with some losing their ability to engage in subsistence harvests.²⁷² One of the factors used to differentiate subsistence users is the resource's "proximity to the domicile, of the subsistence user."²⁷³ Therefore, if the subsistence resources were to become insufficient to support all subsistence users, the statute would require the state fish or game boards to distinguish among subsistence users using a residence-based criterion.

266. See *Denial of Certiorari, Totemoff v. Alaska*, 517 U.S. 1244 (1996) (state); *Alaska v. Babbitt*, 517 U.S. 1187 (1996) (federal). See also D. Hulen, *Court Ties a New Knot in Subsistence Tangle: State Justices Defy Federal Water-Way Rulings*, ANCHORAGE DAILY NEWS, August 19, 1995, at A1 and *Supreme Court Lets Stand Ruling on Subsistence*, ANCHORAGE DAILY NEWS, June 11, 1996, at B3.

267. For a more detailed inquiry into the controversy surrounding the *Totemoff* and *Katie John* decisions, see David G. Shapiro, *Jurisdiction and the Hunt: Subsistence Regulation, ANILCA and Totemoff*, 14 ALASKA L. REV. 115 (June 1997).

268. ALASKA STAT. § 16.05.258(b)(4)(B).

269. ALASKA STAT. § 16.05.258(c), § 2, ch. 1 SSSLA 1992, repealed and reenacted in different form § 3, ch. 1 SSSLA 1992.

270. Compare ALASKA STAT. § 16.05.258(c) (§ 2, ch. 1 SSSLA 1992) with 16.05.940(27)).

271. 894 P.2d 632, 635 (Alaska 1995).

272. ALASKA STAT. § 16.05.258(b)(4).

273. ALASKA STAT. § 16.05.258(b)(4)(B)(ii).

The Alaska Supreme Court held that the Tier II proximity of the domicile factor violates sections 3, 15, 17 of article VIII of the Alaska Constitution, because it bars Alaska residents from participating in certain subsistence activities based principally on where they live.²⁷⁴

Just as eligibility to participate in all subsistence hunting and fishing cannot be made dependent on whether one lives in an urban or rural area, eligibility to participate in Tier II subsistence hunting and fishing cannot be based on how close one lives to a given fish or game population.²⁷⁵

The court went on to sever the offending provision from the rest of the statutory subsection, leaving Tier II subsistence users to be identified by the two remaining factors: (1) their dependence on the fish or game at issue, and (2) the ability of the individual users to obtain food if subsistence use of the particular wildlife population were restricted or eliminated.²⁷⁶

The Alaska Supreme Court, on the other hand, upheld the constitutionality of the nonsubsistence areas, reading the statute to mean that subsistence activities are not in fact prohibited in nonsubsistence areas. In a very literal reading of the statute's mandate, the court states, "The Boards may not permit subsistence hunting or fishing in a nonsubsistence area," but subsistence *activities* can still take place in such areas under the guise of "personal use."²⁷⁷ The court held that what is eliminated in nonsubsistence areas is the statutory subsistence priority in the event of scarcity of resources.²⁷⁸

Thus in nonsubsistence areas, a balance can be struck in allocating fish and game resources among commercial, sport, and subsistence ("personal use") types of activities without giving a preference to subsistence. Subsistence activities may be permitted in the subsistence areas located around the state, and residents of nonsubsistence areas must travel to subsistence areas in order to utilize subsistence permits; although this may be a bit inconvenient for them, such residents are not barred from being members of the subsistence user group.²⁷⁹ In the nonsubsistence use areas, the joint boards can allow subsistence types of activity on state and private land, under the guise of personal use or perhaps even sport regulations.²⁸⁰ In upholding the state's new determination of nonsubsistence areas, the Alaska Supreme Court essentially validated another state scheme, like the one struck down by the federal court in 1988, "whose transparent purpose is to protect commercial and sportfishing interests."²⁸¹

j. Conclusion

As of this writing, subsistence use of fish and game is ensnared in a web of inconsistent state and federal legislation and court decisions. The state of Alaska continues to manage subsistence uses of fish and wildlife on state and private lands, which include Native corporation lands. Under state management there is no preference for rural residents, and all Alaskans are entitled

274. *Kenaitze Indian Tribe*, 894 P.2d *supra* at 642.

275. *Id.* at 638.

276. *Id.*

277. *Id.*

278. *Id.*

279. *Id.*

280. See ALASKA STAT. § 16.05.258 and *Kenaitze Indian Tribe*, 894 P.2d *supra*, at 638.

281. Compare *Kenaitze Indian Tribe v. Alaska*, 860 F.2d *supra*, at 318 (9th Cir. 1988) with *State of Alaska v. Kenaitze Indian Tribe*, 894 P.2d *supra*, at 638 (Alaska 1995).



to a reasonable opportunity to practice subsistence—except in the state's nonsubsistence zones, where subsistence uses are merely balanced against sport and other uses.

On federal public lands (including federal reserved waters), only rural residents are entitled to the subsistence preference. They are also to be afforded the right to harvest subsistence resources according to regulations that are calculated to be least intrusive and, most important, consistent with established subsistence customs and traditions. Thus, a dual management system for subsistence exists in Alaska, one for federal lands and another for state and private areas. The rich fisheries in Alaska's navigable waters are managed by the state of Alaska except for those navigable waters that were by implication reserved in order to fulfill the purposes of a public land withdrawal or those (notably on the North Slope) that cover federal lands withdrawn prior to Alaska statehood. However, federal management agencies could be required to intervene in state management in order to protect subsistence fish and game resources migrating across or toward federal lands and reserved waters.

2. Federal Subsistence Board Structure and Process

Federal subsistence management falls under the authority of the federal subsistence board. The board comprises the Alaska regional directors of the Fish and Wildlife Service, the National Park Service, the Forest Service, the Bureau of Land Management, and the Bureau of Indian Affairs, as well as the chair appointed by the Secretary of the Interior. One representative from each of the five agencies and the Fish and Wildlife Service's Office of Subsistence Management serve as staff to the federal subsistence board, including six specially designated regional council coordinators.²⁸²

In 1993, following the collapse of the state's ANILCA compliance, the federal subsistence board established ten regional advisory councils for subsistence regions as required by section 805 of ANILCA.²⁸³ The size of each council is related to the size of its region. The councils collect local information and local concerns, then develop, review, and present recommendations to the federal subsistence board.²⁸⁴ The board is required to consider the reports and recommendations of the regional councils concerning subsistence management.²⁸⁵ The board may choose not to follow a regional council recommendation which it determines is not supported by substantial evidence, violates recognized principles of wildlife conservation, or would be detrimental to the satisfaction of subsistence needs. If a recommendation is not adopted, the board is required to set forth the factual basis and the reasons for the denial in writing.²⁸⁶ Additionally, local advisory committees may be created within the subsistence regions to provide advice and assist the regional councils if the existing state fish and game advisory committees do not adequately assist a particular regional council in carrying out

282. Personal interview with Taylor Brelsford, Office of Subsistence Management, July 18, 1995. See also 1997-1998 Subsistence Management Regulations at 3 (Federal Subsistence Board: Anchorage) (1997), listing regional coordinators.

283. 16 U.S.C.A. § 3115. Southeast Region; Southcentral Region; Kodiak/Aleutian Region; Bristol Bay Region; Yukon-Kuskokwim Delta Region; Western Interior Region; Seward Peninsula Region; Northwest Arctic Region; Eastern Interior Region; North Slope Region. 50 C.F.R. § 100.22. Section 805 requires a minimum of six regions.

284. Thomas A. Morehouse and Marybeth Holleman, *When Values Conflict: Accommodating Alaska Native Subsistence*, Occasional Paper No. 22 Institute of Social and Economic Research Univ. of Alaska Anchorage (June 1994) at 26.

285. 16 U.S.C.A. § 3115(c).

286. 16 U.S.C.A. § 3115(c),(d) and 50 C.F.R. § 100.10(e)(1).



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3rd Edition. (Praeger, Connecticut, 1997).

Chapter 4

WILD BIRDS

The first category of wildlife Congress chose to protect with targeted legislation was migratory birds. The Migratory Bird Treaty Act was enacted in 1918, following the signing of a treaty with Great Britain that committed the United States to conserving the species that migrate between Canada and our nation.

Other birds have since received congressional protection. Our national symbol, the bald eagle, was the focus of legislation in 1940, and in 1992, Congress adopted a law regulating import of exotic birds. This chapter discusses these three laws and litigation under them.

PROTECTION OF MIGRATORY BIRDS

But for the treaty and the statute there might soon be no birds for any powers to deal with.

Missouri v. Holland (1920)

Early in the twentieth century, federal legislation to stop the decline in migratory bird populations was struck down for lack of a constitutional underpinning.¹ In 1916 the United States signed a treaty with Great Britain on behalf of Canada, the Convention for the Protection of Migratory Birds,² both to provide the constitutional foundation for federal regula-

¹See Chapter 2.

²Aug. 16, 1916, 39 Stat. 1702, T.S. No. 628 (hereinafter Canadian Convention). The events leading to the signing of the 1916 Convention, passage in 1918 of the Migratory Bird Treaty Act, and the Supreme Court's landmark decision in *Missouri v. Holland*, 252 U.S. 416

tion (the treaty power) and to initiate international action to halt the decline of migratory species. Congress passed the Migratory Bird Treaty Act⁴ (hereinafter the Treaty Act) in 1918 to implement the treaty. In *Mitsouri v. Holland*,⁵ quoted above,⁶ the Supreme Court upheld the Treaty Act's constitutionality.

The primary threat to migratory bird populations when the Act was passed was unrestrained shooting for commerce and sport.⁷ Consequently, the main thrust of the Act and the treaty is to regulate "taking" of migratory birds, especially hunting.

The Treaty Act, however, also implements treaties that were signed with Mexico in 1936,⁸ Japan in 1972,⁹ and the Soviet Union in 1976.¹⁰ By the 1970s, when the latter two treaties were signed, additional major human-induced threats to migratory bird populations included chemical poisoning and habitat destruction, as well as more limited hazards such as electric power poles.¹¹

Courts have interpreted the Treaty Act to prohibit "taking" by means other than hunting—for instance, by chemical poisoning.¹² However, courts have refused to apply the Act's strictures to habitat destruction by logging.¹³ Still new hazards are emerging, such as large, wind-driven power generators. It remains to be seen how the Treaty Act will affect these more recent threats, and others as yet unknown.

While there is significant overlap among the treaties underlying the Treaty Act, they differ in the birds that are covered, the limitations on taking, and the affirmative protective measures they require or encourage. These differences are of more than academic interest. The Ninth Circuit

(1920), upholding the constitutionality of both the Convention and the Act, are described in Chapter 2.

⁴Act of July 3, 1918, Ch. 128, 40 Stat. 755 (1918) (current version at 16 U.S.C. §§ 703-712).

⁵252 U.S. 416, 435 (1920).

⁶See George Cameron Coggins & Sebastian T. Patti, *The Resurrection and Expansion of the Migratory Bird Treaty Act*, 50 U. Col. L. Rev. 165, 168 & 171 (1979).

⁷Convention for the Protection of Migratory Birds and Game Mammals, Feb. 7, 1936, United States-Mexico, 50 Stat. 1311, T.S. No. 912 (hereinafter Mexican Convention).

⁸Convention for the Protection of Migratory Birds and Birds in Danger of Extinction, and their Environment, March 4, 1972, United States-Japan, 25 U.S.T. 3329 (hereinafter Japanese Convention).

⁹Convention Concerning the Conservation of Migratory Birds and Their Environment, Nov. 19, 1976, United States-U.S.S.R., 29 U.S.T. 3617, T.I.A.S. No. 9073 (hereinafter Soviet Convention).

¹⁰Coggins & Patti, *supra* note 5 at 174; Donell R. Grubbs, *Of Spotted Owls and Bald Eagles: Raptor Conservation Slips into the '90s*, 19 Cap. U. L. Rev. 451, 461 (1990).

¹¹United States v. I.M.C. Corp., 572 F.2d 902, 2d Cir. (1978); United States v. Corbin Farm Service, 411 F. Supp. 516 (E.D. Cal.), *aff'd*, 578 F.2d 259, 9th Cir. (1978). See also United States v. Van Tassan, 839 F.2d 136 (7th Cir. 1988).

¹²See, e.g., Seattle Audubon Society v. Evans, 972 F.2d 297, 9th Cir. (1991).

Court of Appeals has held that subsistence hunting of migratory game birds in Alaska may be permitted only to the extent it is in accord with all four treaties,¹² a requirement that may well apply to other activities covered by the Act.¹³ Accordingly, this section begins with a discussion of the treaties.

THE TREATIES: RESTRICTIONS ON TAKING

The 1916 Canadian Convention establishes three groups of migratory birds: (1) migratory game birds, (2) migratory insectivorous (insect-eating) birds, and (3) other migratory nongame birds. For each group, article II establishes a closed season¹⁴ during which "no hunting shall be done except for scientific or propagating purposes under permits." Except for migratory game birds, the closed season is year round—in other words, no taking is allowed at any time of the year.¹⁵ The one exception is that certain types of birds in the third category may be taken by Eskimos and Indians for food and clothing but may not be sold or offered for sale.¹⁶

With respect to migratory game birds, article II provides that the closed season shall be between March 10 and September 1¹⁷ and that the "season for hunting shall be further restricted to such period not exceeding three and one-half months as the High Contracting Powers may severally deem appropriate and define by law or regulation."¹⁸ Article V prohibits taking nests or eggs of migratory birds except for scientific or propagating purposes. Article VII authorizes the issuance of permits to kill any migratory birds that, "under extraordinary conditions, may become seriously injurious to agricultural or other interests in any particular community."

Each of the subsequent treaties, although patterned after the original

¹²Alaska Fish and Wildlife Fed'n v. Dunkle, 829 F.2d 933, 941 (9th Cir. 1987), *cert. denied*, 485 U.S. 988 (1988), discussed *infra* at text accompanying notes 133–149.

¹³See *Andrus v. Allard*, 444 U.S. 51, 62 n. 18 (1979), in which the Court stated that it is "hazardous to look to any single Convention for definitive resolution of a statutory construction problem. . . . [I]nasmuch as the Conventions represent binding international commitments, they establish *minimum* protections for wildlife." (Emphasis in original.)

¹⁴The treaty calls this the "close season."

¹⁵See discussion of Alaska Fish and Wildlife Fed'n v. Dunkle, 829 F.2d 933 (9th Cir. 1987), *cert. denied*, 485 U.S. 988 (1988), *infra* at text accompanying notes 133–149.

¹⁶Canadian Convention, art. II, § 3.

¹⁷*Id.*, art. II, § 1. A protocol amending the Convention to permit some subsistence hunting of game birds during this season was signed by both countries on December 14, 1995, but it has not been ratified. See discussion of native subsistence hunting at text accompanying notes 131–160 *infra*. For Atlantic coast shorebirds, a special closed season between February 1 and August 15 is prescribed.

¹⁸For a discussion of litigation about the meaning of the quoted language, see text accompanying notes 161–164 *infra*.

convention, differs somewhat. The Mexican treaty, for example, limits the length of the hunting season for migratory birds to a maximum of four months and requires that hunting be conducted "under permits issued by the respective authorities in each case."¹⁹ In addition, it calls for the establishment of "refuge zones in which the taking of such birds will be prohibited,"²⁰ and it prohibits hunting from aircraft.²¹ The Japanese Convention specifies no dates or lengths for hunting seasons but requires that whatever seasons are set by each party "avoid their principal nesting seasons and . . . maintain their populations in optimum numbers."²² The Soviet Convention prohibits not only taking migratory birds, but also their nests or eggs and the "disturbance of nesting colonies."²³ Without specifying any dates or overall durations, it authorizes the parties to establish hunting seasons, so long as they assure "the preservation and maintenance of stocks of migratory birds."²⁴

The treaties authorize other exceptions to the basic prohibition against taking. For example, all four treaties authorize takings to control bird-caused problems, although the extent of the exception differs from treaty to treaty. Whereas the Canadian Convention authorizes, under "extraordinary conditions," taking birds that "may become seriously injurious to

¹⁹Mexican Convention, article II(C). The Mexican Convention is quite unartfully drafted insofar as the establishment of closed seasons is concerned. Article II(A) provides generally for their establishment but does not specify their length; article II(C) then limits the permissible hunting period to no more than four months in each year; article II(D) prescribes a closed season of from March 10 to September 1 for wild ducks; and article II(E) prescribes a year round closed season for "migratory insectivorous birds." The ambiguity arises from article IV, however, which lumps all migratory birds into only two categories: migratory game birds and migratory nongame birds. If the latter grouping was intended to include any birds other than "migratory insectivorous birds," then the Convention fails to indicate what closed or open seasons are to apply to such other birds. The matter was further confused when, by exchange of notes on March 10, 1972, the governments of Mexico and the United States supplemented the 1936 Treaty by agreeing to a lengthy list of additional birds to be protected. These birds are described as "additions . . . to the list of birds set forth in Article IV," without specifying whether the same are to be considered "migratory game birds" or "migratory nongame birds." By administrative regulation, however, they are all treated as nongame birds, and protected from hunting. See 50 C.F.R. §§ 10.13, 20.11 (1995).

²⁰Mexican Convention, art. II(B).

²¹*Id.* art. II(F).

²²Japanese Convention, art. III, § 2. For a discussion of litigation concerning the requirement to maintain optimum numbers, see text accompanying notes 164-165 *infra*.

²³Soviet Convention, art. II, § 1. The prohibition against disturbing nesting colonies is a new feature not found in any of the earlier treaties or in the Migratory Bird Treaty Act, although it is arguably subsumed in the prohibition against "taking," a term undefined in the treaties and the Treaty Act. Implementing regulations of the Fish and Wildlife Service, however, restrict the definition of taking in a way that would not seem to include nesting colony disturbance. See 50 C.F.R. § 10.12 (1995).

²⁴Soviet Convention, art. II, § 2.

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the agricultural or other interests in any particular community,"²⁵ the Mexican Convention authorizes taking birds only "when they become injurious to agriculture and constitute plagues."²⁶ The Japanese and Soviet Conventions, on the other hand, broadly authorize takings to protect persons or property.²⁷ The treaties authorize other exceptions as well.²⁸

The considerable overlap among species protected by the four treaties thus results in differing substantive standards applicable to protection of the same bird.²⁹ There has even been controversy over what species are protected by the various conventions. The Canadian Convention describes the birds it protects by the common names of certain general groups, such as "woodpeckers," "gulls," and so forth.³⁰ The Mexican Convention, on the other hand, identifies protected birds solely in terms of their scientific family names. The Japanese Convention gives the full scientific name for each species of bird that it protects and further defines the term "migratory bird" to include only those species "for which there is positive evidence of migration" between the United States and Japan or which have subspecies or populations "common to both countries."³¹ The Soviet Convention takes a similar, though still different, approach.³²

²⁵Canadian Convention, art. VII.

²⁶Mexican Convention, art. II(E).

²⁷Japanese Convention, art. III, § 1(b); Soviet Convention, art. II, § 1(d). For a case in which the court rejected a "defense of property" defense to a conviction under the Treaty Act for taking great horned owls, see *United States v. Darst*, 726 F. Supp. 286 (D. Kan. 1989), discussed *infra* at text accompanying note 183.

²⁸Like the Canadian Convention, the Mexican Convention creates an exception for the taking of migratory birds for scientific and propagating purposes and also adds a new exception for museums. Mexican Convention, art. II(A). The Japanese and Soviet Conventions add educational and "other specific purposes not inconsistent with" the objectives of the Conventions to the list of taking exceptions. Japanese Convention, art. III, § 1(a); Soviet Convention, art. II, § 1(a). Both the Mexican and Japanese Conventions also contain specific exemptions for "private game farms." Japanese Convention, art. III, § 1(d); Mexican Convention, art. II(A).

²⁹For a list of the species protected under the Treaty Act, see 50 C.F.R. § 10.13 (1995).

³⁰Migratory game birds are identified in the Canadian Convention not only by their common names, but also by their scientific family names. See Canadian Convention, art. I, § 1. Migratory insectivorous birds under that Convention include not only those specifically listed by common name, but also "all other perching birds which feed entirely or chiefly on insects." *Id.* art. I, § 2.

³¹Japanese Convention, art. II, § 1.

³²The Soviet Convention applies to all species and subspecies that migrate between the two countries and to those with separate populations sharing common breeding, wintering, feeding, or molting areas. Soviet Convention, art. I, § 1. The list of migratory birds may in effect be expanded unilaterally by either party at least as to areas under, or persons subject to, its own jurisdiction, by virtue of authority conferred by article VIII. That article authorizes either party, in its discretion, to treat any species or subspecies of bird as though it were a protected migratory bird under the Convention, as long as it belongs to the same family as any bird that is so protected.

THE TREATIES: OTHER MEASURES

While the prohibition against taking migratory birds is the major focus of all the treaties, the more recent treaties with Japan and the Soviet Union contain important measures aimed at protecting migratory bird habitat. For example, the Japanese Convention directs the parties to "endeavor to establish sanctuaries and other facilities for the protection or management of migratory birds."³³ It also directs the parties to "endeavor to take appropriate measures to preserve and enhance the environment of birds protected under" the Convention, such as by preventing "damage resulting from the pollution of the seas" and by controlling the importation and introduction of live animals and plants that are "hazardous to the preservation of such birds" or that "could disturb the ecological balance of unique island environments."³⁴

The Soviet Convention directs each party to establish preserves, protected areas, and facilities for the conservation of migratory birds and to "manage such areas so as to preserve and restore the natural ecosystems."³⁵ Article IV of the Soviet Convention includes a broadly worded exhortation to take measures necessary to "protect and enhance the environment and to prevent and abate the pollution or detrimental alteration of that environment,"³⁶ and a number of more specific directives aimed at accomplishing that goal.³⁷

Of potentially great importance is the requirement in article IV that each party identify "areas of breeding, wintering, feeding, and molting which are of special importance in the conservation of migratory birds within the areas under its jurisdiction."³⁸ These areas are to be included in a list to be appended to the Convention, and the parties are to "undertake measures necessary to protect [their] ecosystems . . . against pollution, detrimental alteration and other environmental degradation."³⁹

A closely related provision authorizes the parties, by mutual agreement, to designate areas not under the jurisdiction of either of them as areas of special importance to the conservation of migratory birds.⁴⁰ Each party shall "undertake measures necessary to ensure that any citizen or person subject to its jurisdiction will act in accordance with the principles of this Convention in relation to such areas." What acting "in accordance with the principles of" the Convention means is not altogether clear. Presum-

³³Japanese Convention, art. III, § 3.

³⁴*Id.* art. VI.

³⁵Soviet Convention, art. VII.

³⁶*Id.* art. IV, § 1.

³⁷*Id.* § 2.

³⁸*Id.* § 2(c).

³⁹*Id.*

⁴⁰*Id.* § 3.

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⁴²Japanese Convention, art. I.

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ably, it is intended to give these areas the same or a similar degree of protection as the areas of special importance within the jurisdiction of the parties. To date, however, no areas of special importance have yet been designated by the United States.

Article IV of the Soviet Convention requires each party to establish procedures for warning the other of "substantial anticipated or existing damage to significant numbers of migratory birds or the pollution or destruction of their environment."⁴¹ Once warned, the parties are to cooperate "in preventing, reducing or eliminating such damage" and in rehabilitating the environment. Apparently, this provision was intended to facilitate early detection of and cooperative action in combatting major disasters, such as oil spills.

