

Agriculture Forest

Service

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The Rise of Multiple-Use Management in the Intermountain West: A History of Region 4 of the Forest Service

Cover: Gifford Pinchot, first Chief of the Forest Service. This publication is one in a series of works detailing the history of the Forest Service and related activities.

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United States Department of Agriculture

Forest Service

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"The Rise of Multiple-Use Management in the Intermountain West: A History of Region 4 of the Forest Service "

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In any work of this sort, the author is always beholden to others in various ways for their assistance. Unfortunately, when one begins making lists, someone is bound to be left out. Nevertheless, I felt it important to make such a list since so many people helped on the project. Philip B. Johnson, History Coordinator in the Regional Information Office, spent considerable time in contacting the various National Forests, securing statistical information, and coordinating access to present and former employees and to Forest Service records. Natalie Ethington, secretary of the Charles Redd Center for Western Studies, spent countless hours in checking footnotes, proofreading, working on the bibliography, and printing the various versions of the manuscript. Her predecessors, Lori Warren and Jennifer Dean, assisted in making travel arrangements and in transcribing interviews. Barbara Lyman assisted in proofreading. James Allen, chairman of the History Department, and Martin B. Hickman, former dean of the College of Family Home and Social Sciences at Brigham Young University, made arrangements to release me from teaching duties to write the history. David Merrill and the staff of MESA Corporation provided technical assistance and did the final typing of the manuscript.

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Chapter 1 Settlement and Resource Use in the Intermountain West

The Creation of Region 4

After the creation of the first forest reserves in 1891, the Federal Government centralized responsibility for administrative decisions in Washington, DC. Inspectors and forest supervisors reported directly to the administration--first to the Interior Department's General Land Office and then, beginning in 1905, to the Agriculture Department's Forest Service. Decisions on virtually all questions from the number of livestock to the establishment of a sawmill to the authorization of a small timber sale had to have Washington approval.

The adoption of a new policy in 1908 changed that. In that year, the Forest Service created six administrative regions (then called districts) each supervised by a regional (district) forester to whom the Washington Office delegated substantial authority. Under the new system, responsibility for such matters as reports and plans for the individual forests passed to the regional forester. Most importantly, regional foresters were authorized to exercise administrative discretion over a number of functions. Over time, their authority was extended; indeed, the forest supervisors themselves amassed considerable autonomy in making decisions for the forests under their administration.

The 1908 reorganization created the Intermountain Region (District) or Region 4, with headquarters at Ogden, UT. This region covered national forest lands in Idaho south of the Salmon River, Wyoming west of the Continental Divide, Utah, Nevada, a small portion of western Colorado, and Arizona north of the Grand Canyon. The configuration of the region has changed somewhat in the period since its creation. The region has lost northern Arizona, gained a portion of eastern California, and experienced some readjustments in Wyoming. Nevertheless, the general outlines have remained.

Geography and Geology

Geographically, the largest portion of Region 4 is the Basin and Range province of Nevada and western Utah.¹ The Basin and Range province consists of mountains of between 7,000 and 13,000 feet in elevation separated by intermountain plains generally formed by alluvial fans of eroded waste. Typical mountain ranges run on a northsouth axis for 50 to 75 miles and may be 6 to 15 miles wide.

South and east of the Basin and Range lies the Colorado Plateaus province. The term "plateau" may seem misleading, as the highest physical features, which appear from the nearby valleys to be mountains, rise more than 11,000 feet above sea level. Occupying the eastern third of Utah and the southern fifth of Nevada, the province can be divided into the High Plateaus,



Figure 1--View of Dixie National Forest from Strawberry Point.

which continue south and eastward from the termination of the Wasatch Mountains at Mount Nebo near Nephi in central Utah, the Canyon Lands south and east of the High Plateaus, and the Uinta Basin north of the Canyon Lands.

Curving in a northwesterly trending semicircle from the Colorado Plateaus lie the Middle and Northern Rocky Mountain provinces, which form the highest elevations in Region 4. With the exception of the Uintá Mountains, the ranges all trend north and south. The highest mountains, including the Wasatch and Uinta Mountains of Utah, the Wind Rivers and Tetons of Wyoming, and the Salmon River and Sawtooth ranges of Idaho, reach from 11,000 to nearly 14,000 feet above sea level. Most of the Northern Rockies in central Idaho consist of the loose granitic intrusions of the Idaho batholith. The mountains and high plateaus are very steep and easily eroded.

North of the Uinta Mountains lies the Bridger Basin, a part of the Wyoming Basin province. This basin stretches in a triangular fashion from an apex at the Gros Ventre and Wind River Mountains to the north and east and the Wyoming range to the west to its base at the foot of the Uinta Mountains on the south.

Sandwiched between the Northern Rocky Mountains in Idaho, the Middle Rocky Mountains of Wyoming, and the



Finally, on the western border of Region 4 lies the Sierra-Cascade Mountains province. This province is a virtual mirror image of the Wasatch range in Utah-volcanic in origin with extensive faulting along its eastern edge.

The principal watersheds of the Intermountain West originate in the region's mountains and high plateaus. Like giant icebergs, the mountains pierce the sky, cool the air, and precipitate rain or snow. Most of Region 4 is watered by storms moving on the prevailing westerly winds from the Pacific Ocean. The region lies in the rain shadow of the Sierra Nevada-Cascade range, although the Bermuda High in the Gulf of Mexico influences rainfall in the forests of southern Utah during July and August. Though some rainfall occurs from summer storms, precipitation is generally heaviest as snow in the late fall and winter months. The snow melts and flows into the valleys during the late spring and early summer. The valleys of the Basin and Range include some of the driest country in the United States, with less than 3 inches of rainfall per year. Runoff in the basin drains entirely into



Figure 2--Winter storm at Sun Dial Mountain, Big Cottonwood Canyon, Wasatch National Forest, Utah.



Figure 3--View from trail leading to Charleston Peak, Toiyabe National Forest, Nevada.



its interior. On the west, the Walker, Truckee, and Carson Rivers drain into Walker, Pyramid, and Carson Lakes. Runoff from central Nevada drains into the Humboldt River and eventually into the Humboldt sink. In Utah runoff drains either into the Sevier River or the Great Salt Lake.

Drained by the Colorado River and its tributaries to the east and south and the Sevier to the west, the Colorado Plateau on the average is only slightly less dry than the Basin and Range. Although some portions of the High Plateaus may receive more than 40 inches of precipitation per year, the Canyonlands and Uinta Basin may receive less than 6 inches.

The Middle and Northern Rockv Mountain Provinces experience the highest precipitation in the region, ranging to over 50 inches per year, while the Payette and Snake River sections of the Columbia Plateau Province experience low precipitation, ranging from 16 inches in the highest portions of the Owyhee Mountains to less than 8 inches in parts of the Snake River plain. Runoff from these mountains drains into the principal systems of the region including rivers feeding the Great Salt Lake, the Green and eventually the Colorado River, the Snake River, and the Salmon River.

Because of the heavier precipitation, the mountains and high plateaus of the Intermountain Region produce the best stands of timber and the grass and forbs most valuable for summer grazing. Timberline ranges from about 9,500 feet in the north to 11,000 feet in the Uinta Mountains. Englemann spruce and subalpine fir dominate the highest elevation of timber stands throughout the region. Douglas-fir ranges slightly below or is intermingled with the spruce-fir forests. Next lowest is the lodgepole pine, which predominates in northwestern Utah, western Wyoming, and eastern Idaho. At still lower elevations one finds ponderosa pine stands, especially important in the Boise and Payette River drainages of western Idaho and in southern Utah. At the lowest elevations, particularly in the Colorado Plateau Province and in the Great Basin, pinyon-juniper forests dominate. The latter constitute the largest acreage of forest lands in the region. Dispersed among the sprucefir forests throughout the region and to a lesser extent in the lodgepole and ponderosa pine, quaking aspen adds measurably to the game forage supply.

Region 4's national forests encompass important sources of both hard-rock and organic minerals. Pressure between overlapping plates of the earth's crust created an overthrust belt that passes through the Middle Rocky Mountain Province and the high plateaus. The pressure squeezed organic sediments laid down in ancient seas and transformed them into oil and gas. The overthrust belt also has exhibited an inordinate amount of geothermal activity, much of which is found in the national forests. The Canyonlands and Uinta Basin are also important sources of uranium and coal; coal, like other hydrocarbons, developed from sedimentary formations. Extensive phosphate deposits occur near the intersection of the Utah, Idaho, and Wyoming borders. Gold, silver, lead, and copper were deposited in the mountains of the region by volcanic intrusions. Major deposits occurred in the Wasatch and Oguirrh mountains of Utah, in the Idaho batholith, and in the ranges of the Great Basin.



Figure 4--Autumn aspens.

Native Americans of the Region

In this diverse land many Native Americans had located themselves before the arrival of Euro-American settlers.² With the exception of marginal penetrations by the Nez Perce on the northwest, some Algonkianspeaking tribes on the northeast, and the Navajo on the southeast, the aboriginal people of Region 4 were Shoshonean-speaking peoples belonging to the broad groups of Shoshoni, Ute, Bannock, Paiute, and Gosiute.³

In his comprehensive study of Western Indians, Joseph Jorgensen groups the Shoshoneans of Region 4 into what he calls the "Great Basin" environment. Jorgensen further subdivides the area into the northeastern section in the upper Snake and Colorado River drainage systems, where the Utes and Northern Shoshonis lived, and the Great Basin proper, which includes the Indians of the Basin and Range, the lower Snake River Plain, and the Colorado Plateau, particularly the Western Shoshonis, Northern and Southern Paiutes, and Gosiutes.⁴ After studying the habitat of the various peoples, he concluded that the key factor separating the environments was aridity.⁵



The Indians of Region 4 had developed satisfactory means of adapting technology to the problem of subsistence. Utes and Northern Shoshonis used bows and arrows that they made themselves or acquired through trade with the Plains Indians. Great Basin Shoshoni and Paiutes made stationary fences of stone or wood or portable nets into which they drove antelope, rabbits, and even larger game and killed them with clubs, spears, or arrows. On the Snake and Green Rivers and in the lakes of Utah, the Indians used nets and seines as well as weirs and traps and spears to catch fish. Indians used native plant and animal materials to manufacture housing, clothing, cooking utensils, and weaving frames. Indians of the Great Basin region harvested seeds and nuts by knocking them from the native plants. Many dug roots, such as the camas plant. Some of the Paiutes cultivated corn.6

Moreover, the Indians used fire for a number of purposes. They burned dense undergrowth of grass and shrubs to stimulate desired plants, to improve the soil, and to kill insects and remove unwanted plants. They drove animals with fire. They were aware, however, of the destructive force of fire and tried to contain it.⁷

Since these people lived almost entirely off native resources, one wonders why they did not devastate the land as extensively as their successors did. Two reasons are the Indians' relatively lower demand on resources and the relative sparseness of their population. Their technology was primitive. Within the area of Region 4, Jorgensen estimates that the population ranged from 0.2 to 1 person per square mile.⁸ By comparison, in 1982 the density was 14 per square mile, and the technology and living standard made much greater demands upon natural resources.⁹

Vegetation and Wildlife

At the time of the Euro-American penetration, a rich diversity of lush foothill and mountain meadows, tall timber, and sagebrush covered or barren flats peppered the mountains and valleys of Region 4. The best sources on primeval condition are the records of early explorers. In 1776, Fray Francisco Atanasio Dominguez and Fray Silvestre Velez de Escalante passed through the Uinta Basin across the Wasatch Mountains into Utah Valley and southward to the Arizona border. On the Green River, south of the present Ashley National Forest, they found "a lot of good pasturage." $^{10}\,$ Along the Duchesne and Lake Forks they found timber and pastures. In and near Strawberry Valley, in what is now the Uinta National Forest, they found "a dense forest of white poplar, scrub oak, chokecherry, and spruce."¹¹ Southwest of Scipio on the fringes of what is now the Fishlake National Forest, however, they found barren flats with poor pasturage. 12 They encountered pinyon-juniper forests together with "much pasturage" as they moved down the slopes in the present Dixie National Forest into the valley north of present day Cedar City.13 To the south they found "a great source of timber and firewood of ponderosa pine and pinon, and good sites for raising large and small livestock." 14

From the 1820's, trappers, traders, and explorers invaded the region from the East and Midwest, the

Northwest, and New Mexico. Osborne Russell in 1835 found conditions in western Wyoming and eastern Idaho quite diverse. He described the Salt River Valley as "beautiful," covered with "green grass and herbage," grazed by "thousands of buffaloe," and surrounded by mountains "spotted with groves of tall spruce pines."¹⁵ He reported Jackson Hole as "covered with wild sage," while the "alluvial bottoms... produce a luxuriant growth of vegetation."¹⁶ The Teton Basin he described as a "smooth plain ... thickly clothed with grass and herbage [abounding] with Buffaloe Elk Deer antelope etc."¹⁷ Near Blackfoot Creek, he reported "drv plains covered with wild sage and sand hills."¹⁸

In 1843 and 1844, John C. Fremont also found vegetation to be quite diverse throughout the region. The country around Black's and Ham's Forks of the Green River, the Malad River of southern Idaho, the Bear River of northern Utah, and the Snake River plain near Shoshone Falls, he found covered with sagebrush. On the Malad plains, his party had only sagebrush for firewood.¹⁹ About 40 miles southeast of Boise, at the foot of the Sawtooth Mountains, he saw verdant plains of grass, which he found quite inviting after "the sombre appearance" of the sage that they had looked at for such a long time.²⁰

After traveling on to Oregon, Fremont returned to western Nevada, moved south, then returned via the Old Spanish Trail to Utah Lake. From there, he returned through the Wasatch Mountains and Uinta Basin to Colorado. In northern Nevada, he found sagebrush "the principal plant," with grass in the bottom land.²¹ In the mountains near Reno, he reported principally pinyon.²² He was quite depressed by the deserts of southern Nevada. The abundant vegetation of Utah Valley, the Wasatch Mountains, and the Uinta Basin impressed him.²³ J.H. Simpson in the 1850's commented on conditions in the Great Basin and Wasatch Mountains, essentially corroborating Fremont's findings.²⁴

Travelers on the Old Spanish Trail in parts of what is now the Manti-LaSal and Fishlake National Forests indicated similar conditions. Orville C. Pratt camped on the Sevier River in 1848 and reported "the grass very good . . . water is fine, but no wood."²⁵

Early diaries indicate that wildlife was quite unevenly spread over the eastern and northeastern portions of Region 4. Dominguez and Escalante found bison near the Green River in eastern Utah, abundant trout in Strawberry Valley, and waterfowl, fish, and other small animals in and around Utah Valley. The Indians told them of buffalo nearby to the north and northwest.²⁶

During the 1820's, Jedediah Smith and Peter Skene Ogden visited portions of the intermountain region. Smith found his colleagues wintering in Cache Valley "living fat on the abundant fish and game." Ogden described the area between the Humboldt River and Ogden Valley " a gloomy barren country." In the Ogden Valley, however, he found tracks leading him to believe that elk were "plentiful in this locality."²⁷

Between 1824 and 1826, Ogden directed trapping operations in the Snake and Humboldt river drainages of Idaho and Nevada. From near the Montana border north of present-day Salmon, ID, south into the Bear Lake region, he reported numerous herds of buffalo and elk, and a great many beaver.²⁸ As he descended the Bear River into Cache valley, he found buffalo scarce, but reported grizzly bear " in abundance."²⁹ His party found a similar abundance of buffalo in the Henry's Fork area.³⁰ In the area near Shoshone, ID, they found a great many deer.³¹ On the Raft River, they discovered "large herds of Buffalo."³²

As early as 1825, Ogden's journal indicates that the Henry's Fork region was "formerly rich in Beaver" but "now entirely destitute."³³ He discovered similar depletion north of present-day Bruneau, ID.³⁴

In 1833 Joseph R. Walker led a party through western Utah and across Nevada. On the advice of Indians, they first dried 60 pounds of buffalo and antelope for each man, since they had been rightly warned they would find no big game between the Great Salt Lake and the Sierra Nevada.³⁵

By 1835, other species had disappeared from areas where they had previously abounded. Osborne Russell found Cache Valley "entirely destitute of game," and he and his party were forced to "live chiefly upon roots for ten days."³⁶

Russell still found considerable diversity in other areas. Between 1834 and 1841, he saw plentiful supplies of buffalo, antelope, elk, and deer on Ham's Fork of the Green, near Fort Hall on the Blackfoot River, and north of the Portneuf. While he found a great many waterfowl on Utah Lake and Great Salt Lake, northern Utah had little game.³⁷

By 1843, Fremont found conditions had changed even more. Most of the Indians in western Idaho were subsisting on salmon and insects rather than larger wildlife, which was generally absent.³⁸ He found most of the buffalo gone from the portions of Region 4 they had formerly inhabited. He attributed the eradication to the work of fur traders who killed them for their hides in the mid- to late-1830's.³⁹ He was impressed with the abundant game of the Sierra west of Reno and Carson Valley, but found game extremely sparse in the Great Basin, except watercourses and near lakes such as Pyramid, where he noted some mountain sheep. He commented on the poor condition and sparse fare of Great Basin Indians.⁴⁰

J.H. Simpson's exploration of the Great Basin in 1859 added additional information to Fremont's. He sited antelope near Meadow Creek, Utah, and near Butte Valley, and repeated reports of those animals, deer, and mountain sheep in Ruby Valley.⁴¹ His party was particularly impressed with the waterfowl in Steptoe Valley and on the Reese River and Carson Lake. He commented on the fish and Reese River and Carson Lake as well.⁴²



Figure 5--Steelhead migrating up Camas Creek, Idaho.

Wildlife and Plant Depletion After Settlement

Because of the uneven distribution and depletion noted by explorers, wildlife was irregularly situated at the time of settlement by Euro-Americans. When Thomas McCall and his family arrived in 1891, they found numerous fish in Payette Lake, and Weiser River was still an important salmon spawning stream.⁴³ The Salmon River mountains were plentifully stocked with deer, elk, moose, black and grizzly bear, bighorn sheep, and mountain goats. Beaver were plentiful in the valleys of the Payette and Weiser. Elk had disappeared from the Weiser and Little Salmon River, though beaver were plentiful.⁴⁴ Migratory game fowl were still plentiful on the Bear River in the 1880's.⁴⁵

Other areas exhibited similar patterns. By 1890, the supply of big game in and around the Boise Basin had declined seriously, in part because of overgrazing by sheep, and in part because of heavy commercial hunting.⁴⁶ Meat hunters supplying Warren and hide hunters near New Meadows took a heavy toll in the Payette forest region.⁴⁷ The deer herds in the Wasatch-Cache forest area shrank in part because of excessive hunting by Indians. Elk had disappeared everywhere in Utah except the north slope of the Uintas by 1900.⁴⁸

Because of extensive overgrazing and subsequent undesirable plant succession, by the end of the nineteenth century local writers tended to accept as typical the barren character of all the land at the time of settlement rather than the diversity that the explorers had found. As Orson F. Whitney put it in 1892, in Salt Lake Valley the settlers found a "broad and barren plain hemmed in by mountains, blistering in the burning rays of the mid-summer sun. No waving fields, no swaying forests, no verdant meadows to refresh the weary eye, but on all sides a seemingly interminable waste of sagebrush bespangled with sunflowers--the paradise of the lizard, the cricket, and the rattlesnake."⁴⁹

Settlers viewing that valley for the first time in 1847, however, tell a much different story. Thomas Bullock reported that "the Wheat grass grows 6 or 7 feet high, many different kinds of grass appear, some being 10 or 12 feet high." Timber in the valley was limited, but exploring parties found some groves of "Box-Elder and Cottonwood" along the creeks on the well-watered eastern side of the valley.⁵⁰ On the west side, beyond the Jordan River, they found sagebrush and poorer soil.⁵¹

The situation in and around Salt Lake Valley was not unique. Settlers in Utah Valley found excellent grass and trees along the creeks and in canyons like Hobble Creek.⁵² On an exploration trip down the plateau front and across to the area of present-day Panguitch in 1851, Parley P. Pratt found abundant pastures and forests of pinyon-juniper in the valleys and foothills south of Scipio, and "lofty pines" in the mountains. In other places, such as the region between Cove Fort and Beaver, he found barren table lands "nearly destitute of pasturage."⁵³

The situation in southwestern Idaho at the time of settlement was quite similar to what the Mormons found in Utah. Early settlers in Emmett Valley found grass rather than sagebrush on the foothills adjoining the valley. They found little brush in the valleys between Emmett and Boise,⁵⁴ In various valleys on what is now the Payette National Forest early settlers reported verdant pastures of grass, sedges, and rushes.⁵⁵

As trappers and traders adversely impacted on the vegetation and wildlife they also disrupted the economy of the Native Americans who occupied the land. Recent research by Victor Goodwin and Archie Murchie, focusing especially on Nevada, suggests that livestock overgrazed the depleted fragile grasslands thereby interrupting the Paiute-Shoshone food-gathering cycle except for pine nut gathering.⁵⁶ They also eradicated the buffalo from the Intermountain West, depleted beaver populations in certain areas, and initiated the destruction of a number of game populations in northern Utah. In this activity they also were aided by some of the Native Americans. As Calvin Martin put it, once contact and accommodation with Euro-American culture had "nullified" spiritual sanctions against overkilling animals, "the way was opened to a more convenient life-style."57

On the other hand, scientific and governmental explorations seeking information about topography and resources did not seriously damage the ecological balance. Thomas Nuttall and John Bradbury accompanied the overland Astorians in 1811, later to publish contributions on the flora and fauna of the region. Others included William Gambel and Frederick Wislizenus who crossed the Old Spanish Trail to California in 1841. They named several species, including Utah scrub oak and Gambel quail. John C. Fremont, under the auspices of the Corps of Topographical Engineers, conducted two expeditions in 1843-44 and 1845, described the country, and cataloged specimens of a number of plants and animals including the singleleaf pinyon. Other government explorations, including those by Howard Stansbury, John Gunnison, E.G. Beckwith, J.H. Simpson, Clarence King, George M. Wheeler, Ferdinand V. Hayden, and John Wesley Powell, each contributed to information and interpretation of portions of Region 4.

Settlement and Resource Use

These explorations, like the adventures of the trappers and mountaineers, served to advertise the intermountain country and to bring in more settlers. First were members of the Church of Jesus Christ of Latter-day Saints (Mormons) who occupied the Wasatch Front in Utah beginning in 1847. The Mormon expansion led to the settlement of substantial portions of the eastern Great Basin in Utah and Nevada, the Colorado Plateau and Uinta Basin, the Bear Lake and Snake River valleys of Utah and eastern Idaho, and the valleys of western Wyoming. By 1900, the Mormons had established more than 450 communities in the Western United States.⁵⁸

These settlements established a pattern of community ownership and regulation of certain resources together with individual entrepreneurship in farms and businesses. Brigham Young decreed neither "private ownership of the streams that come out of the canyons, nor the timber that grows on the hills. These belong to the people," he said, "all the people."⁵⁹ County courts (predecessors of county commissions) regulated water use by cooperative irrigation districts. The county courts or prominent Mormons regulated timber use for "socially desirable ends."⁶⁰

Hard-rock mining in Utah followed after the Mormons began their settlements. Most centered in the Wasatch and Oquirrh Mountains near the Salt Lake Valley, and mining towns such as Alta, Park City, and Bingham spotted the Utah landscape.

After the abandonment of the Mormon settlement at Genoa in western Nevada, Carson Valley and the surrounding area emerged as a mining district.⁶¹ During the 1850's, gold mining had begun on Mount Davidson. In 1859, the silver mines of the Comstock were opened, producing \$300 million between 1860 and 1880.⁶² On the heels of the Comstock, other Nevada mining camps sprang into prominence. Names like Eureka, Pioche, Treasure Hill, and Austin are indicative of expansion outside the Comstock area.⁶³

Patterns in Idaho and Wyoming were similar to those of Utah and Nevada. Outposts like Fort Hall, Fort Boise, and Fort Bridger were established on the overland route in the 1830's and 1840's either to facilitate the fur trade or to protect migrants. Mormons moved north to establish a settlement on the Lemhi River south of its confluence with the Salmon in 1855. The Latter-day Saints abandoned Fort Lemhi, but made permanent settlements in the late 1850's in northern Cache Valley, and Bear Lake and Malad Valleys, before pushing into the Snake River Valley late in the nineteenth century.

In parts of southern Idaho, gold became the magnet drawing settlers. Beginning in 1861, miners poured into the Salmon River country and the Boise Basin. The north Salmon River diggings around Florence and Warren had produced nearly \$16 million by 1867. By 1864, an estimated 16,000 people lived in the Boise Basin, and Idaho City itself boasted a population of more than 6,000. The basin was producing between \$60 million and \$100 million.⁶⁴ In 1870, a gold rush to the Caribou Mountains opened portions of that country.⁶⁵ After 1879, the Wood River mines attracted people to south-central Idaho.⁶⁶ In 1876 and 1877, quartz mining for gold opened in Custer and Bonanza on the Yankee Fork southwest of Challis.⁶⁷

Though a short-lived mining boom attracted people to the South Pass area in 1867-68, southwestern Wyoming received its greatest push from the overland traffic. In 1843, James Bridger and Louis Vasquez established a fort on Black's Fork of the Green River to serve the overland immigrants. Settlements like Green River and Evanston owed their prosperity to the Union Pacific railroad as crews constructed it through Wyoming in the late 1860's.⁶⁸



Figure 6-Sheep grazing on Boise National Forest.

Cattle ranching drew additional settlers to Idaho. In what later became the Boise National Forest area, grazing began in 1862, soon after mining started.⁶⁹ In the Payette country, William J. McConnell and John Porter located a ranch in April 1863 above Horseshoe Bend, settlers moved into Garden Valley by 1870, and the tall grass of Long Valley attracted ranchers during the 1880's.⁷⁰ Weiser was settled in the early 1870's, and Thomas Cooper and Bill Jolley moved 50 to 60 head of horses into Meadows Valley in 1877.⁷¹ Ed O'Neal and others drove cattle into the Pahsimeroi Valley northeast of Challis.⁷²

Cattle ranching followed hard on the heels of mining in Nevada as well. As early as 1863, stockmen drove cattle from California into the country near Austin, $NV.^{73}$ Alexander Toponce herded 6,000 head of cattle from Salt Lake City to the Comstock mines in 1867.⁷⁴ In the early 1880's, ranchers moved into the Jarbidge area of the present Humboldt National Forest. William Hodges, the Estes family, Neal Beaton, W.S. and Richard Clark, and others began ranching after 1880. By the late 1880's, the "71" outfit grazed most of the southern portion of what is now the Jarbidge Ranger District.⁷⁵ Early settlement of Wyoming's western slope was also cattle-related. By the early 1870's, William A. Carter of Fort Bridger ran some 2,000 head of cattle in Uinta County. He became a vice president of the Wyoming Stock and Wool Growers Association at its organization in 1871. In 1879, Daniel B. Budd and Hugh McKay drove about 750 Nevada cattle to the upper Green River valley. By 1885, extensive cattle ranching had become an important industry in Wyoming.⁷⁶

In Utah and southeastern Idaho, the grazing situation was somewhat different. Excepting southeastern Utah, where a conflict developed between a Mormon cattle pool and ranchers who had moved in from the southwest, most grazing operations were adjuncts of small farming.⁷⁷ Farmers in most towns ran cooperative herds in the nearby mountains and deserts. The large herds owned by Mormon leaders and entrepreneurs like Brigham Young, Heber C. Kimball, and William Jennings and the large cooperative herds of Brigham City were the exception.⁷⁸ In some cases, ranchers and their families operated mountain dairies during the summers, producing butter and cheese for sale in the valleys.⁷⁹



Figure 7---Cattle grazing on Challis National Forest.



Sheep raising, which generally came later than cattle ranching, enjoyed a much more spectacular growth. Between 1870 and 1890, herds from Oregon, Washington, and California stocked the rangelands of Wyoming, Idaho, and Montana.⁸⁰ During the 1880's, sheep raising became very important on what is now the Payette National Forest.⁸¹ The arrival of the Oregon Short Line Railroad in the Boise area in 1884 made markets for lamb, mutton, and wool quite accessible. By 1890, sheep had become so plentiful that settlers in the Boise Basin accused sheepmen of spoiling game herds in the surrounding area.⁸² In about 1889, drovers trailed the first large band of sheep from Oregon into Oneida County, ID.⁸³ Extensive sheep ranching in San Juan County, UT, dates from the mid-1880's when the San Juan Co-op brought sheep in .⁸⁴

Cattle and sheep competed with one another for forage, and stockmen vied for the best herd grounds. Under those conditions, overgrazing soon became a noticeable problem in many parts of the region.⁸⁵

Ranching, mining, and farming, together with the urban, commercial, and transportational development that both preceded and accompanied it, generated demands for timber. The miners of Carson Valley logged first in the nearby pinyon-juniper forests, and the opening of the Truckee Railroad between Virginia City and Carson City allowed loggers to range further into the Sierra Nevada. Miners created an almost insatiable demand for wood which was used for ore reduction, heating, and mine props. By 1880, the mines and mills of the Comstock had consumed an estimated 2 million cords of wood.⁸⁶

Within a short time after settlement in the Salt Lake Valley began, the pioneers constructed sawmills low in the nearby canyons. Gradually, as they harvested the lower timber, loggers moved the mills into the upper reaches of the canyons. Brigham Young and Daniel H. Wells organized the Big Cottonwood Lumber Company, which opened three large mills, and for several years in the late 1850's they sawed more than 1 million board feet annually. The mills used a variety of power including saw pits, water, steam, horse, and ox. The lumbermen cut with hand axe and saw.⁸⁷

In general, small operators did most of the logging. Typical was the David K. Stoddard company on what is now the Targhee National Forest.⁸⁸ Located first in Logan Canyon, Stoddard moved his operation to Beaver Canyon, between Spencer, ID, and the Montana border in 1879. Over the next 23 years, he moved his mill to 26 different locations in the canyon. Stoddard did all his skidding and hauling to the mill and from mill to market with oxen and horses.

Because of the limited capacity and the time consumed in horse and ox skidding, Stoddard had to move his mill quite often. He used four sets to complete cutting in Stoddard Creek and seven in the headwaters of West Camas. In the period before 1900, Stoddard operated in every canyon on the west slope from Idaho Hollow south.

In the early 1860's as mining opened in the Boise Basin and other parts of central Idaho, lumbermen moved into the area as well. Whipsaws provided lumber for cabins, flumes, and sluice boxes. In some cases water-powered mills were used, but as early as 1863, lumbermen had opened a steam mill powered by machinery brought by ox team from the Columbia River. One sawmill on Bear Run above Idaho City operated a quartz mill from the same drive mechanism. One enterprising businessman constructed a small steam-driven railroad to haul cordwood from his mill to the main street in Idaho City.⁸⁹ As operations expanded throughout western Idaho, settlers built log improvements on mining claims. Miners used wood at smelters, most of which loggers clearcut on the hillsides near the towns.⁹⁰

Utah businessman David Eccles earned a fortune, in part from lumber operations. A Scottish immigrant, he took his first lumber job at age 21, when he contracted to skid logs near the junction of Wheeler Creek and the Ogden River. Moving his operations to Monte Cristo in 1872, he joined with several others in purchasing a sawmill in 1873. As his undertaking prospered, he opened lumber yards in Ogden and sawmills near Scofield in Carbon County. Later, he expanded into Idaho and the Pacific Northwest as well.⁹¹

Reports indicate the Eccles operations near Scofield used "very destructive methods." Loggers would burn the side hills during the heat of the summer to kill the timber and remove the undergrowth. They then moved in to "high-grade" or "harvest only the choicest trees," leaving the rest to rot. The burning made it easier and cheaper to get the best timber out, but the ecological devastation was a high price to pay.⁹²

As the railroads moved into the intermountain region in 1868, tie hacking became one of the most rugged and lucrative businesses in the area. Loggers cut on the north slope of the Uintas as the Union Pacific built its tracks through Wyoming and eastern Utah. In 1873, the Utah and Northern Railroad extended its line from Ogden to the mines in Montana. In the mid-1880's, as the Oregon Short Line was built across the Snake River plain, loggers moved into the North Fork of the Payette.⁹³

Methods of bucking the timber varied. A large tree would yield two 8-foot ties, and on occasion the treetops were made into mine props.⁹⁴ Some operators, however, were interested only in the ties and made no attempt to process other portions of the trees. Like David Eccles's operations, this left the forests devastated after the loggers moved out. Slash and litter covered the ground, leaving wasted wood and fire hazards.⁹⁵

Union Pacific came to dominate the tie market in the eastern and northern portions of the Intermountain Region. Prices for number one ties deflated from \$1 each to 30 to 40 cents. On the north slope of the Uintas and in the Payette's North Fork, William A. Carter, of Coe and Carter, became the major supplier. Alexander Toponce, an active western businessman, together with John W. Kerr, a Salt Lake City banker, and Charles S. Durkee, a former Utah governor, contracted to cut 100,000 ties on the north slope.⁹⁶ During the 1870's, the Evanston Lumber Company, owned in part by Jessie L. Atkinson, handled most of the river traffic for the tie operators from headquarters at its Evanston, WY, sawmill.