Article V of the Soviet Convention provides for special protection measures for migratory birds in danger of extinction. Whenever either party decides that any species, subspecies, or "distinct segment of a population" is endangered and establishes special measures for its protection, it is to inform the other party of its action. The other party is then directed to "take into account such protective measures in the development of its management plans." This is a broader mandate than that of a similar provision in the Japanese treaty that merely directs each party to control the exportation or importation of any species or subspecies found by the other party to be endangered.⁴²

THE MIGRATORY BIRD TREATY ACT: STRUCTURE

The Migratory Bird Treaty Act implements all four of the conventions just described. Despite the fact that three of the treaties were signed after the Act's passage, the law reads very much today as it did when originally passed in 1918.⁴³

The Act's proscriptions are broad.⁴⁴ Section 2 makes it unlawful "at any

⁴¹*Id.* § 2(a).

⁴²Japanese Convention, art. IV, § 3.

⁴³Notwithstanding the many differences among them, the ratification of each new convention did not result in a major overhaul of the Act but only in technical amendments that merely added appropriate references to each subsequent convention. Thus, to the extent that the new features of the later conventions cannot be subsumed within the general language of the Act, those features remain unimplemented by domestic legislation. That concern, however, is alleviated by virtue of the broad and general language the Act employs, as discussed below. For a discussion of the extent to which international treaties are self-executing without the need for implementing legislation, see Comment, *The Migratory Bird Treaty: Another Feather in the Environmentalist's Cap*, 19 S. D. L. Rev. 307, 311-16 (1974).

⁴⁴The Act amplified in a number of respects the narrow terms of the Canadian Convention. The Convention prohibited only "hunting" migratory birds during their closed seasons. The amplification was obviously intentional, for the Act's caption described it as being "An Act to give effect to the convention . . . and for other purposes." 40 Stat. 755. The fact that the

time, by any means or in any manner," inter alia, to hunt, take,⁴⁵ capture, kill, possess, purchase, sell, barter, or transport, any bird protected by the treaties, any part, nest, or egg of a protected bird, or any product composed of any part, nest, or egg of a protected bird,⁴⁶ except as permitted by regulation of the Secretary of the Interior.⁴⁷

The Secretary has wide discretion in promulgating regulations, but all rules are expressly made "[s]ubject to the provisions . . . of the conventions." The Secretary must determine "when, to what extent, if at all, and by what means" to permit the above activities.⁴⁸ In doing so, the Secretary must give "due regard to the zones of temperature and to the distribution, abundance, economic value, breeding habits, and times and lines of migratory flight of such birds."⁴⁹ Finally, very important to its administration, the Act provides that nothing therein prevents the states from making or enforcing laws or regulations that are consistent with the conventions or the Act or that give further protection to migratory birds, their nests, or eggs.⁵⁰

Act's proscriptions go beyond those of its underlying treaties presents no constitutional problem, however, since the Supreme Court has ruled that the Commerce Clause provides an independent basis for the Act. See *Andrus v. Allard*, 444 U.S. 51 (1979).

⁴⁵Unlike the Endangered Species Act, neither the Act nor its regulations define "take." See text accompanying notes 107-111, *infra*, for a discussion of the meaning of the word "take" in the Treaty Act as distinguished from that in the Endangered Species Act.

⁴⁶Migratory Bird Treaty Act, ch. 128, § 2, 40 Stat. 755 (1918), 16 U.S.C. § 703. These prohibitions are considerably more expansive than the limited proscription contained in the Canadian Convention against the "shipment or export" of migratory birds from any state during its closed season and against the "international traffic" in unlawfully taken migratory birds. Canadian Convention, art. VI. Furthermore, it is noteworthy that the Act does not require that these activities be conducted in interstate commerce to be unlawful. The Act does, however, prohibit the transportation in interstate commerce of "any bird, or any part, nest, or egg thereof, captured, killed, taken, shipped, transported, or carried . . . contrary to the laws of the State, Territory, or district in which it was captured, killed, or taken, or from which it was shipped, transported, or carried." *Id.* § 705. The latter prohibition is not entirely redundant of the former because the latter applies to *all* birds, not just migratory birds, protected under the treaties. See *Bogle v. White*, 61 F.2d 930 (5th Cir. 1932). It is, however, with the possible exception of its application to nests, redundant of the Lacey Act. See Chapter 3.

⁴⁷16 U.S.C. § 703. Congress initially vested authority to promulgate regulations in the Secretary of Agriculture but transferred it to the Secretary of the Interior in 1939. The Fish and Wildlife Service in the Department of the Interior is the implementing agency. The term "Secretary" in this section refers either to the Secretary of the Interior or the Secretary of Agriculture, as appropriate.

⁴⁸16 U.S.C. § 704.

⁴⁹*Id.* § 708. To implement the Treaty Act, two types of federal regulations are promulgated. The first is of a general and continuing nature and governs such subjects as hunting methods, tagging and identification requirements, scientific and other permit requirements, and other similar matters. These are found at 50 C.F.R. Part 20, subparts A] and L, and Part 21 (1995). The second type fixes season lengths, shooting hours, bag limits, and so forth, and is revised

The Act provides for misdemeanors, punishable for not more than one year, or for felonies, punishable for not more than two years, but one year, if the offense is committed with other equipment.

The Treaty Act requires the Secretary or other federal officials to consider Case law, however, and the Administrator of the Environmental Protection Agency or other federal officials

annually on the basis of "Flyway Councils," a so-called "framework" of regulations for season lengths, shooting hours, and the choices offered in final federal regulations in more detail in Department of the Interior, *Environmental Impacts of Migratory Bird Hunting* (1995).

⁵¹The Secretary, *United States v. D.*

⁵²16 U.S.C. § 707.

⁵³16 U.S.C. § 707.

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The Act provides criminal penalties for violations.⁵¹ Most violations are misdemeanors, punishable by a fine of not more than \$500, imprisonment for not more than six months, or both.⁵² Taking with intent to sell, offering for sale, sale, and related acts with respect to protected birds are felonies, punishable by a fine of not more than \$2,000, imprisonment for not more than two years, or both.⁵³ Misdemeanors are crimes of strict liability,⁵⁴ but one must "knowingly" violate the Act for a felony conviction.⁵⁵ The Act also provides for forfeiture of guns, traps, vehicles, and other equipment used in violating the Act.⁵⁶

The Treaty Act does not create a private right of action against the Secretary or other federal officials to compel them to comply with the Act. Case law, however, has established that affected parties may proceed under the Administrative Procedure Act (APA) against the Secretary and other federal officials who violate the Treaty Act.⁵⁷

annually on the basis of bird population data and the recommendations of affected states, "Flyway Councils," and various advisory committees. These are found at 50 C.F.R. Part 20, Subpart K (1995). The end-product of these formalized proceedings is the promulgation of so-called "framework regulations," which offer individual states a range of choices regarding season lengths, shooting hours, bag limits, and so forth. Individual states select from among the choices offered in the framework regulations, and their selections are then published as final federal regulations. The annual process of formulating these regulations is described in more detail in Department of the Interior, Fish and Wildlife Service, Final Supplemental Environmental Impact Statement: Issuance of Annual Regulations Permitting the Sport Hunting of Migratory Birds (1988).

⁵¹The Secretary, however, cannot be compelled to prosecute violations. *Alaska Fish and Wildlife Fed'n v. Dunkle*, 829 F.2d 933 (9th Cir. 1987), *cert. denied*, 485 U.S. 988 (1988).

⁵²16 U.S.C. § 707(a).

⁵³16 U.S.C. § 707(b).

⁵⁴See text accompanying notes 63-102 *infra*.

⁵⁵16 U.S.C. § 707(b). Prior to 1986, the Treaty Act did not require knowledge for a felony conviction. Courts balked at convicting a defendant of a felony with no finding of intent. The court in *United States v. Wulff*, 758 F.2d 1121 (6th Cir. 1985), found that a felony conviction for violation of the Treaty Act, without proof of scienter, violates due process. In response to the decision in *Wulff*, in 1986 Congress amended section 6(b) to add the word "knowingly." The legislative history of this amendment explains what the change means:

[T]he amendment will require proof that the defendant knew (1) that his actions constituted a taking, sale, barter, or offer to sell or barter, as the case may be and (2) that the item so taken, sold, or bartered was a bird or portion thereof. It is not intended that proof be required that the defendant knew the taking, sale, barter or offer was a violation of the subchapter, nor that he knew the particular bird was [a protected bird].

Sen. Rep. No. 99-445, 99th Cong. at 16, *reprinted in* 1986 U.S.C.C.A.N. 6113, 6128.

⁵⁶16 U.S.C. § 707(c).

⁵⁷*See, e.g.* *Alaska Fish and Wildlife Fed'n v. Dunkle*, 829 F.2d 933, 938 (9th Cir. 1987), *cert. denied*, 485 U.S. 988 (1988); *Humane Society v. Watt*, 551 F. Supp. 1310, *aff'd without opinion* 713 F.2d 865 (D.C. Cir. 1983); *National Rifle Association v. Kleppe*, 425 F. Supp. 1101 (D.D.C. 1976). In *Defenders of Wildlife v. EPA*, 688 F. Supp. 1334 (D. Minn. 1988),

states, and state courts, relying on the common law doctrines of state wildlife trust and public trust, have repeatedly sustained those laws in the face of assertions of contrary individual private rights. "To a layman, and even to a lawyer who has not had occasion to deal with the subject, the extent of the power of the states with reference to fish, game, and all wild life within their borders is perfectly astounding."²¹⁰ State laws protecting wild animals and the lands that sustain them, therefore, reflect long-held background principles of common law, under which a state's authority to regulate and protect wildlife resources is seen as superior to any conflicting private right or interest in the land on which wildlife roams.²¹¹ These laws, therefore, are the paradigmatic example of laws that "inhere [themselves], in the restrictions that the background principles of the State's law of property and nuisance already place on land ownership."²¹²

Hope M. Babcock, *Should Lucas v. South Carolina Coastal Council Protect Where the Wild Things Are? Of Beavers, Bob-o-Links, and Other Things That Gump in the Night*, 85 IOWA L. REV. 849 (2000); see also Oliver A. Houck, *Why Do We Protect Endangered Species, and What Does that Say About Whether Restrictions on Private Property to Protect Them Constitute "Takings?"*, 80 IOWA L. REV. 297 (1995).

SECTION 2. PREEMPTING STATE LAW: THE USES OF FEDERAL POWER

a. THE TREATY CLAUSE

[The President] shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two-thirds of the Senators present concur.

UNITED STATES CONSTITUTION art. II, § 2.

This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme law of the Land; . . .

UNITED STATES CONSTITUTION art. VI, cl. 2.

210. *Cook v. State*, 74 P.2d 199, 201 (Wash. 1937).

211. Although beyond the scope of this Article's focus on background principles of property law, it is also worth pointing out that laws protecting wildlife and wildlife habitat also fit within a state's common law *parens patriae* authority to abate nuisances which injure the public health and comfort. The *parens patriae* doctrine has long applied to the protection of natural resources, authorizing states to seek injunctive relief for a collective injury to a substantial number of

its citizens where no private individual has standing to proceed. See, e.g., *North Dakota v. Minnesota*, 263 U.S. 365 (1923) (flooding caused by change in drainage system); *New York v. New Jersey*, 256 U.S. 296 (1921) (discharge of sewage); *Georgia v. Tennessee Copper*, 206 U.S. 230 (1907) (air pollution); *Missouri v. Illinois*, 180 U.S. 208 (1901) (discharge of sewage).

212. *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1029 (1992) (emphasis added).

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(2) **Weeks-McLean in the lower federal courts:** The federal district court for Kansas also held the act unconstitutional. *United States v. McCullagh*, 221 F. 288 (D.Kan.1915). Two state courts reached the same result—from the opposite side of the issue. In each, defendants prosecuted for violating state game laws argued that state laws had been nullified by the federal statute; the state courts held that the federal statute was unconstitutional and the prosecution for violation of state law could proceed unimpeded. See *State v. McCullagh*, 153 P. 557 (Kan.1915); *State v. Sawyer*, 94 A. 886 (Me.1915). The statute was upheld in an unreported decision of the federal district court for South Dakota. Edward W. Bourne, *Comment, Treaty-making Power as Support for Federal Legislation*, 29 YALE L.J. 445, 445 n.2 (1920). See also *United States v. Selkirk*, 258 F. 775 (S.D.Tex.1919).

(3) **Weeks-McLean in the Supreme Court:** *Shauver* was appealed to the Supreme Court, where it was argued twice—the first time before a bench of only six justices. Following the ratification of the Migratory Bird Treaty and enactment of implementing legislation, the Court dismissed the appeal as moot at the suggestion of the Solicitor General. 248 U.S. 594 (1919). Subsequently and without discussing the constitutionality of the Act, the Supreme Court held that the Weeks-McLean Migratory Bird Act did not prevent a state from passing statutes prohibiting the shipping of wildlife by common carriers. *Carey v. South Dakota*, 250 U.S. 118 (1919).

Although the constitutionality of the Act was never decided by the Supreme Court, it is clear that it is constitutional under current Commerce Clause jurisprudence. This conclusion was implicitly reached in two decisions holding the subsequently enacted Migratory Bird Treaty Act constitutional under the Commerce Clause. See *Cochrane v. United States*, 92 F.2d 623 (7th Cir.1937), and *Cerritos Gun Club v. Hall*, 96 F.2d 620 (9th Cir.1938). In 1979, the Supreme Court also upheld the Treaty Act under the Commerce Clause. *Andrus v. Allard*, 444 U.S. 51 (1979).

(4) **The Migratory Bird Treaty and the Migratory Bird Treaty Act:** While *Shauver* was pending before the Supreme Court, the United States negotiated a treaty with Great Britain (acting for Canada) to protect migratory birds. Convention for the Protection of Migratory Birds, Aug. 16, 1916, United States-Great Britain, 39 Stat. 1702, T.S. No. 628. The 1916 Convention established three categories of migratory birds: migratory game birds, migratory insectivorous birds, and migratory nongame birds. *Id.*, art. I. The Convention established closed seasons on birds in each category. For migratory game birds, the closed season is between March 10 and September 1 with "the High Contracting Powers" further agreeing that the actual open season will be for no more than three and one-half months as each party "may severally deem appropriate and define by law or regulation." *Id.*, art. II, ¶ 1. For the final two categories, the closed season is year round. *Id.*, art. II, ¶¶ 2, 3. On the political background to the treaty, see KURKPA-TRICK DORSEY, *THE DAWN OF CONSERVATION DIPLOMACY* (1998).

Congress enacted implementing legislation on July 3, 1918. Migratory Bird Treaty Act, Act of July 3, 1918, ch. 128, 40 Stat. 755 (codified as amended at 16 U.S.C. §§ 703-711 (1988)). The MBTA provides in part:

Sec. 2. That unless and except as permitted by regulations made as hereinafter provided, it shall be unlawful to hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time or in any manner, any migratory bird, included in the terms of the convention between the United States and Great Britain for the protection of migratory birds concluded August sixteenth, nineteen hundred and sixteen, or any part, nest, or egg of any such bird.

The constitutionality of the Act was quickly challenged and affirmed.¹ The first decision was by District Court Judge Trieber who distinguished his prior decision in *Shauver* on the ground that the Treaty Clause meant that the Tenth Amendment was simply inapplicable. *United States v. Thompson*, 258 F. 257 (E.D.Ark.1919). Other district courts reached the same conclusion. See *United States v. Rockefeller*, 260 F. 346 (D.Mont. 1919); *United States v. Samples*, 258 F. 479 (W.D.Mo.1919); *United States v. Selkirk*, 258 F. 775 (S.D.Tex.1919). One of the cases (consolidated in the district court as *United States v. Samples*) was appealed to the United States Supreme Court:

Missouri v. Holland

United States Supreme Court.
252 U.S. 416 (1920).

■ HOLMES, J.:—This is a bill in equity brought by the State of Missouri to prevent a game warden of the United States from attempting to enforce the Migratory Bird Treaty Act, [], and the regulations made by the Secretary of Agriculture in pursuance of the same. The ground of the bill is that the statute is an unconstitutional interference with the rights reserved to the States by the Tenth Amendment, and that the acts of the defendant done and threatened under that authority invade the sovereign right of the State and contravene its will manifested in statutes. The State also alleges a pecuniary interest, as owner of the wild birds within its borders and otherwise, admitted by the Government to be sufficient, but it is enough that the bill is a reasonable and proper means to assert the alleged quasi sovereign rights of a State. [] A motion to dismiss was sustained by the District Court on the ground that the Act of Congress is constitutional. *United States v. Samples*, 258 F. 479 (W.D.Mo.1919); accord *United States v. Thompson*, 258 F. 257 (E.D.Ark.1919); *United States v. Rockefeller*, 260 F. 346 (D.Mont.1919). The State appeals.

On December 8, 1916, a treaty between the United States and Great Britain was proclaimed by the President. It recited that many species of

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birds in their annual migrations traversed many parts of the United States and of Canada, that they were of great value as a source of food and in destroying insects injurious to vegetation, but were in danger of extermination through lack of adequate protection. It therefore provided for specified closed seasons and protection in other forms, and agreed that the two powers would take or propose to their lawmaking bodies the necessary measures for carrying the treaty out. [] The above mentioned act of July 3, 1918, entitled an act to give effect to the convention, prohibited the killing, capturing or selling any of the migratory birds included in the terms of the treaty except as permitted by regulations compatible with those terms, to be made by the Secretary of Agriculture. Regulations were proclaimed on July 31, and October 25, 1918. [] It is unnecessary to go into any details, because, as we have said, the question raised is the general one whether the treaty and statute are void as an interference with the rights reserved to the States.

To answer this question it is not enough to refer to the Tenth Amendment, reserving the powers not delegated to the United States, because by Article II, § 2, the power to make treaties is delegated expressly, and by Article VI treaties made under the authority of the United States, along with the Constitution and laws of the United States made in pursuance thereof, are declared the supreme law of the land. If the treaty is valid there can be no dispute about the validity of the statute under Article I, § 8, as a necessary and proper means to execute the powers of the Government. The language of the Constitution as to the supremacy of treaties being general, the question before us is narrowed to an inquiry into the ground upon which the present supposed exception is placed.

It is said that a treaty cannot be valid if it infringes the Constitution, that there are limits, therefore, to the treaty-making power, and that one such limit is that what an act of Congress could not do unaided, in derogation of the powers reserved to the States, a treaty cannot do. An earlier act of Congress that attempted by itself and not in pursuance of a treaty to regulate the killing of migratory birds within the States had been held bad in the District Court. *United States v. Shauver*, 214 F. 154 (E.D.Ark.1914); *United States v. McCullagh*, 221 F. 288 (D.Kan.1915). Those decisions were supported by arguments that migratory birds were owned by the States in their sovereign capacity for the benefit of their people, and that under cases like *Geer v. Connecticut*, 161 U.S. 519 (1896), this control was one that Congress had no power to displace. The same argument is supposed to apply now with equal force.

Whether the two cases cited were decided rightly or not they cannot be accepted as a test of the treaty power. Acts of Congress are the supreme law of the land only when made in pursuance of the Constitution, while treaties are declared to be so when made under the authority of the United States. It is open to question whether the authority of the United States means more than the formal acts prescribed to make the convention. We do not mean to imply that there are no qualifications to the treaty-making power; but they must be ascertained in a different way. It is obvious that there may be matters of the sharpest exigency for the national well being that an act of Congress could not deal with but that a treaty followed by

such an act could, and it is not lightly to be assumed that, in matters requiring national action, "a power which must belong to and somewhere reside in every civilized government" is not to be found. *Andrews v. Andrews*, 188 U.S. 14, 33 (1903). What was said in that case with regard to the powers of the States applies with equal force to the powers of the nation in cases where the States individually are incompetent to act. We are not yet discussing the particular case before us but only are considering the validity of the test proposed. With regard to that we may add that when we are dealing with words that also are a constituent act, like the Constitution of the United States, we must realize that they have called into life a being the development of which could not have been foreseen completely by the most gifted of its begetters. It was enough for them to realize or to hope that they had created an organism; it has taken a century and has cost their successors much sweat and blood to prove that they created a nation. The case before us must be considered in the light of our whole experience and not merely in that of what was said a hundred years ago. The treaty in question does not contravene any prohibitory words to be found in the Constitution. The only question is whether it is forbidden by some invisible radiation from the general terms of the Tenth Amendment. We must consider what this country has become in deciding what that amendment has reserved.

The State as we have intimated founds its claim of exclusive authority upon an assertion of title to migratory birds, an assertion that is embodied in statute. No doubt it is true that as between a State and its inhabitants the State may regulate the killing and sale of such birds, but it does not follow that its authority is exclusive of paramount powers. To put the claim of the State upon title is to lean upon a slender reed. Wild birds are not in the possession of anyone; and possession is the beginning of ownership. The whole foundation of the State's rights is the presence within their jurisdiction of birds that yesterday had not arrived, tomorrow may be in another State and in a week a thousand miles away. If we are to be accurate we cannot put the case of the State upon higher ground than that the treaty deals with creatures that for the moment are within the state borders, that it must be carried out by officers of the United States within the same territory, and that but for the treaty the State would be free to regulate this subject itself.

As most of the laws of the United States are carried out within the States and as many of them deal with matters which in the silence of such laws the State might regulate, such general grounds are not enough to support Missouri's claim. Valid treaties of course "are as binding within the territorial limits of the States as they are elsewhere throughout the dominion of the United States." *Baldwin v. Franks*, 120 U.S. 678, 683 (1887). No doubt the great body of private relations usually fall within the control of the State, but a treaty may override its power. We do not have to invoke the later developments of constitutional law for this proposition; it was recognized as early as *Hopkirk v. Bell*, 7 U.S. (3 Cranch) 454 (1806), with regard to statutes of limitation, and even earlier, as to confiscation, in *Ware v. Hylton*, 3 U.S. (3 Dall.) 199 (1796). It was assumed by Chief Justice Marshall with regard to the escheat of land to the State in *Chirac v. Chirac*, 15 U.S. (2 Wheat.) 259, 275 (1817). [] Further illustration seems unneces-

sary, and it is the present case.

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sary, and it only remains to consider the application of established rules to the present case.

Here a national interest of very nearly the first magnitude is involved. It can be protected only by national action in concert with that of another power. The subject matter is only transitorily within the State and has no permanent habitat therein. But for the treaty and the statute there soon might be no birds for any powers to deal with. We see nothing in the Constitution that compels the Government to sit by while a food supply is cut off and the protectors of our forests and our crops are destroyed. It is not sufficient to rely upon the States. The reliance is vain, and were it otherwise, the question is whether the United States is forbidden to act. We are of opinion that the treaty and statute must be upheld. []

Decree affirmed.

■ VAN DEVANTER and PITNEY dissent [without opinion].

NOTES

(1) Holmes' opinion initially seems concise and straightforward: he simply explores the possible tests for the constitutional validity of treaties, concludes that they must involve matters of national interest and must not contravene any specific constitutional prohibition, and then applies these standards to the treaty before the Court. The conciseness of the opinion should not, however, obscure its complexity.