Reminiscences of logging operations evoked considerable nostalgia among participants. Alexander Toponce recalled the Temple sawmill in Logan Canyon, saying that for him the sound of the saw "eating its way through a pine log, or the odor of fresh pine saw dust," generated particularly vivid memories. He remembered the bull



Figure 8--Sawlogs being loaded aboard flatcars by oxen, August 1888.

whackers dragging heavy logs, bucked into 16-foot lengths. The whacker could pop a whip over the head of the ox with "a report as loud as a 38 pistol."⁹⁷

Loggers used a number of methods of getting the logs out. They hauled them out by mule, drove them on spring floods, rafted them on rivers, or floated them on flumes.⁹⁸ Lumbermen drove the timber for the Logan LDS Temple down the Logan river to a boom built about 3 miles from the canyon mouth.⁹⁹ In the 1880's, crowds thronged the banks of the Provo River near Woodland, UT, to watch boom after boom of logs ridden by daredevil drivers float down the river.¹⁰⁰ On the north slope of the Uintas, a flume carried timber from the Hayden Fork 26 miles to Hilliard, with a 6-mile branch from the headwaters of the Stillwater Fork.¹⁰¹

On the South Fork of the Payette River, lumbermen decked the logs along the river bank then drove them during springtime floods to the sawmill at Horseshoe Bend. They used boats to carry food, bedding, and other equipment for the "river rats" who followed the logs downstream. A risky business, this. At least seven men drowned at a falls below Lowman where they had to let boats down by ropes from the shore.¹⁰²

Not all people remembered the logging operations with the same nostalgia as Alexander Toponce. Joseph Rawlins found the task of securing fuelwood time consuming and arduous. The loggers started for the canyons early in the morning. They drove their wagon as far as possible over the steep roads, and made camp. They spent the rest of the first day cutting the pines and skidding them out with horses, single-trees, and drag chains. The next day, they bucked the logs into cordwood lengths, secured the wood to the wagons with chains, and that afternoon took it down the canyon. It required as many as 20 such trips to supply wood for winter stoves, $103\,$

In some areas, the loggers developed a distinctive culture. Asa R. Bowthrope recalled the lumbermen living in Mill Creek and Big Cottonwood Canvons. A deeply religious folk, they reported mysterious disappearances of tools and nocturnal manifestations including the repeated automatic starting and stopping of the mill. Approaching Brigham Young for guidance, they were advised to move the mill, because the ground where it stood was sacred to the spirits of the people who once lived there. They seem to have placated the spirits since, after they moved, the mysterious events stopped. ¹⁰⁴

Operators found markets for their lumber in the towns and cities, in the mines, and on the farms of the intermountain region. By the 1870's, lumber vards had opened in major cities. An Ogden lumber vard owned by Bernard White hauled lumber from Paradise in Cache Vallev. In some cases, the vards manufactured specialty products like laths, shingles, pickets, sashes, doors, blinds, moldings, tongue-and-groove boards, and lathe and scroll work.¹⁰⁵

Except in Idaho, lumber production did not grow steadily. The logging business peaked in Utah, Wyoming, and Nevada between 1870 and 1880 as railroad construction and mining boomed, then declined during the 1880's and 1890's. Wyoming's lumbering recovered and flourished by 1900. Utah's lumbering stabilized at a lower rate. Nevada's previously flourishing lumber industry had virtually died by 1900. In Idaho, with its more extensive timber resources, the lumber industry showed rather consistent growth to 1900 (table 2).¹⁰⁶

Local timber shortages developed in some areas. As early as 1880, lumber operations had stripped the west

56	84,867	219 431	
56)21	84,867	219 431	340 013
21			369.217
	27,326	357,712	3,122,576
516	172.221	210,900	386,249
018	133,695	273,469	887,110
80	95.416	200.266	356.621
72	233,121	1,014,176	3,821,838
30	278,073	685,956	689,970
09	140,225	712,520	5,099,765
	516 518 572 530 509	116 172,221 118 133,695 .80 95,416 .72 233,121 .30 278,073 .09 140,225	116 172,221 210,900 118 133,695 273,469 .80 95,416 200,266 .72 233,121 1,014,176 .30 278,073 685,956 .09 140,225 712,520

Table 1--Cattle and sheep population in Idaho, Nevada, Utah, and Wyoming, 1870-1900

Source: U.S. Bureau of the Census, 1890 Census of Agriculture, 3 parts, 1:100, 101, and 109; 1900 Census of Agriculture, 2 vols, 1:318 and 320. Because these are census figures, they include all animals in the states rather than just the Region 4 portions.

base of the Wasatch Mountains, and various areas of northeastern and north-central Utah were short of timber. Between 1880 and 1884, Utah became a net importer of lumber.¹⁰⁷ In 1890, Nevada reported no lumber production, and by 1900, its production had recovered only marginally.¹⁰⁸

The development of ranching and lumbering exacted a high price from the land. Orson Hyde observed in 1865 "the longer we live in these valleys that the range is becoming more and more destitute of grass: the grass is not only eaten up by the great amount of stock that feed upon it, but they tramp it out by the very roots: and where the grass once grew luxuriantly, there is now nothing but the desert weed, and hard'y a spear of grass is to be seen....[On the benches] there was an abundance of grass; ... they were covered with it like a meadow. There is now nothing but the desert weed, the sage, the rabbit-brush, and such like plants, that make very poor feed for stock."109

By 1890, range and forest deterioration had become even more noticeable in many parts of the intermountain west. Denuded watersheds above some of the towns produced flooding, and less desirable but hardier plants had replaced the grass and trees in canyons and on benches where they had previously flourished. Environmental change made much more of the region look like the sagebrush plains Fremont had seen in the Snake River and Malad valleys or the alkali flats Dominguez and Escalante had described west of Scipio. Large game species had virtually disappeared from many northern Utah ranges. Under those conditions, it became easy to generate demands for resource conservation.

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State	1870	1880	1890	1900
Idaho				
No. of mills	10	48	44	117
Nillion bd. ft. lumber		18.2		54.8
Value of product (\$)	56,850	349,635	631,790	937,665
Nevada				1 ,
No. of mills	18	9	0	4
Million bd. ft. lumber		21.5		0.73
Value of product (\$)	432,500	243,200	0	7,060
Utah				
No. of mills	95	107	32	81
Million bd. ft. lumber		25.8.		12.1
Value of product (\$)	661,431	375,164	249,940	214,187
Wyoming	· .			
No. of mills	8	7	17	52
Million bd. ft. lumber	-	3.0		88.5
Value of product (\$)	268,000	40,990	124,462	831,558

Table 2--Lumber mills and volume and value of lumber produced in Idaho, Nevada, Utah, and Wyoming, 1870-1900

Source: U.S. Bureau of the Census, Compendium of the Tenth Census (1880), pp. 1162-63; and idem., 1900 Census Vol. 9, part 3 Manufactures, pp. 808-810 and 817. Because these are census figures, they include all portions of the states indicated rather than simply the Region 4 portions.

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Chapter 2 Resource Management in the Intermountain West Before 1905: The Interior Department Phase

Acquiring Land and Regulating Disposal

Although westerners could file claims on mineral lands and purchase or homestead crop lands, they made customary rather than legally sanctioned use of grass and timber on the public lands. In the arid Intermountain West, if settlers could irrigate and farm land, they could purchase or homestead it in farm-sized tracts. If they wanted title to land suitable only for grazing or lumbering, they could get it only by fraudulent or inadvertent entry, or with land scrip until 1878. Thereafter they could only purchase such lands in 160-acre lots and in limited areas.¹

Until the mid-1870's, the General Land Office (GLO) did little to try to regulate the customary use of grazing and forest land in the West, except to require trespassers to pay stumpage fees when they were caught with illegally harvested timber. In 1876 and 1878, GLO Commissioner James A. Williamson ordered employees to obtain approval from Washington before accepting such payments, and he appointed special timber agents to investigate illegal cutting on the public domain.² The policy was not popular in the West, but it had some curbing effect.³

In 1878, Congress passed the Timber Cutting Act, which allowed residents of the West to cut trees on public mineral lands for domestic purposes. Westerners thought this would solve the problem of access to needed resources at first, but Secretary of the Interior Carl Schurz and Commissioner Williamson interpreted the law so narrowly that they forbade lumber companies legal access unless they had specific authorization from customers.⁴ Schurz and Williamson understood the unpopularity of their interpretation, but felt bound to enforce the law, though they did propose to modify it.⁵

Later, Interior Secretary Henry Teller of Colorado, a westerner himself, tried to make the law more palatable to the West. He construed "domestic" purpose to include lumber dealers, mill owners, and railroad contractors and allowed limited export of lumber from one territory to another.⁶ Nevertheless, Teller continued vigorous prosecution of those harvesting public timber in trespass.⁷

The Cleveland administration moved to a policy even more restrictive than that of Schurz and Williamson. In 1885, Interior Secretary L.Q.C. Lamar and GLO Commissioner William A.J. Sparks ordered employees to allow only small settlers and miners to cut timber. Calling Teller's views a "misinterpretation," Sparks said that the previous policy tended "to promote and protect trespass upon public timber.⁸ Westerners, however, thought Sparks's policy would retard growth.⁹

Cattle ranchers experienced similar disfavor. In general, until the Lamar-Sparks administration, customary grazing on the public domain continued without interference after settlement. Sparks, however, refused to recognize ranching as a legitimate industry. In a letter to John Wasson, surveyor general of Arizona, he said that herders "of cattle will not be considered as <u>settlers</u> or permanent residents."¹⁰ He could not stamp out the customary use, but he made it clear he was opposed to it.

These policies and prejudices did not eliminate ranching and lumbering from the public lands of the Intermountain West. By 1890, stockraising had become a leading industry in all of what was to become Region 4, and a larger percentage of the population was engaged in lumbering everywhere in Region 4 except Utah than in the remainder of the United States.¹¹

Westerners made numerous suggestions for changes in policy, and sentiment grew for permitting the sale of timber and grazing lands. As early as 1874, the Commissioner of the General Land Office proposed that the Federal Government sell "timber bearing lands for the purpose of placing the timber under the protection of private guardianship," a proposal Williamson renewed in 1876.¹² LaFayette Cartee, surveyor general of Idaho, agreed, suggesting that the government sell "small tracts of eighty or one hundred sixty acres," which he believed would "prevent destructive fires and the fearful waste and destruction of timber now going on."¹³ Some of the most creative proposals on cattle ranching came from John Wesley Powell and John Wasson, who favored large stockraising homesteads.¹⁴

Given the general fear of land monopoly so pervasive in late 19th-century America, such sentiment was always in a minority; most wanted some provisions only for limited sale or lease of the resources. Some, like Secretary Schurz and John Wesley Powell of the Geological Survey, preferred that the Federal Government retain ownership of the public timber lands under a system of regulated logging. Secretary Lamar recommended provisions for sale of timber on the public lands for domestic purposes "with proper provision for designating the lands from which such timber is sold."¹⁵

In the Far West, opinion divided between those who favored unrestricted access and those partial to protection under some system of utilitarian conservation.¹⁶ In 1885, for instance, both Colorado and California appointed forest commissions to investigate the condition of local timber supplies, with a view to both utilization and protection.¹⁷ Governor Francis E. Warren of Wyoming favored "leasing of timber lands under certain restrictions."¹⁸ Governor George Shoup of Idaho recommended the creation of timber protection districts throughout the States, particularly to guard against forest fires.¹⁹

In an attempt to deal in a limited way with the timber problem for some States of the Far West, in 1876 Aaron Sargent of California introduced a bill to allow individuals to purchase 160 acres of unreserved but surveyed nonagricultural timberland for \$2.50 per acre in Washington, Oregon, California, and Nevada. Supporters limited the plots to 160 acres to try to prevent speculation, while at the same time making lumber available for legitimate uses. Sargent's proposal was finally passed as the Timber and Stone Act in 1878; Congress extended it to all Western States in 1892. The act also included a clause prohibiting the cutting or destruction of timber on any public lands with the intent of exporting or disposing of it. The law excluded supplies for miners, farmers, and ranchers from this provision.²⁰

A major problem in the development of policy allowing judicious use of timber from the public lands for domestic purposes was a pervasive fear of eventual timber shortage. Influential observers in the nineteenth century tended to think of absolute volume of timber rather than accessible volume as the determinant of timber availability.²¹ In part, the attitude can be attributed to the influence of German forestry schools and practitioners, but the belief was much too pervasive to have originated entirely from that source.²² Its supporters included both the practical and the romantic.²³ The list embraced scientists such as George Perkins Marsh and John Wesley Powell, politicians such as Carl Schurz and L.Q.C. Lamar, bureaucrats such as Franklin Hough and Edward A. Bowers, and foresters such as Bernhard Fernow and Gifford Plnchot. Influential organizations, for example, the Boone and Crockett Club, the Sierra Club, the Audubon Society, the American Association for the Advancement of Science, and the American Forestry Association, supported this position.²⁴ Fear of a timber famine led, in part, to the creation of the Bureau of Forestry in the Agriculture Department in 1876.²⁵

Considerable justification existed for this point of view. Forest fires tended to burn uncontrolled in many areas.²⁶ Tie hackers and others wasted timber.²⁷ Local shortages occurred in eastern metropolitan and midwestern areas before the Civil War. On the plains with an absence of trees, consumers had to import lumber long distances at considerable expense.²⁸ Still, by the 1880's, most markets had sufficient lumber at a reasonable unit price.²⁹ As Sherry Olson has pointed out, improved transportation and technology made declining actual volume irrelevant and accessible volume the proper determinant of timber availability.³⁰

In the Far West, however, policies like those of the GLO under Williamson and Sparks caused difficulties because of the restrictions on division of labor through

business enterprises. In 1890, Senator Wilbur F. Sanders of Montana proposed that the Federal Government allow free use of timber in the Far Western States for general agricultural, mining, manufacturing, or domestic purposes. He pointed out that the West Coast and the Lake States contained the nearest legally obtainable timber, making transportation unnecessarily expensive. Sanders's proposal failed by three votes in the Senate, largely because of opposition from eastern and midwestern interests.³¹

The general attitude about the relationship between watersheds, rainfall, soil conditions, and timber resources created another problem. Instead of recognizing that vegetation consumed water, most people thought that it stored and released more water from a given area. Although many stockmen in the West did not believe this, Henry Gannett of the Geological Survey was one of the few public officials to contradict the conventional wisdom. Fernow challenged him, arguing that heavy vegetation produced more water.³²

Creating and Administering Forest Reserves

By the early 1890's, the sentiment for protection of some timber resources and preservation of vegetation to enhance water production prevailed. In April 1889, the law committee of the American Forestry Association, consisting of Fernow, Edward A. Bowers, and Nathaniel Egleston, presented their supporting views to President Benjamin Harrison, Interior Secretary John Noble, and



Figure 9--Railroad tie jam on Green River near Kendall Guard Station, 1900.



USGS Director Powell. Others, including Edgar Ensign of Colorado, John Muir of the Sierra Club, and Congressman Richard E. Pettigrew of South Dakota, lobbied for protection as well. The result was an amendment to the General Revision Act, generally called the "Forest Reserve Act," authorizing the President to set aside forest reservations for the protection of timber and watersheds.³³

The Federal Government moved rapidly to protect certain public timber. Harrison created the Yellowstone Timber Reserve, now part of the Bridger-Teton and Shoshone National Forests in Wyoming, as the first reservation in 1891. By the time he left office in 1893, Harrison had created 15 reserves covering 13 million acres. Grover Cleveland added an additional 5 million acres the same year.³⁴

The process for securing the designation of reserves in the early 1890's was quite similar. Ordinarily, settlers, residents, associations, or individuals would petition for the protection of timber or a watershed. They usually cited protection from wanton destruction by lumbermen or fire, or the perceived "rapid and permanent diminution of the water supply." Thereafter, a GLO special agent would inspect the area and recommend its acceptance or rejection.³⁵

Congress provided no mechanism for administration of the forest reserves until 1897. Nevertheless, the Forest Reserve Act saddled the GLO with three tasks in the field of timber management. First, the GLO administered the sale of the open public lands covered by the revised Timber and Stone Act. Second, it protected the forest reserves against <u>any</u> public use. Third, it regulated access to timber on the public lands under the Timber Cutting and the Timber Permit Acts. The basic difference between the two acts was that the Timber Cutting Act restricted unregulated logging to mineral lands, whereas the Timber Permit Act allowed cutting under regulation on nonmineral lands.³⁶

In practice, between 1891 and 1901, the GLO combined the second and third functions into one-administration of the public timber---under Division P (the Special Service Division), which bore responsibility for investigating infractions of all public land laws. Actual administration fell to a corps of special agents. Ranging in number from 38 to 55, the agents reported on cases and recommended civil or criminal suits or compromises, depending on the severity of the infraction.³⁷

A circular of May 5, 1891, outlined the methods of securing timber from the public lands under the 1878 and 1891 acts. By the 1890's, the GLO had abandoned Sparks's interpretation of these acts and allowed individuals and businesses to cut for the local market. Under the Timber Permit Act, anyone could apply to cut timber either for his own use or "for purposes of sale or traffic, or . . . manufacture" as long as the trees grew on nonmineral lands. The applicant had to demonstrate to the satisfaction of the GLO that the timber was "a public necessity," and that harvesting would not damage the watershed.³⁸

Though the special agents of Division P had originally investigated all breaches of the public land laws, by 1892, increasing demand for lumber turned their attention almost exclusively to investigating alleged depredations under the timber statutes. Their reports formed the basis for determining whether to issue permits or not. Usually, the GLO reviewed the permit applications quite carefully.³⁹ Perhaps as a result, and because of the depression of the early 1890's, the number of applications declined from 425 in 1892 to 50 in 1895. By 1895, Commissioner Silas W. Lamoreaux believed that the permit act had "failed to meet, to an appreciable extent, its purposed end. viz., that of providing for the legitimate . . . necessities of people dependent on public timber in settling and developing the country."⁴⁰

Typical of the cases the special agents had to investigate was that of Mansfield, Murdock, & Company of Beaver, UT. Through contracts with a sawmill owned by Louis W. Harris and James E. Robinson, between 1892 and 1894 Mansfield and Murdock had bought timber cut in and near the abandoned Fort Cameron Military Reservation for resale to a mining company. After an inquiry of special agent J.H. Scales, the company determined that the timber grew on mineral land and believed that they could get it under the Timber Cutting Act.⁴¹

By 1895, however, Scales had changed his opinion, and the GLO dispatched special agent John L. Anderson to investigate the alleged trespass. After looking into the matter and securing affidavits from several disinterested parties, Anderson said the land was indeed mineral.⁴² The two contradictory reports did not satisfy the Interior Department, and the GLO sent special agent Jesse E. Mercer to investigate. Mercer concurred in Scales's revised view that the land was nonmineral and said that Mansfield and Murdock had "purchased with guilty knowledge," charging that Harris & Robinson "were wilful trespassers." When the businessmen refused to offer a settlement, Commissioner Lamoreaux referred the case to the Justice Department, recommending a civil suit to recover the value of the timber.⁴³

Attorney General Judson Harmon wrote to J.W. Judd, United States attorney for Utah, who investigated, then recommended against prosecution. Judd pointed out that the loggers had cut most of the trees on land within a designated mining district. Moreover, two special agents had said the trees grew on mineral land and one of them had produced corroborating affidavits from disinterested parties. Judd said that it had been his experience that juries in such cases were reluctant to convict. He pointed out that his record in timber trespass cases had been "exceedingly successful," and he felt this was a poor case to prosecute.⁴⁴ A reference of the case again to the Interior Department led to Commissioner Binger Hermann's opinion that "it would seem a useless expenditure of time and money to bring suit."⁴⁵

Agent Anderson's work in the Mansfield & Murdock case was quite typical. During 1896, Anderson investigated allegations of timber trespass, failures to meet the terms of timber cutting permits, questions of validity connected with requests for such permits, and various recommendations for compromises or civil or criminal prosecution in timber trespass cases. In general, reasons Anderson gave for recommending rejection of permits included a sufficient supply for the local market, possible damage to the local watershed, the unreliability of the logger, or the proposed transport of the lumber across state lines.⁴⁶ Often the GLO handled apparently routine applications without a special agent's investigation. Such applications, usually submitted through the land office, included affidavits from local citizens that the timber grew on nonmineral land, and evidence sufficient to satisfy the Commissioner that local businesses and individuals needed the lumber. They included evidence that the logging operations would not trespass on the rights of others, and that the removal of the trees would not injure the watershed.⁴⁷

While the system of special agents provided a minimum of regulation, it furnished no permanent administrative organization. By the mid-1890's most who favored more effective administration, including the American Forestry Association, supported a bill drafted by Thomas G. McRae of the House Public Lands Committee. Introduced first in 1893, the McRae bill provided for Interior Department administration of the forest reserves. Under the bill, protection and utilization of timber and protection of watersheds were recognized as legitimate reserve functions.⁴⁸ Edward Bowers and others believed that the regulations of the McRae bill ought to be extended to all timber on public lands as well, repealing acts that allowed free use and the purchase provisions of the Timber and Stone Acts.⁴⁹

This was not, however, the majority view. In commenting on the bill in 1896, Commissioner Lamoreaux agreed with McRae's version that allowed free timber to "settlers, miners, residents, and prospectors for minerals, for firewood, for fencing, building, mining, or prospecting purposes." He also opposed the extension of the bill to all public lands.⁵⁰

In the meantime, however, other events were taking place that short-circuited the enactment process. By 1895, various people and groups from throughout the United States, including the New York Chamber of Commerce, the Los Angeles City Council, the American Forestry Association, leading periodicals of opinion, and influential conservationists like John Muir and Gifford Pinchot, supported the establishment of a national forestry commission to survey the public timber lands and recommend new forest reservations.⁵¹

Fernow's prescient argument, that without a system of forest administration and public education the creation of such reserves would antagonize people, carried little weight, and the Cleveland administration, with congressional support, appointed a commission .⁵² On the recommendation of Wolcott Gibbs of the National Academy of Sciences, Cleveland chose Charles S. Sargent, director of the Arnold Arboretum at Harvard, General Henry L. Abbot of the Corps of Engineers, William H. Brewer of Yale, Arnold Hague of the Geological Survey, Alexander Agassiz of Harvard, and Gifford Pinchot, then forester at the Vanderbilt estate at Biltmore, NC.

Submitting its preliminary report on February 1, 1897, after a whirlwind trip through the Far West, the commission recommended 16 new forest reserves totaling 17-1/2 million acres. Parts of three of the reserves--the Uinta (then spelled Uintah) in northeastern Utah, the Teton south of the existing Yellowstone Timber Reserve in Wyoming, and part of the Stanislaus in California--were later included in Region 4. The commission's trip had more the character of a junket than a thorough investigation, since the members did not visit 5 of the 13 reserves they recommended, including the Teton. 53

Nevertheless, moving with haste, Interior Secretary David R. Francis submitted the commission's preliminary report on February 6, recommending that Cleveland proclaim the reserves 16 days later to commemorate George Washington's birthday.⁵⁴ Cleveland's action, taken precipitately and without congressional or local consultation only 10 days before he relinquished the White House to William McKinley, evoked immediate negative response from the Far West. With a stroke of the pen he had created the first reserves since 1893, nearly doubling the existing acreage. Moreover, since Congress had approved no administrative procedures, the reserves were legally closed to any use.

Prominent in their opposition to Cleveland's action were Senators Joseph L. Rawlins of Utah and Clarence Clark of Wyoming. The Utahn called Cleveland's action "as gross an outrage almost as was committed by William the Conqueror, who, for the purpose of making a hunting reserve, drove out and destroyed the means of livelihood of hundreds of thousands of people."⁵⁵

Maneuvering began almost immediately on the floor of Congress. Western senators introduced an amendment to the Sundry Civil Appropriations bill of 1897 to revoke the proclamations. Heading off the amendment, USGS Director Charles D. Wolcott, with the concurrence of Interior Secretary Cornelius Bliss and GLO Commissioner Binger Hermann, convinced Richard Pettigrew, by that time Senator from South Dakota, to introduce virtually the entire wording of the McRae bill as a substitute. In addition, the Pettigrew amendment suspended the proclamations for 9 months to allow the Forestry Commission to complete its report and the USGS to provide proper surveys of the reserves. While the members of the Forestry Commission recognized the need for some administration, with the exception of Pinchot and Hague they generally opposed the Pettigrew amendment because it seemed a temporary expedient.⁵⁶ In Congress, principal opposition came from a small group of southern, midwestern, and eastern Senators and from Representative John Lacey of Iowa, chairman of the House Public Lands Committee, who had apparently prevented enactment of the McRae bill previously by bottling it up in his committee.⁵⁷

Contrary to popular myth, most westerners were not initially opposed to the creation of forest reserves. In a petition to the President on March 18, 1897, Senators Lee Mantle of Montana and Frank J. Cannon of Utah outlined their reasons for opposing Cleveland's proclamations. First, they pointed out, westerners would have to ignore the hastily designated reservation lines, or suspend the mining and grazing industries "in whole regions." Since the Forestry Commission had conducted only a cursory investigation, Cleveland's proclamation embraced "whole townsites and other improvements . . . so as to cut off the sole and natural supply of timber for domestic uses necessary to the existence of thousands of settlers on the public domain." Western opinion, they said, favored "preserving the sources of water supply and the maintenance of such restriction as will wisely preserve and enlarge the forest domain in the mountains. But it is certainly," they added, "an absurdity to make a forest reservation under a law and a proclamation which

absolutely forbid forever the cutting of a stick of timber; because under such a law and proclamation the final purpose of forest reservation is destroyed." Instead, they favored the creation of reservations after a "well informed and carefully prepared report by the Geological Survey [and] due consultation with local authorities and the representatives in Washington of the states to be affected."⁵⁸

Under the Pettigrew Amendment, now generally called "The Forest Service Organic Act," the USGS began an intensive survey of conditions in the reserves. Henry Gannett assumed general supervision of the investigations, the GLO detailed Gifford Pinchot as a special timber agent to draw together the USGS reports, and Dr. T.S. Brandegee of San Diego, a botanist who had worked on the northern transcontinental survey, went to Wyoming to examine the Teton and Yellowstone Park reserves.⁵⁹

From July through September 1897, using maps prepared by the Hayden Survey, Brandegee moved through the two reserves. On the Teton reserve he found about 785 square miles of the 1,300 square miles capable of producing timber. Trees-largely lodgepole pine, quaking aspen, and Engelmann spruce--grew on about 38 percent of the acreage, but only about 3 percent of the timber was merchantable, largely because of previous forest fires. At the time of the investigation, loggers operated three sawmills in the Teton reserve, cutting mainly Engelmann spruce. Local settlers used dead lodgepole pine for log houses and fences. In addition, Brandegee found 40 ranches in the area, 19 on the eastern edge of the Teton Basin and 21 in Jackson Hole. Most were small cattle operations. Because of hostility of the ranchers, no sheep grazed in the reserve. Already, Jackson Hole had developed a reputation as a mountain resort for sportsmen, and many in the valley furnished supplies and outfits for tourists.⁶⁰

Brandegee found conditions much different on the Yellowstone reserve. A reserve of about 510 square miles, it contained a larger percentage of timber than the Teton. He found no sawmills and little demand for the lodgepole pine and Engelmann spruce because of the distance from settlements.⁶¹

In 1897, the Forest Commission, Pinchot, and USGS investigators addressed a much more serious immediate problem than the potential loss of timber to the logger's saw. That was the extensive overgrazing by sheep and cattle on the western public lands.

The commission report said that as sheep outfits moved from Oregon and Washington across Idaho and Wyoming, the animals ate everything bare, carrying ruin in their path. They charged that the sheepmen were the principal cause of forest fires and that sheep hooves destroyed sod and undergrowth.⁶²

Influenced apparently by Frederick Coville's careful studies in Washington and Oregon, in 1897 Pinchot presented a somewhat different view. He indicated that experience had shown that cattle, horses, and sheep could all graze without serious damage on the public forests provided herders kept them away from particularly fragile areas. He argued for 5-year grazing permits issued on the basis of traditional grazing patterns, stockmen responsibility, and established penalties including revocation for permittees who did not show "good faith in the protection of the forests." He recommended that permittees bear the cost of the administration through grazing fees. 63

Currently available evidence suggests a disparate pattern of range conditions on lands ultimately included in national forests in Region 4 by the late 1890's.⁶⁴ Contemporary reports indicate the worst situation on the ranges in Utah,⁶⁵ the Bridger division of the Bridger-Teton in Wyoming,⁶⁶ and the Caribou,⁶⁷ Boise,⁶⁸ Payette,⁶⁹ southern portion of the Sawtooth,⁷⁰ and the southwestern portion of the Targhee in Idaho. Conditions were relatively good on the Teton, the Salmon, and the Challis and the northern portion of the Sawtooth in Idaho. Evidence on the Toiyabe and Humboldt in Nevada is mixed, but it appears that in southeastern Nevada, the Ruby Valley, Humboldt Valley, and Paradise Valley were overgrazed. Western Nevada was not overgrazed, and northern Nevada did not become so until after 1900.⁷¹

Overgrazing combined with trampling and forest destruction contributed not only to the elimination of native plant communities but also to the introduction of less desirable plants. Studies have shown that in southern Idaho, grazing lands previously covered by sagebrush with an understory of perennial bunch grasses were replaced by Russian thistle, mustards, and cheatgrass by 1900. The invasion of cheatgrass was particularly serious because it burned so easily in range and forest fires.⁷²

Even though Pinchot and Coville had argued that sheep could successfully graze under regulations to protect the environment, the prejudice against the "hooved crickets" led to an 1897 order excluding them from the forest reserves.⁷³ The GLO commissioned a study into the advisability of changing this regulation, but for the time being it stood in spite of sharp and vigorous protests from western livestock interests and congressmen.⁷⁴ Protests by Albert F. Potter and E.S. Gosney of the Arizona Wool Growers Association led to an investigation by Pinchot and Coville in 1899, who concluded



Figure 10---Overgrazing by sheep on Maple Creek drainage, July 1940.

that their 1897 recommendations had been correct and that grazing could be carried on under restrictions.⁷⁵

Since no sheep grazed on the Teton reserve in 1897, and the Federal Government created no new reserves in Region 4 until the Fishlake in 1899, the prohibition applied initially only to the Uintah. Petitions from the Utah Wool Growers Association and the Wool Growers Protective Association of Uintah County, WY, led to an investigation by Forest Superintendent W.T.S. May of Denver.⁷⁶ The petitions said that the sheep did not interfere with the water supply, that most sheep owners were among the leading citizens of the country, and that the sheep herders did not burn the grass, since it was contrary to their interest to destroy their own feed.⁷⁷ Support for their position came from John Henry Smith and Joseph F. Smith of the Council of Twelve Apostles and the First Presidency of the LDS Church.⁷⁸

May recommended against allowing sheep on the reserve, but in a report on sheep grazing on the Uintah submitted on July 13, 1899, GLO Commissioner Binger Hermann recognized the contradictory opinions and evidence on the question. The only support for May's position came from the Utah Forestry Association, whereas numerous petitions from stock raising groups and the opinion of former Uintah supervisor George F. Bucher favored opening the reserve to sheep grazing.⁷⁹

After reviewing the Pinchot-Coville recommendations, considering the view of the petitioners, and referring the question to various superintendents, including May, the GLO changed its position. A directive of July 20, 1899, permitted 200,000 sheep from Utah to graze in the open parks on the reserve during the 1899 season.⁸⁰ At the close of the season, Bucher reported that little damage had resulted and recommended that grazing continue.⁸¹ Moreover, in August 1899, the Interior Department issued a provisional regulation permitting sheep grazing on any reserves "in which it has been found, . . . after due investigation, that no injury will result to the reserve by reason of such pasturing."⁸² The regulation became permanent in December 1901.⁸³

The Forest Commission and others addressed the serious problem of competition and damage from transient herds, mostly of sheep. During the 1890's, the range near Scipio in central Utah, according to J. Wells Robins, had been overrun "with transient stock, migratory herds, trail herds, and surplus stock." As a result, his father and others petitioned for the creation of a forest reserve in the area.⁸⁴ Petitions in favor of the proposed Fishlake forest reserve said it was necessary "to protect the timber from fires and vandalism, and its vegetation from destruction by various agencies now going on.⁸⁵ It was the "various agencies"--probably a euphemism for transient herds--that concerned the local ranchers the most.

When the proposal to increase the size of the Fishlake reserve reached his desk in 1903, J.H. Fimple, acting commissioner of the GLO, quite reasonably raised some serious questions. After reviewing Albert Potter's report, he said that while "it is reported that the proposed addition is an exceptionally good grazing section, and that a large number of cattle, horses and sheep have been pastured within its limits, and recommendation is made as to the proper division of the area into grazing districts, the report contains no statement bearing upon the value of the area in question for forestry purposes, strictly speaking, exception that the proportionate distribution of forest and brush lands" is given. 86

Clearly, however, such objectives were beside the point to western livestock interests. They wanted local control of the ranges. In Wyoming, Leonard Hay and William D. Thompson pointed out that numerous outfits from Utah and Idaho had invaded western Wyoming by the early twentieth century. This problem led to the infamous Raid Lake massacre. As Thompson told it, the issue was transient versus local herds rather than cattlemen versus sheepmen. According to Thompson, the Peterson brothers brought large nomadic sheep herds into western Wyoming from Utah. Their sheep mixed with the Thompsons' near Raid Lake where William and his brothers Joe and John worked as herders. After a warning, the cattlemen came in, tied up the Petersons' herders, and drove their sheep into one of Thompson's corrals. Significantly, they let Thompson's sheep loose because the Thompsons were local residents. Then, when they failed in an attempt to drive the Petersons' transient herds into Raid Lake, the cattlemen clubbed the interloping sheep to death.⁸⁷

Like the Fishlake addition, the forest reserve in northern Elko County, NV, later part of the Humboldt National Forest, was created because of transient herds. As C. Syd Tremewan, a long-time resident and former forest supervisor put it, "flocks of transient sheep had become so numerous that the local ranchers were almost forced to quit trying to raise cattle with the public land as a summer range... The mad race to get to the summer range first resulted in the intervening ranges being made into a dusty trail." Tremewan estimated that more than 500,000 sheep grazed on what became the northern division of the Humboldt National Forest. Later, reflecting on the situation, he wrote, "I often thank God that we moved [to take action] in time."⁸⁸

Prior to 1897, the major problem in reserve administration had been the lack of a regularly organized force of forest officers. In his 1891 report Bernhard Fernow recommended the creation of a forest service to administer the newly designated reserves. These reserves required protection against theft, fire, and other damage, regulation of public use, and plans for cropping and marketing timber. He recommended relatively small ranger districts and the appointment of forest supervisors and rangers on the basis of demonstrated competence rather than political preference. He called also for the appointment of a group of centrally directed inspectors on the Prussian pattern.⁸⁹ Agreeing that Germany and France had provided more effective forest management than the United States, Interior Secretary Hoke Smith cited these countries as models for future practice.⁹⁰ In a December 1897 report, Pinchot recommended a plan for administration. Apparently recognizing budgetary realities, Pinchot's proposal was much less ambitious than Fernow's.91 Nevertheless, the Fernow and Pinchot recommendations, both modeled on the Prussian system, formed the basis for the GLO Forestry Division and later, the Forest Service.

The actual organization was somewhat different than the model. Subject first to GLO Division P (the Special



Figure 11-Elk at Jackson Lake, 1905.

Service Division) and beginning in March 1901 to Division R (the Forestry Division under Filibert Roth), the administrative structure consisted of superintendents, with jurisdiction over an entire State or group of States; supervisors, who directed the work on individual reserves; and rangers, who directed districts within the reserves. In addition, a small corps of forest inspectors visited the reserves to examine various matters.⁹²

Over time, the GLO Forestry Division tended to look more and more like Fernow's and Pinchot's Prussianmodel forest service. The tendency in GLO administration over time was to decentralize by emphasizing the field force of supervisors and rangers and reducing the intermediate administration by superintendents. In 1898 there were 11 forest superintendents and a small force of supervisors. By 1904, that force had changed to 5 superintendents and 50 supervisors.

At the same time, the GLO upgraded the status of rangers.⁹³ At first the supervisors hired rangers as temporary employees, furloughed during the winter. Increasingly, however, responsible supervisors like Adolph W. Jensen of the Manti reserve asked permission to keep part of the ranger force over the winter and furlough the other rangers late in the season to complete necessary work.⁹⁴ In 1899 the GLO furloughed all rangers by October 15. By 1904, more than two-fifths were retained all year around.⁹⁵ Moreover, in 1902, the

Forestry Division recognized the importance of the rangers by instituting the position of forest guard for temporary employees, especially those responsible for fire detection during the summer.⁹⁶

The GLO emphasized the field force because of its own experience and because of changes made in consultation with Pinchot's Forestry Bureau. During late 1901, the two bureaus outlined increasing decentralization, codified in regulations in 1902. The policy granted forest supervisors greater autonomy by allowing them to report directly to Washington instead of through the superintendents. Increasing the responsibility of inspectors to investigate alleged improprieties provided checks on the system.⁹⁷

Since the United States boasted fewer than 10 professional foresters in the late 1890's, those appointed to administer the forestry work were generally drawn from other occupations.⁹⁸ John Ise was highly critical of this tendency in the GLO Forestry Division, but seemed to see nothing wrong with it in the Forest Service.⁹⁹ Some of Pinchot's top subordinates like Albert Potter and Will Barnes were Arizona stockmen rather than professional foresters or range managers.

In practice, even in the GLO, with few professional foresters, the competence of the employees had little to do with their previous occupations. Adolph W. Jensen, for instance, served from 1903 as supervisor of the Manti Forest Reserve, continuing after 1905 in the USDA Forest Service. A graduate of Snow Academy, he attended Brigham Young Academy (later Brigham Young University) before becoming a schoolteacher and principal. He also served as Sanpete County Clerk and completed a law degree by correspondence. After the creation of the Forest Service's Regional Office at Ogden, he was appointed general counsel, eventually resigning to enter private practice.¹⁰⁰

All of Jensen's rangers came from the local area, and a number of them had previous experience in ranching or logging before joining the division. Beauregard Kenner, for instance, had grown up in Manti and operated a sawmill in Manti Canyon before becoming a ranger.¹⁰¹ David H. Williams had 2 years' experience with the Coast and Geodetic Survey and had worked in the livestock business before his appointment.¹⁰²

Most of the difficulty in the GLO seems to have been in its corps of special agents rather than among the forest officers. Between February 1903 and April 1904, 22 special agents (nearly half the force) resigned "for one cause or another." Some left because of lack of capability, intemperance, or infirmity, others because they were caught in dishonesty, usually relating to the misappropriation of money, accepting bribes, or releasing confidential documents.¹⁰³

Some difficulties existed in the GLO Forestry Division. Until late 1903, forest officers were political appointees, not covered by civil service regulations. This meant that they served at the pleasure of their superiors. After 1903, as merit employees, they were appointed after examination and could not be removed except for cause.

Perhaps the worst case of misadministration in what was to become Region 4 was that of George F. Bucher, supervisor of the Uintah Forest Reserve. Appointed in 1898, he was reduced to the rank of ranger in 1899, reinstated, furloughed, reinstated again. He finally resigned while under investigation in April 1902, largely for providing inaccurate reports of forest conditions and for placing the interests of individual forest users above that of the government.¹⁰⁴

Most rangers and supervisors in Region 4 under the GLO were generally competent and diligent. Adolph W. Jensen reported in 1904 that of six rangers on his staff, four had proved "conscientious, industrious and willing." Another was newly appointed and had not yet proven himself, and the other had resigned under a cloud, but Jensen thought that he "did the very best in most cases according to his understanding," though he seriously "misjudged the work of ranger."¹⁰⁵ By late in the year, Jensen was apparently quite well satisfied with the work of the new ranger.¹⁰⁶

While some of the early forest reserves like the Yellowstone were very large, after 1897 the Interior Department tended to create smaller reserves. Having learned its lesson from the intense objections to the cursory examinations associated with the Washington's Birthday proclamations, the Department undertook rather intensive surveys before recommending the creation of new reserves.

In the investigations, the GLO cooperated closely with the USGS, the USDA Forestry Bureau, and local people. By 1901, various Presidents had proclaimed three reserves in Utah: the Uintah, the Payson, and the Fishlake. From October 1901 through January 1902, the General Land Office sent papers to the Interior Department proposing the creation of 11 new reserves and an addition to the Uintah, stretching along the Wasatch Mountains and the high plateaus to the south. The subsequent creation process involved interaction between the agencies and parties mentioned.

A number of activities took place simultaneously. The GLO sent Superintendent May from Denver to look into matters relating to the proposed reserves. The USGS made its initial examination and recommendations. Senators Thomas Kearns and Joseph L. Rawlins and Congressman George Sutherland received numerous petitions both for and against the proposed reserves, some petitions went directly to the GLO, and others ended up on the desk of President Theodore Roosevelt. In the meantime, the General Land Office withdrew the lands within the proposed reserve boundaries from disposal, including State selections for schools and other purposes.¹⁰⁷

As the agency most concerned with the new reserves, it fell to the GLO to make the final recommendations. After an initial investigation by the USGS and Superintendent May, Commissioner Hermann found that areas of several of the proposed reserves overlapped portions of the existing reserves and that the GLO had insufficient data to determine "the disposition" of some of the cases. He then recommended a "further, full and more detailed" report from the USGS.¹⁰⁸

The subsequent investigation did not resolve all questions, ¹⁰⁹ so the Interior Department called upon the Forestry Bureau for expert help. Pinchot sent Albert F. Potter, a former Arizona sheepman, to investigate. During the months from July through November 1902, Potter crisscrossed a north-south slice through the high country of Utah, hitting the principal towns and traversing the Wasatch Mountains and high plateaus.¹¹⁰

His comments covered the types, size, and density of trees, the condition of grazing lands, the protection of the water supply, and the attitudes of people. He found the most destructive grazing practices, timber cutting, and watershed damage in canyons and on mountains and plateaus nearest the settlements and in areas of greatest competition. Control by either private or public agencies minimized the destruction. The Ireland Land and Cattle Company managed a large area including possibly 40,000 acres of Federal land west of Emery in the mountains and on Quitchupah and Neotch creeks. There he found "good grazing land," and "a good stand of grass."111 On nearby Salina and Clear Creeks outside Ireland's control, he found the lands "overgrazed and trampled by sheep," and the grass "all eaten off very close."112 On the Uintah Indian Reservation, he saw "good grass and plenty of weeds and browse," because of controlled stocking, $113\,$

Most important, Potter's diary reveals a great deal about the attitudes of the people toward the creation of the forest reserves. In a letter to Interior Secretary Hitchcock, USGS Director Wolcott argued that the attitudes in Utah divided into two--"on the one side being the farmers who are apparently, without exception, in favor of reserving the mountainous regions which are the sources of streams upon which they are dependent for irrigation; on the other hand are the cattle and sheepmen who are desirous of using these mountainous regions as a summer range for stock." This explains, he wrote, "the petitions and counter-petitions of which we are in receipt." 114

Potter, however, found an ideological rather than occupational division. The division was not between farmers and ranchers, but rather between those who favored unrestricted resource use and those who wanted regulated use. Potter found more of the stockmen favoring than opposing the reserves. Their reasons included overgrazing and the need to reduce competition from transient herds. Townspeople mentioned the same things, but also noted damage to watersheds and exces-sive logging of small trees.¹¹⁵ Moreover, many of those who opposed the reserves were not opposed to good land management, but believed that private owners could provide it as well as forest reserve officers. Potter agreed.116 Virtually all thought that the Interior Department ought to make the decisions on the extent of the reserves as rapidly as possible, since land withdrawals in anticipation of reserve creation had proved disruptive to normal economic activities.¹¹⁷

All proposals did not require investigations as complex as the interrelated reserves in Utah. In the case of the Pocatello Forest Reserve, the city council and leading citizens of Pocatello petitioned for the reserve because of stream pollution from livestock in the nearby mountains caused by forest and range destruction. An investigation by GLO special agent C.L. Hendershot and another by the Forestry Bureau recommended establishment, and the GLO concurred.¹¹⁸

In western Wyoming, conditions differed. The boundary between the Yellowstone and Teton Forest Reserves had been arbitrarily drawn. Increasingly, by 1900, transient sheep herds began to challenge longstanding cattle operations. An investigation by F.V. Wilcox of the Forestry Bureau in 1901 tended to side with the cattlemen. In addition, he expressed concern about possible watershed damage and potential forest destruction from man-caused fires.¹¹⁹ The GLO followed with an investigation by Special Forest Superintendent A.A. Anderson who recommended the union of the two reserves.¹²⁰

On the basis of these considerations and the various investigations, the Interior Department recommended the disposition of various proposals. In Idaho, Utah, and Wyoming during 1903 and 1904, presidential proclamations designated the Pocatello, Aquarius, Manti, Grantsville, Salt Lake, and Logan forest reserves; enlarged the Payson, Fishlake, and Uintah reserves; and consolidated the Teton, Yellowstone Absaroka reserve under the name Yellowstone Forest Reserve. ¹²¹

Moreover, cooperation between the Interior Department's GLO and USGS and the Agriculture Department's Forestry Bureau continued in the designation and administration of reserves. Some employees, for example, inspector Harold D. Langille, held appointments in both the GLO Forestry Division and the USDA Forestry Bureau.¹²² Gifford Pinchot assigned employees to assist the GLO in developing working plans for forest reserves "so far as their other duties will permit."¹²³ The GLO could use such help only to the limit of its rather meager budget considering the demands for money by the force of supervisors and rangers.¹²⁴

The two most serious problems faced by the GLO Forestry Division were the management of forest and grazing lands. In managing timber harvests, the GLO developed a body of regulations based on interpretation of the Organic Act. Initiative for a timber sale rested with the public rather than with the forest officers. The general procedure was outlined in a circular issued in January 1902. Individuals wishing to purchase timber applied to the forest supervisor. He had the area examined, marked, and mapped, and provided guidance in filling out the application and filing a bond. He then submitted the application to the GLO. If the GLO approved the sale, the supervisor advertised it in the local papers. Anyone could then bid on the timber sale, and the contract went to the highest bidder.¹²⁵ In order to regularize the sale procedure, the GLO devised a formal contract and bond in December 1901.126 Regulations adopted in 1900 allowed the supervisor to sell the timber to the applicant at the appraised price, upon GLO approval, when he received no other bids. Supervisors were allowed to grant free use of timber worth less than \$100, but were required to secure permission for a larger volume.¹²⁷ In January 1902, the Department published an application blank and a simple sheet of rules for use in applying for free use.¹²⁸

One of the major problems was the general rule that lumbermen might not transport timber from one state to another. Opposition to this rule was especially strong in regions of Wyoming near the borders of other States. Congressman Frank Mondell, Secretary Hitchcock, and Commissioner Hermann all favored modifying the law to allow administrative discretion.¹²⁹ Technically, timber operations on the Uintah Reserve in Utah from Lonetree, WY, violated the law, since the timber had to be moved across State lines, but the GLO apparently ignored the technicality because of the proximity of the Reserve and the shortage of nearby timber in Wyoming.¹³⁰

In administering the forest reserves, the GLO faced an immediate problem of educating both its own personnel and the forest users about proper land management. Of the reserves created in Region 4 in the 1890's, the most serious problems undoubtedly occurred on the Uintah. By 1903, although the greatest demand for timber was on the combined Yellowstone Reserve, the Uintah Reserve was close to the largest population centers, mining districts, and transportation routes in the region.¹³¹ Unfortunately, its first supervisor, George Bucher, was a man of limited administrative ability who neglected the public interest in timber trespass and slash disposal.¹³²

In the period before 1905, companies logged on the Uintah Forest Reserve from three bases. The largest group where those operating out of Summit County, UT--most from Kamas to supply mining companies like the Ontario, Silver King, and Daly-West at Park City.¹³³ A second group centered in Vernal just off the south slope of the Uintah.¹³⁴ The third, and much the smallest, was located in Lonetree, WY, just across the Utah border on the north slope.¹³⁵

In general, these logging operations employed few people--often just a single family--usually based at a small sawmill. Typical perhaps was the Pack family of Kamas.¹³⁶ The Packs became the victims of bad advice during the Bucher administration, but an investigation by Inspector Langille and Bucher's replacement, Daniel S. Marshall, cleared them of culpability. According to Commissioner Hermann, Bucher and his rangers "alike believed that miners and residents have a right to the timber, and rules, regulations and instructions are troublesome formalities to be disregarded wherever possible."¹³⁷ After Bucher's removal, much of the work of the forest officers involved educating loggers in proper forest management, particularly in cutting in designated areas, taking only marked timber, and properly disposing of slash.

It should be emphasized that the Bucher fiasco was unusual and generally the result of the administrative incapability of one supervisor. A survey of available correspondence has turned up no similar situation in Region 4 under the GLO Forestry Division. Adolph Jensen's correspondence on the Manti, for instance, reveals a man concerned with possible irregularities, who also took time to instruct his rangers on their duties and forest users on their responsibilities.¹³⁸

The GLO Forestry Division and Grazing Administration

If anything, grazing problems on those reserves created before 1905 were more serious than those involving timber. In line with Pinchot's views, in February 1900 Hermann recommended that the GLO charge fees for grazing in the forest reserves.¹³⁹ He withdrew the proposal, however, when Assistant Attorney General Willis Van Devanter ruled that the charge exceeded the Interior Department's authority under the Organic Act. The major change in supervisory regulations was a December 1902 amendment that allowed the GLO or even the "local officer, subject to revocal by the Department" to take care of "clerical details of issuing permits to the numerous applicants," rather than securing approval of the Department.¹⁴⁰

The general unwillingness to allow sheep to graze on the same basis as cattle and horses caused considerable friction with parties from the West. At the annual meeting of the National Live Stock Association in Salt Lake City in 1901, Salt Lake sheepman John C. Mackay seems to have summed up the majority sentiment when he called for a liberal national land policy giving each sheep or cattleman with "permanent headquarters" access to the country "tributary to his interests."¹⁴¹

In responding to this problem, the GLO proposed general principles to govern range administration in November 1901. A number of these incorporated Pinchot's 1897 recommendations. These included delegating responsibility to the local woolgrowers association, granting 5-year permits, and regulating rather than prohibiting grazing. In meeting the demands of local graziers, the GLO gave preference to local rather than transient herds.¹⁴² Provision was to be made for stock driveways.¹⁴³

In January 1902, Hermann proposed regulations to implement the general principles, and to codify rules for grazing all stock.¹⁴⁴ The regulations established four classes of graziers: actual residents of the reserve, those residing outside the reserve who owned permanent ranches within the reserve, other persons living close to the reserve, and those with "some equitable claim." Secretary Hitchcock approved all except the proposal to allow 5-year permits.¹⁴⁵

At the end of the 1902 season, however, the Forestry Division abandoned the attempt to delegate regulatory authority to the livestock associations. While it might have seemed a good idea in theory, in practice the associations had failed "to undertake the work of enforcing the rules under which the grazing was allowed."¹⁴⁶ In the case of the Uintah Reserve, for instance, the Utah Wool Growers Association failed to allot the range by units and actually permitted 39,800 more sheep than the 150,000 GLO limit. Supervisor Marshall had recommended a reduction from the 200,000 allowed the previous year, but the association failed to accept this recommendation.¹⁴⁷ In some States, such as Wyoming, the GLO could find no qualified association to work with and had to make the allotments itself anyway.¹⁴⁸

Moreover, the regulation by sheep associations tended to discriminate against certain stockmen. In the case of the Uintah Reserve, for instance, the Utah Wool Growers Association, who controlled the reserve, were reluctant to allow sheepmen from southwestern Wyoming, even those with property in Utah, to graze on the reserve because of the limitation on numbers imposed by the Forestry Division. In responding to complaints, the Interior Department ruled that "if the owners [of the sheep]...pay taxes on them in the State of Utah, their habitat is in that State and no discrimination is to be made between [Utah and Wyoming residents]...in applying the [four classes under the] regulations."¹⁴⁹

In practice, the creation of new reserves caused difficulty because the application of grazing regulations disrupted customary grazing operations, particularly for transient sheep. Prior to the grazing season in 1902, for instance, proclamations added more than 6 million acres to the reserve system. Two enlarged reserves -- the Teton and Yellowstone--included more than half of that area. As a result, the Forestry Division agreed generally to allow customary grazing patterns to continue.150 On the Teton extension, however, Supervisor W. Armor Thompson and Special Superintendent Anderson reported that stockmen had trailed in sheep, cattle, and horses, and that owners were transporting livestock from Texas and New Mexico. Hermann wanted to keep the sheep off the range, but President Roosevelt ordered the supervisor not to interfere for a year.¹⁵¹

The pre-existing conflict between cattlemen and sheepmen in the area created additional difficulty. Sheepmen wanted continued access to grazing grounds and cattlemen wanted them kept off the reserve. As a temporary expedient in 1903, the GLO agreed to open to sheep the portion of the recent addition not obviously needed either for timber or to protect the watersheds.¹⁵² In 1904, 282,000 sheep grazed on the combined Yellowstone Reserve.¹⁵³

The number of sheep seeking pasture on the Uintah Reserve was variously estimated at 300,000 to 2 million. The GLO agreed to allow only 200,000. 154 The reductions coupled with the preference categories established in 1902, effectively eliminated some including transient

herds. In 1903, for instance, Supervisor Marshall reported that he had petitions for 300,000 sheep. He would allow only 200,000 to graze, and he excluded some Wyoming ranchers. Furthermore, other things being equal, the Forestry Division gave a preference to those who had been grazing in the recent past.¹⁵⁵ By 1904, the Uintah had been reduced to 124,995 sheep.¹⁵⁶

In addition, the GLO began to eliminate common use between sheep and cattle. In 1902, for instance, in response to a petition of citizens from Summit County, they reserved a portion of the Uintah Reserve for cattle.¹⁵⁷ On the Uintah Reserve, the Interior Department allowed 10,000 cattle and horses in 1903 on specified allotments.¹⁵⁸

The tendency to allow concerns over economic welfare to outweigh potential environmental damage caused considerable difficulty. A 1902 investigation of the Payson Reserve by Inspector Langille showed that Supervisor Bucher had allowed sheep where none were to have been permitted and that they had created "the appearance" of "utter destruction and injury."¹⁵⁹ For 1903, Langille recommended no sheep and only 1,000 cattle. An appeal by Bucher, supported by his replacement Dan S. Pack, argued that it "would be impossible to keep [the nearby livestock] . . . out." This led to the approval of 5,500 cattle and horses and 30,000 sheep.160 On the Grantsville Reserve, Albert Potter had recommended no more than 2,000 horses and cattle and no sheep. His recommendation with regard to the sheep was observed, but 2,500 horses and cattle were allowed.¹⁶¹ On the Aquarius Reserve, however, Inspector R.H. Charlton recommended 12,500 cattle and horses, but only 10,617 were admitted. 162 By 1904, in spite of Charlton's recommendation that none be allowed, however, 75,000 sheep grazed on the Aquarius.¹⁶³ On the Logan Reserve, Charlton at first recommended 25,000 head of sheep and 7,000 cattle and horses. The GLO disregarded this recommendation as well, but the final number was lower than had previously grazed.¹⁶⁴ Since the Pocatello Reserve had been created to protect the water supply, no sheep and only 482 cattle and horses were allowed to graze.¹⁶⁵

In retrospect, Pack and others were probably right in recognizing that it was difficult to control stockmen's access to the reserves, at least until attitudes disregarding damage to the land changed. Stockmen had access to congressmen who could in turn influence the Interior Department not to reduce numbers if the reductions caused what they perceived to be economic hardship. In 1901 a southern California Federal district court ruled that regulations restricting access were an illegal delegation of legislative authority to the executive. ¹⁶⁶ On the Fishlake reserve in early 1903 a Federal court in Utah ruled the same way in the case of U.S. v. Martinus. On the Fishlake, Frank Martinus brought his sheep into the reserve after Supervisor C.T. Balle had ordered him not to do so. Martinus had financial backing from the Utah Wool Growers Association, which opposed the rule forbidding sheep from grazing on the reserve while cattle and horses were allowed to do so. $167\,$

Following the Blasingame decision, the Justice Department recommended that forest supervisors secure injunctions through civil suits rather than charging criminal trespass.¹⁶⁸ The Federal courts declared the use of injunctions valid in the Dastervignes case in 1903, but such injunctions were difficult to secure. They seem to have had some effect since Pack secured one on the Payson reserve in 1903.¹⁶⁹

Perhaps the worst grazing conditions existed on the Manti reserve. Sanpete residents claimed that a million head of sheep had used the range before the reserve was created. In general, as with other sheep in Utah, they trailed from the west desert where they spent the winter onto the Wasatch plateau to graze during the summer. Some passed on into Idaho, Wyoming, or Colorado, and some went on to the east desert. In addition, transient herds trailed through the Manti into the east desert.¹⁷⁰

On the basis of Potter's evaluation and a subsequent investigation by R.H. Charlton, the GLO recommended in 1903 that 100,000 sheep and 15,000 cattle and horses be allowed on the Manti. Protests from local citizens and Senator Reed Smoot and a reconsideration by Albert Potter led to a recommendation of 175,000 sheep. Further pressure led to the approval for 1904 of 19,500 cattle and horses and 300,000 sheep. 171 Supervisor Jensen and his rangers had a great deal of difficulty keeping herds within even these seemingly generous limits.¹⁷² The one redeeming feature on the Manti reserve was the absolute closing of the forks of Manti Canyon to protect the city's water supply.¹⁷³

Perhaps the most salutary effects of grazing regulations under the Forestry Division were the imposition of quotas on number of animals allowed on the reserves and the closing of some extremely fragile areas like Manti Canyon. Although the permitted numbers were still large, by present standards, they were generally quite reduced from previous usage.

Other Aspects of Forest Reserve Administration

Special uses on the reserves covered a broad range of activities. Applications included constructing wagon roads, establishing road houses, hotels, and stores, and cutting hay. A number of reservoirs and canals were located on the forest reserves, subject to regulation by the forest officers and approval by the Interior Department.¹⁷⁴ Logan, UT, got permission to operate a power plant, including the dam and canal facilities, on the Logan Forest Reserve.¹⁷⁵ Boulder, UT, erected a schoolhouse on the Aquarius Reserve.¹⁷⁶ The Teton Telephone Company constructed and operated a telephone line through the Teton Reserve.¹⁷⁷ The GLO also approved an application to operate an art studio on the Teton reserve.¹⁷⁸

On the average, perhaps half of the petitions were granted.¹⁷⁹ The Interior Department rejected some applications, usually on the ground of lack of public need or because the applicants proposed an exclusively private use believed to be inconsistent with the public lands. A proposal to establish a "public stopping place" on the Uintah Reserve near Vernal, UT, was denied.¹⁸⁰ The Department also disapproved a private hunting and fishing resort at Big Springs, ID.¹⁸¹

Often, individuals and cities did engineering work under special use permits. This was especially true of road construction.¹⁸² On the Manti reserve, for instance, until December 1904 only 4 miles of road and an enclosure were constructed by forest officers; private parties had constructed virtually everything else.¹⁸³

Rangers did some engineering work on the reserves, but there appears to have been no contracting. Perhaps the major work done by forest officers was in helping to set some survey corners.¹⁸⁴ Officers did some work in clearing old trails and building new ones, constructing fire breaks, clearing debris from roads, and building bridges.¹⁸⁵

While the GLO perceived overgrazing and timber depredations to cause considerable damage, Forestry Division officials saw fire as the paramount danger, "in comparison with which damage from all other sources is insignificant."¹⁸⁶ An 1897 act was designed to help in the prevention of forest fires by authorizing the forest officers to post fire warning signs throughout the reserves and to investigate and report on the origin of fires.¹⁸⁷ By 1899, the GLO had developed a system of fire classification, including three classes: 1. small fires (usually campfires left unattended); 2. fires which had gained considerable headway; and 3. large fires requiring an extraordinary effort to extinguish.¹⁸⁸

By 1901, the GLO had issued specific regulations for handling fires and had begun keeping records. Although the GLO did not authorize rangers to spend any money in fighting fires, they were expected to take "intelligent and prompt action," then to notify the supervisor who was to arrange for payment. The statistics gathered in 1901 indicated that fires caused by campers and hunters were the largest single group. Next were locomotive and engine sparks.¹⁸⁹ In 1901, the USDA Forestry Bureau began an extensive study of the relationship between forest fires and reproduction.¹⁹⁰

Fire conditions in Region 4 were not particularly good, though they were not as bad as some other areas. In 1902, Albert Potter found a number of areas in the region which had been burned.¹⁹¹ Perhaps 1903 was the worst fire year during the period of GLO administration, since large fires on the Teton and Uintah Reserves burned 32,600 and 6,500 acres.¹⁹²

Supervisors were expected to use their ingenuity in fighting fires. In 1903, John Squires, supervisor of the Logan Reserve, complained that the only firefighting equipment he started with was a wet blanket. Quite inexperienced--he had been a barber for the past 35 years--he turned to the GLO manual. There he learned that he could use \$200 to purchase tools and hire firefighters. After the outbreak of a large fire, he gathered an untrained crew from the Logan LDS Fifth Ward and left for the fireline. Fortunately for the neophyte smoke chasers, a rainstorm quenched the fire. Squires seems to have spent the bulk of this time in connection with that fire in securing the money to pay the firefighters.¹⁹³

Although the proclamation of a reserve generally suspended all except pre-existing claims, it did not affect mining. The Organic Act had specifically prohibited the Federal Government from stopping "any person from entering upon such forest reservations for all proper and lawful purposes, including that of prospecting, locating and developing the mineral resources thereof." Thus, mining on the forest reserves went on as before .194 Another area of importance on the reserves under the GLO was the interrelated topics of recreation and wildlife management. In his 1891 report Bernard Fernow said that the forests should be objects of interest and places of "retreat for those in quest of health, recreation, and pleasure." Forest management, he said, "does not destroy natural beauty, does not decrease but gives opportunity to increase the game, and tends to promote the greatest development of the country."¹⁹⁵

By about 1900, the number of wildlife in the Western United States had deteriorated to perhaps its lowest point. As indicated in Chapter 1, certain areas were particularly hard hit. Catfish and carp tended to replace trout, because they could tolerate warm murky waters.¹⁹⁶ Hunting for hides, disregard of game regulations, and range depletion led to the decline of big game herds, especially in Utah.¹⁹⁷ Settlements in the Teton Basin and Jackson Hole occupied the former winter range of large elk herds. It was estimated that in the winter of 1897-98, "a thousand died from starvation in Jackson Hole."¹⁹⁸

The GLO responded to the game problem. By an act of 1899, forest officers were directed to "aid in the enforcement" of laws "in relation to the protection of fish and game." The Commissioner ordered forest officers to do everything possible to cooperate in prosecuting offenders, and in one case dismissed a forest ranger for violating State game laws.¹⁹⁹ A legal opinion held, however, that States had jurisdiction and that Federal officers could assist, not regulate.²⁰⁰

Local citizens showed a considerable interest in recreation and wildlife. Camping and summer resorts had developed in various canyons along the Wasatch Front,²⁰¹ and campers ascended to the wilderness of the Uinta Mountains.²⁰² An enterprising madam even brought her girls to Hatties Grove in Logan Canyon.²⁰³ Sportsmen's clubs in cities like Logan began to press for the enforcement of game laws and the promotion of recreational activity.²⁰⁴

In summary, by the time the GLO Forestry Division relinquished control of the forest reserves to the Forestry Bureau--renamed the Forest Service--in 1905, it had accomplished a great deal. It carried basic responsibility for setting patterns of resource management. Beginning with the establishment of the reserves, it succeeded in addressing--though not in solving--problems such as wasteful logging practices, excessive numbers of livestock on the reserves, the stabilizing of nearby communities by excluding transient herds, and the protection of watersheds. In setting these patterns, GLO personnel worked closely with USGS and Forestry Bureau employees.