Why is the Tenth Amendment, which figured so prominently in *United States v. Shauver*, irrelevant? The Court repeatedly decided during this period—in *Geer*, *Ward v. Race Horse*, 163 U.S. 504, 510 (1896) (“the complete power to regulate the killing of game within its borders” is “a necessary incident of [state] authority”), *The Vessel “Abby Dodge” v. United States*, 223 U.S. 166 (1912) (unconstitutionality of federal statute regulating sponge harvest within state waters “obvious”), *Patson v. Pennsylvania*, 232 U.S. 138, 143 (1914), and *New York ex rel. Kennedy v. Becker*, 241 U.S. 556, 562 (1916) (“It is not to be doubted that the power to preserve fish and game within its borders is inherent in the sovereignty of the state”)—states own wildlife within their borders. Why is this property interest not protected by the Tenth Amendment?

If the Tenth Amendment provides no limit, what are the limitations on the power of the United States to enter into treaties?

Could a treaty authorize the federal government to do something contrary to the text of the Constitution? For example, could Congress rely upon a treaty to seize physical possession of real property without paying compensation? Are birds the property of the state? Although the decision in *Missouri v. Holland* is aphoristic and suggestive rather than definitive on such questions, Holmes does state, “The treaty in question does not contravene any prohibitory words to be found in the Constitution.” [¶ 5] In *Geofroy v. Riggs*, the Supreme Court offered the following *dicta* description of the power thus conferred:

The treaty power, as expressed in the Constitution, is in terms unlimited except by those restraints which are found in that instrument

Bean, Michael J. Rowland, Melanie J. The Evolution of National Wildlife Law
3rd Edition. (Praeger, Connecticut, 1997).

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Chapter 5

MARINE MAMMALS

BACKGROUND OF THE MARINE MAMMAL PROTECTION ACT

Until the late 1960s, federal wildlife legislation made no attempt to establish comprehensive programs to conserve any type of wildlife other than migratory birds. Enactment of the Endangered Species Preservation Act of 1966 and the Endangered Species Conservation Act of 1969 signalled a renewal of interest in establishing a more prominent federal presence in wildlife conservation. The programs these laws initiated, though, were relatively modest.¹

By the early 1970s, pressure from many diverse interests had grown for a comprehensive and coordinated program to conserve the world's marine mammals. The pressures arose out of diverse perspectives. Commercial interests, some scientists, and traditionalists in the conservation community believed that marine mammals were an important commercial and food resource that, with proper management, could be used indefinitely through sustained harvests.² Other members of the scientific and conservation communities believed that because marine mammals played an important ecological role in marine systems, the first priority of federal policy ought to be to maintain their populations for ecological reasons. A third group comprised those who believed that marine mammals, because of their apparent intelligence and highly developed social systems,

¹The Endangered Species Preservation Act of 1966 and the Endangered Species Conservation Act of 1969 are discussed in detail in Chapter 7 *infra* at text accompanying notes 3-27.

²The principal bill reflecting these interests was the Anderson-Pelly bill, H.R. 10420, 92d Cong., 1st Sess. (1971).

ought to be left undisturbed and made off-limits to human use.³ This group was motivated primarily by their concern for the welfare of individual animals.

Whatever their motivation, nearly all were in agreement that the existing patchwork of laws and regulations pertaining to marine mammals was inadequate. Although the International Whaling Commission had been charged with safeguarding the world's whale stocks for future generations, its regulations were so ineffective that in 1970 eight species of whales were listed as threatened with worldwide extinction under the Endangered Species Conservation Act of 1969.⁴ A few other species of marine mammals were subject to some form of federal authority, including the West Indian and Amazonian manatees,⁵ the Mediterranean monk seal,⁶ the sea otter,⁷ and the North Pacific fur seal,⁸ but the remainder were protected only by state law or not at all.

Because of the widely divergent interests of those seeking change, their common desire for a new management system for marine mammals did not produce unanimity as to the nature of that system. Instead, Congress had to forge a compromise between the seemingly irreconcilable views of the traditional "managers," the newer environmentalists, and the "protectionists."⁹ The legislation that finally resulted was the Marine Mammal Protection Act of 1972 (MMPA).¹⁰ Precisely because this compromise was necessary in order to pass any legislation at all, the Act articulated only broad, general policy goals and implemented them with specific directions

³The principal bill reflecting this view was the Harris-Pryor bill, H.R. 6554, 92d Cong., 1st Sess. (1971).

⁴35 Fed. Reg. 18320 (1970).

⁵The West Indian manatee was determined to be threatened with extinction under the Endangered Species Preservation Act of 1966. See 32 Fed. Reg. 4001 (1967). The Amazonian manatee was listed pursuant to the 1969 Act. See 35 Fed. Reg. 8495 (1970).

⁶The Mediterranean monk seal was determined to be threatened with worldwide extinction under the Endangered Species Conservation Act of 1969. See 35 Fed. Reg. 8495 (1970).

⁷Taking of sea otters on the high seas by persons subject to the jurisdiction of the United States was prohibited by section 301 of the Fur Seal Act of 1966, Pub. L. 89-702, 80 Stat. 1096 (formerly codified at 16 U.S.C. § 1171; repealed in 1983).

⁸North Pacific fur seals were at the time managed according to sustained-yield principles pursuant to the Interim Convention on the Conservation of North Pacific Fur Seals. See Department of Commerce, National Marine Fisheries Service, Final Environmental Impact Statement, Renegotiation of Interim Convention on Conservation of North Pacific Fur Seals, app. E (1976). For further discussion of fur seal conservation, see Chapter 14 at text accompanying notes 10-55.

⁹The legislative history is described well in Gaines and Schmidt, *Wildlife Population Management Under the Marine Mammal Protection Act of 1972*, 6 *Env't'l L. Rep.* (Env't'l L. Inst.) 50096, 50103-08 (1976).

¹⁰The MMPA was enacted as Pub. L. 92-522, 86 Stat. 1027. It has since been amended several times and is codified at 16 U.S.C. §§ 1361-1421h.

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AN OVERVIEW OF THE MMPA

Whatever its complexities and ambiguities, the MMPA clearly was a major departure from the regulatory scheme it replaced. Most fundamentally, it completely preempted the states from any authority over marine mammals and substituted for the many state programs a single, comprehensive federal program. The central feature of this program was a moratorium of indefinite length, during which no marine mammals could be imported into the United States or taken by any person subject to United States jurisdiction. Limited exceptions were carved out for scientific and public display purposes, for taking by natives of the North Pacific and Arctic coasts, and for taking incidental to commercial fishing operations or pursuant to international treaty. Many of these initial exceptions were substantially revised and still other exceptions were added in later amendments.

Although the MMPA immediately preempted state authority over marine mammals, it also established a mechanism whereby states could regain their authority, together with federal financial assistance to carry out approved state programs. Similarly, although the MMPA established a moratorium on taking and importing marine mammals, it also established a detailed and highly formal mechanism whereby the moratorium could be waived and taking and importation permitted for any species or population stock of marine mammal found to meet the MMPA's novel and complex population criteria.¹¹ Later amendments to the MMPA have eroded the force of the moratorium and the law's novel population goals.

Finally, the MMPA attempted to establish an ambitious international program for marine mammal protection. As a component of that pro-

¹¹One of the MMPA's major innovations was its protection for individual population stocks, as well as species, of marine mammals. The MMPA defines a "population stock" as "a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature." 16 U.S.C. § 1362(11). The protection of stocks represented a significant departure from the Endangered Species Conservation Act of 1969, which applied only to species and subspecies. Pub. L. No. 91-135, § 3(a), 83 Stat. 275 (repealed 1973). This broadening of the scope of protection was in response to the recognition that the health of species and subspecies often depends upon the continuing viability of their various stocks. See, e.g., the following statement of Dr. Kenneth S. Norris: "It is important that we preserve not only the species but the population structure as well, since this [is] part of the way animals have evolved in the world and have managed to meet the changes in the environment that assail [them]." Marine Mammals: Hearings on H.R. 690 and Related Bills Before the Subcomm. on Fisheries and Wildlife Conservation of the House Comm. on Merchant Marine and Fisheries, 92d Cong., 1st Sess. 410 (1971).

gram, the MMPA directed that its policies be the official policies of the United States in the negotiation and renegotiation of international agreements concerning marine mammals. Further, the MMPA provided authority for restricting the importation of certain products from foreign countries whose fishing or other practices impeded the attainment of the Act's goals.

FEDERAL AGENCY RESPONSIBILITIES UNDER THE MMPA

Primary responsibility for implementing the MMPA is shared by the Secretaries of Commerce and the Interior. The former, through the National Marine Fisheries Service, has authority with regard to all members of the order Cetacea (whales and porpoises) and all members, except walruses, of the order Pinnipedia (seals).¹² The Secretary of Commerce also implements, with respect to all marine mammals, the provisions of the MMPA governing incidental take of marine mammals in the course of commercial fishing operations.¹³ The Secretary of the Interior, through the United States Fish and Wildlife Service, administers the MMPA with respect to all other marine mammals (manatees, dugongs, polar bears, sea otters, and walruses).¹⁴

In carrying out these duties under the MMPA, the Secretary is required to consult with the Marine Mammal Commission, an independent advisory body created by the MMPA.¹⁵ The Commission was intended to serve as an impartial and nonpolitical source of expert scientific advice to the Secretary. To ensure the scientific integrity of the Commission, the MMPA requires that its three members be appointed by the President from a "list of individuals knowledgeable in the fields of marine ecology and resource management" unanimously agreed to by the Chairman of the Council on Environmental Quality, the Secretary of the Smithsonian Institution, the

¹²16 U.S.C. § 1362(12)(A)(i). This provision does not refer explicitly to the Secretary of Commerce, but rather to the "Secretary of the department in which the National Oceanic and Atmospheric Administration is operating." The latter agency was placed in the Department of Commerce by Executive Reorganization Plan No. 4 of 1970, 35 Fed. Reg. 15627 (1970), 84 Stat. 2090.

¹³16 U.S.C. § 1362(12)(B).

¹⁴*Id.* § 1362(12)(A)(ii). This sharing of jurisdiction, though a contentious issue at the time of the MMPA's enactment, was premised in part on the belief that there would soon be established a federal Department of Natural Resources in which all federal authority over wildlife would be consolidated. See George Cameron Coggins, *Legal Protection for Marine Mammals: An Overview of Innovative Resource Conservation Legislation*, 6 *Env't'l L.* 1, 26-27 (1975). This action never occurred. The Act imposes identical duties on the Secretaries of Commerce and the Interior for most purposes. Thus the term "Secretary" is used in this chapter to refer to either of them, except where noted otherwise.

¹⁵16 U.S.C. §§ 1401-07.

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Director of the National Science Foundation, and the Chairman of the National Academy of Sciences.¹⁶

THE MMPA'S MANAGEMENT PRINCIPLES: MSY AND OSP

The management units under the MMPA include both species and "stocks." A stock is "a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature."¹⁷ Stocks were a familiar concept in traditional fisheries and marine mammal management. The management goals of the MMPA, however, were intended to be a sharp break from tradition.

Management of commercially valuable fish and other wildlife historically has been aimed at producing a "maximum sustainable yield" (or "MSY") of the exploited species or stock. Management for MSY, in its purest form, focuses solely on the effects of a given harvest level on the ability of the target species or stock to replenish itself.¹⁸ This narrow focus may have been appropriate when the only recognized value of the animal being harvested was its commercial value. However, the MMPA declares that marine mammals have "esthetic and recreational as well as economic" value.¹⁹ To further these and other values, the MMPA provides that the "primary objective" of marine mammal management "should be to maintain the health and stability of the marine ecosystem."²⁰ Thus, the MMPA sought to create a much broader vision in marine mammal management than had previously prevailed.

The MMPA further provides that "[w]henver consistent with" the primary objective of maintaining the health and stability of the marine ecosystem, "it should be the goal to obtain an optimum sustainable population keeping in mind the carrying capacity of the habitat."²¹ The quoted language can only mean that there may be circumstances when maintaining an optimum sustainable population ("OSP") is inconsistent with the primary objective of marine ecosystem health and stability, and

¹⁶*Id.* § 1401(b)(1). The requirement that the individuals be unanimously agreed to by agency heads was added to the MMPA in 1984. Two years earlier, Congress had added a requirement that Commission members be appointed with the advice and consent of the Senate. These measures were enacted in response to the Reagan Administration's efforts to appoint to the Commission individuals lacking the prescribed qualifications who were recommended by the presidentially-controlled Council on Environmental Quality.

¹⁷*Id.* § 1362(10).

¹⁸For a discussion of MSY and related concepts, see F. Christy, *Alternative Arrangements for Marine Fisheries: An Overview* 23 (1973).

¹⁹16 U.S.C. § 1361(6).

²⁰*Id.*

²¹*Id.*

thus must give way.²² What those circumstances might be are difficult to discern.²³ This lack of clarity is but one of several reasons the MMPA's population policy has been described as the Act's "most intricate and the most poorly articulated component."²⁴

Although OSP has a major role to play in marine mammal management, the definition of this important term is far from clear. The Act provides:

The term "optimum sustainable population" means, with respect to any population stock, the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element.²⁵

Two key variables in this definition are the "maximum productivity" of the species or stock and the "health of the ecosystem." The former is relatively quantifiable; the latter is much less so. The more one emphasizes the former, the more OSP resembles traditional living marine resource management standards, which were based solely on the annual "production" of new individuals to replace those taken the previous year.²⁶ To the extent one emphasizes the latter, OSP would seem to compel the minimum feasible disturbance to the ecosystem, especially where the effects of any action are largely uncertain.

Some writers have sought to reconcile the two components of the definition by suggesting that "productivity" need not mean only the narrow concept of biological productivity, but rather the broader concept of "eco-

²²The relative status of the two objectives was clear in the bill passed by the House, which referred to obtaining an "optimum sustained yield" as a "secondary objective." H.R. 10420, 92d Cong., 1st Sess. § 2(6). The Senate amendment to the House-passed bill reversed these priorities, establishing the attainment of optimum sustainable populations as the primary objective of marine mammal management, and reducing ecosystem health and stability to the status of a factor to be kept in mind. The language quoted in the text makes it clear that the Conference Committee adopted the House priorities, despite deletion of the term "secondary" in the original House version.

²³In explaining the Conference bill to the House, Congressman Dingell, then Chairman of the Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, was likewise unable to foresee any incompatibility in the MMPA's two major goals, but he recognized that in the event of conflict, ecosystem health was to be paramount: "I will say that I cannot imagine a case in which the objectives of ecosystem stability and non-disadvantageous taking might conflict; but if they should, it is ecosystem protection which must prevail."

²⁴Gaines and Schmidt, *supra* note 9, at 50101.

²⁵16 U.S.C. § 1362(9). The original definition referred to "optimum carrying capacity" rather than "carrying capacity." The best explication of the original legislative history of the OSP standard can be found in Gaines and Schmidt, *supra* note 9, at 50103-08.

²⁶See Gaines and Schmidt, *supra* note 9, at 50106.

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logical productivity."²⁷ That interpretation, however, is based more on the "spirit" of the MMPA than on anything expressed in the statute.²⁸ More convincing is the Marine Mammal Commission's conclusion that the OSP definition "includes certain features which are potentially inconsistent and other features which call for subjective value judgments that are not amenable to quantification on the basis of available data."²⁹

The MMPA's definition of OSP, by referring to "the number of animals," implies that for any given species or stock there is a single population size that represents its OSP. The implementing regulations since 1976, however, have defined OSP so as to refer to a range of population sizes rather than a single number of animals within a species or stock. The regulatory definition of OSP is

a population size which falls within a range from the population level of a given species or stock which is the largest supportable within the ecosystem to the population level that results in maximum net productivity. Maximum net productivity is the greatest net annual increment in population numbers or biomass resulting from additions to the population due to reproduction and/or growth less losses due to natural mortality.³⁰

Thus, the upper boundary of the OSP range represents the carrying capacity level, often equated with pre-exploitation abundance.³¹ The lower boundary is close to, if not at, the level of traditional MSY-based manage-

²⁷*Id.* at 50107.

²⁸There is some support in the legislative history for this interpretation. Senator Stevens, principal author of the Senate bill, stated the following: "It also requires a judgement, not only on the maximum population of the species, but on the maximum total productivity of the environment including all constituent elements." 118 Cong. Rec. 25258 (1972). Curiously, however, this explanation was offered in regard to the MMPA's original term "optimum carrying capacity" rather than "optimum sustainable population."

²⁹Marine Mammal Commission, *The Concept of Optimum Sustainable Populations 1* (undated).

³⁰50 C.F.R. § 216.3 (1994). This is the definition promulgated by the National Marine Fisheries Service. The U.S. Fish and Wildlife Service has endorsed this definition but has never included an OSP definition in its own MMPA implementing regulations. See 44 Fed. Reg. 2540, 2541-42 (1979).

³¹The possibility that a species or stock could exceed its OSP level might appear to be implicit in a provision of section 104 of the MMPA that refers to cases "in which an application for a permit cites as a reason for the proposed taking the overpopulation of a particular species or population stock." 16 U.S.C. § 1374(b). A better interpretation, however, is that this provision refers to overpopulation in a particular area, rather than overpopulation more generally, because the provision goes on to require the Secretary to consider the alternative of translocating excess animals to a location formerly, but no longer, inhabited by the species or stock. The availability of unoccupied suitable habitat means that the population is not the "largest supportable within the ecosystem" (the upper boundary of OSP as defined in the regulations).

ment.³² In practice, it has been necessary to determine (or at least estimate) the upper boundary, since the lower boundary has generally been set at 60 percent of the carrying capacity population.³³

A marine mammal species or stock that is below its OSP level is considered to be a "depleted" species.³⁴ So too is any marine mammal that has been listed as threatened or endangered under the Endangered Species Act.³⁵ The rules governing what can and cannot be done to marine mammals often turn upon whether the species or stock involved is depleted.

THE MORATORIUM

The cornerstone of the MMPA as passed in 1972 was its "moratorium" on taking and importing marine mammals and marine mammal products. Although the Act defines the moratorium to mean a "complete cessation" of taking and a "complete ban" on importation,³⁶ there were several exceptions to these prohibitions in 1972 and the number has grown steadily in later decades.

The moratorium that exists today essentially applies only to taking and importation of marine mammals for recreational purposes or for commercial use of marine mammal products. Even for these purposes, the moratorium can be "waived," but obtaining a waiver is difficult. Taking that is merely incidental to commercial fishing and other activities can be authorized without a waiver, as can takings and importations for a wide variety of other purposes. A maze of detailed statutory provisions now governs these many activities. The discussion that follows provides a road-map through the maze, starting with the Act's deceptively simple prohibition against "taking."

THE TAKING PROHIBITION

Section 102 of the MMPA prohibits any person or vessel subject to the jurisdiction of the United States from "taking" any marine mammal on the high seas or on the lands or waters of the United States.³⁷ The MMPA's

³²In an early MMPA judicial decision, Judge Skelly Wright, while characterizing the statutory definition of OSP as "singularly unenlightening," was unable to conclude that "MSY is definitely inconsistent with OSP." *Animal Welfare Institute v. Kreps*, 561 F.2d 1002, 1014 (D.C. Cir. 1977).

³³See 42 Fed. Reg. 64548 (1977); 45 Fed. Reg. 72178 (1980).

³⁴16 U.S.C. § 1362(1)(A) and (B).

³⁵*Id.* § 1362(1)(C).

³⁶*Id.* § 1362(7).

³⁷*Id.* § 1372(a)(1) and (2). National Marine Fisheries Service regulations prohibit any person subject to the jurisdiction of the United States from taking any marine mammal during the moratorium, without regard to the locus of the taking. See 50 C.F.R. § 216.11(c) (1995). However, in *United States v. Mitchell*, 553 F.2d 996 (5th Cir. 1977), the court held

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³⁸16 U.S.C. § 1373(a).

³⁹*Id.* § 1373(d).

⁴⁰*Id.* § 1362(12).

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⁴³See 56 Fed. Reg. 11693

⁴⁴5 F.3d 905 (5th Cir. 19

moratorium on taking marine mammals from a particular species or stock could be waived, however, and taking allowed under such regulations as the Secretary deemed necessary to insure that the taking "will not be to the disadvantage" of the species or stock.³⁸ In order for taking not to disadvantage a species or stock, the Secretary had to determine that the species or stock was at its OSP level and would not be reduced below that level by the authorized taking. This determination could be made only through a rulemaking proceeding "on the record after opportunity for an agency hearing."³⁹ That is, a formal, adjudicatory hearing was required to waive the moratorium and authorize taking.

The procedure for authorizing taking, while complex, was at least straightforward. Less so was the scope of the taking prohibition itself. Section 3 of the MMPA defines "take" to mean "to harass, hunt, capture, or kill" any marine mammal or to attempt to do so.⁴⁰ Congress broke new ground by including harassment in the definition, but it did not define this new term. It did make clear that the term was to be interpreted expansively, encompassing even acts that are not intended to affect marine mammals adversely.⁴¹

Two recent cases explored the outer reaches of the take prohibition. Until 1991, the National Marine Fisheries Service's definition of "take" included "the negligent or intentional operation of an aircraft or vessel, or the doing of any other negligent or intentional act which results in disturbing or molesting a marine mammal."⁴² The Service added the following to the take definition in 1991: "feeding or attempting to feed a marine mammal in the wild."⁴³ Operators of a commercial tour boat business that took tourists into the Gulf of Mexico for the purpose of feeding dolphins challenged the new prohibition in *Strong v. United States*.⁴⁴ The district court sided with the tour boat operators on the grounds that "to feed" is not among the dictionary definitions of "to harass." The court of appeals reversed the district court. It noted that

the agency has been given substantial scientific evidence that feeding wild dolphins disturbs their normal behavior and may make them less able to search for food

that the MMPA did not restrict the taking of marine mammals by U.S. citizens in the territory of a foreign nation.

³⁸16 U.S.C. § 1373(a).

³⁹*Id.* § 1373(d).

⁴⁰*Id.* § 1362(12).

⁴¹According to the House Committee report, "[t]he act of taking need not be intentional: the operation of motor boats in waters in which these animals are found can clearly constitute harassment." H.R. Rep. No. 707, 92d Cong., 1st Sess. at 23 (1971), reprinted in 1972 U.S.C.C.A.N. 4144, 4155.

⁴²50 C.F.R. § 216.3 (1994).

⁴³See 56 Fed. Reg. 11693, 11697 (1991).

⁴⁴5 F.3d 905 (5th Cir. 1993).

on their own. It is therefore clearly reasonable to restrict or prohibit the feeding of dolphins as a potential hazard to them.⁴⁵

Although feeding dolphins is therefore prohibited as a taking, firing a rifle at them to frighten them away from food is not, at least according to the court in *United States v. Hayashi*.⁴⁶ That case involved the prosecution of a commercial fisherman who fired two rifle shots near porpoises that he believed were eating the catch off his fishing line. Convicted in the trial court, Hayashi appealed. In overturning his conviction, the court of appeals reasoned that the meaning of the term "harass" in the statutory definition of "take" could only be derived by reference to the words around it: hunt, capture, and kill. According to the court, each of these "involve[s] direct and significant intrusions upon the normal, life-sustaining activities of a marine mammal," and so, therefore, must any act to be considered harassment.⁴⁷

Had the court stopped there, its reasoning might have seemed defensible. Instead, however, it went on at some length to characterize the dolphins' interest in the food on Mr. Hayashi's line as "abnormal" behavior. Characterizing it in this way allowed the court to find an escape from the legal "Catch-22" situation that the court believed otherwise confronted Hayashi. Noting the regulatory prohibition against feeding marine mammals, the court argued that allowing marine mammals to feed on a baited line or a hooked fish might run afoul of this prohibition. "Guilty of 'harassment' by 'feeding' if he did nothing, and guilty of 'harassment' by 'disturbing' if he took steps to prevent the feeding, our hypothetical Hayashi would face possible criminal prosecution under the MMPA no matter which course he chose."⁴⁸ The solution to this dilemma, the court reasoned, lay in recognizing the fact that what the dolphins were doing was not normal and, in the words of the court, "[d]eterrence of abnormal marine mammal activity is not proscribed."⁴⁹

The court's formulation creates as many problems as it solves. The familiar behavior of dolphins "riding" the bow wave of a boat is presumably no more "normal" than that of eating fish off a hook, since it, too, is made possible by human activities. Under the court's view, however, firing a gun into the water to watch dolphins scatter from the bow of a boat would not be harassment because it is not a "significant" intrusion on a "normal" behavior. Yet, it is hard to imagine that Congress did not intend to reach activities of that sort when it prohibited harassment of marine mammals.