Moreover, the GLO established the basic organization assumed by the Forest Service in 1905. Forestry Division personnel were generally industrious and competent. Recent research by Michael McGeary indicates, however, that many of the supervisors and inspectors who transferred to the Forest Service with the reserves left the organization within a few years. Moreover, the Forest Service grew very rapidly in its early years, leaving those who remained from the Forestry Division in a minority.²⁰⁵ Nevertheless, the GLO Forestry Division established patterns, some of which have continued to the present.



Figure 12--Boundary posting and surveying party of Geological Survey before 1910.

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the Forester in Agriculture Department Report until 1905 when they will be cited as Forest Service Report in Agriculture Department Report until 1927 when the Brigham Young University Library begins the separate series and they will be cited as Forest Service Report.) Note: with the 1902 report, the title of the agency was changed to "Bureau of Forestry." In 1905 it was changed again to "Forest Service," the title it has retained to the present. From 1899 through the 1934 report, the title of the report was Report of the Forester, from 1935 through 1976, the report was titled Report of the Chief of the Forest Service, from 1977 to the present it has been titled Report of the Forest Service.

- Steen, Forest Service, pp. 26-27; Rakestraw, Pacific Northwest, pp. 19-22; Frome, Forest Service, p. 14.
- 34. Steen, Forest Service, pp. 27-28; Frome, Forest Service, p. 14.
- 35. General Land Office Report, 1893, pp. 78-79.
- 36. Compare 26 Statutes at Large 1093 (1891) and 20 Statutes at Large 88 (1878).
- 37. See various annual reports of the General Land Office from 1883 through 1896.
- 38. General Land Office Report, 1891, p. 329.
- 39. <u>General Land Office Report</u>, 1892, pp. 46, 392; 1893, p. 76.
- 40. General Land Office Report, 1895, pp. 85 and 402.
- Charles Woolfenden to Commissioner of the General Land Office, October 2, 1894, Interior Department, Lands and Railroads Division, letters received, RG 48, National Archives, Washington, D.C. (hereinafter cited as ID, L and R, letters received): Silas W. Lamoreaux to Secretary of the Interior, October 9, 1896, ibid.
- J.L. Anderson, Special Report of Timber Cut from Mineral Land, May 21, 1895; Anderson to Commissioner GLO, September 26, 1895; and P.O. Puffer, H. Harry Harris, and George H. Leonard, Mineral Affidavit, September 14, 1895, ID, L and R, letters received.
- 43. Lamoreaux to Secretary of the Interior, October 9, 1896, ID, L and R, letters received.
- J.W. Judd to Judson Harmon, February 15, 1897, ID, L and R, letters received.
- 45. Binger Hermann to Secretary of the Interior, March 26, 1897, ID, L and R, letters received.
- 46. See for instance: Commissioner of the General Land Office to Secretary of the Interior, March 27, April 4, 6, May 29, June 4, 13, September 14, October 6, 12, 16, 23, December 7, 1896, January 30, 1897, ID, L and R, letters received.
- See for instance: Commissioner of the General Land Office to Secretary of the Interior, May 18, 23, July 9, 20, 31, 1896, ID, L and R, letters received.
- Steen, Forest Service, pp. 29-30; Edward A. Bowers to Secretary of the Interior, May 10, 1894, in Interior Department Report, 1894, p. lxxix.
- Edward A. Bowers to Secretary of the Interior, September 25, 1893, in <u>Interior Department</u> <u>Report</u>, 1894, p. lxxx; ibid., p. 95.

- 50. Lamoreaux to Secretary of the Interior, February 7, 1896, with attachments ID, L and R, letters received. The attachments include a copy of the McRae bill marked by Lamoreaux and other correspondence.
- 51. Interior Department Report, 1895, p. xxii.
- 52. Rakestraw, Pacific Northwest, p. 60.
- 53. Rakestraw, Pacific Northwest, p. 65; Ivan Sack, "History of the Toiyabe National Forest," 1897, n.d., Historical Files, Supervisor's Headquarters, Toiyabe National Forest, Sparks, Nevada. (Note: Each Forest Supervisor's headquarters had its own files including some historical files. Hereinafter, instead of the long citation, I will merely cite the name of the forest. In this case, then, the citation would be: Historical Files, Toiyabe).
- 54. David R. Francis to Grover Cleveland, February
 6, 1897, with enclosures, ID, L and R, letters
 received; see also Steen, Forest Service, pp. 32-33.
- 55. Ise, Forest Policy, pp. 131-34.
- 56. Rakestraw, Pacific Northwest, p. 61.
- 57. Ise, Forest Policy, pp. 137-40; Steen, Forest
- Service, pp. 134-36; "Remarks of Members of the Forestry Commission before the Honorable Secretary of the Interior," April 5, 1897, ID, L and R, letters received; Rakestraw, <u>Pacific</u> Northwest, p. 57.
- 58. Lee Mantle and Frank J. Cannon to the President, March 18, 1897, ID, L and R, letters received.
- 59. Charles D. Wolcott to Secretary of the Interior, January 31, 1898, ID, L and R, letters received.
- Annual Report of the United States Geological Survey, 1897-98 6 parts (Washington: GPO, 1898), 5: 191-211. (Hereinafter, these reports will be cited in this form: <u>Geological Survey Report</u>, 1898, 5:191-211.)
- 61. Geological Survey Report, 1898, 5:213-16.
- 62. Rakestraw, Pacific Northwest, pp. 62-63.
- Gifford Pinchot, "Report on the Forest Reserves," (MS, n.d., ca. December 1897), pp. 10, 34-36, ID, L and R, letters received; on Coville's work see: Rakestraw, Pacific Northwest, pp. 112-13; and William D. Rowley, U.S. Forest Service Grazing and Rangelands (College Station: Texas A&M University Press, 1985), pp. 32-35.
- 64. On the general situation see: Rowley, <u>Grazing</u>, pp. 15-16, 19-21.
- Lauritz Nielson, "Comments by Lauritz Nielson on 65. Changes and Some of their Causes in Ephraim Canyon," (MS, Ephraim, Utah, 1953), Folder 1-Reference File, Fiftieth Anniversary, Manti Division, 1953, Manti-LaSal; Marion P. Hunt, Range Report, Section V, Part 4, (MS, Blanding, Utah, 1935), Folder I-Reference File, LaSal Division, Range Management, 1925, 1935, 1939, Manti-LaSal; idem., Special Range Study, LaSal (MS, Blanding, 1935), ibid.; John E. Adams, "Statements of John E. Adams," (MS, Blanding, 1935), ibid.; E.L. Clark to Editor, Iron County Record, December 13, 1905, MS, Historical Files, Dixie; C.A. Mattsson, "A Few Observations Concerning Past and Present Conditions of Salina Creek Watershed and Valley Range," (MS, 1951),
Historical files, Fishlake; Charles S. Peterson, Look to the Mountains: Southeastern Utah and the LaSal National Forest (Provo, Utah: Brigham Young University Press, 1975), pp. 79-84, 102-03, 116-117; Albert R. Lyman, History of San Juan County, 1879-1917 (n.p., 1965), pp. 44-45; Charles S. Peterson and Linda E. Speth, "A History of the Wasatch-Cache National Forest," (MS, Report for the Wasatch-Cache National Forest, 1980), p. 186; Utah's First Forest's First 75 Years ([Provo, Utah: Uinta National Forest, ca. 1972]), p. 23; Victor K. Isbell, Historical Development of the Spanish Fork Ranger District ([Provo, Utah] Uinta National Forest, 1972), pp. 60-61; Interview with Delbert and Ora Chipman by James Jacobs, February 7, 1968, p. 1, Historical Files, Regional Office; Interview with J. Wells Robins by James Jacobs, June 27, 1968, p. 5, ibid.; Interview with Charles Redd by James Jacobs, March 30, 1968, pp. 2-3, ibid.

- Interview with Leonard Hay and William D. Thompson by James Jacobs, June 14, 1968, pp. 8, 14, Historical Files, Regional Office.
- L.S. Smart, Statement, in <u>Caribou History</u>, pp. 29-30; Eph Ricks, Statement, ibid., pp. 31-32; H.H. Thomson, Statement, ibid., pp. 33-34.
- 68. Elizabeth M. Smith, <u>History of the Boise National</u> Forest, 1905-1976 (Boise: Idaho State Historical Society, 1983), p. 91.
- 69. <u>History: Payette National Forest</u> (n.p.: Intermountain Region, Forest Service, n.d.), pp. 12-14.
- Ray Ivie, "Grazing on the Sawtooth National Forest and Some Forage Plants Thereon," (MS, 1911), pp. 1-2, File: D. Supervision-General Sawtooth.
- 71. John J. Dieringer and George E. Dieringer, "Statement of Range Conditions in Early Days" (MS, 1935), File: Appendix 2, History of Toiyabe NF, Toiyabe; Interview with George Nelson by George Gruell, 1966, File: Recreation, Land Uses, Fire Control, Personnel, Historical Files, Humboldt; Sid Tremewan, "Early Day Range, Livestock and Wildlife Observations," pp. 1-2, ibid.; Interview with C. Sydney Tremewan by Victor Goodwin and George Gruell, 1966, pp. 2-3, MS, Papers of Floyd Lewis, Paris, Idaho; L.E. McKenzie to A.R. Torgerson, January 12, 1942, File: Range Management, Timber Management, Wildlife Management, Engineering, Historical files, Humboldt; George [illegible] to Mr. Olson, February 8, 1933, ibid.; William A. Marsh, "An Article Relative to the Public Range," (MS, ca. 1928-38), ibid.; J.H. Eager to George C. Larson, October 24, 1935, ibid.; Victor O. Goodwin, "The Humboldt Forest: A Kaleidoscope of Men and Events in the Service of the American People," n.d., File: Recreation, Land Uses, Fire Control, Personnel, Historical Files, Humboldt.
- 72. Dana L. Yensen, "The 1900 Invasion of Alien Plants into Southern Idaho," <u>Great Basin</u> <u>Naturalist</u> 41 (June 30, 1981): 176-83 (copy, historical files, Payette).

- 73. Steen, Forest Service, p. 65; Rules and Regulations Governing Forest Reserves (Washington: Government Printing Office, 1897), pp. 5-6.
- 74. General Land Office Report, 1898, pp. 99-100; Ise, Forest Policy, p. 173.
- 75. Rowley, Grazing, pp. 38-39.
- 76. Binger Hermann to Secretary of the Interior, December 17, 1898, ID, L and R, letters received.
- 77. Wool Growers' Protective Association, Uinta County, Wyoming, and Utah Wool Growers Association to Secretary of the Interior, October 8, 1898, ID, L and R, letters received.
- 78. John Henry Smith and Joseph F. Smith to Secretary of the Interior, July 5, 1899, ID, L and R, letters received.
- 79. Binger Hermann to Secretary of the Interior, July 13, 1899, ID, L and R, letters received.
- 80. Hermann to Secretary, February 8, 1900, ID, L and R, letters received.
- 81. Bucher to Hermann, November 29, 1899, ID, L and R, letters received.
- "Amendment to Rules and Regulations Governing Forest Reserves," August 5, 1899, ID, L and R, letters received; for the general procedure used in changing the regulations see: <u>General Land</u> <u>Office Report</u>, 1899, pp. 105-108.
- "Amendment to the Rules and Regulations Governing Forest Reserves," December 23, 1901, ID, L and R, letters received.
- 84. Robins interview, pp. 6-8.
- 85. "A Petition for Fish Lake Forest Reservation," July 1, 1896, ID, L and R, letters received. The petition includes 114 names, most of them from the Sevier valley area, but also including the governor of the state, the chief justice of the State Supreme Court and a number of other public officials.
- 86. J.H. Fimple to Secretary of the Interior, ID, L and R, letters received.
- 87. Hay-Thompson interview, p. 8.
- C. Syd Tremewan, "Information, Historical" (MS, ca. 1958), File: Range Management, Timber Management, Wildlife Management, Engineering, Historical Files, Humboldt.
- 89. <u>Report of the Forester in Agriculture Department</u> <u>Report</u>, 1891, pp. 225-27.
- 90. Interior Department Report, 1894, pp. lxxxiv-lxxxvi.
- Gifford Pinchot to Secretary of the Interior, December 15, 1897, ID, L and R, letters received; Pinchot, "Report on the Forest Reserves"; ibid. Steen, Forest Service, p. 51.
- 92. <u>General Land Office Report</u>, 1901, p. 106; Lawrence W. Rakestraw, A History of the United States Forest Service in Alaska (Anchorage, Alaska: United States Forest Service, et al., 1981), p. 14.
- 93. Hermann to Secretary, July 17, 1902, and Acting Secretary to Commissioner, July 24, 1902, ID, L and R, letters received.
- 94. Adolph Jensen to Commissioner, October 2, 1904, Letterpress book no. 3, historical files, Manti-LaSal.

- General Land Office Report, 1898, p. 91; 1899, p. 397; 1900, p. 388; 1901, pp. 132-33; and 1904, p. 95. 629.
- 96. W.A. Richards to Secretary, September 4, 1902, ID, L and R, letters received.
- 97. Hermann to Secretary, December 14, 1901, ID, L and R, letters received; some of the correspondence all from ibid. includes: Pinchot to Secretary of the Interior, October 31, 1901; Secretary to Commissioner GLO, November 8, 1901; Hermann to Secretary, April 2, 1902.
- 98. Ise, Forest Policy, p. 143.
- 99.
- Ise, Forest Policy, p. 190. Clipping, November 5, 1954, Folder: Manti File 100. FD 18, Manti-LaSal.
- 101. Salt Lake Tribune, December 20, 1953, in Folder: Manti File FD 18, Manti-LaSal.
- 102. J.W. Humphrey to District Forester, August 14, 1928, Folder: Manti File FD 18, Manti-LaSal; Forest Inspector to Commissioner, July 19, 1903, Letterpress Book July 19, 1903, to October 28, 1903, Historical Files, Manti-LaSal.
- 103. W.A. Richards to Special Agents and Registers and Receivers, April 18, 1904, in Letterpress Book No. 2, Historical files, Manti-LaSal.
- Utah's First Forest's First 75 Years ([Provo, 104. Utah: Uinta National Forest, ca. 1972), p. 61; Binger Hermann to Secretary, April 10, 1902, and Secretary to H.D. Langille, April 28, 1902, ID, L and R, letters received. Bucher's resignation, dated April 15, 1902, came after the initial charges, but before the completion of the full investigation.
- 105. Jensen to Charlton, May 24, 1904, Letterpress Book No. 2, Historical File: Manti-LaSal; on the problems of this ranger see: Jensen to John L. Bench, May 18, 1904, and Jensen to Commissioner, May 23, 1904, ibid.
- 106. Jensen to Commissioner, Letterpress Book No. 3, Manti-LaSal.
- 107. This process is summarized in Charles D. Wolcott to Secretary, February 18, 1902; Binger Hermann to Secretary, March 17, 1902; Hermann to Secretary, March 19, 1902; Thomas Kearns to the President, March 18, 1902; George Cortelyou to E.A. Hitchcock, March 20, 1902; and Acting Secretary to Theodore Roosevelt, March 24, 1902, ID, L and R, letters received.
- 108. Hermann to Secretary, March 17, 1902, ID, L and R, letters received.
- 109. Wolcott to Secretary, April 18, 1902, ID, L and R, letters received.
- 110. For a thorough examination of Potter's survey see: Charles S. Peterson, "Albert F. Potter's Wasatch Survey, 1902: A Beginning for Public Management of National Resources in Utah," Utah Historical Quarterly 39 (1971): 238-53.
- Albert F. Potter, "Diary of Albert F. Potter, July 111. 1, 1902, to November 22, 1902," (Typescript, historical files, Fishlake), p. 37.
- 112. Potter, Diary, p. 38.
- 113. Potter, Diary, p. 13.
- 114. Wolcott to Hitchcock, April 18, 1902, ID, L and R, letters received.

- 115. Potter, Diary, pp. 1, 2, 15, 18, 24, 32, and 41 (for those who favored); 20, 50, 51, 53 (for those who opposed). In his study of the LaSal National Forest, Charles Peterson argues that cattlemen, farmers, and townspeople generally favored the reserves and sheepmen generally opposed. Peterson, Look to the Mountains, pp. 115-16. My own reading of the evidence leads me to believe that this was not uniformly the case, especially where transient herds interfered with local ranchers. William Thompson said that they resisted the idea at first, but decided it was a good thing because it created order on the range. Hay-Thompson interview, p. 11. Delbert Chipman of American Fork said stockmen were somewhat apprehensive, but they knew some regulation was needed. Chipman interview. The Robins and other examples of sheepmen anxious for the reserves have been cited previously.
- 116. Potter, Diary, pp. 18, 20, 28.
- 117. John W. Springer to E.A. Hitchcock, March 29, 1902, ID, L and R, letters received; Utah Legislature, House Joint Memorial, March 12, 1903, ibid.
- 118. Petition of citizens of Pocatello, May 27, 1903; C.L. Hendershot to Commissioner, May 27, 1903; W.L. Richards to Sec. of Interior, September 3, 1903; the petition had the approval of both Senators Weldon Heyburn and Fred T. Dubois and Congressman Burton L. French; ID, L and R, letters received.
- 119. F.V. Wilcox, "Proposed Extension of the Yellowstone and Teton Forest Reserves," (MS, 1901), File: LP Boundaries (Wyoming)-Bridger, 1901-1911, Historical Files, Regional Office, from the Denver Federal Records Center.
- 120. Binger Hermann to Secretary of the Interior, October 22, 1902, ID, L and R, letters received.
- 121. General Land Office Report, 1903, p. 319, 567; 1904, pp. 627-29.
- 122. Rakestraw, Alaska, p. 12.
- 123. Pinchot to Secretary of Agriculture, December 11, 1899, ID, L and R, letters received; James Wilson to Secretary of the Interior, December 12, 1899, with Pinchot's memo attached and handwritten postscript. Ibid. Report of the Forester, in Agriculture Department Report, 1902, pp. 110 and 117.
- 124. Hermann to Secretary, February 3, 1900, ID, L and R, letters received.
- 125. Hermann to Secretary, January 21, 1902, and "Circular: Sale of Timber in Forest Reserves," January 22, 1902, ID, L and R, letters received.
- 126. Hermann to Secretary, December 5, 1901, ID, L and R, letters received.
- 127. Hermann to Secretary, October 25, 1899, ID, L and R, letters received; E.A. Hitchcock to Assistant Attorney General, November 20, 1899, ibid.; Willis Van Devanter to Secretary of the Interior, December 21, 1899, ibid.; "Rules and Regulations Governing Forest Reserves," (draft, April 1900), ibid.
- 128. Hermann to Secretary, January 14 and 17, 1902, ID, L and R, letters received.

- 129. Mondell to Hitchcock, October 1, 1901, ID, L and R, letters received; Hermann to Secretary, December 28, 1901, ibid.; Hitchcock to President pro tempore of the Senate, January 6, 1902, ibid. The rule was modified in 1898 for timber harvested from the open public lands near the Idaho-Wyoming border, but it did not apply to forest reserve timber. Hermann to Secretary, July 20, 1898, ibid.
- 130. General Land Office Report, 1903, p. 330.
- 131. General Land Office Report, 1903, pp. 575-76; 1904, pp. 634-35.
- 132. See especially case file 4643/1902, especially W.A. Richards to Secretary, April 15, 1904, which summarizes the case; case file 514/1900, especially the summary in Binger Hermann to Secretary, June 26, 1902; and undated memo of H.D. Langille, in file 9296/1902, ID, L and R, letters received.
- See case file 259/1900 especially Binger Hermann to Secretary, July 12, 1900; W.A. Richards to Secretary, August 18, 1903; and Files 1419/1902, 6371/1901, and 506/1904, ID, L and R, letters received.
- See files: 3017/1900, 1835/1900, 1170/1902, 2509/1902, and 5511/1902, ID, L and R, letters received.
- 135. See files: 2622/1902 and 4791/1902, ID, L and R, letters received.
- Files 3556/1903, 506/1904, and 2334/1904, ID, L and R, letters received.
- 137. W.A. Richards to Secretary, August 18, 1902, and the remainder of file 2459/1900, ID, L and R, letters received; H.D. Langille, undated memo in file 2301/1902, ibid.; Hermann to Secretary, June 27, 1902, ibid.
- 138. On the Aquarius Reserve see files 2333/1904, 2337/1904, and 2538/1904, ID, L and R, letters received; on the Manti Reserve see: files 4214/1903, 4977/1903, 1713/1904, 2311/1904, 2330/1904, 3216/1904, 4467/1904; see also Jensen's correspondence in Letterpress books, Historical Files, Manti-LaSal. Examples of instructions to ranges include Jensen to D.H. Williams, August 5, 1903; idem. to Parley Christiansen, August 11, 1903; idem. to D.H. Williams, September 9, 1903; idem. to Williams, September 28, 1905; idem. to Williams, October 2, 1903; in Letterpress Book, July 19 to October 28, 1903, Historical files, Manti-LaSal; and idem. to B. Kenner, May 21, 1904, Letterpress Book, No. 2, ibid.
- 139. Hermann to Secretary of the Interior, March 9, 1900, ID, L and R, letters received.
- 140. Hermann to Secretary, November 28, 1902, and Hitchcock to Commissioner, December 3, 1902, ID, L and R, letters received.
- 141. Peterson, "Wasatch-Cache," p. 184.
- 142. Hermann to Secretary, January 18, 1902, ID, L and R, letters received.
- 143. Rowley, Grazing, pp. 39-40.
- 144. "Circular: Stock Grazing in Forest Reserves," January 8, 1902, ID, L and R, letters received.

- 145. Hermann to Secretary, January 18, 1902; and Secretary to Commissioner, February 8, 1902, ID, L and R, letters received.
- 146. Hermann to Secretary, October 20, 1892; and Secretary to Commissioner, October 25, 1902, ID, L and R, letters received.
- 147. Hermann to Secretary, October 24, 1902, ID, L and R, letters received.
- 148. Rowley, Grazing, p. 47.
- 149. Secretary to Commissioner, May 27, 1902, ID, L and R, letters received; and idem to idem, June 18, 1902, ibid.
- 150. Hermann to Secretary, May 31, 1902, ID, L and R, letters received.
- 151. Hermann to Secretary, July 21, 1902, and Hermann to A.A. Anderson, July 22, 1902, ID, L and R, letters received.
- 152. W.A. Richards to Secretary, April 24, 1983 and Secretary to Commissioner, April 30, 1903, ID, L and R, letters received.
- 153. General Land Office Report, 1904, p. 629.
- 154. Hermann to Secretary, April 22, 1902, ID, L and R, letters received.
- 155. J.H. Fimple to Secretary, May 11, 1903, ID, L and R, letters received; W.A. Richards to Secretary, April 2, 1903, ibid.
- 156. General Land Office Report, 1904, p. 629.
- 157. Hermann to Secretary, March 19, 1902, ID, L and R, letters received; and Acting Secretary to Commissioner, March 20, 1902, ibid.
- 158. Commissioner to Secretary, October 25, 1902, ID, L and R, letters received; and Secretary to Commissioner, October 28, 1902, ibid.
- 159. Hermann to Secretary, October 2, 1902, ID, L and R, letters received.
- 160. J.H. Fimple to Secretary, June 5, 1903; W.A. Richards to Secretary, April 30, 1904; and Acting Secretary to Commissioner, May 3, 1904, ID, L and R, letters received.
- 161. J.H. Fimple to Secretary, June 9, 1904; Acting Secretary to Commissioner, July 11, 1904, ID, L and R, letters received.
- 162. W.A. Richards to Secretary, April 27, 1904; idem to Secretary, May 19, 1904; and Acting Secretary to Commissioner, May 24, 1904, ID, L and R, letters received.
- 163. General Land Office Report, 1904, p. 629.
- 164. See file 146723/1903, ID, L and R, letters received.
- 165. General Land Office Report, 1904, p. 629.
- 166. United States vs. Blasingame (1900) copy in ID, L and R, letters received.
- 167. "Memorandum Concerning Grazing in Fish Lake Reserve," July 14, 1902, ID, L and R, letters received.
- 168. <u>General Land Office Report</u>, 1901, pp. 131-32; In a later reminiscence, Dan Pack, a ranger on the Uinta Forest Reserve remembered that he had thought of the idea of initiating injunctions in 1903. Since instructions had been issued by the Justice Department in 1901, it seems highly unlikely that the idea originated with Pack. <u>Utah's First</u>, pp. 22-23.

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- U.S. v. Dastervignes; see General Land Office Report, 1903, p. 325; Utah's First, pp. 22-23. 169.
- Peterson, Look to the Mountains, p. 115. 170.
- 171. General Land Office Report, 1904, p. 629. See file 3640/1903, ID, L and R, letters received.
- 172. See numerous letters in Letterpress Books (1903-05), Historical files, Manti-LaSal.
- 173. Secretary to Commissioner, August'11, 1903, ID, L and R, letters received.
- 174. A.W. Jensen to Parley Christiansen, September 2, 1905, Jensen to Commissioner, September 12, 1903, Jensen to Edward H. Clarke, September 14, 1903. Letterpress book July 19, 1903, to October 28, 1903, Historical Files, Manti-LaSal; see also files 2607/1903, 3629/1904, ID, L and R, letters received.
- 175. Secretary to Joseph Howell, December 14, 1903, ID, L and R, letters received.
- 176. Secretary to Commissioner, August 26, 1904, ID, L and R, letters received.
- 177. Secretary to Commissioner, March 31, 1903, ID, L and R, letters received.
- 178. General Land Office Report, 1900, p. 393.
- 179. Interior Department Report, 1903, p. 21.
- Acting Secretary to Commissioner, July 19, 1902, 180. ID, L and R, letters received.
- 181. Secretary to Commissioner, March 21, 1904, ID, L and R, letters received.
- See for instance, A.W. Jensen to Commissioners 182. of San Pete County, August 5, 1903, Letterpress book, July 19, 1903, to October 28, 1903, Historical Files, Manti-LaSal.
- 183. Jensen to Commissioner, December 3, 1904, Letterpress book no. 3, Historical Files, Manti-LaSal.

- 184. Jensen to Commissioner, March 26, 1904, Letterpress book no. 2, Historical Files, Manti-LaSal.
- 185. General Land Office Report, 1901, p. 136.
- General Land Office Report, 1898, p. 97. 186.
- 187. General Land Office Report, 1897, pp. 80-81.
- 188. General Land Office Report, 1899, p. 103.
- 189. General Land Office Report, 1901, p. 134.
- Report of the Forester in Agriculture Department Report, 1901, p. 332; 1902, p. 124. Peterson, "Wasatch-Cache," pp. 147-48. General Land Office Report, 1903, p. 574. Peterson, "Wasatch-Cache," p. 148. 190.
- 191.
- 192.
- 193.
- 194. Secretary to Commissioner, November 21, 1903, ID, L and R, letters received.
- 195. Report of the Forester in Agriculture Department Report, 1891, pp. 225-26. Lee E. Yeager, "Progress in Forest-Wildlife
- 196. Management," in Henry Clepper and Arthur B. Meyer, eds., American Forestry: Six Decades of Growth (Washington, D.C.: Society of American Foresters, 1960), p. 125.
- Isbell, <u>Historical</u>, <u>Spanish Fork</u>, p. 118; Peterson, Look to the Mountains, p. 193; <u>Utah's First</u>, p. 17. 197.
- 198. Geological Survey Report, 1898, 5:211.
- General Land Office Report, 1901, p. 136. 199.
- 200. [F.E. Hutchins], "The Power of Congress to Regulate the Killing of Game in Forest Reserves Within States," ID, L and R, letters received.
- Peterson, "Wasatch-Cache," p. 247. 201.
- Utah's First, p. 16. 202.
- 203. Peterson, "Wasatch-Cache," p. 250.
- Peterson, "Wasatch-Cache," p. 250. 204.
- 205. Mike McGeary to Dennis Roth, October 19, 1984, copy in the author's possession.

Chapter 3 The Beginnings of Forest Service Resource Administration in the Intermountain West: 1905 to 1909

Transfer From Interior to Agriculture

As early as 1899 the McKinley administration had considered transferring the forest reserves from the Interior to the Agriculture Department.¹ Early in 1901, the House Agriculture Committee debated the transfer, but the matter came up too late for floor consideration. In the absence of congressional action, the departments worked out a formal agreement for a division of labor by which the GLO administered the reserves, the Forestry Bureau directed the technical aspects of investigation and planning, and the USGS made surveys.²

In December 1901, Interior Secretary Hitchcock formally recommended the transfer. A 1902 bill proposed to effect the change, reserve by reserve, as the boundaries were surveyed and land claims settled. GLO Commissioner Hermann and several congressmen, including Frank Mondell of Wyoming, opposed the bill, since it seemed to them to promote duplication of effort, and, although both Secretaries and the President supported the bill, it did not pass.³

By early 1905, conditions had changed. William A. Richards of Wyoming had replaced Hermann as commissioner; many in the West, particularly those in mining and grazing, and Mondell, favored the transfer.⁴ Many had come to realize that the existing arrangement fragmented responsibility while joining administration and expertise in a single department would overcome this deficiency.⁵ With this support, on February 1, 1905, President Roosevelt approved the transfer of all functions except cadastral surveys and land disposal. On July 1, the Bureau of Forestry became the United States Forest Service.⁶

The popular appeal of the Forest Service grew, in part, because Pinchot supported resource use under utilitarian conservation rather than preservation as game reserves or public playgrounds. In various addresses and most particularly in a letter which he wrote for Agriculture Secretary James Wilson's signature outlining his duties as Chief Forester, he emphasized that "the resources of forest reserves are for use ... under such restrictions only as will insure the permanence of these resources." Moreover, he wrote, "the continued prosperity of the agricultural, lumbering, mining, and livestock interests is directly dependent upon a permanent and accessible supply of water, wood, and forage, as well as upon the present and future use of these resources under businesslike regulations, enforced with promptness, effectiveness, and common sense ... Where conflicts exist they must be decided for the greatest good of the greatest number in the long run."⁷

Creation of New Reserves

Creation of reserves accelerated under the Forest Service. Between 1905 and 1907, when they were redesignated "National Forests" the acreage in the United States increased two and a half times, from 63 million to 151 million acres.⁸ Although this growth may seem excessively rapid, much of it consisted of completion of work begun under the GLO.

Many of the reserves in Utah derived from proposals based on the Potter survey of 1902 or on local initiatives to protect watersheds. The best examples from the Potter group are perhaps the Sevier and Beaver. The former, proclaimed May 12, 1905, had been recommended early in 1903, but was held up apparently because of a protest by citizens of Beaver, UT, and the need to deal with State land enclosed within the proposed reserves.⁹ The Beaver was proclaimed January 24, 1906. 10 The Dixie Reserve, also delayed until 1905, was established principally to preserve "the water supply of St. George and neighboring towns," and the future potential timber supply.¹¹ Citizens of Fillmore wanted to guard their watershed, but the GLO put this reserve on hold in 1903 at the request of the Geological Survey so Henry Gannett could complete "a comprehensive plan of dealing with the whole subject of water protection and sheep grazing in Utah." The Fillmore Reserve was not established until 1906.12

Many other reserves in Utah were not part of the Potter survey. These included the Vernon Reserve in Tooele County created in 1904 for watershed protection.¹³ The 1906 proclamation of the La Sal Reserve resulted from an examination made by Inspector Robert R.V. Reynolds in 1904.¹⁴ Creation of the Monticello Reserve in southeastern Utah had been considered as early as 1902, largely at the instigation of the Geological Survey, since Henry Gannett, who had explored the area with John Wesley Powell, knew it quite well. The actual proclamation in 1907, however, awaited a petition from people in the area and an examination by R.B. Wilson.¹⁵ Delay in the creation of the La Sal and Monticello reserves apparently resulted from initial lack of interest on the part of most people and opposition from sheepmen in the region.

A number of reserves in Idaho were created to protect watersheds and regulate grazing, and only incidentally to protect timber lands. A 1905 addition to the Yellowstone Reserve above the Teton Basin and Swan Valley and the designation of the Henrys Lake, Cassia, and Challis reserves are examples.¹⁶

The old Sawtooth, Weiser, and Payette reserves were originally examined by Forestry Bureau personnel in 1904. Although protection of stockmen from "alien" sheep and overgrazing with its consequent watershed and forest damage were primary motives, the examiners also recognized the timber production potential. Cutover forests on the Weiser were reported "in a very poor condition."¹⁷ while acquisition of "timber lands for speculation" had begun to threaten the remaining uncut timber areas and the Forest Service feared that the results "would be most unfortunate for future consumers in the surrounding valleys and especially so for the resident miners."¹⁸ The Payette Lumber Company, a Weyerhaeuser subsidiary, had acquired or leased timbered foothills above Long Valley.¹⁹ The proposed Sawtooth Reserve contained more than 1.3 million acres of commercial forest.²⁰

The reserves of Nevada were created principally to protect watersheds from overgrazing or to promote an orderly use of scarce pinyon and juniper needed for mining. A report by Franklin W. Reed on the proposed Ruby Mountain Reserve in 1905 emphasized the importance of watershed protection and the virtual lack of any commercial timber.²¹ Reports on the Monitor and Toiyabe reserves emphasized the need to regulate use by mining companies to prevent "friction that may arise from such source."²² In 1906, an estimated 96,000 transient sheep ranged the length of the Toiyabe Range, eliminating access by local ranchers.²³

As executive proclamation of the reserves continued, people in the West divided sharply on Forest Service management practices.²⁴ Generally favoring Pinchot's approach, which included conservation coupled with development and consideration of state interests, were senators such as Reed Smoot of Utah, Francis E. Warren of Wyoming, Key Pittman of Nevada, and Fred T. Dubois of Idaho. Senators opposing virtually all FS regulation included Weldon B. Heyburn of Idaho, John F. Shafroth of Colorado, and Clarence D. Clark of Wyoming.

As chief spokesman for the opponents, Heyburn attacked Pinchot and the policy of withdrawing lands for forest reserves. Denying that the volume of timber was diminishing, Heyburn argued that these forests ought to be open to unrestricted access. These lands belonged to all the people, Heyburn said, and the Federal Government had no right to limit use.

Smoot on the other hand feared destruction of timber resources through indiscriminate use. Free use, he pointed out, had destroyed forests in States like Wisconsin. Smoot agreed with Pinchot that the policy of controlled access provided businesslike and economical management.

A clear division came in consideration of the Agricultural Department Appropriations Act of 1907. The Delegations of Oregon, Idaho, Montana, Wyoming, and Colorado insisted upon enacting an amendment prohibiting the President from creating any forest reserves in their States without congressional approval. He could still proclaim reserves in Utah, California, Washington, and Nevada without such concurrence.

Decentralization and Reorganization

As the Forest Service continued the creation of forest reserves within Region 4 it also took steps toward greater decentralization. In 1906, after consultation with Henry Gannett, Frederick E. Olmsted, and others, Pinchot decided to organize the field service into inspection districts. He announced that as rapidly as possible the service expected to reduce the duties of the Washington Office to those of general administration, scientific investigations, inspections, and record keeping.²⁵ The 1906 configuration included three districts, each headed by a chief inspector. They were: the Northern, including national forests in Idaho, Montana, Wyoming, South Dakota, and Minnesota; the Southern, including national forests in Utah, Colorado, New Mexico, Arizona, Nebraska, and Oklahoma; and the Western, including forests in Washington, Oregon, California, and Alaska. At the same time he created an inspection section in the Washington Office. Inspectors in charge of the districts reported directly to the Chief Forester. Inspectors conducted supervisor's meetings and assessed and reported on the efficiency and integrity of person-nel.²⁶

In 1907, the Service expanded the number of inspection districts to six. Headquarters were located at Missoula, Denver, Albuquerque, Salt Lake City, San Francisco, and Portland. District 4 with headquarters at Salt Lake City had jurisdiction over southern Idaho, western Wyoming, eastern Nevada, Utah, and northern Arizona.²⁷

While his principal responsibility was inspection, Chief Inspector Raymond E. Benedict at Salt Lake City also worked with supervisors and proposed new forests and reorganizations of existing national forests within the district. The final decisions in each case were made by Pinchot.²⁸ Benedict also worked with forest supervisors in public relations efforts, such as holding meetings to promote understanding between communities and the Forest Service.²⁹

Working under Washington's instructions, Benedict began the reorganization of the national forests within the region. The first steps included placing adjoining small forests under a single supervisor, and dividing some of the larger forests for administrative efficiency and convenience (Table 3).³⁰

The organization of inspection districts served principally as a prelude to the more extensive and thorough reorganization that took place the next year. On December 1, 1908, the inspection districts were recast into field headquarters called "districts" under the direction of a district forester. Each district was organized under substantially the same system as the Washington Office, with experts supervising the law office and four divisions: operations (including organization, occupancy, engineering, accounts, and maintenance), grazing, products, and silviculture (including timber sales, planting, and silvics).³¹

The Forest Service established headquarters for districts 1 through 3 and 5 and 6 in the cities where the inspection district offices had been located. The situation in District 4, however, was complicated because of a Washington Office decision to decentralize supply operations as well. Prior to this time, the service had purchased supplies and filled orders from the Washington office. This practice caused inordinate delay since all the national forests were then located in the Far West. It was expected that locating a supply depot at a rail point in the West would provide more efficient and prompt service.

The Forest Service administration decided to link the headquarters of District 4 with the location of the supply depot for all six districts, and the advantage of Ogden as a shipping point led to its choice as the district office. After investigating the possibility of Salt Lake City, the administration realized that delays in shipments of broken carloads would result and that some shipments would have to be rebilled. Moreover, living expenses, drayage, and storage costs were higher in Salt Lake, the city lacked warehouse space, and it had experienced a recent labor shortage. On the other hand, the railroads had designated Ogden as the starting point for shipments to the east, west, and north, and there would be no additional shipping charges.³²

The final recommendation on district headquarters's location was left to Clyde Leavitt, then serving as chief of the Branch of Operations in Washington.³³ After an investigation, he recommended the acceptance of an offer made by Ogden businessman Fred J. Kiesel to construct a new building at the corner of Lincoln Avenue and 24th Street that could house both the supply depot

Table 3---Configuration of Inspection District 4 at its reorganization in 1907

Headquarters	Inspector or Supervisor
Salt Lake City, Utah	Raymond B. Benedict (Chief Inspector)
Fredonia St. George, Utah	Selden F. Harris Chas. C.Y. Higgins?
Logan, Utah Afton, Wyoming Afton, Wyoming Pocatello Pocatello Pocatello St. Anthony St. Anthony St. Anthony St. Anthony Salmon Salmon Mackay Van Wyck Boise	W.W. Clark J.T. Wedeneyer J.T. Wedeneyer P.T. Wrensted P.T. Wrensted P.T. Wrensted Homer E. Fenn Homer E. Fenn Geo. G. Bents Geo. G. Bents Guy B. Mains unknown
Hailey	Emil Grandjean
Las Vegas Las Vegas Elko Blko Austin Austin Austin	David Bernett David Barnett Clarence N. Woods Clarence N. Woods Mark G. Woodruff Mark G. Woodruff Mark G. Woodruff
Pinedale Jackson Aftoa Aftoa	unknown Robert E. Miller J.T. Wedemeyer J.T. Wedemeyer
Logan Becear Beaver St. George Nephi Salins Salins Salina Grantsville Grantsville Ephraim Salt Lake City Salt Lake City Panguitch Provo	W.W. Clark Geo. H. Barney William Hurst Ches. C.Y. Higgins Dan S. Pack Dan S. Pack N.E. Snell N.E. Snell C.F. Cooley C.F. Cooley Adoloh W. Jensen E.H. Clarke E.H. Clarke Timothy C. Hoyt Willard I. Pack
	Headquarters Salt Lake City, Utah Predonia St. George, Utah Logan, Utah Afton, Wyoming Pocatello Pocatello Pocatello Pocatello St. Anthony St. Anthony St. Anthony St. Anthony Salmon Salmon Salmon Mackay Van Wyck Boise Hailey Las Vegas Las Vegas Las Vegas Elko Elko Austin Austin Austin Austin Austin Austin Austin Salion St. George Nephi Salina Salina Salina Salina Salina Salina Salina Salina Salina Salina Salina Salina Salina Salina Sali Lake City Provo

Source: James B. Adams to R.E. Benedict, May 25, 1907, File: O- Supervision-General, 1907-1915, Regional Office Records, RG 95, Denver FRC; Charles S. Peterson, <u>Look to the Hountains: Southeastern Utah and the LeSel National Forest</u> (Provo, Utah: Brigham Young University Press, 1975); and comments by Gordon Watts.



Figure 13---Map of district 4 of the National Forest System, 1908.

and the district headquarters for 5 to 6 years, after which Leavitt expected a Federal building to be completed into which the district office could move. In the meantime, Leavitt located the office--his office, since he was appointed district forester--in temporary quarters on the fourth and fifth floors of Ogden's First National Bank building at 2384 Washington Boulevard, approximately where ZCMI is now located.³⁴ The arrangement with Kiesel allowed the Forest Service to set minimum construction standards and a rental price of \$425 per month for 10 years on an annual lease.³⁵

Much more thoroughgoing than the organization of inspection districts, the 1908 district reorganization involved a qualitative as well as a quantitative change from the GLO system. The GLO had used an inspection system, but under the Forest Service system all correspondence, reports, and papers that supervisors previously sent to the Washington Office were handled at district headquarters. Moreover, the district foresters, unlike the inspectors, could exercise considerable administrative discretion without Washington Office clearance. In order to facilitate this, administrative and financial records and clerical force were transferred from Washington to the districts.³⁶

At the same time, the Service continued the rationalization of its local organization, begun under the inspection district system, by combining forests, transferring some between regions, and changing forest headquarters (table 4).

In addition to shifting their line of accountability from the Washington Office to the district forester, the decentralization had some Impact on the work of supervisors and rangers as well. Paperwork increased, both for supervisors and rangers, as they worked on surveys for administrative withdrawals and tried to settle range disputes. Supervisors became more responsible for policy judgments.³⁷ Previously, supervisors had worked with the chief inspector in making recommendations on pay, but, with the change, they made the recommendations to the district forester themselves, after which he exercised his judgment.³⁸

Rangers' duties changed and expanded. Previously they were assigned to districts organized along the line of the grazing allotments. With decentralization they worked on trails, roads, and fences, built ranger stations, strung telephone lines, and fought fires. Under the GLO they had done little timber management, since all sales had been made on application of private parties, and the Forestry Bureau had drafted working plans. Under decentralization, they drafted their own timber sales plans after conducting a timber reconnaissance.

Duties, Salary, and Training

Rangers, at that time, were expected to furnish their own board and lodging, plus their horses, saddle, pack outfts, tent, and wagons and harnesses when necessary.³⁹ One estimate set the annual expenses for all these items at between \$400 and \$485 per year. Most rangers who talked in retrospect about the system said their salaries were about \$60 per month or \$720 per year; however, records indicated the salaries ranged from about \$900 per year for an assistant forest ranger to \$1,200 for a ranger. A deputy forest supervisor earned \$1,300 to \$1,400 per year, the supervisor got \$1,600, and the clerk earned \$1,000 per year. Orrin C. Snow believed that the salaries compared "favorably, or probably exceeded slightly that which could be earned by each working for wages outside the Service, except in the case of rangers who are on a salary of \$900 per annum." The reason for the exception was that, since rangers had to work full time in the field during the summer, they could not operate another business on the side as many others with similar capabilities did.⁴⁰

Since most supervisors, deputies, and rangers joined without prior formal training, the Service took measures to educate them. In 1909, of 192 supervisors and deputies in the entire Forest Service only 48 or 25 percent had any technical training. The percentage among rangers seems to have been even lower. In order to provide needed expertise, the Service instituted a short course in forestry at Utah State and Colorado State agricuitural colleges in 1908 and at the University of Washington in 1909.⁴¹ In 1908, also, the Service began 5-week in-service training sessions in Washington, DC.⁴²

Typical of the minority who entered the Service with some training were a number of foresters from District 4. J. Wells Robins, born at Scipio, ran cattle in the Sevier River area and on the Arizona Strip before moving to Ogden to work in a feedlot. He left for a proselytizing mission for the Mormon Church, then returned to take the short forestry course at Utah State. After passing the examination, he was appointed to the Fishlake National Forest. 43 Better educated than most who entered, Moses. Christensen had grown up in Cache Valley, the son of a Mormon immigrant family. He attended Utah State, where he majored in agriculture, before moving to the Umatilla Indian Reservation where he handled land and grazing matters and taught practical agriculture. He entered the Forest Service in 1908 on the Malad National Forest. 44 Carl Arentson had spent 5 months in business college and taken correspondence courses in surveying, bookkeeping, and range management before joining the staff on the old Payette.⁴⁵ Emil Grandjean was born in Copenhagen, Denmark, to a family of foresters, and he had studied forestry under tutors.46

Since the number of employees grew rapidly under the Forest Service, most supervisors and deputies had not worked for the GLO. Those like Clarence N. Woods and Adolph W. Jensen, who transferred from the GLO Forestry Division to the Forest Service, were the exception. Nevertheless, most new recruits had similar backgrounds. Most had some livestock experience, like Orrin C. Snow, who became supervisor of the La Sal National Forest. Or they had done some ranching and logging like William M. Anderson, first supervisor of the Ashley National Forest.⁴⁷ It should be noted, however, that turnover in the early years of the Forest Service was comparatively high.

Entrance into the Forest Service came after passing an examination that emphasized practical knowledge. Carl B. Arentson remembered applying to Guy B. Mains for a ranger's job. Mains asked him for references from at least three men who knew of his good reputation and experience in handling livestock.⁴⁸ C. Syd Tremewan indicated that the written examination lasted 2 to



Table	4Configuration	of	District	4,	1908
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National Forest	Former Names	Headquarters	Supervisor
District 4		Ogden	Clyde Leavitt (District Forester)
Idaho			
Weiser	Pavette (north)	Weiser	J.B. Lafferty
Payette	Payette (south), Weiser, Sawtooth (west)	Meadows	H.A. Burgh H.A. Burgh
Boise	Sawtooth (southwest)	Boise	Emil Grandjean
Challis	Sawtooth (northeast), Salmon	Challis	David Laing
Salmon		Salmon	George G. Bentz
Sawtooth		Hailey	Clarence N. Woods
Lenhi	Lemhi (north and south) and Sawtooth	Mackay	C.L. Smith
Targhee	Henry's Lake (north)		
	Yellowstone (Idaho)	St. Anthony	Homer E. Fenn
Teton (Palisade?)	Henry's Lake (south)	St. Anthony	Homer E. Fenn
Caribou	Caribou (north and south)	Idaho Falls	J.T. Wedemeyer
Cache	Bear River (except Malad Division)	Logan	M.G. Woodruff
Pocatello	Pocatello, Port Neuf,		
	Bear River (Malad Division)	Pocatello	P.T. Wrensted
Minidoka	Raft River, Cassia	Oakley	William McCoy
Nevada			
Humboldt	Ruby Mountains, Independence	Elko	C.S. Tremewan
Toiyabe	Toiyabe, Toquima, Monitor	Austin	D.L. Barnett
Моара	Charleston, Vegas	Charleston	H.E. Matthews
Wyoming			
Yellowstone (Teton)	Yellowstone (north Teton Division)	Jackson	Robert E. Miller
Bonneville*	Yellowstone (Wind River Division)	Pinedale	Jones?
Wyoming	Yellowstone (south Teton Division)	Afton	John Raphael
Utah			
Cache	Bear River	Logan	M.G. Woodruff
Wasatch	Salt Lake, Wasatch, Grantsville	Salt Lake City	E.H. Clarke
Uinta	Uinta (west)	Provo	Willard I. Pack
Ashley	Uinta (east)	Vernal	William M. Anderson
Nebo	Payson, Vernon, Fillmore (north)	Payson	Den Pack
Manti	Manti (north)	Ephraim	A.W. Jensen
Fillmore	Fillmore (south), Beaver	Beaver	William Hurst
Fishlake	Fish Lake, Glenwood, Manti (south)	Salina	N.E. Snell
Powell	Aquarius	Escalante	G.H. Barney
Sevier		Panguitch	Timothy C. Hoyt
Dixie	Dixie, Trumbull	St. George	C.G.Y. Higgins
La Sal	La Sal, Monticello	Moab	John Riis
Arizona			
Dirie	Trumbull	St. George, Utah	C.G.Y. Higgins
Kaibab	Grand Canyon (north)	Kanab, Utah	W.W. Clark?

*Transferred to District 2, 1909.

Source: Memo for OB, April 24, 1908, File: 1680 History-Historic Documents-Washington Office Changed Administrative Units, 1908, Challis; Overton Price to Clyde Leavitt, May 10, 1909, File: O- Supervision-General, 1907-1915, Regional Office Records, RG 95, Denver FRC. Rationalized on the basis of comments by Gordon Watts. 3 hours. The practical portion was much longer--candidates had to pack a horse using swing and diamond hitches, demonstrate the use of a compass and elementary surveying, and prove cooking skills. Tremewan had to estimate the number of telephone poles that could be cut from an acre of Nevada pinyon-juniper. Given the small size of most such trees, this was no mean feat. "Some of the answers," Tremewan said, "were really ridiculous."⁴⁹

In the early years, promotions came very rapidly for competent personnel. William R. Hurst rose from assistant ranger to forest supervisor in 2 months.⁵⁰ David Laing, a temporary forest guard in September 1905, was supervisor of the Challis National Forest by 1908.⁵¹ Leon F. Kneipp, a man from the Chicago waterfront with no forestry training and little formal education, became district forester in 1915 at age 26 after serving as assistant chief of the grazing division in Washington.⁵²

Virtually all employees during the early years were males of northern European extraction. Beauregard Kenner hired a couple of Native Americans, but Inspector Benedict fired them. Few Mexican-Americans, Orientals, or southern Europeans found positions. There were a number of immigrants, but like Grandjean of Denmark and John F. Squires from Scotland, virtually all were from northwestern Europe.⁵³ Some women were hired as clerks, but none held senior positions. More typical was Margaret Jensen of Mendon, UT, clerk of the Cache National Forest for 20 years starting in May 1907.⁵⁴

The staff of the Sevier National Forest in 1909 seems to have been fairly typical. The forest had 10 salaried employees including the supervisor, deputy, and clerk in the supervisor's office, and two rangers, two deputy rangers, and three assistant rangers on the six ranger districts. Supervisor Snow used one of the deputy rangers in what today would be considered a timber staff position. Of the staff all except the clerk had been stockmen, two had worked in lumbering, and one had been in clerical work before entering the Service. Two still owned property and livestock outside the forest. Most were good workers, though two were deficient in clerical ability and education and did not do well with paper work.⁵⁵

Many rangers and their families lived a hard life, but probably not harder than others living in the back country during the early twentieth century. The Dixie National Forest reported difficulty in finding rangers willing to work on the Trumbull division on the isolated Arizona Strip.⁵⁶ On some forests, the ranger might have to live in a tent, an old miner's cabin, or a log cabin he built with materials furnished at government expense. He might spend the winter snowbound with his family, and a move could become a significant adventure.

Rangers' wives served essentially as unpaid employees in addition to their household and other duties. Some worked in the communities where they lived, in some cases as postmistresses or telephone operators. For the wife, household chores resembled those of other rural women, with their sadirons, wood stoves, and washboards. In addition, however, they often had to check firefighters in or out or count sheep and cattle onto the forest.⁵⁷ The forest supervisor's life, on the other hand, was much different. Instead of enduring the hardships of the back country, they and their families could experience the advantages of rural town or city life. Moreover, while they undoubtedly spent more time in the field than supervisors today, much of their work consisted of correspondence with the Washington Office or the district forester about such matters as the interpretation of the "Use Book" (the pocket-size manual of Forest Service procedures first published in 1905), preparing and transmitting reports, and hiring and evaluating employees.⁵⁸

The supervisor kept card files on temporary personnel. These cards listed for each person the name, address, age, marital status, occupation, type of work, reputation, sobriety, and record in Forest Service employment. If a sample from the Caribou National Forest is representative, the supervisors were very frank in their assessment of the record. One was listed as "too heavy for light work and too light for heavy work, but mighty good with a spoon," another was said to be "poor, didn't know how to work," and a third was reported to be "good, does very good work as far as knowledge extends."⁵⁹

Public Relations and Cooperation

A substantial part of the supervisor's time involved public relations with the forest users. On the Boise National Forest, Supervisor Frank Fenn delivered lectures on the value of the Forest Service.⁶⁰ On the Nebo, Dan S. Pack got one of his rangers to help out a disgruntled forest user with a survey so his forest homestead could go to patent.⁶¹

Perhaps the most important cooperation took place on the old Payette under Guy B. Mains. Between 1905 and 1908, crews from a number of lumber companies including the Payette, Boise, Barber, and A.W. Cook, together with Boise and Payette National Forest employees, had worked together a number of times in firefighting. After controlling a fire on Buck Creek in 1908, Mains and Harry Shellworth, Payette Lumber Company land agent, discussed the possibility of sharing responsibilities, the use of State fire wardens, and other related matters. By 1911, out of the discussions grew the Southern Idaho Timber Protective Association (SITPA), said to have been the third such organization in the United States, and perhaps the most successful cooperative effort in District (later Region) 4. Mains became the first president of the organization. Through SITPA's influence, State fire wardens were removed from political appointment, and areas of responsibility between the State, private owners, and the Forest Service in prevention, detection, and suppression were spelled out.⁶²

Forest Policies

In managing the forests, the Service operated under a number of general policies. As outlined by Pinchot in 1908, these policies covered: 1. Protection against fire and trespass, 2. Harvesting of mature timber under policies assuring sustained yield and watershed protection, 3. Improvement of timber stands, 4. Protection of the



Figure 14--P.T. Wrensted, supervisor of the Cassia, Pocatello, Port Neuf, and Raft River National Forests, at the Bannock Guard Station, ca. 1908 or 1909.

water supply, 5. Utilization of the forest's forage crop for grazing, 6. Improvement of range conditions, and 7. Development of adequate means of housing, communication, and transportation. 63

From the point of view of the States, perhaps the most important pieces of legislation were the laws of 1906 and 1908 that provided for payment to the States of first 10, then 25 percent of the forest receipts. The money was to be used for public schools and roads and was perceived by the westerners as a means of compensating for tax revenues lost to the States through Federal ownership of the lands.⁶⁴

Inspections

The district forester exercised judgment on the implementation of general policy and on evaluating the work of supervisors and their staffs. The work of inspection and recommendation previously performed by the district inspector now fell to the district forester, who became the eyes and ears of the Forest Service in its fieldwork. Since Washington had to approve many of the supervisors' proposals, they were first considered by the district forester, whose judgment carried considerably more weight than the district inspector.



Figure 15--Clyde Leavitt, Regional (District) Forester, 1909-10.

The notations on an inspection report on the Dixie National Forest that Homer E. Fenn, District Chief of Grazing, made in 1909 indicate the way in which District Forester Clyde Leavitt operated.⁶⁵ He made many decisions himself. When questions arose as to the disposition of duplicate correspondence and forms, Leavitt wrote the Washington Office for a clarification. He authorized the Dixie supervisor to secure larger quarters for his office and accepted Fenn's recommendation that no deputy supervisor be appointed at present, as none of the staff had enough experience to take the position and morale had suffered from the importation of too many officers from outside the Dixie area. He also accepted Fenn's recommendation that the current acting supervisor be promoted to supervisor at the end of his probation.

Range Management

Grazing administration was undoubtedly the most difficult and time-consuming problem in District 4. In spite of the efforts of the GLO, overgrazing had continued in the Intermountain West and the forest officers had the unenviable task of weighing the need to protect and improve the condition of the land against the shortrun economic interests of range users. The Forest Service's organizational structure and its reporting and inspection systems provided some internal cohesion and support for the supervisors and rangers in their efforts to control grazing. By 1910, however, grazing problems were far from solved.

In general, the Forest Service retained preference classes--named A, B, and C and based on base ranch holdings and distance from the national forest--much like the GLO.⁶⁶ The major modification came in an attempt to help owners of small herds. Protective limits--the number of livestock below which graziers would not be required to reduce permitted numbers-were established by each national forest, rather than for the Service as a whole. Applicants owning stock above the protective limit had to be classified as B or C, and only small owners could be class A, the most preferred.⁶⁷

In retrospect, two things seem to have been most important in the development of patterns of range management. One was the European forestry system, inculcated by the GLO and furthered by the Forest Service under Pinchot, which included a strong emphasis on inspection and evaluation. Second, and equally important, was the capability of the district office staff, particularly Homer E. Fenn, with a background in ranching, who moved from his position as supervisor of the Targhee National Forest to serve as the first district chief of grazing during the early years of District 4.

Fenn's appointment was particularly important, since both District Forester Clyde Leavitt and Assistant District Forester Franklin W. Reed lacked experience in forest administration, though they had technical training. For his deputies, Fenn chose A.C. McCain and George G. Bentz, both of whom had worked on the ground in eastern Idaho and western Wyoming.

While Fenn was extremely competent in the administration of the district grazing division, his views did not always coincide with Service policy. Some of the differences were apparent in a meeting with the district officers and Washington Office personnel in 1909.

In Fenn's view, Forest Service grazing regulations had six purposes. These purposes were: first, to prevent injury to "stands of timber" and to avoid interfering with reforestation: second, to protect watersheds "against damage by livestock:" third, to accomplish "a complete utilization of the forage crop within the National Forests;" fourth, to prevent "range monopoly:" fifth, to avoid "unfair competition in the use of the range;" and sixth, to accomplish "a more equitable distribution of the grazing privileges."⁶⁸

All except "the last purpose," Fenn said, had met "with the unqualified endorsement of users of the Forests." The attempt at equitable distribution had generated considerable dissatisfaction, since it brought about a reduction toward the protective limit in the herds of the larger users in favor of new permittees. This produced uncertainty for the larger users and reduced "stability and permanency" in their business operations. Moreover, because stockmen invested in base property and equipment in proportion to the number of permitted stock, a reduction in the permit size reduced "the value of their property . . . in exact proportion."

Though Fenn followed the Service's distribution policy, it was clear that he did not like it. In his view, the Forest Service ought to "confine its efforts to the regulation



of grazing to prevent damage to the timber or watersheds, the prevention of range monopoly and unfair competition." Thus, he argued that "when the number of stock on the Forest has been reduced to a point where there is no further danger to the range, timbered areas, or watersheds, the Service would have done its principal duty in the administration of the grazing business."

In regulating grazing, Fenn thought that the Service ought to recognize "the regular occupant as having an equity in the range to the extent of his permit." Then, he said, "any one who wishes to secure a permit, except a new settler on new land, should be required to do so by purchase." He was "willing to defend so far as it is actually true," the proposition that under such a policy the Service was "granting to large outfits on the Forests their privilege in perpetuity," believing that if they "maintain a normal economic condition by preventing range monopoly and unfair competition in its use, the distribution of the grazing privilege" would "take care of itself."

In this connection, he objected to the policy that required the owner to provide hay from his own land for his stock during the winter in order to be eligible for a permit--the so-called "commensurability" rules. This, it seemed to him, flew in the face of the "object of the grazing Regulations," which was "to assist in the development of the country and add to the prosperity of the community in the vicinity of the Forest." If the policy were dropped, the rancher could graze his stock on winter range and "turn a neat profit" from the sale of hay he might otherwise have fed his stock.

Assistant Chief Forester Albert Potter disagreed. Forest Service policy had a social as well as an economic component. Policy included favoring the small stockman, as well as reducing the number of livestock to the carrying capacity of the range.⁶⁹ He rejected Fenn's views, believing that in accepting them the Service would have to recognize that the permittee held a property right in the range. He feared that recognizing such a right might make it difficult "to exclude stock from any of the lands" even if this became necessary for range protection. He recognized, however, Fenn's concern about keeping the "large owner continually in an unsettled state of mind as to which range he is going to be allowed to use," but considered that a less serious matter than the social purpose and range protection.

He was willing to put Fenn's views to a vote, recognizing that they represented a "change in the principle upon which our present regulations are based." The results were somewhat inconsistent. A majority of 15 to 2 believed that the Service should continue the policy of making sliding scale reductions to take care of beginning stockmen and new owners. By a majority of 10 to 5, however, they held that exceptions should be made "from reduction to the protective limit in cases where there is an unusually large investment in ranch property."

Those present then proposed a compromise by issuing 5-year term permits to the stockmen. This had the advantage of guaranteeing 5 years of stability to continuous and larger users, while allowing distribution after a 5-year term to allow new stockmen to enter. Only 2 of 17 voting--one of whom was presumably Fenn--opposed the idea of permitting reductions to help new owners at the expiration of the 5-year period. All agreed, however, on allowing reductions for silvicultural improvement and range protection even during the 5-year term. 70

At the same meeting, F.W. Reed outlined the procedure by which the Service allowed some continuity, through a system apparently originated on the Uinta that allowed the actual--though not the legal--transfer of permits between a seller and purchaser of base property and livestock. Under the system, the seller relinquished his permit to the government and the government transferred it to the purchaser. Reed pointed out that the system had avoided a great many complaints. All agreed with Fenn's proposal that to protect against speculation and instability, the purchaser had to stay in business for 3 years before he could transfer the permit on the sale of his property.