⁴⁵*Id.* at 906-7.

⁴⁶22 F.3d 859 (9th Cir. 1993).

⁴⁷*Id.* at 864.

⁴⁸*Id.* at 866.

⁴⁹*Id.* at 864.

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⁵⁰16 U.S.C. § 1362(18).

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⁵³*Id.*

⁵⁴*See* Gaines and Schmidt,

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In 1994 Congress added a definition of "harassment" to the MMPA. The definition rejects the court's reasoning in *Hayashi* and proscribes "any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering."⁵⁰ Conspicuously missing from this definition is any limitation to "normal" behavioral patterns or any of the key words (direct, sustained, and significant) that the *Hayashi* court used.⁵¹

WAIVER OF THE MORATORIUM

It is technically incorrect to refer to a waiver of "the moratorium," for what is in fact waived is only that part of the moratorium applicable to a particular species or stock of marine mammal, and then only to the extent provided in the waiver. In making these "partial waivers" the Secretary must act on the basis of the "best scientific evidence available and in consultation with the Marine Mammal Commission."⁵² If satisfied that the proposed waiver will be "compatible with" the MMPA and if "assured that the taking of such marine mammal is in accord with sound principles of resource protection and conservation as provided in the purposes and policies" of the MMPA, the Secretary may waive the moratorium and permit the taking pursuant to "suitable regulations."⁵³

The net effect of these requirements is that prior to any waiver, the Secretary must determine that the affected species or stock is within the range of OSP and that the taking authorized by the waiver will not reduce it below that level.⁵⁴ This conclusion is reinforced by the MMPA's requirements regarding the promulgation of regulations to implement the waiver. These regulations must ensure that the takings they authorize "will not be to the disadvantage of those species and population stocks and will be consistent with the purposes and policies" of the MMPA.⁵⁵

Once having decided to propose regulations to implement a waiver decision, the Secretary must follow procedural requirements much more stringent than those ordinarily applicable to agency rulemaking. The reg-

⁵⁰16 U.S.C. § 1362(18).

⁵¹Although Congress in 1994 clearly rejected the *Hayashi* court's reasoning, it nevertheless endorsed the result. See text accompanying notes 94-105, *infra*.

⁵²16 U.S.C. § 1371(a)(3)(A).

⁵³*Id.*

⁵⁴See Gaines and Schmidt, *supra* note 9, at 50009.

⁵⁵16 U.S.C. § 1373(a). Although the MMPA does not define the term "disadvantage," it is commonly understood as a shorthand way of incorporating the MMPA's prohibition against taking that would reduce a species or population stock below its OSP level.

ulations must "be made on the record after opportunity for an agency hearing."⁵⁶ This requirement brings into play the full panoply of procedures applicable to an adversarial administrative hearing, rather than the more typical "notice and comment" procedures of informal rulemaking. The most important of these is the right to cross-examine. Moreover, the hearing's scope is not limited solely to the proposed regulation but extends to the decision to waive the moratorium. Finally, when proposing regulations, the Secretary must publish and make available to the public a statement describing the existing population levels of the affected species or stock, the proposed regulations' anticipated impact on the OSP of the species or stock, and the evidence upon which the Secretary's proposed action is based.⁵⁷

Once promulgated, the regulations do not by themselves authorize any taking or importation of marine mammals. The Secretary also must issue a permit, consistent with the regulations, specifying the number of animals to be taken, where they are to be taken, over what time period, and other similar conditions.⁵⁸ Where the permit is for importation, as distinct from taking, there are additional requirements. The Secretary may not permit importation of marine mammals that were taken inhumanely, that were pregnant at the time of taking, or that were "nursing at the time of taking, or less than eight months old, whichever occurs later."⁵⁹

Before issuing a permit, the Secretary must publish notice of the permit application in the Federal Register and allow thirty days for public comment.⁶⁰ If, during that period, any person requests a hearing on the application, the Secretary may order a hearing.⁶¹ The permit applicant has the burden of demonstrating that the proposed taking or importation is consistent with the regulations and with the policies of the MMPA.⁶² The Secretary's decision to grant or deny a permit is subject to judicial review at the behest of the applicant or any party opposed to the application.⁶³

⁵⁶*Id.* § 1373(d).

⁵⁷*Id.* It was the Secretary's failure to publish this statement (or even to make the required underlying determinations) that was the narrow basis for the court's holding in *Committee for Humane Legislation, Inc. v. Richardson*, *infra* note 68.

⁵⁸16 U.S.C. § 1374(b). The Secretary also may issue "general permits." *Id.* § 1374(h). General permits have been issued to commercial fishing associations to authorize the incidental taking of marine mammals by individual members of those associations.

⁵⁹*Id.* § 1372(b). For a discussion of these requirements, see *Animal Welfare Institute v. Kreps*, *supra* note 32.

⁶⁰16 U.S.C. § 1374(d)(2).

⁶¹*Id.* § 1374(d)(4).

⁶²*Id.* § 1374(d)(3).

⁶³*Id.* § 1374(d)(6). In *Animal Welfare Institute v. Kreps*, *supra* note 32, at 1006, the court concluded that "Congress implicitly intended to confer standing to challenge waiver regulations on the same categories of people to whom it gave standing to challenge permits."

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When the MMPA was passed, Congress presumably intended that the complex procedures it crafted to accomplish a waiver of the moratorium would be the principal mechanism for allowing the taking of marine mammals. In fact, however, this process has rarely been used.⁶⁴ Instead, Congress has marginalized the significance of the waiver provisions by establishing an ever-broadening list of takings that are lawful without regard to the moratorium or the waiver provisions. Today, the waiver process remains available to those who might propose recreational or commercial hunting of marine mammals, or who wish to import marine mammal products for commercial purposes. For most others, however, there are simpler ways around the MMPA's supposed moratorium.

EXCEPTIONS TO THE MORATORIUM: TAKING INCIDENTAL TO COMMERCIAL FISHING OPERATIONS

The taking prohibition is subject to a long list of exceptions. The most complex of these pertain to taking that is "incidental" to fishing activities. The concept of "incidental taking" in this context encompasses a wide range of activities, including both some that are intended to "take" marine mammals and some that are not.

In the tuna fishery of the eastern tropical Pacific Ocean, fishers deliberately chase and attempt to capture (at least temporarily) schools of surface-swimming dolphins in order to catch the tuna that typically swim beneath them. In this instance, "taking" (i.e., chasing and encircling) the dolphins is quite deliberate, but since the ultimate purpose is to catch tuna, the deliberate taking of dolphins is considered "incidental" to the fishery. In other fisheries, marine mammals can become entangled or caught in nets intended for fish. The fishers do not intend to catch the marine mammals and, in fact, would prefer not to, but this incidental capture still occurs. Finally, marine mammals may try to "steal" fish from nets. To prevent them from doing so, fishers may try to frighten them away with small explosives or gunshots. This form of deliberate harassment is also generally considered to be incidental to the fishery.

The MMPA as originally enacted made few distinctions among the fisheries in which incidental taking of marine mammals occurred. Only the commercial tuna fishery of the eastern tropical Pacific Ocean was singled out for special treatment. Incidental taking in all other commercial fish-

⁶⁴A moratorium waiver to allow the commercial importation of seal skins from South Africa in 1976 was overturned on the grounds that it violated the MMPA's strictures against importing animals that were nursing or less than eight months old when taken. *Id.*

eries was subject to a uniform set of requirements: Taking incidental to commercial fishing operations was prohibited unless specifically authorized by regulation.

Even when incidental taking was authorized, however, the MMPA somewhat ambiguously sought to minimize or eliminate it. The MMPA declared an "immediate goal that the incidental kill or incidental serious injury of marine mammals permitted in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate."⁶⁵ All commercial fisheries were to be regulated under this broad framework.

Over the years, however, Congress has repeatedly revised the statutory requirements applicable to commercial fishing. It has created a dazzling array of distinctions never contemplated by the original drafters of the law. One set of requirements applies to foreign vessels lawfully fishing in U.S. waters; another applies to U.S. vessels. California sea otters are treated differently from pinnipeds, and both are treated differently from all other marine mammals. The various commercial fisheries that incidentally take marine mammals are subject to differing requirements that depend upon the frequency of incidental taking within the fishery. The tuna fishery of the eastern tropical Pacific Ocean has its own set of detailed requirements, unlike those applicable to any other fishery. Underlying these many distinctions is a complex set of biological, economic, and political factors.

The Tuna-Dolphin Conflict

In the eastern tropical Pacific Ocean, in the waters off Central and northern South America, an unusual association of fish and marine mammals occurs. Schools of large yellowfin tuna regularly swim directly beneath surface-swimming schools of dolphins. This association is not known to occur anywhere else in the world. Precisely why it occurs there remains a mystery. The fact that schools of tuna also are found beneath other surface objects, such as floating logs, suggests that the tuna associate with the dolphins, and not vice versa. But even this is unclear, and it is possible that there is some mutual gain to both fish and dolphin.

Tuna fishers were quick to recognize the potential value of this unusual bond. Finding large schools of tuna in the open ocean is a daunting task. It is considerably easier with a guide to lead fishers to the fish. Schools of dolphins, active and visible at the ocean's surface, became the guides once the link between tuna and dolphins was known.

By the late 1950s, the technology of tuna fishing in the eastern tropical Pacific had adapted to exploit this link. Smaller "long-line" and "bait-

⁶⁵16 U.S.C. § 1371(a)(2).

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Clean Water and Water Quality Considerations

INTRODUCTION

Importance of Water Resources

Water constitutes up to 90 percent of all living matter in plants and animals. No form of life can survive without some dependable supply of this simple, yet critically complex combination of hydrogen and oxygen. Water also constitutes a basic component of many of the world's varied ecosystems, and ecologists and other scientists worldwide recognize it as a key component in many habitats.

Water has also played a central role in the evolution of human society and commerce. The histories of many civilizations are written in and along the banks of major rivers and lakes as well as in transoceanic exploration. Society evolved around rivers, exploration followed river courses, and today rivers remain major highways for commerce. Running water continues to serve as a major source of power for an energy-demanding nation, from the earliest days of the water wheel and mill to today's massive hydrogeneration systems.

Settlements sprouted along the banks of the world's rivers, and the earliest settlers recognized the value of a dependable supply of safe water for a variety of purposes: personal needs and habitat for valued wildlife and plants initially, followed rapidly by transportation. Too frequently, rivers and streams became convenient systems for waste disposal. Unfortunately, the quality of many sources of water has been seriously lowered by a variety of sources of pollution.

Today, the availability of water significantly affects the value of land as well as commercial development. In the semi-arid regions of the western United States, water for irrigation determines the value of farm land, and available, clean water is a prerequisite for industrial development. Even though water covers nearly three-quarters of the earth's surface area, in many parts of the world, and in most of the United States, supplies are in danger and water has come under increasingly rigorous regulation by individual states and the federal government.

The Status of the Nation's Water Supplies and Water Use

Deterioration of water quality is not a new problem, although recognition of the magnitude of the problem is fairly recent. In 1992, in response to a federal legislative mandate, the states reported the extent of water pollution and sources of pollution to Congress. In terms of water resources, the states estimated the nation has:

1. over 3.5 million miles of rivers and streams
2. approximately 40 million acres of lakes, ponds, and reservoirs
3. more than 56,000 miles of ocean shoreline, including Alaska
4. nearly 5,400 miles of Great Lakes shoreline
5. over 277 million acres of wetlands, more than half of which are in Alaska

The report includes only samples, ranging from 99 percent of the Great Lakes shoreline to 18 percent of the rivers and streams, 6 percent of the ocean coastal waters, and 46 percent of lakes, ponds, and reservoirs. Although incomplete, this report provides a sound appraisal of the quality of the nation's water resources.

The report characterizes water quality as "fully supporting" (quality adequate to support a designated use, no serious pollution problem), "threatened" (supporting, but in some danger from pollution), "partially supporting" (some loss attributable to pollution), "not supporting," and "not attainable" (loss from pollution such that the water source cannot be improved to support a designated use). For rivers and streams, 62 percent qualified as supporting or only threatened and 56 percent of the lakes were similarly classified, except that only 3 percent of the Great Lakes reached these desired levels; obviously, the Great Lakes suffer serious pollution problems. Sixty-eight percent of the estuaries sampled, 87 percent of the ocean waters, and 51 percent of the wetlands achieved either the fully supporting or threatened status.

The individual states reported many types and sources of pollutants. Categories of pollutants included sediment, nutrients (such as nitrates from fertilizers and sewage that overstimulate growth of aquatic plants, which ultimately results in oxygen deficiencies). Water pollutants also include silt from agriculture, forestry and developments, pathogens (bacteria, fungi, and viruses) from sewage, medical waste, and livestock. Coliform bacteria suggest the presence of untreated sewage in the water.

Many sources account for accumulations of organic matter as a pollutant: Sewage, leaves and garden clippings, and runoff from livestock feedlots are common sources. Organisms that decay organic matter require oxygen and create a high biological oxygen demand (BOD). Thus BOD is a measure of organic pollutants; a high BOD reflects relatively high concentrations of raw organic material in the water and is undesirable

because of potential harm to fish and other forms of aquatic life that must compete for the available oxygen.

Industries contribute heavy metals (such as lead and mercury) and a wide array of organic chemicals, many of which come from petroleum compounds. Leaching from landfills represents a continuing threat to water quality, making landfills subject to strict regulations (see chapter 8). Residues from agricultural chemicals, both pesticides and fertilizers—many of which are also used in urban settings such as golf courses—represent a significant nonpoint source of pollution.

INTRODUCTION TO WATER LAW

Water resources are subject to four broad areas of regulation involving both state and federal laws and regulations. Laws that establish criteria for water quality and preservation of water resources generally are based on federal law and rules authorized by two major federal laws: the Clean Water Act and the Safe Drinking Water Act. In addition, laws regulating waste disposal focus on protecting water quality.

Generally, state laws regulate health issues related to water safety and quality, although the Safe Drinking Water Act addresses some of these issues. By convention, state water laws that address purely health-related water issues are not considered “environmental regulations.”

Water Use and Water Rights

The regulation of the use of water and allocation of water resources from lakes, rivers, streams, and even wells remain generally controlled by state law. However, federal law becomes operative when federal water projects are involved and when water sources, such as many major rivers, serve more than one state.

Water laws and regulations can be divided into two major categories: laws affecting the rights to “own” or use water for any purpose (other than navigation, which is beyond the scope of this discussion), and laws and regulations that address establishing or maintaining specific levels of water quality or purity, including the regulation of water pollution.

WATER RIGHTS: OWNERSHIP CONSIDERATIONS

Generally, issues of water ownership involve water use more than water quality. Conflicts take the form of disputes over water rights, and such disputes have played a significant part in the development of the more arid portions of the western United States. With the exception of use limitations established by the federal government for water delivered by federal water projects, such as the Central Valley Project in California, and interstate disputes over the rights to river water, such as the Colorado River and disputes between California and other states through which it runs, ownership disputes are a matter of state law.

Ownership interests in water traditionally are limited to supplies of freshwater, and the immediate source of the water can play a central role in the nature of the water rights. State regulations recognize two basic sources of water: surface water, which is water in naturally flowing rivers and streams and commonly includes lakes; and groundwater, which

is water found in underground strata that is tapped by wells and extracted by pumps. It may include some types of springs, before spring flow becomes a measured surface source.

In the case of surface water, a water right grants the right to use the water, but it does not grant ownership of the water itself. Regulation of the rights to surface water fall under one of two doctrines: the *riparian doctrine*, which has its roots in common law and links ownership of property adjacent to a body of water to the use of that water; and rights claimed by *appropriation*, which allow individuals to claim water and to divert it for use apart from its channel or source. The appropriation right frequently is associated with a state requirement for a permit to divert the water. These two basic doctrines include other important provisions and reflect additional differences.

Riparian Rights

The doctrine of riparian rights to surface water trace to English common law. The basic right states that owners of land adjacent to a body of water have the right to use that water so long as the water is returned undiminished in quality and quantity to the channel from which it was diverted, before the channel leaves the user's property. States in the more humid eastern parts of the country follow this doctrine. The riparian doctrine seems reasonable for water rights associated with the use of water for power, but uses that actually "consume" water, such as irrigation, where the water obviously cannot be returned to the channel from which it was diverted, clearly violate the basic provisions of the doctrine. These violations appear to create no conflicts, so long as adequate water is available. However, when such diversions adversely affect others who claim similar rights along the same body of water, conflicts arise and litigation follows.

In terms of ownership, the riparian right is transferred with the land: The owner of the land owns the right to use the water, and when the land is sold, the riparian right is sold with it. In addition, the owner's right is limited to use on the riparian land, meaning that riparian water generally cannot be diverted to locations removed from the body of water, even when the land to which it is transferred is owned by the same individual.

Increased consumptive use of water has seriously eroded the continued acceptance of the riparian doctrine, even in states that traditionally have enjoyed plentiful supplies of water. Traditional riparian states have addressed these problems by statutory modification of the doctrine, or by similar judicial interpretation of the riparian doctrine. Many states have formulated water plans that establish priorities for water use, the riparian doctrine notwithstanding. In the face of drought emergency conditions, such plans allow the state government to suspend riparian water rights.

Appropriation Rights

In the drier areas of the United States, water rights have been established by appropriation. In the simplest sense, appropriation means use: An individual diverts water from a river or stream (appropriates it) and claims the right to use a specified amount of water. This right is traditionally established on the basis of "first in time gets first in right"; that is, the first person to divert and use water beneficially has the first right to it. The requirement to

divert and use is critical because it effectively limits claims for all of the water in a given stream. So long as the flow of a stream has not been entirely appropriated, individuals may claim water rights. However, in many states, to avoid conflicts, enforceable claims require a state permit in addition to the diversion and use criteria. Of course, problems arise in dry periods when stream flow is inadequate to satisfy all appropriations. In such instances, the "first in time" doctrine becomes critical: The earliest claimants have first right to all the water they initially claimed, before later claimants receive any flow. In most states, this right can be sold or rented independently of title to any land.

In many instances, water appropriations on a given stream exceed the normal flow of the stream. As a result, later appropriations are of little value. Part of the "overappropriation" comes from multiple appropriations of water to be used for the same purpose. In recent years, states have reviewed the validity of such multiple claims in an attempt to identify valid claims and to reduce cases of apparent overappropriation of rivers and streams. The state of Montana, for example, has been a leader in efforts to reject needless multiple claims while protecting the rights of claimants under the traditional precepts of "first in time is first in right." By legislation, every person claiming a water right was required to refile the claim. If an individual made more than one claim to irrigate the same parcel of land, generally the state denied the multiple claims, but allowed the earliest priority claim. In addition, Montana has established a special Water Court to hear and settle disputes involving water rights.

Groundwater

Although they did not own surface water, traditionally landowners owned the water, or at least the right to the water, beneath their land. (This is the same general principle associated with the ownership of minerals, although the rights to minerals have far more frequently been separated from the sale of the land.) In recent years, the exercise of this ownership right has come under increasing regulation. Increased demands for groundwater resulting from urban growth and massive expansion of and dependency on irrigation for agricultural purposes, coupled with the development of high volume, high powered pumping systems, have created serious threats to supplies of groundwater and to conflicts among users.

Aquifers

The major sources of groundwater exist in *aquifers*, subterranean paths of slow water movement that may extend hundreds or even thousands of miles, although some are relatively local in extent. Water may be extracted from an aquifer great distances from the site where surface waters enter (recharge) the aquifer, and within relatively small distances several users may seek to pump water from the same aquifer.

Aquifers are far more complex than an underground river of freely flowing water or a subterranean lake; their geology reveals complex, frequently ancient structures that are sturdy, yet fragile. The internal structure of aquifers subjected to excessive withdrawals of water may deteriorate, so that even if adequate water at the recharge sites is available, the aquifers can no longer support the same flow as before the withdrawals. Normal paths of water flow may be blocked and the resources damaged, if not lost. Even if an aquifer is not damaged in terms of its capacity to transport water, its value can be permanently reduced.

In the coastal areas of South Carolina near the border with Georgia, for example, rapid urban growth over the past decade has accelerated the demands for water, most of which is supplied from groundwater resources. Demands have exceeded recharge rates, and the water level in wells has dropped dramatically. In fact, the level in some wells has dropped below sea level. As a result, salt water has encroached on the freshwater supply entering the well; the normal flow of the aquifer is inadequate to flush the salt water from these wells. Effectively, the overuse of wells represents a critical first step in contamination of the aquifer and its loss as a major source of fresh water.

Regulating Groundwater Use

Because the water in question did not exist as a lake under an individual's property, claims of ownership rights to the use of groundwater have been more difficult to sustain. In dry years, water levels drop, and shallow wells may suffer. Proof that the operation of a new, deeper well with a large pumping system directly caused a problem with a smaller well is difficult to establish, but courts in some states have recognized the right to water in a common "cone of depression" such that an individual cannot increase groundwater withdrawals to the detriment of others' historic use of that supply of groundwater.

Unlike regulation of surface water, the regulation of the use of groundwater supplies is relatively new. This in part reflects the fact that until fairly recently, supplies of groundwater have generally matched the demand. Now, as new technology allows far greater exploitation of this resource, demands exceed supply, and the need for regulation becomes apparent. In addition to regulations to foster the fair distribution of this valued resource, from an environmental perspective, regulations are needed to protect the resource itself.

In addition to protecting water rights to groundwater based on basic precepts of prior use and on historic withdrawals, some states have legislated water plans that address the regulation of both surface water and groundwater resources. For example, the state of Washington requires permits for the development and operation for all but domestic water wells (wells that provide water for household purposes), and South Carolina has established a statutory basis to protect groundwater resources by monitoring uses and avoiding excessive withdrawals. Many other states are following the pattern of introducing groundwater regulations and water rights in addition to traditional rights associated with surface waters. Such regulation certainly is part of environmental law because it regulates a critical natural resource.

WATER QUALITY

Virtually all human activities depend on an adequate supply of reasonably pure water. In a very real sense, the purity of available water reflects the quality of the local environment. Water is sensitive to many sources of environmental abuse. Human activities account for the deterioration of water quality, and human efforts have demonstrated that deterioration not only can be slowed, but can be stopped and indeed be reversed.

Table 7.1 summarizes a variety of sources of water pollution and associated types of pollutants identified by the EPA.

7

Rights to Use Water

“When the well’s dry, we know the worth of water.”