The entire process indicated the openness of the Washington Office to suggestions and decentralization. Those present supported the Service system of having the Secretary of Agriculture designate only the maximum number of animals allowed on each national forest rather than specifying the details of distribution, which was left to the supervisor's discretion. Under the GLO system, the Interior Secretary had itemized the number in each grazing district.⁷¹

It is one thing to develop and review general policy in the office, and quite another to apply it in the field. Ranges throughout virtually all of District 4 were badly overgrazed and until the late 1950's, such improvements as were made were generally only relative. Nevertheless, in practice, though the forest officers had to work hard in implementing policy, they could sometimes be somewhat more successful if they could develop a good relationship with stockmen. In addition, the chances for success in relations with stockmen in District 4 were somewhat better than in some areas; unlike the situation in District 2, there is no evidence of general opposition among graziers to the imposition of grazing fees. This was, however, only a minor advantage compared with the massive problem of overgrazing.⁷²

Even on some of the best ranges, the situation was extremely serious, and in retrospect, even major attempts at reduction can be perceived as little more than holding operations. More sheep and cattle grazed on the Humboldt National Forest than any other in the Intermountain District. In 1908, 560,000 sheep grazed in the northern portion of the forest on what are now the Jarbidge and Mountain City Ranger Districts. As the result of a meeting with stockmen in March 1909, Supervisor Tremewan reduced permits by 38 percent to allow 350,000 sheep, several thousand cattle, and 2,000 horses.⁷³

An inspection by E.H. Clarke found that stockmen had not observed Tremewan's limits and 400,946 sheep and 41,020 cattle had actually grazed on the forest during 1909.⁷⁴ Moreover, Clarke faulted Tremewan for his distribution of the livestock. He found that the Copper Basin and Jarbidge areas had been overgrazed while some areas like the Marys River, Little Salmon, and Sun Creek were not used to their full capability. He also found difficulties with trespass on the north fork of the Humboldt. In Tremewan's defense, it should be pointed out that stockmen were generally pleased with Humboldt administration and conditions on the Humboldt, while extremely bad, were relatively better than on other forests in the district. In general, reports indicated the stock came from the forest "in better condition than stock grazing on other areas."

In practice, however, Tremewan's recommendations promised little improvement in the future. In 1909, basing reductions on a protective limit of 5,000 sheep, Tremewan recommended the same number of sheep (350,000) as the year before and an increase to 40,000 cattle and horses for 1910.⁷⁵

On the Wyoming National Forest, in contrast, in 1908 the forest was not only overgrazed, but public relations with stockmen were guite unfavorable as well. The forest had been separated from the Teton division of the Yellowstone in July 1908, and Teton Supervisor Robert Miller had never inspected that area. Moreover, Forest Supervisor John Raphael headed a young and inexperienced ranger force. On two of the grazing districts, stockmen failed to observe allotment boundaries, and the forest officers had not been present to see that the animals went on the proper allotments. They had succeeded, however, in separating the cattle and sheep ranges. This was sorely needed owing to the long-standing conflict between the two groups of stockmen. One hopeful sign, however, was the cooperation of the Advisory Board of the Wyoming National Forest Wool Growers Association in counting stock on to the forest.⁷⁶

Supervisor John Riis on the La Sal paid little attention to public relations. His predecessor Orrin Snow had encouraged graziers to organize the Southeastern Utah Stockgrowers' Association in 1907. Although Riis's staff was too small to control trespass, he had apparently ignored Assistant District Forester Reed's suggestion that the association could help him.⁷⁷ Some of the outfits like Lemuel H. Redd, Carlisle and Gordon, and the Indian Creek Cattle Company exceeded permitted numbers, but Riis's obvious distrust of the stockmen's association was hardly calculated to promote good feeling.⁷⁸

Supervisor Anderson on the Ashley, on the other hand, tried to handle his problems somewhat more astutely. He set a protective limit of 2,100 sheep per permittee and proposed plans to increase or reduce all permittees to that level. He found some difficulty in securing proper salting for cattle, but proposed specifying regulations in the permits. He developed an effective public relations and education program by working with stockmen's associations at Vernal, UT, and Lone Tree, WY, and in educating graziers on the need for permits.⁷⁹

Problems on the Dixie were caused in part by poor range and livestock management by the stockmen. According to Homer Fenn, the Utah division was "only about one-half stocked," though it had been overgrazed in the early 1890's and scrub-oak browse had replaced the grasses. Stockmen allowed their animals to drift on the forest with "practically no attention throughout the grazing season." Salting and water improvement had been badly neglected. On the Arizona division, which Preston Nutter used almost exclusively, the situation was the worst. In one place, Fenn found water troughs "completely filled with dead cattle, and many cattle . . . choking for water."⁸⁰ Fenn's proposals for dealing with problems on the Dixie indicate his generally practical bent of mind. In spite of his previously professed opposition to joint ventures, he proposed cooperation with the St. George Commercial Club and the Mt. Trumbull and Parashaunt Cattle Growers' Association Advisory Board in the construction of drift fences in Utah and Arizona.

On the Uinta National Forest the situation was extremely serious because a number of badly overgrazed watersheds rested above the cities of Utah Valley. By 1907, forest officers recognized that drastic reductions were necessary to protect and restore the drainages. Lambing grounds were moved from the west side of the Hobble Creek and Diamond Fork drainages to Strawberry Valley. After lambing, sheep were allowed to return for a shortened period from September 10 until late October. The range began to improve, but quite slowly because of extensive past damage.⁸¹

In some cases, attempts to control grazing resulted in disputes between forest officers. Supervisor Robert R.V. Reynolds of the Wasatch argued with his deputy, William M. McGhie, about overstocking on the Pleasant Grove District. McGhie believed that the permittees had done all in their power to reduce the number of stock and did not feel justified in making further reductions because they had "exhibited such a good spirit." Reynolds, however, insisted that the numbers be reduced, in order to protect the resource under his stewardship. McGhie finally agreed, but refused to accept any responsibility for recommended reductions.⁸²

In general, range deterioration in Idaho, though serious on the Targhee, Challis, Sawtooth, and Boise, had not been as bad as in Utah.⁸³ The major exception was in eastern Idaho on the Caribou National Forest. After a number of the other forests in western Wyoming and eastern Idaho were created, the Caribou area became, as Forest Supervisor John Wedemeyer put it, "the general dumping ground for sheep . . . as men [came] who could not get on reserves elsewhere or who were cut down."⁸⁴

Wedemeyer had to hustle to keep the numbers down during 1907, since the forest had just been created. He received applications for 740,000 head of sheep, and he allowed 450,000 sheep and 12,000 cattle and horses in 1907. By 1909, he had succeeded in reducing the number of sheep to 340,000 head, at least on paper, since most of those using the forest lived in Utah or Nevada and many had no base property.⁸⁵

Still, N.E. Snell, who replaced Wedemeyer in 1909, believed that the former supervisor had left an intolerable situation. In order to get the numbers down, Wedemeyer had induced some of the larger outfits to relinquish portions of their permits for a year with the promise that he would restore them later. Then, to help beginners, he promised new allotments. The total of 340,000 head he requested would not cover both sets of promises, so Snell had to secure special permission to allow 375,000. Contrary to Wedemeyer's previous allegations of good feelings between the permittees and the Service, Snell found himself standing "on the firing line, day and night, in defense of the Forest policy," largely because of Wedemeyer's promises and the "state of confusion," in which he found administration.⁸⁶

Snell undertook several measures, which were undoubtedly necessary to provide successful management and to reconcile the forest users to his administration. These



included the organization in August 1909 of the Caribou Sheepmen's Association, constituting its principal officers as an advisory board, and granting 5-year permits.⁸⁷

In contrast to the situation on the Caribou, by 1909 conditions on the Weiser were perceived to be very good. Leon F. Kneipp noted few problems in an inspection of 1909. The forest was grazed principally by cattle.⁸⁸ In 1909, grazing associations were formed on the Weiser and the old Payette.⁸⁹ In some cases, the areas covered by some of the national forests seemed far too large for effective administration with the available manpower. In 1907 when Emil Grandjean took over as supervisor of what was then the Sawtooth National Forest, it included the present Boise, and parts of the present Payette, Sawtooth, Salmon, and Challis. The range was allotted to 575,000 head of sheep and 15,000 head of cattle, and Grandjean held meetings in various towns from Hailey and Mackay on the east to Payette and Boise on the west to meet with permittees.⁹⁰

By 1909, the forest had been divided into a number of smaller units, on which conditions varied. On the old Payette, Guy Mains reported in 1908 that the cattle allotments were in good condition, but the sheep allotments had been overgrazed, and he recommended a reduction from 100,000 to 90,000 for 1909.⁹¹ Emil Grandjean thought conditions so good on the Boise in 1909 that he recommended a 3-percent increase in sheep.⁹²

Conditions on the newly created Sawtooth were not completely favorable. Supervisor Clarence N. Woods said that the forest furnished "excellent forage for sheep," but could not satisfy the demand for grazing allotments, and that antagonism existed between the Forest Service and some of the more outspoken permittees. Part of the problem, he acknowledged, was the inexperience of the field staff, but some of the difficulties resulted from an inability to meet the demand on an inadequate resource.⁹³

In what seems in retrospect to have been a serious misperception, the supervisor thought conditions on the Targhee were so favorable that he actually recommended increases in the number of sheep, cattle, and horses between 1907 and 1909. A special report in 1907 listed 205,000 sheep and subsequent increases raised the number to 217,000 in 1909. Similar increases from 9,450 to 11,750 for cattle and horses also were reported.9⁴ In his 1908 report the supervisor opined that conditions were generally satisfactory, with the exception of one district on which he found insufficient water.⁹⁵

Wedemeyer, Snell, and perhaps many of the other supervisors in District 4 had been lucky in 1907 and 1908, when the summers had been unusually wet. Nevertheless, undoubtedly writing out of inexperience and misinformation, District Forester Clyde Leavitt said in December 1908 that "the grazing lands on nearly all Forests in District 4 have been brought to approximately their permanent carrying capacity, and a point has been reached which demands the establishment of a system of permit allotments in no immediate need of revision, and which will be consistent with the future requirements of the livestock industry and the best interests of the National Forests." Henceforth, Leavitt believed, the main problem would be to determine the extent to which beginners would be allowed on the forest, and the establishment of beginners, Class A, and maximum limits.⁹⁶

Range and Watershed Studies

A careful study of the condition of the Caribou by E.R. Hodson in 1909, together with what we know of conditions on a number of other forests in Idaho by that time, however, demonstrate how faulty the district forester's projections were. Hodson pointed out that the forest had been burned over a number of times over the past 100 years and that excessive sheep grazing like that of the previous decade could only be sustained during unusually wet years. "With a dry season," he argued, "half the present number would be . . . dangerous." In 1909, the rate of grazing there was approximately I sheep to 1.5 acres, which was much higher than on the Weiser where I sheep to 4 acres was considered too high. Considerable watershed and seedling damage, especially to Douglas fir, had resulted from overgrazing.⁹⁷

Fortunately, Leavitt's misplaced optimism did not prevent the inauguration of efforts to improve range conditions. Perhaps the most important were several experiments with the reseeding of overgrazed areas begun in 1907 in cooperation with the Bureau of Plant Industry.⁹⁸ In 1909, these efforts were expanded on the Wallowa Forest in Oregon and the Manti in Utah, and included research into methods of seed collection, eradication of poisonous plants, and range examination.⁹⁹ On the Malad district of the Pocatello National Forest, Moses Christensen plowed and seeded about 300 acres with smooth brome and slender wheatgrass. Late in 1909, a supply of different sorts of domestic grass seed was sent to several forests including the Sawtooth, and Supervisor Woods was asked to keep records of the results of reseeding efforts.¹⁰⁰

In 1909, District 4 took the first tentative steps in what would be called trend and reproduction studies today. In May, Leavitt wrote to the Sawtooth National Forest, asking Woods to establish one or two sheep-proof enclosures of 1 to 3 acres each, "substantial enough to last 5 years or longer," on a suitable area such as "a burn with scattered reproduction." The enclosures were to "show the natural recuperation of the range on the removal of stock or they may be used for sowing native grasses and forage plants or to test those introduced from foreign countries." The primary purpose of the enclosure, however, was "to determine the precise effect of sheep grazing on natural forest reproduction." Behind these experiments was Leavitt's conviction that "the real purpose . . . of the Forests is to grow trees and it is quite possible that the present allotment of sheep on many of our Forests is detrimental to natural reforestation and certain restrictive measures on grazing may therefore be necessary for the proper protection of our timbered areas." Since opinions on the subject were conflicting, the enclosures were designed to provide "conclusive evidence of the effect of sheep grazing on natural reforestation before any restrictive measures on grazing are adopted." Woods agreed to undertake the experiment on the Sawtooth. $^{101}\,$

Another major area of experimentation, the determination of water production, also came about in an attempt to resolve with empirical evidence a difference of opinion on the relationship between streamflow and forest growth. The point of view that a dense forest growth released a greater and more orderly streamflow persisted into the twentieth century. In 1903, Supervisor A.W. Jensen, commenting on the effect of the closure of the Forks of Manti Canyon from grazing, said that "it is noticeable in riding on the reserve that in Manti Canyon the springs are flowing a greater quantity of water than the springs on the same level, and in the same earth formation" in Ferron, Six Mile, and Ephraim Canyons. Moreover, during a heavy rainstorm, floods occurred in all four of the canyons except Manti.¹⁰²

In a paper delivered to the American Society of Civil Engineers in September 1908, Lt. Col. Hiram M. Chittenden of the Army Corps of Engineers challenged the conventional wisdom, as Henry Gannett had earlier. The forests, Chittenden argued, could not maintain any great regulating influence on streamflow in times of great floods or of extremely low water. Moreover, he said, forests did not induce precipitation, and he questioned whether deforestation had any appreciable effect on the silting of river channels. Chittenden made it clear that he was not hostile to the creation of national forests, he merely wanted to challenge the more extreme supporters who claimed too much.¹⁰³

In order to test these conflicting views, the Washington Office's division of silviculture wrote the various district foresters trying to locate two similarly situated areas on which water production could be measured, one heavily timbered and the other virtually denuded.¹⁰⁴ The areas finally selected were in District 2 at Wagon Wheel Gap in Colorado, and the experiment showed that timber removal increased streamflow.¹⁰⁵ Later studies at the Davis County Experimental Watershed in what by that time had become Region 4 showed that the perception that extensive vegetation could prevent or reduce at least dry mantle floods was correct.

Wildlife Management

Another area of concern, related to grazing and silviculture, was that of wildlife management. In this field the Service inaugurated two policies. Foresters were urged to protect game animals like deer and elk, while they assisted in the attempts to destroy predators, like coyotes and bears, that were believed to threaten domestic livestock.¹⁰⁶

The situation was hardly uniform. Deterioration of the supply of game and fish in portions of the Intermountain West had become critical. In Utah, Nevada, and part of southeastern Idaho, the virtual eradication of some species like elk accompanied severe reduction of deer. In Nevada, antelope herds had dwindled to the point that the State prohibited hunting them.¹⁰⁷ In Jackson Hole, elk had multiplied to such an extent that winter starvation had become common. In a number of areas, the number of fish had declined, owing to extensive seining and other practices.¹⁰⁸ In practice, the States and the Federal Government dealt with depletion and overabundance in the same wav--control and regulation. In 1908, Utah prohibited deer hunting for 5 years.¹⁰⁹ Governments set aside game preserves like the Teton State Game Preserve in Wyoming to protect the Jackson Hole Elk and the Grand Canyon Game Preserve in Arizona on what later became the Kaibab National Forest, to protect mule deer.¹¹⁰

In an attempt to improve the stocking of streams and lakes, a number of States set up fish hatcheries. Most of the States established fish and game commissions to oversee general administration.¹¹¹

Forest officers assisted in enforcement of State game regulations. In some cases no State game wardens had been appointed, and, in others, they were lax in prosecuting cases. In some areas, forest officers were deputized as game wardens.¹¹² Moreover, foresters tried to catch poachers who killed Teton elk for their valuable teeth.¹¹³

Forest officers also began to deal with the problem of predatory animals. Here, control if not eradication was the watchword, especially for bear and covote, which preyed on livestock. Stockmen urged the Forest Service to eradicate these animals, and at times field employees were sent to hunt them. The Biological Survev, under its general mandate, did much of the work by hiring hunters and experimenting in the use of poisons. In 1909, the Forest Service indicated that one of its goals was to eliminate predatory animals on the Grand Canyon National Game Preserve.¹¹⁴ The effort to accomplish this caused extreme difficulty for the Forest Service in a very unexpected way.

Timber Management

Even though the demands of range management on forest officers' time exceeded any other function in District 4, many in the Service considered timber management more important. In the Intermountain West,



Figure 16--Planting trees at the Flowers Ranger Station, 1911.



the demand for timber at that time was not great enough to place an inordinate demand on the supply. Only in Nevada, with its small timber supply and extensive demand for wood products in the mines, had a large percentage of the available timber been harvested by 1909. In no other State in District 4 had the cut represented even 1 percent of the stand. Although depletion had occurred near a number of urban and mining centers, most virgin stands remained virtually untouched. In Wyoming loggers had cut less than one-half of 1 percent of the timber, and, in Utah, less than two-tenths of 1 percent.¹¹⁵ In Idaho, the Service found overripe and deteriorating timber it needed to sell before the forests became an economic loss.¹¹⁶

Nevertheless, in large part because of the training and attitudes adopted from European forestry practices, Forest Service employees tended to believe in the concept of potential timber famine. As a result, they tended to emphasize almost exclusively the concept of declining supply rather than to recognize that actual demand and accessibility determined both the cut and price of lumber.¹¹⁷ In managing the national forests the Service recognized that the total volume of timber cut from the national forests was only a small portion--one-eighth of 1 percent in 1907--of the total lumber produced in the United States. However, even that amount could have some effect on the price and supply of timber in certain localities. For that reason, the Forest Service established general principles for determining stumpage prices: 1. To not take advantage of local needs to exact a monopoly price: 2. To act as the public's trustee in preventing depletion of the forests in the interest of replenishing a renewable resource without undue delay: 3. To set a reasonable price for timber in light of general conditions with due allowance for local factors: and 4. To avoid overcutting, by setting an approximate annual sustained yield for each forest.¹¹⁸

The market for timber did not remain stable. Between 1896 and 1907 timber prices generally rose, though they varied widely between regions. Between 1907 and 1914 prices generally leveled off.¹¹⁹

By the 1890's the Lake States pineries had become depleted, and lumber interests looked westward for



Figure 17--Small sawmill in operation.



sources of timber. During the first decade of the twentieth century, several larger companies had begun to operate in District 4, particularly in western Idaho.¹²⁰

Still, at the time, most District 4 timber was sold to small operators or given free to settlers. In 1906, the largest sales were made in lodgepole pine forests in Wyoming principally for railroad ties. In Utah and Colorado most cutting was confined to fire-killed timber in the mineral districts and small sawmill operators supplying towns and ranches at some distance from the railroads.¹²¹

Within the Intermountain West, the greatest opportunities for sawtimber lay in the ponderosa pine of the Boise and Payette River drainages. The two most prominent companies in this area were the Barber and Payette lumber companies, both of which were organized in 1902. Both had acquired private timberland, often under the Timber and Stone Act: they also cut on the national forests.¹²²

As they had with graziers, the Forest Service tried to promote good relations with lumber companies. In July 1908, the Service began to publish monthly wholesale price lists of lumber in 20 principal markets of the country. These lists, it was argued, would help prevent wasteful exploitation and potential timber famine. Most of the lumber companies were willing to work with the Forest Service, since they believed that the era of free timber was over and in the Intermountain West at least,



Figure 18-Log scaler at work.

much of their supply would eventually come from public lands, $123\,$

Responding at first to the timber depletion argument Congress prohibited the sale of timber cut on the public lands in foreign markets or even in adjacent States. Revisions of the law in 1905 and 1906 changed this policy.¹²⁴

In 1908, the Forest Service outlined a general sales policy for states in District 4. Nevada was said to have "the poorest growth of timber of any State in the Union." Its timber was largely confined to species, such as pinyon and juniper, used for firewood, charcoal, and mine props: and its main markets had been in the mining districts. As a matter of policy, the service preferred to encourage free use and to eliminate sales of fuel to manufacturing enterprises. $^{125}\,$ In western Wyoming, most forests were lodgepole pine. Insect infestation had become a problem on one national forest, so only dead, down, or insect-infested timber was to be sold there. On other forests commercial and local sales were possible.¹²⁶ As with other States in the Intermountain West, the bulk of the timber supply of Utah was on the national forests. Competition from California and Oregon had become significant. Of the forests in Utah, the service allowed ordinary sales on 6, only small local sales on 11, free use on 2, and no cutting on 1. With the exception of the Uinta National Forest, which was designated a lodgepole pine type, the forests were considered Englemann spruce type.¹²⁷

Successful forest management required an adequate working plan. Such plans were worked out under the direction of technical personnel, often forest assistants, assigned to the supervisor's office for this purpose.¹²⁸ General policy allowed the cutting of live timber for sale or free use only if careful study on the ground indicated to the satisfaction of the forest officers that cutting would not injure the forest or the water supply. Only marked trees were to be cut, and sales contracts stipulated slash disposal and methods of cutting to utilize all economic parts of the tree. Skidding was to be done in such a way as to prevent excessive destruction of young growth.¹²⁹

Pinchot cited as a model a working plan prepared for the Henrys Lake National Forest in 1906.130 Made by Forest Assistants J.G. Peters and A.T. Boison for Supervisor Homer E. Fenn, the object of the study "was to determine the actual amount of standing timber with a view to securing from it a sustained annual yield."131 They found the merchantable timber on the forest, in widespread stands of lodgepole pine and less abundant Douglas-fir. Both types had been burned over, generally before Euro-American occupation. Because of this, the dense Douglas-fir forests and most of the lodgepole pine were found in even-aged stands. The trees had sustained some damage from ground fires, frost crack ("gum checks"), fungus, dwarf mistletoe, and pine beetle. For economic and silvicultural reasons, the report recommended clearcutting of the lodgepole and selective cutting of the Douglas-fir.

The trained forest assistants who conducted the survey pointed out that grazing was the largest source of revenue on the Henrys Lake National Forest. Nevertheless, they recommended that forest officers eliminate sheep grazing from certain areas to improve and expand the



Douglas-fir stand because, the authors indicated, "as a source of revenue both actual and potential timber production is far superior to grazing."¹³² They proposed also to restrict grazing from certain areas to protect watersheds.¹³³

The major problem with their projection was that it anticipated an early and radical change in timber supply and demand patterns in the upper Snake River Valley. As the report indicated, better grade lumber from western Oregon could already be marketed in the area south of Idaho Falls, except in the towns immediately adjacent to the forest, for less than the inferior products of local lumber companies. In evaluating the proposed new railroad siding at Big Springs, the report did not take into consideration the possible reductions in price, owing to economies of scale, by the Oregon companies that operated in decidedly superior and more extensive timber stands. Although it was felt that in the long run timber values might well surpass grazing values, this change was certainly not imminent.

A detailed series of comparative statistics for income from timber sales and grazing on the Targhee National Forest (successor to the Henrys Lake) is not available; however, such a series is available for Region 4 from 1909 through 1941, and for the Targhee in selected years. In fact, considering the information now available, it is safe to say that revenues from timber sales never reached as much as half those of grazing for the region as a whole until after 1950. In 1950, the Targhee earned roughly three-eighths of its revenue from timber and forest product sales and more than half from grazing.¹³⁴

Thus, the suggested immediate reduction in grazing for silvicultural purposes was quite premature. F.W. Reed made a similar premature projection for the Teton.¹³⁵ On the other hand, reports on the Fishlake, Aquarius (Powell), and Dixie were quite realistic for the time, recognizing that the Fishlake was deficient of timber, the Pine Valley Mountains had high-quality ponderosa pine stands on the Dixie, and that the extensive stands on the Aquarius were then virtually unmarketable.¹³⁶ With better transportation, highquality stands of timber on the Aquarius Plateau and over other portions of the Dixie National Forest have sustained a healthy timber industry.¹³⁷

Trespass

One of the least pleasant and at times most onerous duties of rangers was the investigation of trespass. The object generally was to recover for the Service the value of goods damaged or lost and in cases of flagrant trespass to levy punitive fines on the trespasser.

C.N. Woods reported on an investigation he undertook during the winter of 1905 while on the old Teton.¹³⁸ The supervisor, receiving a report that a coal company had cut mine props on Hams Fork without a permit, asked Woods to investigate. Woods went from Jackson over Teton Pass into Teton Basin, where his horses had wintered, and brought them back to Jackson.

He expected to ride his horse southerly via the Hoback River to Kemmerer, then up Hams Fork to the trespass area. Along the Hoback River, he found the snow so deep that he had to ride in the river through much of the canyon. He spent the night in lower Hoback Basin and started out the next day on crusted snow. By the time he reached the upper end of the basin, the crust was too soft to support his horse. Leaving it on a grassy south slope, he walked 10 miles to a ranch for dinner. He expected the snow would crust over during the night, so he went back for the horse. Unfortunately, the crust was still too weak, so he left his horse again and walked 18 miles to the Horse Creek Ranger Station, where he met with Ranger Dick Smith and the two decided to ski the remaining 60 miles to Kemmerer. After several days of travel, they lost the trail. Then they followed a drainage to a ranch, where they hired some horses and went on to Kemmerer.

At Kemmerer, they found an agent of the coal company that had allegedly committed the trespass and took him before a United States Commissioner for examination. Afterwards, the company owner agreed that his employees had indeed trespassed and agreed to pay the value of the timber. Woods sent Smith back with the rented horses, went with the agent to the Hams Fork trespass site, assessed the damages, and returned to Kemmerer.

Then, since he was without transportation, Woods walked for 2-1/2 days to the South Cottonwood Ranger Station, borrowed a horse from the ranger, and returned to Jackson by way of the Hoback Basin, where he picked up the horse he had left. In reporting on this adventure, he said that he "reached Jackson none the worse for the trip."

Forest Products Studies and Tree Planting

The Service undertook measures to improve the use of forest products and the condition of the forest. In 1907, the Service joined in a successful experiment with several railroad companies in the treatment of lodgepole pine for use as ties. In the experiment, dead fenceposts from the Henrys Lake National Forest were treated with creosote to discover the most efficient process at the lowest cost.¹³⁹ In 1905, studies were begun in the lodgepole pine stands of Utah, Montana, and Wyoming to collect information on silvics, commercial markets, and methods of lumbering in order to provide a basis for the correct management of the species.¹⁴⁰

The Forest Service also tried to reestablish tree stands from nursery stock. By 1908, the Service had set up two major nurseries and a number of smaller operations in District 4. The two largest were in Little Cottonwood Canyon on the Wasatch National Forest near Salt Lake City and on Mink Creek about 12 miles from Pocatello. Smaller operations were established at such places as Blacksmith Fork on the Cache and on Poorman Creek on the Boise. At the time, the Little Cottonwood nursery was the largest in the Forest Service system and the Mink Creek tied for second place.¹⁴¹

Fire Protection

The one hazard feared perhaps more than any other in, the forests was fire. Examination of existing timber

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Figure 19--Seedbed preparation, Bannock Creek Nursery, ca. 1908 or 1909.

stands revealed that many had been burned over in times past and that the destruction from a crown fire could be extensive. Even a ground fire could cause considerable damage, often leaving the thin barked species like lodgepole pine with "catfaces," scars that left the trees susceptible to fungus infection and insect infestation. Moreover, because of their reproductive and growth characteristics, lodgepole pine tended to replace the more valuable Douglas-fir in burned areas. Firefighting was often arduous and time-consuming work. Emil Grandjean remembered fighting a fire on the old Sawtooth near the headwaters of the Salmon River. He found himself in the saddle nearly all day and "part of the night," with little extra money to hire laborers and scant instruction.¹⁴² Guy Mains remembered his men going out to a fire with a crew of settlers from Round Valley with inadequate mess facilities.¹⁴³

Carl Arentson outlined the technique they generally used. With axe, mattock, and shovel, they built a fireline, burning out any vegetation by backfiring between the line and the fire. After establishing the fireline, they tried to hold the fire on the ground inside it to prevent "crowning" by lopping any flammable limbs as high as they could reach.¹⁴⁴

Foresters also undertook presuppression measures. On the Cache, the rangers established fire patrols and posted fire warnings.¹⁴⁵ On the Boise they set up fire lookouts where observers kept watch during the daylight hours. Communication with the lookouts was a problem. They tried heliographs, but found that much less satisfactory than telephone.¹⁴⁶ Eventually, they built a telephone line system serving many lookouts and guard stations.

Engineering

When the ranger was not checking on permittees, working on timber reconnaissance, or investigating trespass, he might have been busy doing what today would generally be regarded as engineering. Rangers and guards did virtually all surveying and building--including surveying forest boundaries, constructing trails or bridges, stringing telephone lines, and gauging stream flow.¹⁴⁷

Special Uses

Though the Interior Department had previously allowed special uses on the forests free of charge, in 1906 the Forest Service asserted the right to charge for the use of resources. The charge was theoretically based on the value of the resource had it been used by the public, but in practice it was much less.¹⁴⁸ The basic principle followed in granting special uses was that since the forests were for public use no privileges were to be denied unless their exercise materially reduced resource values or threatened to harm the public.

In addition to issuing permits for telephone lines, canal rights-of-way, stores, mills, hotels, and other such facilities, the Service granted special use permits for recreation facilities. In 1908, the Service set aside a tract in Logan Canyon for the construction of summer homes. Applications for the use of lots in such tracts were made to the forest supervisors, investigated by a forest officer, and, if acceptable, approved by the Chief of the Forest Service.¹⁴⁹

Homesteading

Major thorns in the side of forest administration were the acts designed to open portions of the forest for homesteading. The Forest Lieu Land Act amendment of 1897 had allowed those owning land within the forest to secure in lieu thereof tracts of equivalent size outside the forest. Congress repealed the act in 1905, ¹⁵⁰ but passed the Forest Homestead Act on June 11, 1906. The Forest Service opposed this act.

Under the Forest Homestead Act, forest officers had to take time from other activities to investigate and classify lands within the forest thought by applicants to



Figure 20--Survey locating monument north or Ketchum, ID. Forest assistant, later Regional Forester, W.B. Rice.



Figure 21--South Fork Ranger Station shelter, 1919, Bridger National Forest.

be suitable for agriculture. Unfortunately, little water was available for irrigation and even less cultivable land remained within the forest boundaries. Such inholdings made administration more difficult since the forests could not be managed as single units.

Moreover, many starry-eyed agrarians applied for homesteads on lands poorly suited for farming. Coert DuBois, formerly district forester in District 5, was said to have devised the rule-of-thumb that if the prospective farmer wore size 50 overalls and a 6-3/4 hat his rangers were to "clear-list" the land, or approve it for homesteading "because the damn fool won't know any better than to try to farm it," anyway. If he wore size 36 overalls and 7-5/8 hat, "refuse to list it because he'll never waste his time to do anything with it if it's listed."¹⁵¹ Moses Christensen confirmed that a number of mistakes were made by clearlisting unsuitable land under the act while he was a ranger on the Malad district.¹⁵²

Accomplishments and Problems

By the end of 1909 much had been accomplished, but a number of serious obstacles remained in the development of effective management of the forests in District 4. Between 1905 and 1908, the Forest Service finished rounding out most of the boundaries of forests in District 4. The establishment of the district office in Ogden and the tendency to decentralize forest management promised that those responsible for implementing decisions would have the authority to make them. In this connection, the periodic courses and meetings provided training, information exchange, and guidelines for acceptable problem-solving techniques. Another important development was the introduction of forest and grazing assistants into the system. These staff officers provided valuable services in assessing the potential value of timber stands and grazing land and in helping to develop plans for resource management.

In addition, the Service recognized grazing associations and created grazing advisory boards on the forests. Working through and with the boards helped to secure some needed grazing reductions, and those supervisors who seem to have been successful developed good relations with their users. Another significant measure of importance was the expansion of the inspection system. This proved extremely valuable, as long as it was used effectively, because it allowed relatively detached eyes to study problems, policies, and procedures on the various forests. As long as the inspector operated competently and with a sense of helpfulness and fairness, both the Service and the inspected forest officers benefited.

Nevertheless, many problems remained. Some of these problems were actually made worse by the initially proposed solutions. In some cases, the forest assistants tended to overemphasize the potential of timber stands in the Intermountain District. This tendency probably resulted from their previous training in professional forestry. Initially this problem was addressed by the gaining of experience, recognizing their status as staff rather than line officers, training in range management, and leaving final decisions to the supervisors and district forester, who had to weigh all the potential forest values, subject to review through inspection. Eventually, the acceptance of the concept of multiple use would require that all forest uses be valued equally.

A major problem for some forest officers was the tendency of stockmen to view range problems primarily from their short-term economic perspective rather than to recognize potentially greater harm from persistent ecological damage. Moreover, some foresters tended to view range conditions as better than they actually were, in part because of their own backgrounds and in part because of the lack of available information on such matters as plant growth characteristics, sources of land damage, and proper grazing patterns. Another major problem lay in the rather indiscriminate destruction of predators in the Intermountain District and in the tendency to treat the Teton elk more as pets than as wild animals. The way in which the Forest Service faced these and other problems will be described in succeeding chapters.

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- 136. "Fish Lake Forest Reserve, Clark, October 19, 1906," File: S-Supervision, Fishlake, 1924-1950, Regional Office Records, RG 95, Denver FRC; "Dixie Forest Reserve, Clark, July 18, 1906," File: S-Supervision, Dixie, 1908-1950, ibid.; and Aquarius Forest Reserve, Clark, October 13, 1906," File: S-Supervision, Dixie (Powell) 1906-1944, ibid. The Clark was who wrote the reports is unknown.
- 137. Information supplied by William D. Hurst.
- This is based on Woods, "Thirty-seven Years," 138. pp. 11-14.

- 139. Forest Service Report in Agriculture Department Report, 1907, p. 378.
- 140. Forest Service Report in Agriculture Department Report, 1905, pp. 213-14.
- Forest Service Report in Agriculture Department 141. Report, 1908, p. 424; Peterson, Wasatch-Cache," p. 138; Christensen interview, p. 8; Smith, Boise, p. 84.
- 142. Grandjean, "History of the Boise," p. 3.
- 143. Guy B. Mains, "Memorandum Directed to Supervisor Van Meter, Payette National Forest," (MS, n.d.), p. 7, Historical Files, Boise.
- 144. Arentson interview, p. 10.
- Peterson, "Wasatch-Cache," p. 148. Smith, <u>Boise</u>, p. 113. 145.
- 146.

- Woods, "Thirty-seven Years," pp. 14-16: Mains, 147. Memo, p. 19, 21-22; C.S. Chapman to Forest Supervisors, August 17, 1908, File: E-Water Power-General, Sawtooth.
- Forest Service Report in Agriculture Department Report, 1906, pp. 270, 272-73. Ruth Clayton, "The History of Recreation Residence Building in Logan Canyon," 148.
- 149. (Unpublished Seminar Paper, Utah State University, 1971), pp. 4-6.
- 150. Forest Service Report in Agriculture Department Report, 1905, p. 205.
- 151. Kneipp, "Land Planning and Acquisition," p. 71.
- 152. Christensen interview, pp. 4, 6-7.



Chapter 4 Forest Protection and Management: 1910 to 1929

Leadership

In 1910 both the Forest Service and Region 4 reached important benchmarks.¹ In March 1909, the Nation inaugurated William Howard Taft as president. Taft appointed Richard A. Ballinger of Washington as Interior Secretary, replacing Pinchot's and Theodore Roosevelt's friend James R. Garfield. Relations between Taft and Ballinger on the one side and Pinchot and Roosevelt on the other had deteriorated as Ballinger tied himself closer to large corporations, especially the Guggenheim interests. Highly critical of what he perceived as Ballinger's indifference to conservation and opposition to progressive policies favoring small business, Pinchot attacked the Secretary openly and Taft asked for and got Pinchot's resignation in January 1910. Henry S. Graves supplanted Pinchot as Chief Forester.²

In early 1910, Clyde Leavitt left Region 4, eventually landing with the Canadian Forestry Department.³ Leon F. Kneipp suggested that although he had mastered technical skills he lacked administrative ability. Leavitt's successor, Edward A. Sherman, began his career as a newspaperman and had previously worked as a Forest Service inspector in Montana and Idaho. In the Bitterroot Mountains Sherman's political finesse earned him



Figure 22--Edward A. Sherman, Regional (District) Forester, 1910-15.

the nickname "Old Smoothie." He remained as Regional Forester until the spring of 1915 when he moved to Washington as assistant chief in charge of lands replacing William B. Greeley in the position.⁴

Kneipp, then serving as assistant chief in the Branch of Grazing, replaced Sherman. An office boy from the Chicago waterfront, Kneipp had joined GLO Division R in Arizona as a political appointee. Kneipp's appointment aroused opposition from some technically trained foresters. Graves reportedly passed them over for Kneipp because of their "lack of knowledge of local mores, procedures, and practices."⁵

Kneipp remained until the fall of 1920, when he transferred again to Washington and Richard H. Rutledge replaced him. Rutledge, an expert in grazing administration and an excellent administrator, remained until the fall of 1938, when he moved to the Interior Department as Chief of the Division of Grazing.⁶

Headquarters Facilities

Throughout the entire period, the region operated out of the building Leavitt had selected on 24th Street and Lincoln Avenue in Ogden. Leavitt's expectation that the office might move into a Federal building to be



Figure 23--Leon F. Kneipp, Regional (District) Forester, 1915-20.



constructed had not materialized, and the Forest Service continued to rent on annual leases. The supply depot used a three-room office and all the basement and ground floor of the building, while the regional forester's organization occupied 26 rooms--a total of 7,500 square feet--on the second and third floors.⁷

By the mid-1920's, however, the facility had begun to show considerable wear. The linoleum looked shabby and a number of the window blinds had broken. Meetings and correspondence between Rutledge and T.V. Pearson, administrative assistant in the division of operation, and W.H. Shearman, manager for the Kiesel estate, brought about some improvements, but did not solve as many problems as the regional administration thought necessary. Ogden City inspectors found some code violations, especially in the building's electrical system, which were only partly corrected.⁸

Personnel

By 1927, though the size of the regional office staff was smaller than it had been in 1920, it had expanded considerably since 1910.9 An assistant regional forester headed each of the major divisions except Finance and Accounts, Engineering, Maintenance, and the Great Basin Experiment Station. To the Divisions of Operation, under Clarence N. Woods;¹⁰ Forest Management under Chester B. "Chet" Morse; Grazing (renamed Range Management by the late 1920's), under Ernest Winkler: and Lands, under R.E. Gery, had been added Engineering, under Regional (District) Engineer J.P. Martin, and Public Relations, under the direction of Dana Parkinson. Lee Stratton served as fiscal agent, Manly Thompson was law officer, and H.C. Baker had been appointed maintenance clerk. The Great Basin Experiment Station under Clarence L. Forsling maintained an office in Ogden after 1916, but its headquarters was located in Ephraim Canyon on the Manti National Forest. Regional office staffs tended to be small by present standards, ranging from a high of 14 in Engineering and 8 in Finance to 2 each in Operations, Law, and Public Relations. Grazing and Forest Management had four each, and Lands and the Great Basin Station had three each. Baker maintained the building and equipment with a staff of four.¹¹

By 1927, less change had taken place on the national forests themselves. The announced desire to decentralize not only from Washington to the regional offices, but to forests¹² brought about increases in staffs in the supervisors' offices of some of the larger forests, whereas others were not affected at all. Ranger districts were still usually one-person operations. The Boise, the Idaho, and the Payette National Forests each had two assistant supervisors and two clerks. The Cache, Powell, Uinta, and Wyoming had staff range examiners. A large number of forests (Ashley, Caribou, Challis, Dixle, Humboldt, Kaibab, La Sal, Manti, Minidoka, Nevada, Sawtooth, Teton, Toiyabe, and Wasatch) functioned with two or three persons in the supervisor's office, usually the supervisor and one or two clerks.¹³

Professionalism and Commitment

Nevertheless, the Forest Service's esprit de corps noted by Herbert Kaufman promoted a sense of professionalism among forest officers.¹⁴ Whether the employees had come up through the ranks like Kneipp and Woods or had a technical education like Lyle F. Watts and Emil Grandjean, they exhibited pride in a professional organization. As Edwin Cazier put it, "I have always been proud of the United States Forest Service and sincerely hope that I never have cause to feel otherwise."¹⁵ Wearing prescribed uniforms, they were touched by an almost religious sense of duty.¹⁶

The organization reinforced the sense of commitment and participation by periodic training sessions and meetings. These also provided a valuable exchange of ideas.¹⁷ Rangers, supervisors, and staff joined with the region officers to discuss activities such as timber, grazing, lands, and recreation. The meetings helped the field force gain "a better understanding of the technical points of the regulations governing the management of the national forests."¹⁸ Forest management training schools also were held in the field.¹⁹

Forest officers functioned under a great deal of pressure and inconvenience. The Forest Service demanded enormous commitment from its officers and got it from most of them.²⁰ Over a period of 7 years as an inspector, C.N. Woods spent an average of 200 days a year away from the regional office.²¹ On the forest level, Leo E. Fest compared the operation of a ranger district to managing a large farm. With timber and livestock management, fire control, engineering, and maintenance, the ranger tried to "harvest a crop and still leave [the] area in a good . . thrifty condition, where it will produce and keep producing the crops it is best suited for.²²

Those who could not accept that sense of commitment, demonstrated by a willingness to sacrifice for the good of the Service, left. Based on current standards, turnover was quite high during the period before World War I. Supervisor William Hurst declined to move from his home and farm to accept a new assignment and resigned. Emil Grandjean refused to transfer from the Boise to the Nevada, was demoted to assistant supervisor, and resigned in disillusionment.²³ In 1915, when the Service prohibited forest officers from holding grazing permits, several rangers resigned to pursue their livestock interests.²⁴ Orrin C. Snow, who spent too much time in his livestock operations, was forced out.²⁵

Shortly after World War I, a ranger caught embezzling money from the sale of timber permits was dismissed and sent to jail. He tried to justify himself by circumstances: "Many are going wrong since the war--I guess it's in the air."²⁶ However, this attitude was unusual. Both forest officers and the public tended to see Service employees as custodians of the public resources and recognized their scrupulous commitment to integrity.²⁷

Supervisors concerned themselves particularly with securing competent and effective personnel.²⁸ One means was offering steady employment and a reasonable

salary and creating a sense of belonging and security, so that employees perceived that they had the trust and confidence of their superiors.²⁹ Rangers had permanent appointments. Guards were seasonal, and some supervisors thought this arrangement created difficulties in finding and keeping competent men in these jobs.

Reporting and Inspection Systems

Most important, besides the sense of commitment, in maintaining the integrity of the Service were the reporting and inspection systems. Supervisors and rangers were required to keep and submit various detailed accounts.³⁰ Forest officers had to account for property under their control and to report on their activities through a daily diary that they summarized at the end of the month, assigning time to the various categories of forest administration. Regulations required the supervisor to review the diaries and reports before certifying the ranger for his monthly salary, unless the supervisor knew the ranger was on an assignment that would make it impossible for him to complete the report. In practice, the supervisors did not usually wait for the formal monthly reports before completing the certifications.³¹

Inspections and review of diaries and reports proved valuable. A thorough inspection of the Uinta by A.C. McCain in 1913 revealed a deplorable situation. Willard I. Pack supervised a number of rangers related to him by blood or marriage whose diaries showed a clear inattention to duty. Pack said he had paid little attention to their diaries and reports and was unaware of their ineffectiveness. Regional Forester Sherman offered Pack the alternative of demotion to ranger, but the supervisor chose to resign. Sherman furloughed two of the offending rangers; Robert Pack, Supervisor Pack's brother, resigned under pressure.³²

After Clarence Woods came to the regional office, he still found some employees whose attitudes needed changing. Some forest officers believed they could "get by" provided their morals were "pretty much above criticism," whether or not they were energetic or efficient. Woods did his part to change that attitude. On one inspection he rode with a ranger over his district. He found the trails poorly maintained, the wires on pasture fence loose, and paperwork deficient. When Woods suggested that the ranger ought to do something about the trails, he replied that they were "just as God Almighty made them." Woods responded that God "had favored some men with good muscles and strong backs" so they could do manual labor, and that He blessed others with good minds so they could do "constructive thinking," but as far as he had been able to observe, "the ranger had not been favored in either way." The ranger promised to do better, but later resigned. 33

Although some supervisors, such as Guy Mains, received high marks for their ideas and field supervision, their paperwork left much to be desired. In 1916, Kneipp said that 2 years before he had found Mains's records in "disarranged attire," and indicated he was sorry to note that in the intervening "two hard winters" Mains appeared, "figuratively speaking," to be "pretty badly frost-bitten. Don't you think," he wrote, "it is time that you protected yourself against exposures of this character?" $^{34}\!$

The character of the supervisor and the rangers made a great deal of difference in the administration of a national forest. During the late teens and early 20's, for instance, reports from the Toiyabe showed lax grazing administration. The appointment of James E. Gurr in 1925 reportedly "brought grazing administration up from . . . a pretty low standard to a fairly high" one³⁵

Women constituted the most mistreated group of employees. Arlene Burk, secretary in the region's division of operations, traveled on official duty to conduct inspections of filing systems and paperwork on the various forests. At first, under Service regulations, the region furnished transportation, but she had to pay her own board and room solely because she was a woman. After enduring second-class status for some time, she complained to Rutledge, who balked at first, saying that she lived at home. Later he backed down and arranged to pay her per diem expenses.³⁶

Public Relations

Although the Division of Public Relations was not established until 1920, many successful forest officers were already promoting good relations with the public.³⁷ In 1914, E.C. Shepard of the Cache took photographs on the forest for displays at the Panama-Pacific exposition.³⁸ On the Caribou in the 1920's, Sterling Justice showed films to local groups and prepared exhibits for the Eastern Idaho State Fair.³⁹ Edwin Cazier managed to win over an antagonistic stockman and his son by cultivating an interest in the boy and helping him write an essay on range management.⁴⁰

Timber Management

During the period from 1910 to 1929, as before, a number of the assumptions based on European precedents under which the Forest Service formulated general timber management policy were extremely difficult to apply in Region 4. First, the Service operated on the assumption that depletion constituted the major threat to the timber supply.⁴¹ Second, the Washington Office expected to use timber disposal as a means of stand improvement, requiring cutting the poorest and most diseased timber as part of large sales.⁴² In practice, the forests in Region 4 tended to be far too vast compared with consumer needs, far too distant from markets, and far too overmature to make such policies practicable.

The region had three major commercial markets: Boise, Salt Lake City, and Idaho Falls, none of which was very large (see table 5). The forests fell generally into three groups: (1) Forests with some commercial markets plus a moderate local market, (2) Forests with virtually no commercial market, but a moderate local market, and (3) Forests with virtually no commercial market and a very small local market.

Peculiar conditions allowed some forests to fit in the first category between 1910 and World War I (table 5).⁴³ The Wyoming, Uinta, Wasatch, and Targhee sold ties extensively to the Union Pacific and its subsidiaries.



Figure 24--Steam log jammer in operation, Boise National Forest, 1925.

The Manti, Nevada, and Toiyabe found ready markets in nearby mines. The accessibility of transportation and the good quality ponderosa pine lumber helped the Payette and the Weiser, and the Palisade and Cache were close to the major market centers in Idaho Falls and Salt Lake.

The second category included forests near moderatesized settlements, but distant from the major commercial market centers. These included forests like the Sawtooth, Salmon, Challis, Lemhi, and Minidoka of south-central Idaho; the Caribou and Teton in eastern Idaho and west-central Wyoming; and the forests of southwestern Utah such as the Dixie, Fishlake, and the Fillmore. On some of these forests, for example, Fillmore, saw timber was extremely scarce, and the accessible pinyon-juniper and aspen stands were principally valuable for posts and poles.⁴⁴

The third category, forests away from major commercial centers and transportation, near small settlements, or with large private timber stands nearby, could expect only a small market. These included the Powell and Ashley in Utah, the Kaibab in northern Arizona, the Idaho in Idaho, and the Humboldt, Santa Rosa, and Ruby in Nevada. Each had a local market, but some of these forests, particularly the three in Nevada, suffered from an absence of marketable timber. Most of their supply consisted of pinyon-juniper forests valuable principally for posts or firewood.

A survey by Assistant Regional Forester O.M. Butler of the forest and market conditions in Region 4 in 1912 indicated the futility of trying to impose the European model. The Boise block was quite typical as it contained all three kinds of forests. From that block, only 5 percent of the 4.9 million board feed cut in 1911 "entered into the general competitive market." If the timber growing in western Idaho had been found closer to major market centers, its volume might have justified its transportation. Because of the disadvantage in the cost of transportation to the mill, these forests could not compete successfully with Oregon lumber operations. Butler believed that if the forests in the Boise block were able to operate on a sustained yield basis with a 140-year rotation, they could have produced 50 million board feet (MM) a year. This was, however, more than 10 times the current production, so such a basis was patently impossible (see table 5).⁴⁵

As market conditions changed over time, forests moved from one category to another, usually depending upon their access to commercial markets. By 1919, for instance, Supervisor W.W. Blakeslee on the Toiyabe had seen a decline in fuel sales to mining companies, since by that time electricity had begun to supply most power for mining operations.⁴⁶ By the early 1920's, the expansion of mining in the Jarbidge district on the northern Humboldt increased the market for timber from that forest.⁴⁷ By the 1920's, the Uinta had cut into the Manti's mine prop business and moved it out of the first group.⁴⁸ (For data on the changing value of stumpage and logs nationally see table 6.)

In Region 4, the demand was so minuscule that some forest officers had difficulty justifying the amount of time required to administer the many small timber sales they had to conduct.⁴⁹ Because of the time invested in administering small free use permits for green timber, forest managers allowed free use of small amounts of dead timber, but gave away no green timber to local people for their personal or commercial use.⁵⁰ To minimize the time on small sales, L.L. White of the regional timber staff suggested that the supervisors consider giving year-long permits for the estimated amount small users would want.⁵¹

In the period before World War I, the region ran into some problems in sale administration. Problems ordinarily appeared during periods of market depression when timber purchasers wanted to get out of contracts they could not fulfill at an acceptable profit. In those cases, regulations required the regions to try to prevent the purchaser from breaking the contract and to recover the loss to the Federal Government from those who did.⁵²

In the region as a whole, the Targhee might be considered the "average" timber forest among those favored both with some commercial market and a moderatesized local market. The report of C.E. Dunston, based on his reconnaissance of the Targhee in 1910, reveals assumptions in accord with the general European model, including markets for products from timber stand improvement, and the idea of imminent forest depletion.⁵³ Dunston thought that the forest existed in a "depleted condition" largely because of primeval fires that had destroyed an ancient Douglas-fir forest.⁵⁴ The Targhee had been created because of the "inroads being made on merchantable stands." The Oregon Short Line

Forest	FY 1914	FY 1913
Category 1		
Wydeing	\$8,083.70	\$ 7,321.12
Manti	7,808.57	10,790.49
Payette	6,561.25	19,030.41
Wasatch	6,240.73	271.90
Nevada	5,569.23	5,097.89
Uinte	5,507.40	868.29
Toiyabe	4,437.20	5,89 9.03
Targhee	3,901.74	7,797.54
Cache	2,932.55	2,426.21
Palisade	2,799.36	3,273.54
Weiser	2,005.43	1,648.88
Category 2		
Salmon	1,754.44	4,823.23
Sevier	1,657.36	1,386.17
Fishlake	1,646.20	2,770.24
Fillmore	1,566.07	1,868.80
Sewtooth	1,424.34	1,909.84
Lenhi	1,411.36	2,216.31
Boise	1,282.17	2,841.82
Minidoka	1,253.18	1,118.15
Caribou	1,160.34	1,123.48
Le Sal	1,108.25	1,449.75
Challis	1,090.66	1,209.44
Teton	1,049.00	732.50
Dixie	1,031.19	805.65
Category 3		
Powell	782.50	1,365.00
Ashley	637.31	1,040.46
Pocatello	623.35	648.15
Kaibab	417.00	314.80
Humboldt	395.61	355,69
Santa Rosa	158.75	43.00
Nebo	25.50	179.80
Idaho	6.00	40.75
Ruby	00	00
Totals	76,343.74	92,668.33

Table 5--Timber sale receipts by forests Region 4, 1913, 1914 (ranked by walue of males in 1914)

Source: A.C. McCain to Forest Supervisor, July 22, 1914, File: S-Salas, General, 1912-1923, Box 601102, Regional Office Records, RG 95, Denver FRC. For a description of the categories, see the accompanying text.

Railroad had recently constructed a railroad through the forest to West Yellowstone, MT, and the settlements near St. Anthony and Ashton were growing rapidly.⁵⁵

Dunston's proposed timber management plan was a mixture of the ideological and realistic, addressing actual conditions with European forestry prescriptions. He recognized that for some time, logging would continue "with portable, steam power sawmills" with a capacity of 3 to 10 thousand board feet (M) a day. The one attempt to introduce a larger mill near Island Park had failed. Dunston attributed the failure, quite realistically, to "an insufficient amount of sawtimber accessible to the sawmill setting," and a location "at too great a distance from the market at St. Anthony."⁵⁶

On the ideological level, Dunston based his prescription for forest management at that time on the assumption of an extensive increase in cut that would allow timber stand improvement. In his view, "the chief alm" ought to be "the establishment of the best possible silvicultural conditions and consequent ultimate normality [by which he seems to have meant even-aged sustainedyield management] of timber stands on all parts of the Forest."⁵⁷ He concerned himself with protection against forest fires and diseases, particularly dwarf mistletoe and bark beetle. These diseases generally attacked trees "which have passed the period of maximum growth and are decadent."⁵⁸ He prescribed stand improvement and selection cutting for Douglas-fir and clearcutting in strips for lodgepole. In mixed stands of lodgepole and spruce, he hoped to reduce the number of lodgepole. Even though only 3.3 million board feet had been sold and only 1.8 million cut in 1910, his prescription required an annual cut of in excess of 8 million board feet including 4 million board feet of the Douglas-fir.⁵⁹

The impossibility of such a silvicultural prescription in those days is evident from subsequent reports. In 1919, the forest consisted of "a large surplus of overmature timber." The supervisor said that "at least 75 percent of the timber that is used in the Upper Snake River Valley is imported from Oregon and Washington." He estimated that they were then cutting about 30 percent of the annual growth and no more than 2 percent of the mature and overmature timber.⁶⁰ In 1925, Chester B. Morse, assistant regional forester, estimated that on the Moose Creek plateau, "the annual loss due to decay, insect killing of overmature timber." and other causes "is greater than the annual growth."⁶¹

A reconnaissance of the Teton in 1912 revealed an essentially similar state of mind on the part of the investigators. Prescriptions were based on European precedents and the expectation of an immediate extensive market in southern Idaho.⁶² By the early 1920's, the Teton timber stands still remained largely untapped except for local uses, although the investigators reconnaissance expected the tie market to open these stands up in the near future.⁶³

Ironically, between 1910 and the mid-teens, largely inflexible Forest Service policy, including an unwillingness to set stumpage prices in accord with market conditions, increased the inability to achieve the objective of even-aged stands operated on a sustained-yield . basis.⁶⁴ The Washington Office insisted that stumpage prices represent actual value of standing timber under "normal" market conditions, whereas the period between 1910 and the First World War witnessed a depression in the timber industry.⁶⁵ When the Federal Government created the forests of western Idaho the Service set stumpage rates at \$1.00 to \$2.00 per thousand board feet (M). Under those conditions, the forests made some sales to larger companies who could compete with Oregon operations. Shortly thereafter, the Washington Office set the rate at \$3.00 per M and large companies stopped bidding on the timber. Thereafter, sales went generally to small mills filling the local market, where low transportation costs and a willingness to accept lower quality offset the competitive advantage from the Oregon forests.66

Local forest supervisors complained that the required stumpage rates were too high, but the Washington Office paid little attention at the time.⁶⁷ Unfortunately, decentralization had not reached the timber market policy.⁶⁸ O.M. Butler argued that the Government ought to

Year	Wholesale price index (1947-49 = 100)		Stumpage prices (dollars per 1,000 bd. ft.)		Log and lumber prices (dollars per 1,000 bd. ft.)		
	BLS consumer	Lumber	Douglas- fir	Ponderosa pine	Douglas-fir saw log	Douglas-fir lumber (whsle)	
 1910	45.8	16.6	\$2.20	\$3.60	\$ 9.00	¢13.00	
1911	42.2	16.3	2.30	2.50	8.00	11 00	
1912	44.9	17.5	2.30	2,70	8.00	11.50	
1913	45.4	18.5	1.70	2,20	8,50		
1914	44.3	17.1	1.60	2.00	7,50		
1915	45.2	16.7	2.90	2.50	7.00	10.60	
1916	55.6	18.9	1.20	2,90	8,50	10.80	
1917	76.4	24.7	1.60	2,20	11.00	16.20	
1918	85.3	28.6	1.80	2.70	14.50	19.50	
1919	90.1	38.7	2.40	3.00	17.00	24.90	
1920	100.3	56.6	1.80	3.70	22.00	34.90	
1921	63.4	30.5	1.90	3.20	14.50	18.00	
1922	62.8	33.9	2.50	4.00	15.00	21.00	
1923	65.4	38.3	2.50	3.00	18.50	27.30	
1924	63.8	34.0	2.20	3.50	16.00	22.40	
1925	67.3	34.5	2.10	3.60	15.00	21,10	
1926	65.0	33.2	2.20	3.70	16.00	20.40	
1927	62.0	30.9	2.50	3.40	15.00	19.80	
1928	62.9	30.1	2.90	2.50	15.50	19.40	
1929	61.9	31.2	2.70	3.60	16.00	20.60	
1930	56.1	28.5	3.30	3.60	15.50	17.80	

Table 6---National stumpage, wholesale, and log and lumber prices, 1910-1930

Source: U.S. Bureau of the Census, <u>Historical Statistics of the United States</u>, <u>Colonial Times to 1957</u> (Washington: GPO, 1960).

"appraise each species separately upon its value in the market." At that time, "the inferior species do not justify . . . stumpage rates much more than \$1 per M if utilized as lumber."⁶⁹

Two Service policies designed to help small users did open up more timber for acquisition and increase the probability of stand improvement. A 1912 law allowed farmers and settlers to purchase mature, dead, and down timber at cost.⁷⁰ (These were later referred to as S-22 sales after the regulation allowing the procedure.) In addition, settlers, local residents, and prospectors were allowed free use of dead timber.⁷¹

By the mid-teens, some in the Washington Office, particularly William B. Greeley, had begun to recognize that their current pricing and cutting policies and silvicultural prescriptions were unworkable. This change in position seems to have come because of regional objections to various Washington Office decisions. Responding to a Washington Office statement issued in October 1914, Assistant Region Forester A.C. McCain suggested a number of revisions in lodgepole pine policy.⁷² Arguing that railroad ties constituted the principal market, he objected to rules that set a maximum cut at 20 to 40 percent of the stand. He pointed out that in unevenaged and often defective stands like those found in the region, it was often necessary to take as much as 50 percent to meet the quality and specifications of railroad companies.

Moreover, he opposed as futile the cutting prescriptions, aimed at controlling diseases and beetle infestations, that required loggers to remove snags and diseased and insect-infested trees as part of the sale. In the previous year, the region had discovered a major beetle infestation on the Palisade. They tried to remove it by cutting the infested trees, but subsequently the supervisor informed McCain that apparently the effort had failed. McCain believed that experience had shown they could not justify such control work on either economic or silvicultural grounds. This lack of justification was doubly true of trees with root rot, since felling them wasted the operator's money and added prematurely to debris on the ground.

McCain also called for a change in the slash disposal policy. Here, the prescription called for piling and burning. He wanted flexibility that would allow the region to decide whether to use piling and burning, piling and not burning, or lopping and scattering.⁷³

He also wanted flexibility in determining stumpage prices. Regulations had required that, in calculating stumpage rates, the regions use a profit margin of 15 to 20 percent of presumed investment. McCain pointed out that subcontractors---"gypos"---did virtually all of the actual logging, so hypothetical investment did not reflect actual conditions. Moreover, the amount of usable material in uneven-aged and deteriorating stands was certainly not constant, a condition which made prediction of profit margins imprecise at best.

After considering McCain's views, Greeley accepted the proposals on marking, utilization prescriptions, and appraisal. He rejected the criticisms on diseased and infected trees since Agriculture Department scientists believed that the insects and diseases could be controlled through cutting. He allowed the region to use methods other than piling and burning on an experimental basis.⁷⁴

By the early 1920's, the regional administration found that piling and burning of slash was the best method. Although lopping and scattering was less expensive, under the region's dry conditions the material did not deteriorate rapidly enough, hence it was a fire hazard.⁷⁵ Region 4 forest personnel also favored the establishment of cooperative funds from timber sales to allow slash piling and burning.⁷⁶

In 1915, the regional administration pressed even harder to change its management techniques away from the European model in order to deal with actual conditions. Small sales averaging \$12.00 in stumpage and based on users applications, rather than large sales based on reconnaissance and extensive silvicultural prescription, were the norm, so the region began to plan for sales of the size for which users were most likely to apply, rather than to plan large sales that no one would buy.

Under this concept, market conditions rather than ideologically based prescriptions governed sales prices. In a competitive market, timber was to be appraised at its assumed market value. In isolated regions, "the prices should be on a reasonable basis, corresponding to a great extent to rates in the competitive market."⁷⁷

Under this policy, the region took a greater interest both for its own information and to help guide prospective timber purchasers in companies' logging and milling costs and profit margins. Representative figures were obtained in 1913 and 1914 from samples taken from each forest in the region.⁷⁸

Thoughtful regional foresters, like Leon F. Kneipp of Region 4 and John F. Preston of Region 1, recognized that practical considerations had to play the dominant role in timber management. Both believed that no one had enough experience to know what the "best silvicultural treatment of a given mixed stand might be." In many cases, prescriptive ideological models made management difficult; in others, they gave away timber that ought to have been sold. The presumption, for instance, that Douglas-fir was not a valuable species in ponderosa pine stands had led to its treatment in appraisals as a negative value and thus, in effect, the Service actually paid lumber companies to take it.⁷⁹

After his appointment as Chief Forester in 1920, Greeley continued to shift policy in a more realistic direction. In a 1925 statement he commented that "refined and detailed schemes of regulation, following European precedents . . . never got off of paper and into practical operation in the woods." Although he clearly believed in depletion as a general concept, he recognized that the major problem in national forests was great overstocking of mature and overmature timber. For that reason, he proposed to prescribe management only in broad terms. The time for refined regulation on the European model, could come "only after we have worked over our forests into more like a normal [even-aged] distribution of age classes and also after much more comprehensive growth and yield figures have been secured."⁸⁰

Under this concept, local conditions were allowed to dictate profit margins. This was particularly important in view of the often poor quality of timber and high logging costs incurred by small operations in Region 4. In figuring a small sale on the Ashley in 1921, for instance, the ranger used a presumed profit margin of 30 percent. He based the stumpage value on the average expected price of the types of lumber the operator could realistically hope to sell, minus the total conversion costs (including the profit margin, maintenance, depreciation, and other costs of operation). In that case, the stumpage value was figured at \$2.17 per M. The ranger recommended that they offer the sale at \$2.15 per M because of the poor quality of the stand.⁸¹

Though by the 1920's a practical acceptance of actual conditions by the Washington Office had replaced the attempt to adhere to theoretical concepts, the fear of depletion motivated much of the legislation and lobbying throughout the period.⁸² In addition to the argument for flood prevention and watershed protection, supporters used depletion arguments in support of the Weeks Act of 1911, which allowed the Forest Service to purchase private lands in the watersheds of navigable rivers to add to the National Forest System.⁸³ The General Forest Land Exchange Act of 1922 authorized the Service to exchange federally owned lands or stumpage within a national forest for privately owned land. This allowed the Service to control and rehabilitate logged-over lands that had generally been neglected because market conditions did not warrant their replanting. The Clarke-McNary Act of 1924 permitted the Federal Government to assist the States in fire prevention, the reforestation of denuded lands, and farm forestry. This act also amended the Weeks law to allow the purchase of lands suitable for timber in addition to those in major watersheds.