—*Benjamin Franklin*

“If there is magic on this planet, it is contained in water. . . . Its substance reaches everywhere; it touches the past and prepares the future; it moves under the poles and wanders thinly in the heights of air. It can assume forms of exquisite perfection in a snowflake, or strip the living to a single shining bone cast upon the sea.”

—*Loren Eisley, The Immense Journey*

“Of all the elements, the Sage should take Water as his preceptor. Water is yielding but all-conquering. Water extinguishes fire, or finding itself likely to be defeated, escapes as stream and re-forms. Water washes away soft Earth, or, when confronted by rocks, seeks a way around.”

—*Tso Cheng, Eleventh Century A.D.*

Groundwater is the source of drinking water for about half of the people in the United States and almost all people living in rural areas. Forty-seven states have wellhead protection programs. During the twenty-first century, water use is expected to increase dramatically in the southeastern and western parts of the United States, where population increases are expected to be greatest. More reclamation of wastewater will be required to help sustain water resources.

This chapter discusses the rights associated with use of water resources in the ground and surface portions of the hydrological cycle. Use of water

resources fundamentally affects the environment. Misuse can alter interdependent ecological relationships. Use of water by individuals has led to its pollution. Constraints on the use of water may affect both water quantity and water quality. This chapter will analyze who has rights to use different sources of water. The common law in the United States has spawned two alternative water rights systems: (1) riparianism and (2) prior appropriation.

Surface Water Rights

Who has water rights, and when do they arise? The answers depend on the allocation system. This section concerns the taking or use of surface water, such as lakes or streams. It does not concern groundwater, discussed in a later section. The common law doctrine of riparian rights was adopted in the humid states in the East; the alternative prior appropriation doctrine (discussed later) was adopted in the arid and semiarid regions of the West. First, we'll explore the doctrine of riparian rights.

Riparian Water Rights: Geographic Determination

What Are Riparian Water Rights?

Water rights that spring from the ownership of property abutting a water source are called riparian rights. The owner of such land is called a riparian. Leaseholders on that land may also have riparian rights. Holders of easements have riparian rights only insofar as to use and enjoy the easement. Legally, holders of easements are not necessarily riparians. Geographic proximity dictates riparian rights.

The dictionary defines a "riparian" water right as "the rights that accrue to owners of land on the banks of waterways, such as the use of such water, ownership of soil under the water, etc.; rights not originating in grants, but arising by operation of law, and are called natural rights because they arise by reason of the ownership of lands upon or along streams of water, which are furnished by nature."

Typical riparian rights include:

- Access to waterways
- Fishing
- Drinking
- Navigation and boating
- Household uses
- Industrial and commercial uses

Surface Water Rights

- Production of hydroelectricity
- Turning of waterwheels

Notice that the listed riparian rights are all rights to *use* water for a purpose, and not the ownership of the water itself. Riparian rights are *usufructuary*, or rights to *use*. Because riparian rights are merely usufructuary and not possessory rights to the water, at law a riparian's *expectation* interests in those rights are less than his or her expectation in the rights normally associated with land.

Water Types Subject to Riparian Rights

Riparian rights attach to certain categories of *surface* waters, such as lakes and streams. Rights arising from proximity to lakes are called *littoral* rights. Because littoral rights are essentially the same as riparian rights, the terms littoral and riparian are both used in reference to lakes. Below, we briefly identify the types of *surface* waters and identify whether they are subject to riparian rights. As a basic rule, flowing water (watercourses) is subject to riparian rights. The rules determine whether a landowner with water on his or her land must share the water with other riparian owners.

Diffused Surface Waters — Not Subject to Riparian Rights. Diffused surface waters are waters from precipitation or melting ice and snow that rest on the earth's surface but are not part of a watercourse or lake. The rule for diffused surface waters is: the owner of the land on which the water is located actually owns the water, and the water may be "captured" by the owner to use the water as he or she chooses. He or she need not share with others — it's a case of finders keepers. The only duty a landowner with diffused surface waters may have to neighbors is to allow drainage according to the natural drainage pattern.

Floodwaters — Not Subject to Riparian Rights. Floodwater is water that flows over the banks of a waterway in times of high water and then returns to the stream. The laws pertaining to floodwaters vary by jurisdiction. Some states allow landowners to impound floodwaters for their own uses, while other states do not allow impoundment and require landowners to let the floodwater return to the original stream. There are no riparian rights to floodwater use. If impoundment is permitted, the owner need not share.

Springs — Sometimes Subject to Riparian Rights. The common law rule for a spring that is not the source of a running watercourse allows the landowner where the spring is located exclusive rights to the waters from the spring. The owner need not share. However, if the spring is a source of a running watercourse, the waters are subject to riparian rights, and the landowner will have a duty to share with other riparians.

Watercourses—Riparian Rights Attach. Riparian rights and duties attach to natural watercourses such as rivers and streams. For a body of water to be legally defined as watercourse, three elements must be present:

1. *Channel.* The channel of a watercourse must be well defined; waters must flow through a readily ascertainable impression in the land left by running waters.
2. *Bed and banks.* The stream bed and banks may be determined by an incline capable of retaining water, or by terrestrial organisms bordering aquatic organisms.
3. *Flow.* The water in a watercourse must flow or have a current in a certain direction. For seasonal streams, flow may be intermittent.

The nature of the specific riparian rights that attach to watercourses are defined according to *navigability*. Once a natural watercourse is determined to exist and riparian rights attach, a further delineation must be made as to whether that watercourse is *navigable*. Navigable waters are those waters over which commerce may be carried or that are used for transportation. Navigable waters usually provide a continuous course suitable for transportation. If a waterway is found to be navigable, then it is considered public and public rights attach. The general public has access rights to navigable waterways, and the private owners of property along the waterway have a duty to share the waters with the public. Public uses include commercial navigation, fishing, and recreation. If a conflict arises between private and public users, private rights may be subordinated to advance public interests. If the waterway is nonnavigable, then no public uses exist and only private rights attach.

Riparian rights do not generally attach to artificial or human-made watercourses. Under changing circumstances over the passage of time, however, an artificial watercourse may evolve to become a natural watercourse, such as when a private mill run evolves to carry tributaries such as a natural stream. Conversely, substantial human-made changes to a natural watercourse may change the status of the watercourse to "artificial," and thus provide that its waters no longer need to be shared with other riparian owners.

Subsurface Streams—Riparian Rights Attach. Wherever a subsurface stream is proven to exist, riparian rights will attach. However, proving that a watercourse is in fact a subsurface stream is a difficult proposition as the riparian proponent must demonstrate the boundaries and current of the stream before he or she may appropriate water. Exhibit 7.1 summarizes these 5 categories of surface water bodies and their relation to riparian rights.

Riparian Land

Riparian rights are tied to the ownership of riparian land. Riparian land is land that abuts or is adjacent to a watercourse during periods of normal

Exhibit

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Surface Water Rights

Exhibit 7.1 Surface Water Bodies and Riparian Rights

<i>Water Body</i>	<i>Do Riparian Rights Attach?</i>
1. Diffused surface water	No
2. Flood waters	No
3. Springs	Sometimes
4. Watercourses	Yes
5. Subsurface streams	Yes

flow. Since dry land naturally ends at the edge of the water body, the question arises: What is the legal boundary of the riparian land and its proximate water rights? The underwater boundaries of the riparian land are as shown in Exhibit 7.2.

The topography of an area may be altered through the natural forces of a stream's current. Drastic changes in a riverbed may occur within a very brief time span; gradual changes due to erosion or sediment may also take place. The rules for changes in riparian land area are set out in Exhibit 7.3.

~~Riparian land, as with any other type of real property, may be transferred in whole or in part or may have other tracts joined to it. Similarly, the right to water can be severed from the ownership of land: riparian rights may be transferred separately from the land. Such transfers grant easements so that the transferee can exercise those rights. Riparian rights may be transferred in whole or in part by deed or other agreement. The transferor may convey a specific right to another, such as the right to fish, and retain his or her other riparian rights. The nature of the rights transferred are determined by the transfer instrument. The transferee may not convert any conveyed nonconsumptive uses into consumptive uses.~~

Exhibit 7.2 Underwater Boundaries of Riparian Land

<i>Water</i>	<i>Boundary</i>
1. Nonnavigable waters	The boundary line exists at the center of the stream.
2. Lakes	The lake is split in a manner similar to a pie; in some states, however, the littoral owners may use and enjoy the whole, undivided lake.
3. Tidal navigable waters	The state owns the stream bed, and the private owner's boundary extends to either the ordinary high or low water mark, according to jurisdiction.
4. Nontidal navigable waters	The state owns the stream bed, and the private owners' lands extend to the vegetation line along the banks of the stream.
5. Between states	State boundaries exist at the middle of the interstate waterway, unless defined otherwise.

Exhibit 7.3 Rules for Changes in Riparian Land Area

<i>Occurrence</i>	<i>Riparian Rule</i>
1. Gradual change from natural causes	Riparian takes possession and ownership of gradual augmenting changes (<i>accretion</i>) but bears the loss of gradual decreases (<i>erosion</i>). There are two types of accretion: 1) alluvion from sediment, and 2) reliction from falling water levels.
2. Sudden and perceptible loss (avulsion)	Boundary between properties remains where it previously existed in the old channel.
3. Changes due to artificial causes	The same rules apply as in the case of naturally caused changes, except where artificial impediments are purposely erected to cause accretion, in which case the party who built the structure does not benefit from any gain to his or her land.

The Evolution of the Reasonable Use Rule

Originally, riparians had an *absolute* right to use the watercourse without any interference from other riparians. Riparians were permitted to make water withdrawals for their own noncommercial, domestic use to the detriment of others. At the beginning of the twentieth century, the absolute use rule was modified to allow for only *reasonable* withdrawals or diversions of water by a riparian for nondomestic, commercial purposes. The *reasonable use rule* that emerged grants rights that take into account the rights of other riparians along the same stream at any given time.

Because the nature of riparian rights is influenced by the rights of others, a *correlative* duty to share arises. Each riparian has a duty to exercise his or her rights only in relationship to the rights and duties of riparian neighbors. Whether a use is reasonable is a factual question. Additionally, rights to use may be established through covenants, prescriptive use for a period of time under a claim of right, government grants, or deeds.

The riparian interests of private landowners around a lake were subordinated by the Sixth Circuit to federal regulations to preserve the wilderness character and use of the entire lake, including areas that were outside the officially designated wilderness area in private hands. *Stupak-Thrall v. United States*, 70 F.3d 881 (6th Cir. 1995) (regulation was within federal power, even though federal statute expressly preserved private rights, which private rights were subordinated to those of adjoining sovereigns under state precedent, and in which local sovereign's shoes the federal government was allowed to stand for purposes of asserting these rights).

Riparian water rights are also subject to a sharing of those water rights with the public. A riparian has a right to use water, rather than own water. Riparian rights are severable from the land, and thus may be transferred to

those who are not riparians. In some jurisdictions, such a transfer would only be valid against the transferring riparian, and not against other riparians.

Under the modern riparian system, the right to use water for either *consumptive* or *nonconsumptive* purposes must be reasonable. If the water is returned to the stream, the use is considered *nonconsumptive*. Nonconsumptive uses include fishing, boating, swimming, and turning turbines for hydroelectric power. However, if the water is consumed, incorporated into a product, or lost to evaporation, then the use is *consumptive*. Examples of consumptive uses are irrigation, the watering of livestock, and drinking. Both consumptive and nonconsumptive uses are subject to the same legal test of *reasonableness*.

Water may be diverted and impounded for a period of time. Subsequently, the water may be either returned to the stream after undergoing some sort of nonconsumptive use or lost as a result of a consumptive use. The right to impound water also is limited by the reasonableness standard. The amount of water, period of impoundment, and the time and manner of discharge or return to the stream, must be reasonable.

Some uses of riparian water are given preference over others. A preference is given to withdrawals for *domestic* purposes. Pollution and waste of water are considered unreasonable. Uses determined to be nuisances are also unreasonable. Use by a nonriparian may be enjoined as unreasonable. Through the balancing of these various factors, riparians may use waters reasonably, and they are protected against unreasonable uses by other riparians. We will see some examples of reasonableness (and its absence) in the Examples and Explanations.

During a water shortage, riparian owners would all suffer the loss of water more or less equally because each would be required to reduce water use in a reasonable manner. In the event of conflicts, the courts look at the reasonableness of each riparian's use and make a factual determination over which use is more reasonable. The use and suitability of that use is analyzed, as well as its social or economic value, and the extent of harm caused to others by that use, in deciding how to ration riparian water uses.

This system is inherently flexible and allows judicial imposition of reasonableness standards. Conflicts between old and new uses are decided by the courts. In theory, new uses may replace less reasonable old ones. Ultimately, this system is designed to provide greater social, economic, and environmental protection by reallocating water rights to the most reasonable use over time. Although this flexibility exists, very few cases have reallocated water rights without requiring some form of monetary compensation.

~~The Effect of Non-Use and Prescription~~

~~The riparian need not actually use the water or exercise his or her rights in order to sustain those rights. Like other property rights, however, unexercised riparian rights may be lost under prescriptive theories if another party~~

1d/e. *Madonna/Michael*. George, Paul, and Ringo may not prevent Michael from boating on the river. The implied navigation servitude applies. Because the river is navigable, public rights attach, and they are superior to riparian rights. Therefore, public boating and recreation are allowed, and private riparians may not enjoin or interfere with such use. Navigation rights for Madonna, although she is not a riparian, also are protected.

1f. *Domestic Uses*. The only other stated uses allowed by the given facts seem to be George's icemaking and Paul's domestic consumption. Reasonable domestic uses are allowed. The other uses may be allowable if they were smaller in scale and not unreasonable under the circumstances.

The System of Prior Appropriation: First in Time

In the United States, the common law of prior appropriation was adopted and developed in the arid and semiarid western states. Evolved appropriation common law now forms the basis for administrative permitting systems employed by a large number of states across the country.

Under the prior appropriation doctrine, water rights do not stem from the ownership of land that abuts a waterway. Instead, prior appropriation law bases water use rights on *previous* withdrawals from a water supply. In essence, one is allowed to use presently what one used in the past, and one also has the future right to consume the same amount of water. The policy underlying the appropriation system is meant to ensure that limited water supplies are beneficially and efficiently used. But it also invests prior takers/exploiters with a right to use an increasingly valuable natural resource.

Development of Prior Appropriation

Miners and other water users on the public domain in the West were originally considered trespassers, unless they had obtained a federal patent. Naturally, water disputes arose even among trespassers. The rule that emerged was that the first trespasser had greater or priority rights against all subsequent trespassers. The rule of *first in time, first in right* formed the basis of the common law prior appropriation doctrine. The trespasser's rights, however, were still subordinate to federal authority.

In 1935 the Supreme Court decided, in *California Oregon Power Co. v. Portland Beaver Cement Co.*, that the Acts of 1866 and 1870, together with the Desert Land Act of 1877, severed water from the public domain. As a result, the federal government had relinquished all sovereignty over waters in the West, except in limited cases. After *California Oregon Power*, states were completely free to choose their water rights system, and many chose prior appropriation.

Because prior appropriation rights do not follow the ownership of property located along a waterway, like riparian rights, they may be acquired by anyone, and at any location. Parties may acquire the right to take and use a specific quantity from a water supply that they put to beneficial use. Some appropriators, like riparians, may transfer their rights to others. Once a party has established its right to extract a certain amount of water, he or she has rights *senior* to subsequent appropriators. This system of seniority rights is referred to as a priority system.

In an appropriation system, there exists no duty to share water with other potential users, unless they have priority. Because an appropriative right is an exclusive right, a senior appropriator can enjoin use by a junior user if the latter's appropriation infringes on the senior's ability to obtain his or her full amount of allotted water. In some circumstances exceptions to this rule are made, such as during periods of water shortage or by state-mandated action.

Obtaining Priority Rights: Appropriation

Parties wishing to appropriate from a water source must meet three criteria. First, a potential user must give *notice* of intent to appropriate water. Second, the party must make an actual *diversion* of the water. Third, the party must apply the water to *beneficial use*. When these conditions are met, an appropriator has "perfected" his or her right to extract water and has rights and liabilities according to the priority system of senior and junior rights. Where water is unavailable for further extraction, a senior appropriator may prevent a junior appropriator from diverting and using water. Let's examine the three necessary criteria.

Notice of Intent to appropriate. Today, with the exception of Colorado, all states enforce priority rights through state administrative agencies. In states with administrative permitting agencies, notice of intent to appropriate is given when an application to withdraw is filed with the agency. Permit systems or Colorado's common law system require that the potential appropriator must indicate the location of the water supply. After an appropriator gives notice of intent to appropriate, he or she must next divert the water within a reasonable amount of time or lose the appropriative right.

Diversion. Water is diverted when it is physically removed from its source. Diversion may occur when water is controlled in its natural course by artificial means, also known as an in-stream diversion. *Instream diversions* may be represented legally by simple stream flow or water level requirements. Exercising exclusive right to water where access to it is over public lands may involve statutes that allow a right-of-way for water ditches to transport the water to the place where it will be used. When access to a water supply

requires a trespass onto privately owned land, a necessary easement must be granted.

Interestingly, the amount claimed *on paper* by senior appropriators may fully appropriate or even exceed the actual volume of water in a watershed. However, the amount *actually* diverted and put to beneficial use may be much less than the amount claimed by seniors. Because an appropriator's rights extend only to the amount put to *actual* use, a new appropriator may in some states be allowed to withdraw water if he or she can show that water is physically available. This dichotomy between claimed and actually diverted water is critical. Other states, however, rely strictly on the amounts claimed on paper by senior appropriators and will not allow further appropriations if a water body appears on paper to be fully appropriated.

Beneficial Use. In an effort to curb speculation and waste, the law requires an appropriator to put the diverted water to a specific beneficial use in order to perfect the right. Beneficial uses include domestic or municipal use, irrigation, stock watering, mining, power generation, recreation, fish and wildlife maintenance, and instream flow or water level protection. Wasting water is not a beneficial use. Either a *community custom* standard or an *efficient use* standard is used to determine whether a use is wasteful. When a use is determined to be wasteful or for a nonbeneficial purpose, the appropriation may be enjoined.

Instead of diverting water for immediate use, an appropriator may appropriate water and impound it. Water may be stored in off-stream ponds or reservoirs, or it may be kept behind in-stream dams. The storage of water is not a *per se* beneficial use unless the stored water is to be applied later to a beneficial use. Among other purposes, water may be stored for future irrigation or flood control. The appropriation still must meet the requirements of notice, diversion, and beneficial use.

The right to store water is a valuable asset in times of water shortages. Storage may provide an abundant water supply to an appropriator when other water sources are low. To capitalize on stored water in the hands of appropriators during shortage, some states have implemented *water banking* systems. A water banking system requires an appropriator to release a quantity of stored water or to forgo further appropriations in exchange for remuneration. The freed water is then distributed to users where water resources are scarce.

An appropriator who stores water may be strictly liable for damage caused by flooding as a result of inadequate impoundment. If an appropriator releases water from a reservoir into a stream, the amount released must not exceed the capacity of the stream. If a stream flow fluctuates, an appropriator releasing water into that stream has a duty to monitor the stream flow and adjust discharge amounts accordingly to prevent downstream flooding.

Water That May Be Appropriated

Surface Waters. Surface waters, including streams and lakes, are subject to appropriation. Diffused surface waters are *not* subject to appropriation. Water may be appropriated when a new appropriator is capable of showing that water *unappropriated* by senior takers is physically available. Water availability in a stream or lake is a measure of the amount of water in a normal water year less the amount already claimed by senior appropriators. If a surplus exists, then water may be extracted by new (junior) appropriators.

Saved Water. The amount of water unused by an appropriator because of the appropriator's use of conservation practices is *saved water*. Put another way, if an appropriator employs more efficient ways to put the water to beneficial use than he or she previously did, then the decrease in the amount of water used is *saved water*. In some jurisdictions, the saved water is not subject to appropriation by others, and the appropriator who "saved" the water has a right to the whole or partial amount of saved water. Other jurisdictions do not allow the water conservator to retain use of the saved water.

Reusable Water. Water previously appropriated, put to use, and released as runoff may be recaptured and appropriated by others, so long as the runoff is in the tributary of a natural rather than human-made stream. Runoff that forms a tributary of a natural stream is called *return flow*; otherwise it is considered *seepage*. Return flow may be appropriated. The doctrine of return flow appropriation allows parties to appropriate the runoff from another party's land. If the water is considered *seepage*, the original user may reclaim the water and use it again. Once runoff has reached a natural stream, it is subject to appropriation by others.

Springs and Developed Water. Springwater that originates and remains on the land where it originated is *not* subject to appropriation by others. Springs that are tributaries to natural streams *are* subject to appropriation. Water added to a natural stream that would not normally have become part of the stream is *developed* water. Developed water, such as water pumped from a mine, is not subject to appropriation by others. Modern law prohibits transfer of water out of a watershed area for use elsewhere. However, many transfers predating this modern doctrine continue currently. Moreover, government-sponsored water projections, subject to legislative directive, that divert public waters for irrigation or development projects would not be subject to the common law doctrines.

The Transfer or Conveyance of Water Rights

Though appropriative rights do not arise from land ownership, they may be transferred incident to the sale of land. Appropriative water rights may

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also be transferred separately from the land. The only rights to appropriate water that may be transferred are for the amount of water put to actual *beneficial* use. This is a critical requirement.

Another limitation on the transfer of appropriative water rights involves the protection of junior return flow rights. Recall that runoff into a natural watercourse in the form of return flow may be appropriated by others. Proposed transfers of appropriative rights are not allowed to disrupt return flows. Similar to the way in which courts prevent a greater burden as a result of any assignment and delegation, they may prevent or condition water right transfers to protect a junior's right to that water.

An appropriator may lose rights to appropriate water as a result of abandonment. *Abandonment* is the intentional surrender of an appropriative right, while *forfeiture* is the loss of a right caused by failure to meet statutory requirements. Non-use alone is not abandonment. Proof must be presented showing an *intent* to abandon and an *act* of abandonment.

For forfeiture, by contrast, intent to abandon or forfeit need not be shown. Instead, noncompliance with statutes or regulations may be proven. Noncompliance generally involves non-use for a period of time; in many states, for five years. Non-use of water because of unavailability, as during a drought, does not rise to the level of abandonment or forfeiture. As appropriative rights may not be gained through prescription, those same rights may not be lost as a result of prescription.

Dual System States

Although the western states adopted the prior appropriation doctrine as a basis of water use law, in several of those states some riparian rights coexist with appropriative rights. How can this work? Conflicts between a riparian and an appropriator are resolved by converting riparian rights into appropriative ones. Similarly in many states, in both the East and West, administrative permitting schemes replace riparian common law systems. These transform riparian rights into appropriation rights, with appropriative priority relating back to the time of transformation. Only riparian rights that have been *exercised* are transformed into appropriative rights; recall that strictly traditional riparian rights usually do not need to be exercised to be retained. The idea of converting riparian rights into appropriative rights and the idea that those riparian rights must have been *exercised* are both important concepts.

Administrative Permit Systems

Administrative permit systems for water withdrawals and use are merely a codification and modification of the common law of prior appropriation. With the exception of Colorado, all western states have adopted administrative permitting systems. Many humid states also have adopted these systems.

Administrative permit systems place the management of water resources in the hands of regulatory agencies. Often the administrative systems regulate both surface and groundwater uses under a system that follows a comprehensive state water resource management plan.

Under these administrative systems, an applicant must file an application for a water withdrawal permit with the regulating state agency. During the review process, the applicant must give notice of the proposed diversion to other rightsholders who may be affected by the new withdrawal, and a public comment period ensues. The application and comments are then reviewed by the permitting agency, and a permit may issue. The right to appropriate is *perfected* upon the permittee actually putting the *diverted* water to *beneficial* use. Note again these key concepts.

The agency may impose certain conditions based on environmental concerns, such as fish and wildlife protection, maintenance of stream flows and water levels, and pollution control. The public trust concept may also be used to limit the issuance of permits that would conflict with public trust purposes. If conflicting water uses arise, the state agency decides which use has precedence.

An examination of the Massachusetts Water Management Act is illustrative. This 1985 statute enacts a comprehensive system for water management and withdrawals of water. The Act regulates water withdrawals in excess of 100,000 gallons per day (gpd). The department also protects special watershed areas. The state DEP is given the authority to raise or lower this threshold upon a finding that such change is necessary to protect the public health, safety, and welfare.

There are two ways to withdraw water in excess of this threshold. One is to register a preexisting withdrawal; the second is to obtain a permit for any new withdrawal. Existing withdrawals of greater than 100,000 gpd prior to enactment of the statute can be registered with the agency. A baseline is determined looking at actual withdrawals during the five years prior to 1986 (1981-1985).

Registrants are required to install flow meters to measure future withdrawals, maintain information on usage, verify any estimated withdrawals for the period 1981-1985, and submit additional historical water use data. All withdrawals of quantities in excess of 100,000 gpd had to be registered prior to 1988. Registrations gave a registrant the right to that water for a period of ten years. Renewals could be effected after ten years. Failure to register in a timely manner resulted in one not being able to grandfather an existing withdrawal. After this time, an existing use would have to register for a new permit as a new use. The department may attach to any permit conditions it deems necessary to further the purposes of this statute or to assure compliance with its regulations.

A new permit is valid for a period of twenty years from the effective date for a particular river basis. Therefore, the actual permit may be for a period

of less than twenty years, depending upon the effective date for the region. In evaluating a permit application, the agency considers a variety of factors, including safe yield from the water source, long-term effect, land values, the use to be made of the water, reasonable conservation practices and measures, protection of public drinking water supplies, groundwater recharge, wastewater treatment, and hydropower resources.

There is an exemption for nonconsumptive uses. Where water is returned at or near the withdrawal point, in essentially unimpaired quality and quantity, it is determined to be a nonconsumptive use. These would typically include salt-water withdrawals, noncontact cooling water requirements, and use of hydropower resources. Generally, riparian systems did not allow the alienation of water rights from the riparian land. The Massachusetts system allows for the transfer of water rights.

Types of violations fall into the categories of willful failure to comply, violation of specific conditions on withdrawal permits, or failure to file required annual reports. In Massachusetts, approximately 1200 individual entities have withdrawal permits. A large number of these are municipalities serving as water supply entities and agricultural uses (primarily cranberry bogs).

Constitutional Issues

The loss of property rights caused by state action raises constitutional questions of police powers, property takings, and due process.

Police Powers and Public Trust Doctrine. Courts allow a state to change from riparian rights to an appropriation system because of the state's right to exercise *police powers*—so long as the state action is rationally related to the protection or enhancement of the public's environmental health, safety, and welfare. States also have used the public trust doctrine to justify the change to an appropriative system of water management. The *public trust doctrine* does not create a legal trust, but it is a way to justify state action. The public trust theory declares that the water resources in a state are held in trust by the state for the use and enjoyment of the public. Because the state acts as trustee, it has the power to manage the trust *res* in a manner consistent with the public trust purposes of navigation, commerce, fishing, recreation, and so on.

Property Takings and Due Process. When a state converts exercised riparian rights to appropriative rights, the resulting loss of future *unexercised* riparian rights raises issues of property taking by the government. Because the riparian rights are merely usufructuary and not possessory, courts have held that the riparian owner had a *diminished expectation* in those property rights. State interference in the exercise of those rights can be more readily justified than if the rights were possessory. The state appropriative schemes

B. Conservation of Endangered Species

Not content with the results of NEPA, Caldwell has proposed the adoption of a constitutional amendment embodying a "statement of basic environmental rights and duties under law." Caldwell premises his call for an environmental amendment to the Constitution on the notion that economic and political pressures for environmentally deleterious action are simply too strong. He argues that an environmental amendment would: (1) make it more difficult for a president to ignore the environment, (2) encourage courts to consider the substantive merits of environmental disputes rather than deferring to environmental agencies, and (3) enhance the credibility of the United States in international environmental protection efforts (a subject we consider in Chapter 10).

Other observers view NEPA as a mixed bag. A typical assessment is that while "NEPA's true action-forcing potential" may have been "killed" by the judiciary's "relegating [it] to a procedural statute," the NEPA process nevertheless has improved the quality of agency decision-making. Millan, *Wanted: NEPA, Dead or Alive, Reward: Our Global Environment*, 22 *Env. Rep.* 2081, 2083 (1991). Oliver Houck views NEPA as "missing the point. It is producing lots of little statements on highway segments, timber sales, and other foregone conclusions; it isn't even present, much less effective, when the major decisions on a national energy policy and a national transportation policy are made." Houck, *Letter to Michael R. Deland* (Feb. 19, 1991). Antonio Rossmann blames the Supreme Court for many of NEPA's problems, noting that in each of the NEPA cases the Court has heard it "has never written to expand NEPA's application and has consistently narrowed or reversed generous rulings by the courts of appeals." Rossmann, *NEPA: Not So Well at Twenty*, 20 *Envtl. L. Rep.* 10174 (1990). By contrast, Daniel Mandelker declares NEPA "alive and well" because the Supreme Court has reaffirmed the statute's most important principles even while narrowing their application. Mandelker, *NEPA Alive and Well: The Supreme Court Takes Two*, 19 *Envtl. L. Rep.* 10385, 10387 (1989). All in all, NEPA has not fully realized the high hopes of its supporters, but many would agree that it has improved thousands of agency decisions that affect the quality of the environment.

B. CONSERVATION OF ENDANGERED SPECIES

Throughout this century, Congress has been concerned about the need to protect certain species of wildlife in danger of extinction. But

it was only in the last three decades that comprehensive programs for protection of endangered species were developed at the federal level. Beginning in 1966, federal legislation and an international convention (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) established a comprehensive program that "restricts the taking of species currently in danger of extinction or likely to become so, regulates trade in them, provides authority for the acquisition of habitat needed for their survival, and mandates the consideration of impacts upon them resulting from various federal activities." M. Bean, *The Evolution of National Wildlife Law* 318 (1983).

In the past decade, protection of endangered species has come to be seen in its larger context—the conservation of biological diversity. Congress's Office of Technology Assessment has defined "biological diversity" as "the variety and variability among living organisms and the ecological complexes in which they occur." OTA, *Technologies to Maintain Biological Diversity* 313 (1987). Properly understood, "biological diversity" includes not only the diversity of species, but also genetic diversity—the variation among individuals of the same species—and the diversity of ecosystems, or natural communities. It also includes the ecological and evolutionary processes on which those systems depend, such as predation, mutation, and decay.

With this broader understanding, the conservation of biological diversity poses a fundamental challenge, implicating, for example, climate change, toxic chemicals, and land use. But the Endangered Species Act (ESA) is the cornerstone of U.S. efforts to conserve biological diversity. It is a mechanism for saving species, the diversity within them, and the natural systems on which they depend. It is, ultimately, the safety net when broader efforts fail. Before turning to that statute, however, it is worth considering the moral, economic, and political groundings of the conservation of species.

1. *Why Should We Conserve Endangered Species?*

At the beginning of this course, we considered some of the intellectual and cultural roots of environmental protection. These issues come to the fore in debates about the extinction of species. Aesthetic concerns and moral principles are often invoked in support of conservation, but conservation may also be justified by narrower concerns for human health and economic well-being. Some of these arguments are set forth in the following excerpts from the writings of Edward O. Wilson, prominent biologist and eloquent champion of biodiversity.

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and Public Works Comm., 97th
Cong., 1st Sess. 366 (1981)

In reflecting on the preservation of species and genetic diversity, it is worth remembering that a butterfly is far more complicated than any machine ever constructed by man. And because of the microorganisms living in it, a cubic inch of Virginia soil contains more structure and provides greater opportunities for scientific advance than the entire surface of Jupiter. When these comparisons are expanded to include the three to ten million species that comprise the whole biota, the magnitude of Earth's living treasury literally exceeds our imaginative capacity. Scientists have documented the vast opportunities offered by species variation for the development of new crops, drugs, and renewable energy sources. Others have demonstrated the vital role of rich, stable ecosystems in the regeneration of oxygen and its maintenance. But there is a great deal more to organic diversity than these utilitarian considerations.

The great German zoologist Karl von Frisch once said that the honeybee is like a magic well: the more you draw from it, the more there is to draw. And so it is with any species, which is a unique configuration of genes assembled over thousands or millions of years, possessing its own biology, mysteries, and still untested uses for mankind. Only a tiny fraction of the millions of species, less than 0.01 percent, have been studied in any detail; most have not even been given a scientific name.

Last year I was . . . asked . . . to give my opinion concerning the most serious problem [we face]. I rephrased the question in the following form: What event likely to occur [now] will our descendants most regret, even those living a thousand years from now? The relatively unconventional opinion I gave was the following. The worst thing that can happen—*will* happen—is not energy depletion, economic collapse, limited nuclear war, or conquest by a totalitarian government. As terrible as these catastrophes would be for us, they can be repaired within a few generations. The one process ongoing [now] that will take millions of years to correct is the loss of genetic and species diversity by the destruction of natural habitats. This is the folly our descendants are least likely to forgive us.

The bleeding of diversity is greatest in the moist tropical forests, but it is also occurring at an unknown rate in the United States. We

should keep in mind that extinction is accelerating not only in birds and mammals, but also in such forms as mosses and insects. These organisms receive little attention but are magic wells nonetheless, the importance of which may not be appreciated for generations—when it will be too late.

|| *E. O. Wilson, Biophilia* ||
121 (1984)

A conservative estimate of the current extinction rate is one thousand species a year, mostly from the destruction of forests and other key habitats in the tropics. By the 1990s the figure is expected to rise past ten thousand species a year (one species per hour). During the next thirty years fully one million species could be erased.

Whatever the exact figure—and the primitive state of evolutionary biology permits us only to set broad limits—the current rate is still the greatest in recent geological history. It is also much higher than the rate of production of new species by ongoing evolution, so that the net result is a steep decline in the world's standing diversity. Whole categories of organisms that emerged over the past ten million years, among them the familiar condors, rhinoceros, manatees, and gorillas, are close to the end. For most of their species, the last individuals to exist in the wild state could well be those living there today. It is a grave error to dismiss the hemorrhaging as a "Darwinian" process, in which species autonomously come and go and man is just the latest burden on the environment. Human destructiveness is something new under the sun. Perhaps it is matched by the giant meteorites thought to smash into the Earth and darken the atmosphere every hundred million years or so (the last one apparently arrived 65 million years ago and contributed to the extinction of the dinosaurs). But even that interval is ten thousand times longer than the entire history of civilization. In our own brief lifetime humanity will suffer an incomparable loss in aesthetic value, practical benefits from biological research, and worldwide biological stability. Deep mines of biological diversity will have been dug out and carelessly discarded in the course of environmental exploitation, without our even knowing fully what they contained.

By economic measure alone, the diversity of species is one of Earth's most important resources. It is also the least utilized. We have come to depend completely on less than 1 percent of living species for our existence, with the remainder waiting untested and fallow. In the course of history, according to estimates recently made by Norman Myers, people have utilized about 7,000 kinds of plants for food, with emphasis on wheat, rye, maize, and about a dozen other highly domesticated species. Yet at least 75,000 exist that are edible, and many

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of these are superior to the crop plants in use. The strongest of all arguments from surface ethics is a logical conclusion about this unrealized potential: the more the living world is explored and utilized, the greater will be the efficiency and reliability of the particular species chosen for economic use. Among the potential star species are these:

The winged bean (*Psophocarpus tetragonolobus*) of New Guinea has been called a one-species supermarket. It contains more protein than cassava and potato and possesses an overall nutritional value equal to that of soybean. It is among the most rapidly growing of all plants, reaching a height of fifteen feet within a few weeks. The entire plant can be eaten, tubers, seeds, leaves, flowers, stems, and all, both raw and ground into flour. A coffeelike beverage can be made from the liquefied extract. The species has already been used to improve the diet in fifty tropical countries, and a special institute has been set up in Sri Lanka to study and promote it more thoroughly.

The wax gourd (*Benincasa hispida*) of tropical Asia grows an inch every three hours over a course of four days, permitting multiple crops to be raised each year. The fruit attains a size of up to 1 by 6 feet and a weight of 80 pounds. Its crisp white flesh can be eaten at any stage, as a cooked vegetable, a base for soup, or a dessert when mixed with syrup.

The Babussa palm (*Orbigyna martiana*) is a wild tree of the Amazon rain forest known locally as the "vegetable cow." The individual fruits, which resemble small coconuts, occur in bunches of up to 600 with a collective weight of 200 pounds. Some 70 percent of the kernel mass is composed of a colorless oil, used for margarine, shortening, fatty acids, toilet soap, and detergents. A stand of 500 trees on one hectare (2.5 acres) can produce 125 barrels of oil per year. After the oil has been extracted the remaining seedcake, which is about one-fourth protein, serves as excellent animal fodder.

Even with limited programs of research, biologists have compiled an impressive list of such candidate organisms in the technical literature. The vast majority of wild plants and animals are not known well enough (certainly many have not yet been discovered) even to guess at those with the greatest economic potential. Nor is it possible to imagine all the uses to which each species can be put. Consider the case of the natural food sweeteners. Several species of plants have been identified whose chemical products can replace conventional sugar with negligible calories and no known side effects. The katemfe (*Thaumatococcus daniellii*) of the West African forests contains two proteins that are 1,600 times sweeter than sucrose and is now widely marketed in Great Britain and Japan. It is outstripped by the well-named serendipity berry (*Dioscoreophyllum cumminsii*), another West African native whose fruit produces a substance 3,000 times sweeter than sucrose.

Natural products have been called the sleeping giants of the pharmaceutical industry. One in every ten plant species contains compounds

with some anticancer activity. Among the leading successes from the screening conducted so far is the rosy periwinkle, a native of the West Indies. It is the very paradigm of a previously minor species, with pretty five-petaled blossoms but otherwise rather ordinary in appearance, a roadside casual, the kind of inconspicuous flowering plant that might otherwise have been unknowingly consigned to extinction by the growth of sugarcane plantations and parking lots. But it also happens to produce two alkaloids, vincristine and vinblastine, that achieve 80 percent remission from Hodgkin's disease, a cancer of the lymphatic system, as well as 99 percent remission from acute lymphocytic leukemia. Annual sales of the two drugs reached \$100 million in 1980.

A second wild species responsible for a medical breakthrough is the Indian serpentine root (*Rauwolfia serpentina*). It produces reserpine, a principal source of tranquilizers used to relieve schizophrenia as well as hypertension, the generalized condition predisposing patients to stroke, heart malfunction, and kidney failure.

The natural products of plants and animals are a select group in a literal sense. They represent the defense mechanisms and growth regulators produced by evolution during uncounted generations, in which only organisms with the most potent chemicals survived to the present time. Placebos and cheap substitutes were eliminated at an early stage. Nature has done much of our work for us, making it far more efficient for the medical researcher to experiment with extracts of living tissue than to pull chemicals at random off the laboratory shelf. Very few pharmaceuticals have been invented from a knowledge of the first principles of chemistry and medicine. Most have their origin in the study of wild species and were discovered by the rapid screening of large numbers of natural products.

For the same reason, technical advances utilizing natural products have been achieved in many categories of industry and agriculture. Among the most important have been the development of phytolium, new plant fuels to replace petroleum; waxes and oils produced from indefinitely renewing sources at more economical rates than previously thought possible; novel kinds of fibers for paper manufacture; fast-growing siliceous plants, such as bamboo and elephant grass, for economical dwellings; superior methods of nitrogen fixation and soil reclamation; and magic-bullet techniques of pest control, by which microorganisms and parasites are set loose to find and attack target species without danger to the remainder of the ecosystem. Even the most conservative extrapolation indicates that many more such discoveries will result from only a modest continuing research effort.

NOTES AND QUESTIONS

1. Why should we care about the extinction of species? What reasons does Wilson articulate? What other reasons are there? Recall the

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discussion in Chapter 9. How do these approaches economic and environmental problems demonstrate the importance of biodiversity? How do we attempt to identify and protect biodiversity, even apart from the concerns of the Convention on Biological Diversity and the United Nations World Commission on Environment and Development?

2. The Endangered Species Act (ESA) of 1973 (16 U.S.C. §1531(a)(3)). Sure, the ESA implicitly protects determined species. Why then is there a need for a higher level of protection? How do we determine more sense to value biodiversity? How do we assess the value of biodiversity? How do we assess the value of biodiversity?

3. To what extent are endangered species being lost? How do we estimate the number of endangered species? How do we estimate the number of endangered species? How do we estimate the number of endangered species?

4. Note that the rate of species loss is increasing. How do we estimate the rate of species loss? How do we estimate the rate of species loss? How do we estimate the rate of species loss?

5. Recall the concept of "ecosystem services" and its implications. If many ecosystems are being lost, how do we estimate the value of ecosystem services? How do we estimate the value of ecosystem services? How do we estimate the value of ecosystem services?

6. A recent development of the pharmaceutical industry is the use of natural products in the development of new drugs. How do we estimate the value of natural products? How do we estimate the value of natural products? How do we estimate the value of natural products?

discussion in Chapter 1 of competing values and the different approaches economics and ecology employ in conceptualizing environmental problems. In what respects do arguments concerning the importance of biodiversity reflect an economic perspective? For an attempt to identify the various reasons why biodiversity is valuable to humans, even apart from purely utilitarian values, see S. Kellert, *Biological Diversity and Human Society* (1996).

2. The Endangered Species Act (ESA) refers to the "esthetic, ecological, educational, historical, recreational and scientific value" of species in danger of or threatened with extinction. §2(a)(3), 16 U.S.C. §1531(a)(3). Surely not all species have the same value to mankind, as the ESA implicitly recognizes by excluding from its protections insect pests determined to "present an overwhelming and overriding risk to man." Why then should all disappearing species be entitled to the same level of protection? From an economic perspective, wouldn't it make more sense to vary the level of protection on the basis of some assessment of the value of the species to mankind? How could such an assessment be done given our present knowledge?

3. To what extent does uncertainty justify strict protection for endangered species? Wilson states that we have studied in detail less than one one-hundredth of one percent of all species. If we know so little about the characteristics of species that are fast disappearing, is it reasonable to assume that what we are losing includes some valuable resources? Is biodiversity inherently valuable because it is impossible to know what we are losing as species disappear?

4. Note that Wilson forecast that the rate of species loss may increase to beyond 10,000 per year during the 1990s. Remarkably, his prediction now appears to have been too optimistic. In his 1992 book *The Diversity of Life*, Wilson reports that his most conservative estimate of the current rate of species loss is 27,000 per year, the equivalent of 74 per day and three per hour. E. O. Wilson, *The Diversity of Life* 280 (1992). This estimate includes only the loss of species that is caused by destruction of natural habitat, and not that which is the product of exotic species replacement or endangerment from pollution.

5. Recall the discussion in Chapter 1 concerning the "new ecology" and its emphasis on the inherent instability of ecological communities. If many species disappear as a result of natural forces and ecosystems are in constant turmoil even absent man's intervention, why should we be concerned about protecting endangered species? See E. O. Wilson, *The Diversity of Life* 330 (1992).

6. A recent example of the pharmaceutical use of rare plants is the development of a drug called Taxol to treat breast cancer and ovarian cancer. The drug originally was made only from material found in the bark and needles of the rare Pacific yew tree. Environmentalists initially were concerned that this discovery threatened to decimate the yew population since it took six 100-year-old yews to make enough Taxol to treat

a single patient. However, having developed an understanding of how taxol production occurs within the yew tree, researchers were able to synthesize the drug using much smaller quantities of yew bark. Scientists also discovered that the drug could be extracted from the leaves of a tree found widely in the Himalayas, *Taxus baccata*, without killing the tree. In December 1994, the FDA approved a new, semi-synthetic version of Taxol that uses the Himalayan tree rather than the rare Pacific yew. New Version of Taxol Is Approved by FDA, N.Y. Times, Dec. 13, 1994, at C6.

7. Experiments conducted by conservation biologists have demonstrated that more biologically diverse communities have more productive ecosystem processes. This finding is a product of research conducted at a facility in England called the "Ecotron." The Ecotron has 16 environmental chambers that were used in an elaborate experiment to replicate terrestrial communities that differ only in their biodiversity. Naeem et al., Declining Biodiversity Can Alter the Performance of Ecosystems, 368 Nature 734 (1994). The study suggests that reduced biodiversity will indeed adversely affect the performance of ecosystems. Similar results were obtained in a large-scale field study of prairie plants, which found that the more species a plot of experimental prairie had, the more biomass it produced and the better it retained nitrogen. Yoon, Ecosystem's Productivity Rises With Diversity of Its Species, N.Y. Times, March 5, 1996, at C4.

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The most significant legislation for preserving biodiversity has been the Endangered Species Act of 1973. The major provisions of the Endangered Species Act are outlined below. The Act protects species that are listed by the Secretary (under section 4) as either "endangered species" or "threatened species."

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Section 3: Definitions

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packing it, and only one packer capable of the almost super-human task of balancing such a load. But the piano failed to bring contentment; the lady decamped; and when the story was told me, the ranch cabin was already a ruin of sagging logs.

Again there was 'Friole Cienega,' a marshy meadow walled in by pines, under which stood, in my day, a small log cabin used by any passer-by as an overnight camp. It was the unwritten law for the owner of such real estate to leave flour, lard, and beans, and for the passer-by to replenish such stock as he could. But one luckless traveler, trapped there for a week by storms, had found only beans. This breach of hospitality was sufficiently notable to be handed down to history as a place name.

Finally, there was 'Paradise Ranch,' an obvious platitude when read from a map, but something quite different when you arrived there at the end of a hard ride. It lay tucked away on the far side of a high peak, as any proper paradise should. Through its verdant meadows meandered a stinging trout stream. A horse left for a month on this meadow waxed so fat that rain-water gathered in a pool on his back. After my first visit to Paradise Ranch I remarked to myself: what else *could* you call it?

Despite several opportunities to do so, I have never returned to the White Mountain. I prefer not to see what tourists, roads, sawmills, and logging railroads have done for it, or to it. I hear young people, not yet born when I first rode out 'on top,' exclaim about it as a wonderful place. To this, with an unspoken mental reservation, I agree.

[128]

Leopold, Aldo. A Sand County Almanac and Sketches Here and There. (Oxford University Press, New York, 1949).

Thinking Like a Mountain

A deep chesty bawl echoes from rimrock to rimrock, rolls down the mountain, and fades into the far blackness of the night. It is an outburst of wild defiant sorrow, and of contempt for all the adversities of the world.

Every living thing (and perhaps many a dead one as well) pays heed to that call. To the deer it is a reminder of the way of all flesh, to the pine a forecast of midnight scuffles and of blood upon the snow, to the coyote a promise of gleanings to come, to the cowman a threat of red ink at the bank, to the hunter a challenge of fang against bullet. Yet behind these obvious and immediate hopes and fears there lies a deeper meaning, known only to the mountain itself. Only the mountain has lived long enough to listen objectively to the howl of a wolf.

Those unable to decipher the hidden meaning know nevertheless that it is there, for it is felt in all wolf country, and distinguishes that country from all other land. It tingles in the spine of all who hear wolves by night, or who scan their tracks by day. Even without sight or sound of wolf, it is implicit in a hundred small events: the midnight whinny of a pack horse, the rattle of rolling rocks, the bound of a fleeing deer, the way shadows lie under the spruces. Only the ineducable tyro can fail to sense the presence or absence of wolves, or the fact that mountains have a secret opinion about them.

My own conviction on this score dates from the day I saw a wolf die. We were eating lunch on a high rimrock, at the foot of which a turbulent river elbowed its way. We saw what we thought was a doe fording the torrent, her

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breast awash in white water. When she climbed the bank toward us and shook out her tail, we realized our error: it was a wolf. A half-dozen others, evidently grown pups, sprang from the willows and all joined in a welcoming mêlée of wagging tails and playful manlings. What was literally a pile of wolves writhed and tumbled in the center of an open flat at the foot of our rimrock.

In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy: how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down, and a pup was dragging a leg into impassable slide-rocks.

We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.

Since then I have lived to see state after state extirpate its wolves. I have watched the face of many a newly wollless mountain, and seen the south-facing slopes wrinkle with a maze of new deer trails. I have seen every edible bush and seedling browsed, first to anaemic desuetude, and then to death. I have seen every edible tree defoliated to the height of a saddlehorn. Such a mountain looks as if someone had given God a new pruning shears, and forbidden Him all

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other exercise. In the end the starved bones of the hopped-for deer herd, dead of its own too-much, bleach with the bones of the dead sage, or molder under the high-lined junipers.



I now suspect that just as a deer herd lives in mortal fear of its wolves, so does a mountain live in mortal fear of its deer. And perhaps with better cause, for while a buck pulled down by wolves can be replaced in two or three years, a range pulled down by too many deer may fall of replacement in as many decades.

So also with cows. The cowman who cleans his range of wolves does not realize that he is taking over the wolf's job of trimming the herd to fit the range. He has not learned to think like a mountain. Hence we have dustbrows, and rivers washing the future into the sea.

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We all strive for safety, prosperity, comfort, long life, and dullness. The deer strives with his supple legs, the cowman with trap and poison, the statesman with pen, the most of us with machines, votes, and dollars, but it all comes to the same thing: peace in our time. A measure of success in this is all well enough, and perhaps is a requisite to objective thinking, but too much safety seems to yield only danger in the long run. Perhaps this is behind Thoreau's dictum: In wildness is the salvation of the world. Perhaps this is the hidden meaning in the howl of the wolf, long known among mountains, but seldom perceived among men.

Escudilla

~~Life in Arizona was bounded under foot by grama grass, overhead by sky, and on the horizon by Escudilla.~~

~~To the north of the mountain you rode on honey-colored plains. Look up anywhere, any time, and you saw Escudilla. To the east you rode over a confusion of wooded mesas. Each hollow seemed its own small world, soaked in sun, fragrant with juniper, and cozy with the chatter of piñon jays. But top out on a ridge and you at once became a speck in an immensity. On its edge hung Escudilla.~~

~~To the south lay the tangled canyons of Blue River, full of whitetails, wild turkeys, and wilder cattle. When you missed a saucy buck waving his goodbye over the skyline, and looked down your sighs to wonder why, you looked at a far blue mountain: Escudilla.~~

~~To the west billowed the outliers of the Apache National Forest. We cruised timber there, converting the tall pines, forty by forty, into notebook figures representing hypo-~~

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a single patient. However, having developed an understanding of how taxol production occurs within the yew tree, researchers were able to synthesize the drug using much smaller quantities of yew bark. Scientists also discovered that the drug could be extracted from the leaves of a tree found widely in the Himalayas, *Taxus baccata*, without killing the tree. In December 1994, the FDA approved a new, semi-synthetic version of Taxol that uses the Himalayan tree rather than the rare Pacific yew. New Version of Taxol Is Approved by FDA, N.Y. Times, Dec. 13, 1994, at C6.

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B. Conservation of Endangered Species

Section 4: Listing Endangered and Threatened Species

§4(a) requires the Secretary of Commerce or the Secretary of the Interior to determine whether any species is "endangered" or "threatened" and to designate critical habitat of such species.

§4(b) provides that the listing determination is to be based solely on "best scientific and commercial data available" and that the designation of critical habitat is to be based on the "best scientific data available . . . taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat."

§4(b)(3) provides that citizens may petition to force listing determination.

§4(f) requires the Secretary to develop and implement recovery plans for endangered and threatened species unless he finds they will not promote conservation of the species.

Section 7: Review of Federal Actions

§7(a)(1) requires all federal agencies to carry out programs to conserve endangered and threatened species.

§7(a)(2) provides that all federal agencies must insure, in consultation with the Secretary, that their actions are "not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification" of such species' critical habitat.

§§7(e)-(h) provide that if action is barred by a "jeopardy" determination, its proponent may seek exemption from the Cabinet-level "Endangered Species Committee."

Section 9: Prohibitions

§9(a) prohibits sale, import, export, or transport of any species listed as endangered.

§9(a)(1)(B) & (C) makes it unlawful to "take" (broadly defined by section 3(19) to cover harassing, harming, killing, capturing, or collecting) any endangered *animal* species.

§9(a)(2)(B) prohibits removal or damage of endangered *plants* on federal lands or anywhere else if in knowing violation of state law.

§9 states that these prohibitions generally apply to threatened species, except as the Secretary has specified otherwise, and they apply to any "person," including any corporation or government entity.

Section 11: Enforcement and Citizen Suits

§11(a) & (b) provides civil and criminal penalties for violations of the Act.

§11(g) authorizes citizen suits against any person alleged to be in violation of the Act and against the Secretary for failure to perform any nondiscretionary duty.

While threatened species are to be protected by regulations "necessary and advisable to provide for the conservation of such species," in general, threatened species have been extended the same protections accorded species listed as endangered. Specific protections are provided in sections 7 and 9 of the Act. Section 7 of the Act requires all federal agencies to "insure that any action authorized, funded, or carried out" by them "is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species," 16 U.S.C. §1536. Section 9 of the Act regulates private conduct by making it illegal for any person to sell, import, export, or transport any plant or animal greater listed as endangered. Endangered fish or wildlife are given even greater protection by section 9(a)(1), which makes it illegal for anyone to "take" them. "Take" is broadly defined to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Section 9(a)(2)(B) makes it illegal to remove or damage endangered plants from federal lands or from any other property if it is done in knowing violation of any state law or regulation including state criminal trespass law.

In the remaining sections of this chapter, we consider the three key sections of the statute: section 4, section 7, and section 9. Any study of the Endangered Species Act must begin, however, with one of the most celebrated cases in environmental law—*TVA v. Hill*, 437 U.S. 153 (1978)—in which the Supreme Court resoundingly affirmed the sweeping protections that this statute provides to species on the brink of extinction.

|| *TVA v. Hill* ||
437 U.S. 153 (1978) ||

MR. CHIEF JUSTICE BURGER delivered the opinion of the Court. . . . The Little Tennessee River originates in the mountains of northern Georgia and flows through the national forest lands of North Carolina into Tennessee, where it converges with the Big Tennessee River near Knoxville. The lower 33 miles of the Little Tennessee takes the river's clear, free-flowing waters through an area of great natural beauty. . . .

In this area of the Little Tennessee River the Tennessee Valley

B. Conservation

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Until rece hardly generat darters, of whic these having be behind the sna discovery, wh 1973, 16 U.S.C other things, of animal life these creatur

In Janua the Secretary

Ferrey, Steven. *Environmental Law*. 2nd Edition.
(Aspen Law + Business, New York, 2001).

13

The Endangered Species Act

“Every landscape in the world is full of these exact and beautiful adaptations, by which an animal fits into its environment like one cogwheel into another.”

—J. Bronowski, *The Ascent of Man*, 1973

“The first prerequisite of intelligent tinkering is to save all the pieces.”

—Aldo Leopold

“We haven’t the time to take our time.”

—Eugène Ionesco, *Le Roi se meurt*, 1963

Key Concepts

Now we turn to the protection of animals and plants. Before the Endangered Species Act (ESA), only fragmentary legislation existed to protect wildlife. The states handled the earliest stages of wildlife management; intervention was limited. Established to regulate sport fishing and hunting, state laws operated on the premise that wildlife was a “public good.” In 1900 the first federal legislation regulating wildlife focused on a few isolated species. The scope of federal protection gradually extended, but only on a species-by-species basis. This first federal statute was the Lacey Act of 1900, which restricted interstate commerce of certain species taken in violation of state law. The Migratory Bird Treaty Act of 1918 was the first effective federal

legislation to prohibit the taking of a species. Endangered species protection on a federal level was framed on a species-by-species basis until the 1960s.

A related statute is the Animal Welfare Act (7 U.S.C. §§2131-2159). Under this, the U.S. Department of Agriculture is required to promulgate regulations to provide standards to protect animals used in exhibitions. This includes providing a "physical environment adequate to promote the psychological well-being of primates." It was held that individual plaintiffs have standing to contest the failure of the agency to promulgate regulations, to implement minimum standards for the protection of animals. *Animal League Defense Fund v. Glickman*, 154 F.3d 426 (D.C. Cir. 1998) (plaintiff and the organization he represented had standing). The plaintiff alleged that he viewed animals mistreated at the zoo, which caused him to suffer a concrete aesthetic injury, which would be redressed by properly promulgated regulations to protect not only the animal, but people like himself within the zone of interests the legislation was designed to protect. The injury was deemed to be distinct, aesthetic, and imminent.

This approach changed with the passage of the first Endangered Species Act in 1966, as subsequently amended by the 1973 Endangered Species Act, 16 U.S.C. §§1531 et seq. In this act, Congress acknowledged the importance of biodiversity: "These species of fish, wildlife, and plants are of aesthetic, ecological, educational, historical, recreational and scientific value to the Nation and its people." 16 U.S.C. §1531(a)(3). The ESA set out to create the tools to conserve entire ecosystems necessary for the preservation of endangered species.

Congress used its earlier definition of species but extended it to embrace any member of any animal species or subspecies including entire populations. The 1973 Act extended protection to endangered species and also those threatened species that could foreseeably become extinct. The category of threatened species would also include species that have been "successfully restored" yet are still in need of protection.

Three major sections of the act, §§4, 7, and 9, drive the machinery of the ESA. Section 4 lists the species. Section 7 requires interagency cooperation and consultation to prevent any federal action, including federal permits or funding, that would place a species and or its "critical habitat" in jeopardy. Section 9 creates private party liability for prohibited acts against individual members of a species, specifically the "taking" of a species or destruction of habitat. The other operative sections of the act are §10, which grants "incidental take" exemptions; §11, which delineates the enforcement provisions; and §6, which mandates state and federal cooperation. The act's procedural requirements and guidelines are determined by the Administrative Procedure Act.

The ESA operates by listing endangered and threatened species of plants and animals, and their critical habitats. The act applies to both federal and state actions. Any federal action requires consultation to prevent jeopardizing

threatened species or their habitat. In addition, no private citizen can undertake any activity that will result in a taking of any species, even if the taking is unintentional. "Taking" can involve harming the habitat of an endangered species. Certain *incidental* takings are permitted, however. Let's look now at the specifics of the ESA.

The Key Nouns and Adjectives

Key, broad-reaching definitions facilitate the purposes of the act. The most important ESA nouns and adjectives are as follows.

Species is defined as a species, subspecies, or geographically separate population. In other words, very specialized, distinct branches of animals and plants are recognized for protection. Even though a species may have a healthy viable population in one area, it could be threatened with extinction in another locale.

Endangered species is defined as any species threatened with extinction in all or a significant part of its range. *Fish or wildlife* is an unlimited term covering *any* creature dead or alive or its parts, products, offspring, or eggs. *Plant* takes in all seeds, roots, and other plant parts. Anything living or a part thereof is covered.

Threatened species refers to a species that is likely to become endangered within the foreseeable future throughout all or a large part of its range. By federal regulation, the same protection that shields *endangered* species applies to *threatened* ones. A little later, we'll discuss this distinction in more detail.

Places and activities also are key noun definitions in the ESA. *Critical habitat* is an area necessary for a species' survival. Unique food needs, shelter requirements, or breeding sites all delineate a critical habitat. A species does not have to *occupy* the habitat in question so long as the habitat satisfies fundamental behavioral needs. Critical habitat and the determination of an endangered or threatened species do not have to be established concurrently.

The scope of the habitat does not have to include the entire potential habitat. The *potential* geographical habitat for a species does not determine the *critical* habitat, except in cases where a limited area is the critical habitat. In *Palila v. Hawaii*, 852 F.2d 1106 (9th Cir. 1988), a state agency maintained a gaming program in which the game consumed the only possible food source for the palila, which is an endangered bird. The court scrapped the program, since it would render the endangered bird extinct. The destruction of the bird's habitat by sheep was deemed to threaten its ability to rebound from its endangered status. The result was that the sheep had to be removed from the forest to protect destruction of the endangered birds' habitat.

Conservation defines the purpose of the act. As defined, conservation encompasses any and all measures of whatever kind necessary to remove a species from a threatened or endangered status. These measures range from

scientific research to a regulated "taking." More about this below. Economic harm is not a factor in this analysis. In *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978), the Court shut down a billion-dollar dam project so as to halt and reverse the trend toward species extinction, "whatever the cost."

One more noun and its modifier are important: *Commercial activity* extends to all activities of industry and trade and is not limited to mere buying and selling. However, exhibitions and the like by museums or similar cultural organizations are exempt from the "commerce" definition.

The Key Verb: "Take"

There is a single key verb to understand with respect to ESA. The act operates to prevent the taking of any protected species. *Take* covers any possible conduct that could cause actual injury to an endangered or threatened species: to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in any such conduct." 16 U.S.C. §1532(3)(19). The verb *harm* is key in this string of definitions. *Harm* includes habitat modification as long as there is a showing of actual injury to wildlife. *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon et al.*, 515 U.S. 687 (1995). *Habitat modification* encompasses any activity that would significantly impair essential behavioral patterns such as breeding, feeding, or sheltering. 50 C.F.R. §17.3. So, *take* includes *harm*, which includes *habitat modification*, which includes impairment of breeding, feeding, or sheltering. Remember this key string.

Within the statute, the term "Secretary" is a generic term that refers to the agency head who has authority for the implementation of respective sections of the ESA. The power vests according to the type of species. The Secretary of the Interior is responsible for land animals and freshwater fish; the Secretary of Commerce for marine mammals and saltwater fish; and the Secretary of Agriculture for the import and export of animals and plants. Command over the ESA is delegated to the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), who then administer the ESA according to regulations promulgated by the respective "Secretaries."

EXAMPLES

1. The piping plover, an endangered species, nests on the dunes of barrier beaches. The young birds are well camouflaged and remain on the ground for several weeks after hatching. Permits for off-road recreational vehicle travel on the beach generate considerable revenue for the state. Vehicle traffic crosses many nesting sites. Does the state have to close the beach to vehicle traffic? Why or why not?
2. The endangered palila's singular food source is threatened as a result of

a state agency gaming program. If the gaming continues, the food supply will be eliminated.

- a. Can you enjoin the state from pursuing its gaming program?
- b. Evidence suggests the palila's population is increasing while the bird's singular food source is being threatened. Should the gaming program be halted under these circumstances? Why?

EXPLANATIONS

- 1. Yes. Protection of a critical habitat is necessary whenever unique breeding, feeding, or sheltering patterns are interrupted. Thus in coastal New England, the piping plover's habitat is protected from beach traffic but only during nesting season while the fledglings are on the ground. Once the young birds are able to fly, the area is not restricted. The state does not do a balancing test weighing its economic interests against the plover's nesting requirements. The interests of the species is paramount.
- 2a. Since the gaming program directly interferes with the feeding habits of the palila, it meets the first prong of habitat modification: altering an essential *behavioral* pattern. The threat of injury is imminent to the species and that is enough to satisfy the *actual injury* requirement even without a corpus delicti.
- 2b. If the harm to the species merely affects the species' ability to recover from the endangered or threatened status, there is no proximate cause to suggest killing or actual injury. The status quo hasn't been altered. However, if it is certain that the species will suffer injury as a result, protection should ensue since the purpose of conservation is to remove species from endangerment.

Listing of Species and Consultation

Listing Species and Habitat: §4

Listed species are protected. To protect species and enable them to recover before they become extinct, §4 of the ESA provides that species be identified and listed as either "endangered" or "threatened" species. Neither environmental impact statements (EIS) nor environmental assessments (EA) are necessary for listing of a species or its critical habitat, since the aims of ESA are consistent with that of the National Environmental Policy Act (NEPA). You don't have to complete an EIS to satisfy the ESA, but you need to satisfy the ESA to complete an EA or a final EIS, where they are required. Thus, while ESA is a factor in NEPA, an EIS is not necessary for ESA compliance.

No species receives full ESA protection until it is listed. The listing

process is done "solely" in accordance with the "best scientific and commercial data available," because Congress intended for the Secretary to use only *biological* criteria to determine which species are listed. 16 U.S.C. §1533(b). Economic factors are not considered when listing a species. Often species with similar characteristics are listed jointly or generically to increase protection for the truly endangered subspecies. Public notice is not necessary, but *actual* notice must be given to the affected state agencies.

To initiate the listing process, anyone may petition the Secretary. Most actions to compel listing are brought by environmental groups under the citizen suit provision. Species proposed for listing must meet *any one* of five requirements in order for the petition to go forward:

1. The present or threatened destruction, modification, or curtailment of its habitat or range
2. Overutilization for commercial, recreational, scientific, or educational purposes
3. Disease or predation
4. The inadequacy of existing regulatory mechanisms
5. Other natural or manmade factors affecting its continued existence.

16 U.S.C. §1533(a)(1).

In addition, §4 requires the Secretary to list the species' critical habitat. The Secretary uses the same listing criteria for both *species* and *habitat*. The critical habitat designation represents the geographic area necessary for the species' conservation and recovery from endangerment. Species *occupation* of a habitat is not a prerequisite for the classification.

A habitat may be excluded from protection if, after weighing the best scientific data available along with any other relevant impact, the Secretary determines that the benefits of exclusion outweigh the benefits of inclusion. Unlike the listing of a species, the *economic* impact on a particular area may be considered in designating a habitat. This exclusion factor is widely used. Contrary to the mandate of the ESA, most species do *not* have a critical habitat listed for them.

In addition, the Secretary must establish recovery plans for each listed species. He or she may allocate resources according to those species most likely to benefit from recovery efforts. Recovery is based on the Secretary's reasonable belief of what promotes conservation, and the plans are therefore discretionary. The act allows the agency to acquire land to further the interest of conservation. However, due to limited appropriations, recovery plans do not receive first priority.

Due to limited funds, the biggest problem is the huge backlog of proposed or "candidate" species. In 1994 there were over 3,000 unlisted candidate species. These are often categorized by the Secretary as "warranted but precluded" due to other species' more urgent listing demands. Since an unlisted or candidate species receives little protection, human activity is unaffected.

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Required Cooperation and Consultation for Listed Species and Habitat. §7

The federal government must consult proactively to protect species. Any person who requests federal action in the form of a federal permit, federal license, or federal funding for any project—federal, municipal, or private—must submit to a *consultation* between the appropriate wildlife agency and the concerned federal agency to enforce the ESA. Direct and indirect effects must be considered. *National Wildlife v. Coleman*, 529 F.2d 359 (5th Cir. 1976). In every consultation, “each agency shall use the best scientific and commercial data available.” 16 U.S.C. §1536(a)(2). Most consultations are informal, because most projects do not affect *listed* endangered species, candidate species, or their critical habitats. If questions arise as to the potential impact on a *listed* or *candidate* species or its critical habitat, *formal* consultation is necessary.

Once the *formal* process is initiated, the proposing agency may make no “irreversible or irretrievable commitment of resources.” 16 U.S.C. §1536(d). Once again, we encounter a key term. The formal consultation process is designed to prevent any agency action that could “jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat.” 16 U.S.C. §1536(a)(2). The “jeopardy” analysis also extends to the continued existence of *candidate* species and the adverse modification of a proposed critical habitat.

The inquiry into jeopardy concerning the continued existence of a species centers on the potential effect on reproduction, population, or distribution, and that in turn generates a determination of the likelihood of the species’ survival in the wild. The regulatory criteria for evaluating habitat modification include: (1) space for individual and population growth, and for normal behavior, (2) food, water, air, light, minerals, or other nutritional or physiological requirements, (3) cover or shelter, (4) sites for breeding, reproduction, rearing of offspring. 50 C.F.R. §424.12 (1992).

When a protected habitat or species is implicated, the same *habitat* modification criteria must be met to insure only an incidental taking. An *incidental* taking is a discrete event that does not jeopardize the species as a whole. The consultation process concludes once the proposal formally satisfies the *jeopardy* test.

State action must comply with the purposes of the ESA, but it is not subject to the consultation process. Stricter state laws are not preempted by the act as long as they don’t contravene exceptions, exemptions, or permits granted under ESA §4, §7, or §10. The Supreme Court recognized “a conscious decision by Congress to give endangered species priority over the ‘primary missions’ of federal agencies.” *TVA v. Hill*, 437 U.S. 153 (1978). If there is a conflict, “the firm opinion of the expert wildlife agency is entitled

to a presumption of validity until overborne by contrary evidence." *Sierra Club v. Froehlke*, 534 F.2d 1289 (8th Cir. 1976). Judicial review of the Secretary's actions is based on the APA's "arbitrary and capricious" standard.

Exemption from §7

Section 7 does create one narrow exemption whereby a project that will jeopardize a listed species or its critical habitat may proceed. If an application is denied in the consultation process, the applicant may pursue the matter with a cabinet-level group, the Endangered Species Committee (otherwise known as the "God squad"). This administrative route is rarely used because to succeed an applicant must first exhaust the consultation process and then demonstrate that the need for the proposed project meets a very demanding test. Five out of the seven members of the "God squad" must determine that:

- (1) no reasonable alternatives to the agency action exist,
- (2) the benefits of the action clearly outweigh the benefits of any alternative course of action consistent with the conservation of species or its critical habitat,
- (3) the action is in the public interest and of regional or national significance, *and*
- (4) neither the agency involved nor the exemption applicant has made an irreversible or irretrievable commitment of resources.

16 U.S.C. §1536(h).

In *Tennessee Valley Authority v. Hill*, the Tellico Dam was a billion-dollar project that did not meet this stringent test. If an exemption does issue, it is not subject to §9's prohibited acts (discussed after the Examples and Explanations).

Tennessee Valley Authority v. Hill blocked the operation of the nearly completed Tellico Dam to save the Snail Darter, a small perch, because the Act makes the value of every endangered species "incalculable." Congress subsequently approved a rider to the Energy and Water Development Appropriation Act of 1980 exempting the dam from §7 and allowing its completion and operation. Ironically, after operation, it was found that the Snail Darter was not present only on the affected river, but was present on other rivers in Tennessee; its status was down-listed from "endangered" to "threatened." See 50 C.F.R. §17.11.

~~EXAMPLES~~

1. ~~A federally funded dam in Alaska is near completion, after being under construction for several years, when a previously undiscovered species of turtle, the arctic snow-turtle, is discovered in the river bed. Up until~~

Takings: §9

What Private Action Is Prohibited?

Individual acts that threaten species are prohibited. Section 9 enumerates all prohibited acts, under the ESA. Any commercial activity (international, interstate, or in-state) involving a protected species is prohibited. Transport of a protected species is prohibited. Malicious destruction of a species or a habitat under federal jurisdiction is prohibited. The section does not apply to protected plants on private land if one is trespassing. Unlike §§6 and 7, §9 focuses on the activities of *any person*, not just on federal actions. The only exceptions are permits granted either by the God squad or incidental takings under §10 (discussed below).

The so-called "take" provision is the primary mechanism protecting listed species from the risks of development in the private sector. Most importantly, §9 declares that the "taking" of an *individual* member of a listed species is a prohibited act anywhere that federal jurisdiction applies. It does not matter that the taking was unintentional. One single taking is illegal. Section 9 does not apply to *plants on federal land* if a "taking" is *unintentional*. The scope of prohibited taking reaches the removal of any *part* or stage of a listed species (like eggs, body parts, or fur) or its habitat.

To further the national policy of protection and conservation, Congress defined "take" very broadly. From humble beginnings, this section has emerged as the subject of extensive and protracted litigation. Remember the string of terms defined earlier. The term *take* is defined by statute as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." 16 U.S.C. §1532(19). To construct a comprehensive understanding of the "take" definition, the Secretary promulgated regulations to define *harass* as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering." 16 U.S.C. §17.3.

Harm is defined in the same regulation as:

... an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

50 C.F.R. §17.3.

As a result of the "harm" definition, modification of a species' habitat can invoke a §9 "taking." This definition of harm is applied to protect and conserve listed species and critical habitat. To establish that a "taking" by habitat modification has occurred, one must show "significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." The

economic hardship. The applicant must have a contractual relationship that predates the notice of a *candidate* species' initial listing in the Federal Register. In addition, Alaskan natives are granted incidental "take" permits if such a taking is primarily for human subsistence.

The enforcement provisions in §11 of the ESA create civil penalties, criminal penalties, and allowance for citizen suits. A citizen may enjoin any person, including the United States, "who is alleged to be in violation of any provision of the ESA." 16 U.S.C. §1540(g). Intent is irrelevant as to whether or not a violation has occurred. The district court is granted jurisdiction. Injunctions, warrants, forfeiture, condemnation, rewards, fines, and some expenses are all court remedy options under §11.

Standing was automatic under the language of the citizen suit provision. However, a Supreme Court decision altered the requirement for citizen suit standing. Now a citizen must show some *direct* injury. *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1992). However, the Ninth Circuit has held that imminent past, present, or future injury to a species is enough to satisfy the distinct injury to plaintiff requirement — although these really are district issues. *Forest v. Roseboro Lumber Co.*, 50 F.3d 781 (9th Cir. 1995). The Ninth Circuit decision did not reach the issue of whether habitat modification that merely retards a species' recovery met the injury requirement to constitute a "taking."

In *Bennett v. Spear*, No. 95-813, 520 U.S. 154 (March 1997), the Court held that any person, even one opposed to government protection of endangered species, is within the "zone of interests" to challenge the action. Justice Scalia, writing for the majority, found that "economic consequences are an explicit concern of the Act." This decision lets those opposed to species preservation to challenge decisions under the Act: "The court of Appeals concluded that this [injury] test was not met here, since petitioners [landowners] are neither directly regulated by the ESA nor seek to vindicate its overarching purpose of species preservation. That conclusion is in error." This case elevates economic interests, as well as the interests of species, to those protected by the Endangered Species Act. Moreover, the petitioners' claims satisfied constitutional standing requirements. The petitioners also satisfied the zone-of-interest requirement under the Administrative Procedure Act to challenge the factual record assembled by the agency.

In the aftermath of the Supreme Court decisions construing the Endangered Species Act, the lower federal courts have generally deferred to broad restrictions enacted by responsible agencies (see Chapter 11 for discussion of federal agency responsibilities for public lands). See *Mausolf v. Babbitt*, 125 F.3d 661 (8th Cir. 1997) (upholding restriction of snowmobiles to minimize harm to the endangered gray wolf habitat); *Bensman v. U.S. Forest Service*, 984 F. Supp. 1242 (Mo. 1997) (preserving hibernation and breeding areas during the hibernation season of the Indiana bat); *United States v. Town of Plymouth, Massachusetts*, 6 F. Supp. 2d 81 (D. Mass. 1998) enjoining

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off-road vehicles on the beach which endangered the piping plover; *Loggerhead Turtle v. County Council of Volusia County, Florida*, 148 F.3d 1231 (11th Cir. 1998) (enjoining vehicles from driving on a beach and threatening baby turtles).

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Snitzman, James, Thompson, Barton H. *Environmental Law and Policy*.
(Foundation Press, New York, 2003).

tent with basic economic principles and vary considerably with the exact questions asked. Some critics, moreover, suspect that people report high values not because they would be willing to pay that much but because they want the surveyor to think that they are moral and environmentally conscious. No matter what the deficiencies of CVM, however, it is the best means currently available to estimate nonuse values.

Two federal agencies split administrative responsibilities under the ESA. The Fish & Wildlife Service (FWS) within the Department of the Interior is responsible for protecting terrestrial and avian species and freshwater fish. The National Marine Fisheries Service (NMFS) within the Department of Commerce takes responsibility for marine species, including anadromous fish such as salmon. Interestingly, the only major debate within the Congressional conference committee that put the finishing touches on the ESA was how to allocate responsibility between these two agencies. Most observers believe that the FWS is more protective and proactive than NMFS, and occasionally policymakers propose returning NMFS to the Department of the Interior, where NMFS was part of the FWS prior to 1970. The odds on such a move, however, are currently slim to none. For convenience, the remainder of this chapter will refer to the FWS alone as the ESA implementing agency. Far more species fall within the FWS' jurisdiction so it is the principal agency. When you read "FWS," however, keep in mind that it can be either the FWS or NMFS depending on the species under protection.

A. Listing Species

The ESA protects only those species that are listed by the FWS as either *endangered* or *threatened*.³⁹ A species is endangered if the FWS finds that it is "in danger of extinction throughout all or a significant portion of its range."⁴⁰ A species is threatened if it is "likely to become an endangered species in the foreseeable future."⁴¹ Congress created the "threatened" category both to provide some protection to species before they are on the very edge of extinction and as a "halfway house" for species on the road to recovery. For most purposes, the ESA provides the same protections to endangered and threatened species, although there are some differences under section 9 as discussed below.

Under section 4 of the ESA, the FWS can decide to list a species on its own initiative, or an individual or organization can petition to list the

39. There is one exception to this rule. If a species so closely resembles a listed species that it also requires protection, section 4(e) of the ESA authorizes the FWS to

list the similar species even if it is not endangered or threatened.

40. ESA § 3(6), 16 U.S.C. § 1532(6).

41. ESA § 3(20), 16 U.S.C. § 1532(20).

species. When Congress passed the current ESA in 1973, the government already had listed 392 species under a prior version of the Act. Almost thirty years later, over 1800 species have been listed under the ESA, of which over 1250 are found in the United States. Of the listed domestic species, over 500 are animals and almost 750 are plants. About 80 percent of the U.S. species are listed as endangered, with the remainder categorized as threatened. All states, as well as the District of Columbia and Puerto Rico, host at least a handful of listed species. Listed species, however, tend to be found more often in those areas naturally high in biodiversity and threatened by significant habitat modification. Thus Hawaii has the most listed species (over 300), followed closely behind by California. Other states in the "top six" are Alabama, Florida, Tennessee, and Texas.

In deciding whether to list a species, the FWS sometimes must decide what is a *species*. If a flower is very similar to a known species but the flower appears to have slightly smaller petals, for example, is the flower a separate species? If two separate plant species combine to reproduce, is the resulting plant a new and distinct species or merely a hybrid? Unfortunately, the ESA does not define the term "species" or address these issues. In light of the ESA's silence and the FWS's expertise, courts have been very deferential to the FWS's judgment as to what constitutes a species. The issue is further complicated, however, by the fact that the ESA authorizes the FWS to list not only individual species but also *subspecies* and, in the case of vertebrates, *distinct population segments* that interbreed when mature. Because of their role as reservoirs of genetic diversity, the loss of some subspecies and local populations ultimately can endanger the species as a whole even if other populations currently are numerous; individual populations and subspecies, moreover, can be of ecological or aesthetic importance to a local region. The ESA, however, once again fails to define subspecies and distinct population segments, making the listing of subspecies and distinct populations ripe for controversy.

The ESA tries to keep economic and political considerations out of listing decisions. Under the ESA, the FWS must determine within 90 days of receiving a listing petition whether the petition presents sufficient evidence to pursue a full review of the species' status and must decide within a year of that determination whether to list the species. The FWS must list a species if it finds that "natural or manmade factors" make the species endangered or threatened. The FWS must use the "best scientific and commercial data available" and cannot consider the potential economic consequences of listing the species. In an effort to support the scientific basis for its decisions, the FWS also has adopted a peer review policy of seeking the expert opinions of outside specialists before making a listing determination.

Because listings require the application of scientific expertise, courts have been reticent to overturn the FWS's determinations. Courts review the substance of the determinations under the liberal "arbitrary and capricious" standard and overturn the decisions only where the agency has "failed to articulate a satisfactory explanation for its actions."⁴² Courts also generally have resisted ordering the FWS to engage in additional scientific research before deciding whether to list a species, noting that the ESA only requires the FWS to consider the best scientific information "available."

The FWS, nonetheless, often faces significant pressure not to list a species. Where listings are likely to limit local development or other economic activity, property owners and other affected interests often threaten lawsuits or seek Congressional or White House intervention. Despite its strict deadlines and requirements, the ESA provides the FWS with a variety of ways to avoid listing a species. The FWS, for example, can conclude that it needs additional information to decide whether a species should be listed (although courts have warned that the ESA does not require "conclusive evidence" before a species should be listed⁴³). Under the ESA, the FWS also can conclude that listing is "warranted," but that immediate listing of the species is "precluded" by higher listing priorities (i.e., the agency is too busy at the moment on other, more important listings).⁴⁴ As of mid-2002, over 250 species were languishing in this purgatory status of *candidate species*. At times Congress itself directly intervenes in the listing process. In 1995, for example, Congress imposed a moratorium on new listings for approximately a year.

The FWS also sometimes tries to avoid listings by asserting that other efforts to preserve a species provide adequate protection. The ESA explicitly permits the FWS, in deciding whether to list a species, to consider "efforts, if any, being made by any State . . . or any political subdivision of a State . . . to protect" the species.⁴⁵ Courts, however, have been skeptical of FWS reliance on state and local efforts unless those efforts are in place, enforceable, and comparable to protections provided under the ESA. In recent years, the FWS also has argued that it has the authority to consider all conservation efforts, including efforts being made by private entities.⁴⁶ This argument, which relies on a general provision of the ESA requiring the FWS to consider "other natural or manmade factors affecting [a species'] continued existence,"⁴⁷ remains untested.

42. Northern Spotted Owl v. Hodel, 716 F.Supp. 479 (W.D.Wash.1988).

43. E.g., Defenders of Wildlife v. Babbitt, 958 F.Supp. 670 (D.D.C.1997).

44. ESA § 4(b)(3)(B)(iii), 16 U.S.C. § 1533(b)(3)(B)(iii).

45. ESA § 4(b)(1)(A), 16 U.S.C. § 1533(b)(1)(A).

46. See Announcement of Draft Policy for Evaluation of Conservation Efforts When Making Listing Decisions, 65 Fed. Reg. 37102 (June 13, 2000).

47. ESA § 4(a)(1)(E), 16 U.S.C. § 1533(a)(1)(E).

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B. Limits on Federal Agency Actions

Under section 7(a)(2) of the ESA, all federal agencies must consult with the FWS before taking any action that might affect either an endangered or threatened species and must insure that the action is not "likely" either (1) to "jeopardize the continued existence" of the species or (2) to "result in the destruction or adverse modification of [the critical] habitat of such species." As the Supreme Court emphasized in *TVA v. Hill*,⁴⁸ this mandate permits no consideration of cost. "The plain intent of Congress in enacting [the ESA] was to halt and reverse the trend towards species extinction, whatever the cost." According to the Court, "Congress intended endangered species to be afforded the highest priorities," adopting a policy which the House Report on the ESA described as the "institutionalization of . . . caution."⁴⁹ If written today, the House Report almost certainly would have spoken in terms of the precautionary principle (discussed earlier at pages 13-14).

TVA v. Hill is one of the most famous environmental cases of the twentieth century and offers a number of useful lessons. Environmentalists for years had been trying to block the Tennessee Valley Authority (TVA) from building the Tellico Dam. The dam promised little hydroelectricity or other benefits, yet would destroy the last free flowing stretch of the Little Tennessee River and flood a beautiful valley rich in farmland and sacred Indian sites. No law, however, proscribed a dam because its environmental costs outweighed its economic benefits. The National Environmental Policy Act, described in the next chapter, required TVA to examine the environmental costs but imposed no substantive mandates. Stopping the dam seemed a lost cause until an ichthyologist, shortly after the ESA was passed, discovered snail darters, a previously unknown species of perch about three inches long, just downstream from the dam site. After the species was listed as endangered, several individuals and a local environmental group sued under the ESA's citizen suit provision to enjoin the dam as a violation of section 7(a)(2).

The major issue in *TVA v. Hill* was whether the ESA required courts to enjoin a dam that was essentially complete and had cost almost \$80 million. As noted, a majority of the Court concluded that Congress meant to forbid agency actions that jeopardized the continued existence of endangered species, no matter what the economic costs. Justices Powell and Blackmun dissented, arguing that the ESA did not apply to projects that already were underway when the Act was passed. Justice

48. 437 U.S. 153 (1978).

49. H.R. Rep. No. 93-412, at 4-5 (1973).

Rehnquist also dissented, contending that, absent clear Congressional directives to the contrary, courts retain the equitable discretion to deny injunctions where the costs of the injunction would far outweigh the benefits.⁵⁰

Congress responded to *TVA v. Hill* by creating an Endangered Species Committee, colloquially known as the God Squad because of its power to determine the fate of a species.⁵¹ The God Squad is a cabinet-level committee, comprised of the Secretaries of Agriculture, the Army, and Interior; the Administrators of EPA and National Oceanic and Atmospheric Administration (NMFS's mother agency); the Chairman of the Council of Economic Advisors; and a state representative appointed by the President. At the request of any federal agency, state governor, or permit applicant, the God Squad can vote to exempt a federal action from section 7(a)(2) if it determines that there are no "reasonable and prudent alternatives," the benefits of the action "clearly outweigh" the environmental costs, and the action is of "regional or national significance."⁵² In granting an exemption, the God Squad also can require "reasonable mitigation and enhancement measures."⁵³

Congress expected that the God Squad would exempt the Tellico Dam, overturning the Supreme Court's decision. But the God Squad unanimously denied an exemption, finding that the dam was not worth completing even if one ignored the snail darter. Secretary of the Interior Cecil Andrus bemoaned that he hated "to see the snail darter get the credit for stopping a project that was ill-conceived and uneconomical in the first place." In 1980, Congress nonetheless exempted the Tellico Dam from the ESA in a rider to a military appropriations bill. Although TVA completed the dam and thus destroyed the snail darter's principal known habitat, other populations of snail darters were discovered later in the main stretch of the Tennessee River and a number of its tributaries. In 1984, the FWS upgraded the snail darter's status from endangered to threatened.

What are the lessons of *TVA v. Hill*? From a legal perspective, the main lesson is that agencies cannot use cost as an excuse for not complying with the requirements of section 7(a)(2). *TVA v. Hill* also teaches that, if Congress wants to exempt a project from the dictates of the ESA (or any other federal environmental statute for that matter), it better be clear. Subsequent to the discovery and listing of the snail

50. Although Justice Rehnquist failed to convince any other justice that the ESA permits courts to exercise equitable discretion in deciding whether to enjoin agency actions, he later convinced a majority that courts do retain equitable discretion in an injunction action under the Clean Water

Act. See *Weinberger v. Romero-Barcelo*, 456 U.S. 305 (1982).

51. ESA § 7(e), 16 U.S.C. § 1536(e).

52. ESA § 7(h), 16 U.S.C. § 1536(h).

53. ESA § 7(h)(1)(B), 16 U.S.C. § 1536(h)(1)(B).

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), 16 U.S.C. § 1536(e).
) 16 U.S.C. § 1536(h).
7(h)(1)(B), 16 U.S.C.

darter, Congress repeatedly had appropriated funds to continue constructing the Tellico Dam and, in reports accompanying the appropriation bills, declared that the ESA should not stand in the way of the dam. Noting that courts should be reticent to conclude that Congress has repealed a law by implication, however, the Court held that the appropriation bills did not exempt the Tellico Dam from the ESA. In a more recent lawsuit, the Ninth Circuit Court of Appeals held that a law authorizing the University of Arizona to build three telescopes on Mount Graham, even if the construction would jeopardize the continued existence of the endangered Mount Graham red squirrel, did not exempt construction of one of the telescopes at a slightly different location than that specified in the law.⁵⁴

TVA v. Hill also demonstrates the immense importance of the ESA in protecting natural resources. The ESA is one of the few federal laws in the natural resources field with real teeth. NEPA, as discussed in the next chapter, is purely procedural. Environmental groups wishing to derail or modify a proposed federal action thus will look to see if the action might menace a listed species. Opponents of the ESA often accuse environmental groups of using the ESA for "ulterior" purposes. The opponents are correct that environmental groups often oppose federal actions for multiple reasons, of which harm to the listed species may be the least important. Unfortunately, there is no federal law outlawing federal actions that are, to use Cecil Andrus' phrase, "ill-conceived and uneconomical," so environmental groups often are forced to turn to the ESA for help. For better or worse, the ESA remains the strongest tool that environmental groups have to help shape natural resource policy in the United States.

The aftermath of *TVA v. Hill* also illustrates that, no matter what a statute might say, cost and politics are realities of regulation. Given the local political and economic support for the Tellico Dam, completion of the dam may have been inevitable. To date, the God Squad has exempted only two projects (and one of those exemptions was reversed).⁵⁵ But few agencies have requested exemptions, in large part because the FWS often finds ways to allow federal actions to proceed forward in the face of jeopardy determinations at only slight cost and inconvenience to the agencies and their constituents. Professor Oliver Houck of Tulane Law School studied 186,000 federal projects that the FWS and NMFS reviewed under section 7(a)(2) from 1987 through 1995. The FWS and NMFS required alterations or delays for less than three percent of the

54. *Mount Graham Coalition v. Thomas*, 53 F.3d 970 (9th Cir.1995).
55. See *Portland Audubon Soc'y v. Endangered Species Comm.*, 984 F.2d 1534 (9th Cir.1993) (reversing an exemption for

thirteen timber sales that would have jeopardized the endangered northern spotted owl). The only lasting exemption was for the Gray Rocks Dam, which jeopardized the endangered whooping crane.

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projects and blocked less than 0.05 percent. Most of the mandated alterations, moreover, were minor and undemanding.⁵⁶

Recall that an agency violates section 7(a)(2) if its action will either "jeopardize the continued existence" of a listed species or adversely modify a species' "critical habitat." While it seems obvious today, the dual-pronged strategy of protecting both a species and its habitat was an important innovation at the time of the ESA's passage. The ESA requires the FWS to designate a species' critical habitat at the same time that it lists the species, so long as the designation is "prudent and determinable."⁵⁷ Because the cost of determining a species' critical habitat can cost as much \$500,000 and use scarce agency resources, however, the FWS typically chooses to postpone designating critical habitat. Indeed, at the end of 2002, the FWS had designated critical habitat for less than 15 percent of domestic listed species. Because cost is not a legitimate factor in deciding *whether* to designate critical habitat, the FWS generally argues that it does not have sufficient information to determine the critical habitat or that designation would be imprudent (e.g., because the designation would alert poachers and collectors where to find the endangered species and thus increase the risk to the species). This practice has put the FWS on a collision course with environmental groups, which believe that the designation of critical habitat is important in enforcing section 7(a)(2). In recent years, environmental groups have brought and won a number of important lawsuits to force the FWS to designate critical habitat.

In contrast to the decision of *whether* to designate critical habitat, the decision of *how much* and *which* habitat to designate as "critical" is one of the few situations where the ESA permits the FWS to consider cost. In deciding what is critical habitat, the FWS must take "into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat." The FWS can exclude an area from the critical habitat if the benefits of excluding the area outweigh the benefits of including it, unless the exclusion "will result in the extinction of the species concerned."⁵⁸ Forced by lawsuit to designate critical habitat but lacking the resources to do so, the FWS sometimes has responded by designating broad swaths of land. Property owners and local governments have responded by suing to exclude land on economic grounds. Until Congress gives the FWS sufficient funding to conduct full evaluations of critical habitat, the FWS is between a rock and a hard place. Try to put off the designations, and environmental groups will

56. Oliver A. Houck, *The Endangered Species Act and Its Implementation by the U.S. Departments of Interior and Commerce*, 64 U. Colo. L. Rev. 277 (1993).

57. ESA § 4(a)(3), 16 U.S.C. § 1533(a)(3).

58. ESA § 4(b)(2), 16 U.S.C. § 1533(b)(2).

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sue. Try to err in favor of designating all potential habitat, and property owners will sue.

An important but open issue under section 7(a)(2) is the degree, if any, to which it applies to actions that jeopardize the continued existence of species outside the United States. The FWS originally issued a regulation providing that section 7(a)(2) applies to federal actions both inside and outside the United States. Under this regulation, if the U.S. Agency for International Development (AID) had loaned money to construct an overseas dam that would flood the habitat of a listed species, AID would have had to consult with the FWS under section 7. In 1986, however, the FWS changed its mind and issued a revised regulation requiring agencies to consult only with regard to actions taken in the United States or on the high seas.⁵⁹ Several environmental organizations sued to invalidate the revised regulation in *Lujan v. Defenders of Wildlife*,⁶⁰ but the Supreme Court found that the organizations did not have standing (see page 74). The validity of the regulation still remains untested. A related question is whether section 7(a)(2) applies to federal agency actions taken *in* the United States that affect species *outside* the nation's borders. That issue is currently before the courts in connection with federal water projects on the Colorado River that reduce the flow to the Colorado River Delta, an area of historically high biodiversity with a number of endangered species. The government argues that it need not comply with section 7(a)(2); environmentalists disagree. The government's position on these issues is weak. On its surface, section 7(a)(2) would appear to apply to all actions that jeopardize the continued existence of endangered species, no matter where the actions occur or the species live.

~~C. Private Violations~~

~~1. The Prohibition On "Takings"~~

~~Under section 9(a)(1) of the ESA, no one, public or private, can take an endangered species of fish or wildlife. The ESA defines "take" to include actions that "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" an endangered species. In many cases, this prohibition is easy to apply. If a poacher kills or traps an endangered grizzly bear or bald eagle, for example, he clearly violates section 9. But does a landowner violate section 9 if she cuts down trees that are potential habitat for the endangered red cockaded woodpecker or paves over a sand dune that is the habitat of the endangered Delhi sands flower-loving fly? Does a farmer violate section 9 if he withdraws water~~

59. 50 C.F.R. 402.1(a).

60. 504 U.S. 555 (1992).