In general, although the rationale for such legislation had little immediate applicability to Region 4, its application had a salutary effect on the lumber industry, the States, and the Forest Service. It allowed the Service to increase the amount of land under its management and to expend Federal dollars in improvement of lands that, because of market considerations, other agencies or private companies would otherwise not have improved. It allowed the States to develop cooperative programs in fire prevention and forestry farming that would otherwise probably not have been feasible because of lack of funds and markets.

Even where there were few commercial sales, the regional personnel attempted to enforce silvicultural prescriptions for removing defective and diseased trees, leaving low stumps, and piling and burning slash.⁸⁴ On some of the forests like the Uinta, free use outweighed sales.⁸⁵ Many of the few large sales on the Fishlake were for derrick poles. Nevertheless, the working circles and sale areas were inspected and rangers graded on sales administration and stand improvement.⁸⁶.

Immediately after World War I, in 1919, prices rose rapidly, then declined in the early 1920's before stabilizing by 1923.⁸⁷ Stabilization helped improve markets in Region 4, as indicated by such developments as the Standard Timber Company's tie sale on the Wyoming, the activities of the Hoff and Brown lumber company on the Idaho, and sales to Boise-Payette on the Payette and Boise.⁸⁸

Accompanying this improvement was the hope of introducing long-term stability and sustained-yield management to the forests of Region 4.⁸⁹ Meeting this goal required the development of timber management plans based on accurate assessments of timber volumes and values within each national forest. The Service attempted to achieve this through reconnaissance, intensive planning, and logging units established in working circles. Ordinarily, the working circle consisted of a topographic management unit tying timber to the nearest point of manufacture.⁹⁰

Forest reconnaissance efforts had begun in Region 4 in 1908. By 1910 they had been undertaken on the Kaibab, Manti, Minidoka, Pocatello, Salmon, Sawtooth, and Tar-



Figure 25--Winter timber cruising, ranger estimating tree height, 1927.

ghee.⁹¹ Timber cruising included the establishment of survey control from a base line, the use of mapping techniques, and the determination of timber volume and types.⁹²

As methods and assumptions changed, new cruises refined previous figures. On the Weiser, for instance, a reconnaissance of 1911 and 1912 was redone between 1927 and 1929. Because of a change in method, the new cruise showed a larger volume of merchantable timber than the previous estimates.⁹³ On the Provo River Working Circle of the Uinta and Wasatch, a cruise in 1925 updated and augmented work done in 1911, 1913, 1914-16, and 1923.⁹⁴ Recognition of the importance of pinyon-juniper forests on the Fillmore necessitated a reconnaissance of that type in 1922.⁹⁵

Following the cruise, the forest officers drafted a timber management plan. It provided a description of the working circle and its subunits, a statement of the silvicultural objectives, and a plan for achieving these objectives through timber sales and silvicultural practices.⁹⁶

Timber management plans where a large amount of private timberland was involved (especially in western Idaho and in the area along the Union Pacific Railroad in Utah and Wyoming) were sound theoretically but impossible to implement from a practical standpoint. On the Idaho National Forest, for instance, during the early teens, lumber companies bought virtually no timber from the forest because of the large private holdings by Boise-Payette. This condition placed the Idaho in the bottom rank of forests in volume logged, although its timber resources were comparatively large.

Some cruises showed that although the timber stands might be extensive, they were actually unmarketable. A 1915 cruise of the North Fork of the Duchesne on the Uinta National Forest showed that the only practicable method of getting the sizable timber volume out was either building an extensive road system or dredging and blasting to rechannel the river for driving. After considering costs of these alternatives, Daniel F. Seerey decided that logging was economically unfeasible at the time.⁹⁷



Figure 26--Horse skidding of lodgepole pine to tie mill, Flat Creek, ID.


Most sales, on forests as diverse as the Ashley, Weiser, and Uinta, were small--10 M to 15 M--and known variously as ranger, at cost, green card, or regulation S-22 sales to farmers and ranchers who manufactured the lumber at small mills.⁹⁸ Often, as on the Minidoka, the rangers would set aside one day a week when farmers could come to purchase timber. Joseph W. Stokes laid out small sales in isolated 5- to 10-acre patches, which he classified for thinnings, small poles, large poles, or large timber.⁹⁹

During the 1920's, a major problem in implementing timber management plans stemmed from the lack of personnel. The ranger districts were mostly one-person operations. Shortly after his appointment as a ranger on the Weiser, Dewitt Russell was put to work on a large sale on Filley Creek. Assistant Supervisor Felix Koziol planned the sale and left after he got Russell started. The ranger did the marking, scaling, and woods supervision alone.

After several weeks, it became apparent to Russell that he had, and would have, no time to do anything on the district but run the sale. He tried in vain to get some help, then decided to bring matters to a head by applying for a week's annual leave. "No one in his right mind," he pointed out, "applies for annual leave in the middle of the summer on a fire forest." His application brought the desired result, as Supervisor John Raphael paid him a quick visit and demanded to know why he wanted annual leave. Possessed of a good sense of humor, Raphael got the point when Russell told him that "we had some high powered and very expensive Range Management Plans, and nobody to use them." The supervisor authorized Russell to hire a man to help with the scaling, which freed Russell for other duties.¹⁰⁰

Although most Region 4 mill owners were small operators, a number of large companies operated there too. Perhaps the largest was the Boise-Payette Lumber Company, a Weyerhaeuser subsidiary, organized from the Barber and Payette lumber companies in 1913. By 1916, it operated two major mills at Boise and Emmett, in addition to a number of smaller establishments. The Emmett mill, built in 1916, had a capacity of 200 M per 10-hour shift. The company hauled logs to the mill from the Payette River valley over an Oregon Short Line branch completed in 1915. A large, integrated operation, the mill included three 9-foot single-cutting band saws and double and single edgers. After sawing, the lumber moved to the sorting and stacking sheds, the drying kilns, an unstacking building, and the planing mill. Steam and electricity generated by a steam turbine, presumably fired by lumber scrap, powered the operation.¹⁰¹

North of Cascade, the company built the town of Cabarton, named for C.A. Barton, vice president and general manager of Boise-Payette, as its operations center. Boise-Payette had a mill at Cascade as well.

Most logs for the Cascade and Emmett mills were skidded by horse. During the 1920's, the company constructed log chutes up the draws from the railroad and used grease monkeys to keep the chutes slick.¹⁰²

Under the Timber Exchange Act, during the 1920's, the Service began a series of large exchanges of timber



Figure 27--Starting down with a load aboard a Boise-Payette Lumber Company logging train.

for land with the Boise-Payette trading with Boise National Forest. $^{103}\,$

Tie-hacking operations became especially important on the forests of southwestern Wyoming, particularly the Wyoming and Bridger; eastern Idaho, especially the Targhee; and northeastern Utah, mainly the Wasatch. The Standard Timber Company, organized in 1912 by D.M. Wilt, based in Omaha and closely associated with the Union Pacific railroad, did most of the logging. Tie hacks working for the company were generally Scandinavians and local farmers and ranchers who lived in camps. In the winter months, they hewed logs into ties. In the spring these were driven by stream or flume to loading points. The company paid hackers by the piece. Since they could average 20 ties per day, they cleared, after board, about 96 cents per day.¹⁰⁴ The ties were taken to Pocatello for preservative treatment.¹⁰⁵

The log drives caused some conflict with ranchers and farmers along the Blacks Fork of the Green River in



Figure 28--Logging chute greaser at a Boise-Payette Lumber Company sale, 1923.

1915. Supported by R.H. Fletcher of the U.S. Geological Survey, they alleged that the driving had damaged irrigation works and portions of the river channel. They pressed the Wyoming legislature unsuccessfully to prohibit the drives. In response to the complaints, Standard Timber expended over \$15,000 in channel improvement.¹⁰⁶

Because the ultimate aim of the forestry work during the early years was to achieve a "normal" forest of good-quality even-aged trees operated on a sustainedyield basis, the region attempted considerable reforestation.¹⁰⁷ Greeley expressed his reservations in the mid-teens—in this case about reforestation work on the Manti.¹⁰⁸ The Service found that the plantings were extremely expensive, but the commitment to the European ideal promoted continuation for a number of years.¹⁰⁹ By the end of the First World War, the regional administration, realizing that it did not know how to plant trees successfully, closed its nurseries.¹¹⁰ By 1923, reforestation had virtually come to a halt in Region 4. In 1927, the Washington Office acknowledged that it could not reforest at a reasonable cost.¹¹¹ Into the 1930's some work continued in the States under the cooperative provisions of the Clarke-McNary act.¹²

Fire Protection

Fire undoubtedly evoked more fear among forest officers than any other forest hazard, in part because of experiences in 1910 and 1919.¹¹³ In both years, the extremely dry weather increased the fire hazard and led to fires with tremendous losses of resources, property, and human life in Region 1.¹¹⁴ Some bad fires also took place in Region 4, although it was not hurt as severely.¹¹⁵

After 1910, the Service worked more diligently to develop fire protection plans for each forest. Agreements were reached with local settlers, lumber companies, mine operators, railroad companies, and livestock permittees, to help fight fires. 116

In addition, the Service began to improve firefighting technology and presuppression. Forest supervisors like Clinton Smith on the Cache set up caches of fire tools, usually shovels, double-bitted axes, and grubbing hoes, throughout the forests with instructions for use in case of fire.¹¹⁷ The Service pushed for improvements in transportation and communications facilities such as roads and trails and telephone lines and for the piacement of lookout towers and fire breaks.¹¹⁸

Between 1914 and 1917 lookouts were set up on the Boise and fire guards located at various points. The lookouts had an Osborne fire-finder, based on a setup similar to a plane table and alidade.¹¹⁹ The guard at Deer Park on the Boise modified saddlebags for use with hand pumps to deliver water on mules for firefighting.¹²⁰

Firefighting techniques improved considerably during the 1920's. A central-dispatcher system originated on the Weiser in 1921 under Lyle F. Watts and Thomas V. Pearson. This system allowed a dispatcher in Council to receive reports from rangers and lookouts and to send fighters to respond.¹²¹ Similar systems were instituted on the Payette in 1922 and in 1925 on the Boise.¹²² By 1930, the region made up standard smokechaser outfits, including such equipment as the Koch tool (a handle that could be mounted on either a grubbing hoe or a shovel), and the pulaski, a handle with a head consisting of an axe on one side and a grubbing hoe on the other. Other firefighting equipment, including a gas operated water pump, was introduced.¹²³ Some experimental use was made of airplanes for spotting large fires in Idaho, but this was not extensive in Region 4.¹²⁴

Sources of fires varied, but lightning and sparks from railroad locomotives were two of the most common. The Service pressed railroad officials for clearing near tracks, for installing spark arresters, and eventually for the use of petroleum fuel in all locomotives.¹²⁵ Though lightning caused most fires in Region 4, these fires were generally not as serious as human-caused ones, since they were generally predictable, coming after thunderstorms.¹²⁶

Not until the 1920's did the region develop standard techniques for fire control. 127 In 1926, the region prepared a fire control manual that it distributed to the forests. 128 By the mid-1920's, various forests, such as



Figure 29--Peeling bark off trees at a tie sale near Evanston, WY, Wasatch National Forest in the 1920's.

the Boise and Bridger, were holding fire training for employees.¹²⁹

No matter what methods were used, firefighting was backbreaking work. In general, the fighters would walk in from the end of a road or from a lookout or guard station. Most were one-man fires where a ranger used "dirt and ambition," camping if necessary, near the fire until it was completely extinguished.¹³⁰

The Service worked on developing cooperative fire prevention programs. By 1930, Idaho was the only State in Region 4 working with the Service in a cooperative program.¹³¹ The 1925 Idaho Forestry Law required all owners of forest land to maintain adequate fire protection. If they did not, the State supplied it and charged the cost to the owners as a tax.¹³² This strengthened cooperative organizations such as the Southern Idaho Timber Protective Association.¹³³

In recognition of the pervasive danger of fire, insects, and diseases, a number of agencies organized the Regional Forest Protection Board in 1929. The board included representatives of the Forest Service, the Weather Bureau, the General Land Office, the National Park Service, the Bureau of Entomology, the Bureau of Indian Affairs, the Bureau of Plant Industry, and the Bureau of Animal Industry.¹³⁴

Insect and Disease Control

Although insects, diseases, and pests constituted as real a challenge as fires, they never generated the sort of all-out control responses that fire did. Nevertheless, because they were so unpredictable and devastating, these hazards threatened sustained-yield management. In the period before 1929 the outbreaks of bark beetles and spruce budworm were the worst.¹³⁵

Between 1911 and 1915, an infestation of bark beetle started around Kalispell, MT, and spread down the Continental Divide through the lodgepole pine into the Targhee and Wyoming. 136 The infestation moved south and west from the Targhee. By the early 1920's, beetles had become a serious problem on the north slope of the Uintas, the Middle and South Forks of the Payette, and the South Fork of the Salmon. Infestations then spread through Utah to the Kaibab in northern Arizona.¹³⁷ Nevada was not seriously affected.¹³⁸

The Service tried various methods of treatment. At first crews peeled the bark from infected trees like banana skins. When that failed to stem the epidemic, they felled, decked, and burned the trees. They also tried spraying with insecticide or spraying with fuel oil and then burning the oil.

Research on controlling the beetle infestation centered in the Bureau of Entomology field lab headed by James C. Evenden at Coeur d' Alene, ID. The major problems he and his team faced were the extreme expense and limited effectiveness of known treatment methods. More seriously, these treatments also destroyed the beetle's natural enemies. Research revealed a great deal about the beetles, but the team was unable to develop a method of eradication that was both economical and effective.¹³⁹ At the time, Evenden thought that treatments had succeeded in minimizing the infestation, but in retrospect, he believed that the infestations may have run their courses anyway.¹⁴⁰

Evenden and his associates also researched other insects as well. Following the outbreak of the Douglasfir tussock moth near Sun Valley, on the Sawtooth, they introduced gypsy moth parasites from the Eastern United States into the Idaho colony, with inconclusive results. They achieved some success with spraying the iodgepole pine sawfly on the Targhee, west of Yellowstone National Park.¹⁴¹

Forest users complained of other pests as well. Spruce budworms moved onto the Boise and Payette. White pine butterflies were evident on the Middle Fork of the Payette.¹⁴² Foresters declared open season on porcupines, which girdled trees, especially young ones.¹⁴³

Special Use

Special use permits for water power development increased in importance during this period. After 1896, firms that later formed the Utah Power and Light Company began the development of hydroelectric power facilities on various rivers in Utah and Idaho. Acts in 1901 and 1911 authorized special use permits for water power sites. Insisting that the water laws of the States, not those of the Federal Government, applied on Federal lands within a State, the power companies refused to pay fees for special use permits to occupy sites and divert water within the national forests. The Forest Service's challenge to this position took the case to the United States Supreme Court, which ruled in 1917 that the Forest Service had authority to charge for such uses.¹⁴⁴

By the 1920's, the increase in occupancy of sites for power development had increased the related work of the Forest Service considerably. With the establishment of the Federal Power Commission in 1920, the Service also was burdened with the responsibility for the bulk of the engineering and technical work on sites within the forests. 145 Other special uses also increased in importance. Many permits were issued for facilities adjunct to stock and lumber operations. Others covered recreation facilities. One burgeoning use was the summer home development. An act of March 4, 1915, permitting the lease of small tracts for summer homes, had extended a law of 1899 which, applying to the Interior Department, confirmed existing Forest Service policy. ¹⁴⁶

In some cases, summer homes conflicted with public recreation uses. On Fish Lake, for instance, the forest officers had considerable difficulty in keeping houses away from the shore so the general public could have access to the lake. Finally, a grandfather clause was established, allowing existing owners to keep their cabins near the lake, but requiring their successors to move.¹⁴⁷

Recreation

Closely related to special uses were developments in the field of public outdoor recreation. Pinchot had been largely indifferent to recreation, but Graves favored it and in his report of 1912, he recognized recreation as an important forest purpose.¹⁴⁸ In 1915, the regional administration, following precedents in Region 6 and a recommendation from the Washington Office, began to reserve timber for scenic purposes along major highways.¹⁴⁹

After World War I, as lifestyles changed and people had more leisure time, recreation assumed even more importance. In 1919, Graves called for management plans that provided for "an orderly development of all . . .[National Forest] resources for the use and benefit of the public" including wildlife and recreation.¹⁵⁰ Of particular significance was the increased mobility accompanying the growing use of automobiles.¹⁵¹ The number of people seeking recreation in the national forests increased from an estimated 2.4 million in 1916 to 6.2 million in 1922.¹⁵² Moreover, during the mid-1920's, the largest recreation increases came in picnicking, transient motoring, and hotel and resort guests, rather than in camping, which actually decreased.¹⁵³

Under these circumstances, the Service began even more systematic planning for recreation use: After the creation of the National Park Service, the Forest Service assigned Frank A. Waugh to make studies as a basis for determining policies for the development of national forest recreation facilities.¹⁵⁴ With the exception of Grand Canyon National Monument, then administered by the Forest Service, all of the examples in Waugh's 1918 report were outside Region 4.¹⁵⁵

In 1922, Waugh came to Region 4 to examine its recreation problems. The study focused on proposals for the development of Bryce Canyon, Cedar Breaks, a Wasatch Mountain drive, the Kaibab Forest, Fish Lake, and what he called "communicating roads" to tie these sites together. Recognizing that most tourists came from local areas, his proposal gave preference to their needs.¹⁵⁶

The Washington Office tried to meet recreational needs by allocating additional development funds during the 1920's. Beginning in 1923, the Service received small Federal appropriations for construction of camping facilities and, in addition, got money from municipalities and philanthropic organizations for recreation purposes.¹⁵⁷ In 1924, President Calvin Coolidge called a national conference on outdoor recreation, which Greeley supported.¹⁵⁸

Even without a systematic national policy, the forests in Region 4 had hosted recreationists long before the 1920's, though specific monetary support was minimal. Perhaps the earliest recreation emphasized water and mountain scenery. Water attractions included lakes such as Fish Lake on the Fishlake National Forest, Payette Lakes on the Idaho, Redfish Lake on the Sawtooth, and Teton Lake on the Teton and rivers such as those in the Island Park country of the Targhee and those flowing from the canyons of the Wasatch front in Utah. In northern Arizona and southern Utah points of focus on the Kaibab, Powell, and Dixie included Grand Canyon, Cedar Breaks, and Bryce Canyon.¹⁵⁹

Closely associated with recreation policy was the management of national monuments under Forest Service jurisdiction. In the teens, Region 4 operated Grand Canyon National Monument, and after its proclamation as a national park, the region continued to administer the area until the Park Service geared up to take it over.¹⁶⁰ In 1922, Timpanogos Cave in American Fork Canyon became a national monument under the Forest Service.¹⁶¹ In June 1923, President Warren Harding proclaimed Bryce Canyon a national monument under Forest Service jurisdiction. Following the proclamation, Frank Waugh came to examine Bryce and Cedar Breaks for future recreational development. Waugh's emphasis, as in his earlier report, was on auto-related tourism.¹⁶² A battle between the Forest Service and National Park Service over the creation of a proposed Cedar Breaks National Park occurred during the early 1920's and was settled temporarily in 1933 with the designation of a national monument in the Dixie National Forest.¹⁶³

Another vigorous battle between the Forest Service and National Park Service developed over the Teton-Jackson Hole area. In 1918, Wyoming Congressman Frank Mondell introduced a bill to extend Yellowstone National Park to include the Teton Range, Jackson Lake, and a number of other lakes in the area. Publicly Graves approved the idea, but he had private reservations. Local livestock interests combined with dude ranchers to kill the Mondell bill. In July 1918, President Woodrow Wilson issued an executive order giving the National Park Service a veto over any Forest Service plans for the area. By mid-1923, the livestock-dude ranch coalition had broken down as the guest-ranchers pushed for the



Figure 30--Autos at top of Teton Pass, 1915.

transformation of the Jackson Hole area into a frontieroriented recreational district, a concept somewhat out of line with both the National Park Service mass recreational emphasis that required road and improvement construction and the Forest Service's increasing commitment to multiple use, including recreation.¹⁶⁴ The upshot was the creation of a relatively small Grand Teton National Park in 1929 with the remaining area under Teton National Forest administration.¹⁶⁵

Wildlife Management

Forest Service policy emphasized proper management of wildlife within the national forests. By congressional mandate, the Service cooperated with local authorities in game protection, especially on game reserves such as those on the Kaibab, Teton, Targhee, Boise, and Fishlake. Until 1916, when the responsibility was turned over to the Biological Survey, the Service worked on the control of predators on the national forests.¹⁶⁶

The combination of game protection, predator control, and the change in plant communities as a result of livestock overgrazing led to excessive wildlife in some areas.¹⁶⁷ Most notable were undoubtedly the Teton elk and the Kaibab deer herds. Both situations were extremely complex, involving a number of Federal and State agencies.

In the case of the Teton elk, for instance, the Biological Survey raised hay to feed the elk in the winter, but the game laws of Wyoming, Idaho, and Montana applied to their management as did Forest Service, Biological Survey, and National Park Service regulations.¹⁶⁸ Eventually, coordination was achieved in part through the creation of an elk commission. Between 1913 and 1916, efforts to control the elk herds included relocation of some to forests in Utah and western Idaho.¹⁶⁹ Disputes developed over the Service's multiple use policy, because wildlife enthusiasts opposed continued livestock grazing within elk habitat areas.¹⁷⁰

The situation with Kaibab deer was similar. Between 1908 and 1925, the number of deer in the Kaibab herds increased dramatically--from an estimated 8,000 to



Figure 31--Hunting bear in Mill Creek Canyon, Utah, 1921.

between 20,000 and 50,000. This situation was more complicated than others largely because Arizona State authorities refused to cooperate with the Forest Service in game management and because of fanciful plans they proposed for relocation of the animals.¹⁷¹ The Service tried to relocate young fawns, but with only minimal success.

In another attempt to find ways to control the numbers of deer, which were killing off their own food supply and dying of starvation, Agriculture Secretary Henry C Wallace appointed the Kaibab Deer Investigating Committee, composed of representatives of wildlife and grazing interests. Some members charged that the livestock were competing too heavily with the deer, but analysis of deer stomach content showed that they ate brush almost exclusively and not the grass and weeds generally consumed by livestock. Walter G. Mann, longtime supervisor of the Kaibab National Forest and a keen observer of deer activities on the forest, was a strong advocate of controlling deer numbers through more liberal hunting and other removal measures to keep them in balance with their native forage supply. George McCormick, said to be a knowledgeable old cow hand, and his supporters failed in an attempt to herd the deer across the Grand Canyon. His efforts eventually led to the realization that Supervisor Mann and his Forest Service wildlife specialists were right when they told him that he could not drive deer like cattle.¹⁷²

With no reasonable alternatives left, the Agriculture Department issued an executive order permitting the harvest of excess deer. The Arizona authorities refused to cooperate in this venture and arrested the Service's hunters for violation of State game laws. The Service sought an injunction, which the Supreme Court upheld in Hunt v. United States (278 U.S. 96), affirming the right of the Federal Government to kill animals and ship them from the State to protect the land from injury. The decision, written by Utahn George Sutherland, rested in part on the Utah Power and Light case cited previously.

Land Jurisdiction

In addition to the changes associated with the creation of national parks and monuments, other alterations in forest boundaries came about for agricultural, mining, and urban purposes. Some small forests were consolidated into larger units.¹⁷³ The Pocatello, Moapa, Nebo, Palisade, and Fillmore became part of the Cache, Toiyabe, Uinta, Targhee, and Fishlake; and the Santa Rosa and Ruby were consolidated with the Humboldt.¹⁷⁴

Some interforest transfers took place for more effective administration. One example was the transfer of more than 355,000 acres from the Uinta to the Wasatch in 1915.¹⁷⁵

Some areas were added to national forests. The addition of the Vernon division to the Wasatch in 1924 under the Clarke-McNary Act is one example.¹⁷⁶ The addition of 1.12 million acres of unreserved Federal lands to the Idaho and Payette in 1919 was probably the largest addition. This addition was made principally to facilitate control of fires that threatened Federal and nearby private lands, to promote development of roads and bridges, and to protect wildlife.¹⁷⁷



Figure 32--Sublett Ranger Station, Minidoka National Forest.

Engineering

Roads tended to be cooperative construction ventures. Roads constructed on the Manti and La Sal in 1910 were financed principally by counties and towns, with a small Forest Service contribution.¹⁷⁸ Some roads, such as that crossing Teton Pass from Jackson, WY, into the Teton Basin of eastern Idaho, were constructed in cooperation with the Office of Public Roads, then an Agriculture Department bureau.¹⁷⁹ Acts in 1912, 1916, 1919, and 1921 provided some funds for forest and near-forest roads, for Federal highways through forests, and for trail construction.¹⁸⁰

In the first decades of the twentieth century, engineering work tended to be relatively simple. When Arval Anderson, later regional engineer, started as a junior engineer in the 1920's, engineers generally had little to do except to design trails and a few simple roads and do some mapping.¹⁸¹ Sterling Justice indicated that the Caribou had only a horse-powered road grader in 1921.¹⁸² George Kreizenbeck remembered that roads and trails were constructed to a very low standard. Generally the buildings on the forests were one- or two-room log cabins, with no inside plumbing. After World War I, the Payette National Forest had a couple of obsolete trucks and a tractor; by 1930, they had three tractors and a motorized road grader.¹⁸³

During this period, the most extensive Forest Service improvements tended to be telephone lines, rather than roads or trails. In general, the lines were ground-return systems strung from tree to tree through the forest or on poles where trees were unavailable. These lines were generally built by the rangers themselves. 184 Rangers also constructed cabins, lookouts, bridges, fences, and other structures and improvements. 185

Summary

By 1930, Region 4 was still far from achieving its goals in the fields of timber management and other functions. The adoption of silvicultural prescriptions on the European model seemed quite distant. The lack of adequate funds made difficult, if not impossible, the achievement of acceptable progress in watershed, recreation, or wildlife management. Moreover, the failure of the public to perceive that the Service had reached <u>de</u> facto multiple-use management, including recreation and wildlife management, brought about the transfer of national forest recreational areas to the National Park Service as soon as they achieved national prominence.

Nevertheless, some bright spots existed. Most important was the establishment of precedents facilitating proper stewardship in special uses and wildlife management through the Utah Power and Light and Kaibab deer cases. Unfortunately, the problems associated with range management were even more serious than those in timber management.



Figure 33—Using a pitsaw at Cold Meadows Ranger Station, July 1925.

Reference Notes

- 1. Hereinafter, in order to avoid confusion with ranger districts, the term "region" will be used in this study even though the change was not officially made until the late 1920's.
- 2. Harold K. Steen, <u>The U.S. Forest Service</u>: A <u>History</u> (Seattle: University of Washington Press, 1976), pp. 100-102; Lawrence W. Rakestraw, A History of Forest Conservation in the Pacific Northwest (New York: Arno Press, 1979), p. 273. Perhaps the best study of the Ballinger-Pinchot affair is James Penick, Jr., Progressive Politics

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- Alumni Bulletin: Intermountain District, 1930, 3. File: Alumni Bulletin, Historical Files, Dixie.
- 4. Leon F. Kneipp, "Land Planning and Acquisition, U.S. Forest Service," interview by Amelia R. Fry, Edith Mexirow, and Fern Ingersoll, 1964-65 (University of California, Regional Oral History Office, 1976), pp. 18, 79-82.
- 5. Kneipp, "Land Planning and Acquisition," pp. 18, 20-31, 24, 82.
- C.N. Woods, "Thirty-seven Years in the Forest 6. Service," MS, n.d., File 1680, History, Historical Files, Regional Office, p. 36.
- 7. Certificate, August 14, 1929, File: O- Quarters, Regional Office Building, 1929-1930, Regional Office Records, RG 95, Denver FRC.
- 8. R.H. Rutledge to W.H. Shearman, April 12, 1926, File: O-Quarters-Regional Office Building, 1926-1928, Regional Office Records, RG 95, Denver FRC; T.V. Pearson, Memorandum for the Files, July 13, 1926, ibid.; T.V. Pearson, Memorandum for the Files, November 27, 1926, ibid; R.C. Beckstead, Memorandum for the Files, November 29, 1926, ibid.; Ed Jessop to Forest Service, February 11, 1927, ibid.; R.C. Beckstead, Memorandum for Operation, December 15, 1926, and November 30, 1926, ibid.; HCB, Memorandum for Mr. Pearson, June 14, 1927, ibid.; W.H. Shearman to Howard C. Baker, August 22, 1928, ibid.; T.V. Pearson, Memorandum for the Files, August 26, 1929, File: O- Quarters, Regional Office Building, 1929-1930, Regional Office Records, RG 95, Denver FRC
- Alumni Bulletin District 4, 1927 (n.p. [Ogden]: 9. [District 4], 1927), p. 1. The number of rangers had declined by 28 percent from 189 to 137. The number of clerks and auditors in the district office had declined from 29 to 17, a 41-percent drop.
- 10. Woods had previously served as an inspector in grazing, as chief of lands, and as chief of lands and grazing. See L.F. Kneipp to the Forester, April 16, 1919, and Albert F. Potter to L.F. Kneipp, April 23, 1919, File D- Organization-General, 1905-1929, Historical Files, Regional Office, and C.N. Woods, "Thirty-seven Years in the Forest Service," p. 35. Alumni Bulletin District 4, 1927 (n.p. [Ogden]:
- ·11. [District Office], 1927). p. 32.
- 12. Forest Service Report in Agriculture Department Report, 1911, p. 345.
- 13.
- Alumni Bulletin, 1927, pp. 33-36. See Herbert Kaufman, The Forest Ranger: A 14. Study in Administrative Behavior (Baltimore: Johns Hopkins, 1960).
- 15. S. Edwin Cazier, The Last Saddle Horse Ranger (Logan, UT; Educational Printing Service, 1971), p. 83.
- Charles S. Peterson and Linda E. Speth, "A 16. History of the Wasatch-Cache National Forest" (MS, Report for the Wasatch-Cache National Forest, 1980), p. 95.

- 17. District Four, "Minutes of Supervisors' Meeting, Idaho and Wyoming Forests," 1910, pp. 281-83.
- William Miller Hurst, Thinking Back: An Account of the Author's Forest Service Experience in Southern Utah (n.p., n.d.), p. 23. See also A.R. Standing, "Memorandum on Work in the Forest Service, " January 4, 1962, Historical Files, Fishlake.
- 19. W.E. Tangren, interview by Arnold R. Standing, April 21, 1965, pp. 3-4, Historical Files, Fishlake.
- 20. Emile Grandjean, "A Short History of the Boise National Forest" MS, Historical Files, Sawtooth, p. 10.
- 21. Woods, "Thirty-Seven Years in the Forest Service," p. 30.
- 22. Leo E. Fest, interview by Elizabeth Smith, Boise December, 1974, p. 7, Historical Files, Boise.
- 23. Elizabeth Leflang Sliger, "Emile Grandjean, One of the First Forest Supervisors," MS, Historical Files, Sawtooth, p. 3.
- Files, Sawtooth, p. 3. 24. Victor K. Isbell, <u>Historical Development of the</u> Spanish Fork Ranger District, (Spanish Fork, UTI: Spanish Fork Ranger District, 1974), p. 41.
- J.W. Humphrey, interview by Arnold R. Standing, April 1965, p. 7, MS, Historical Files, Fishlake.
- Woods, "Thirty-seven Years in the Forest Service," p. 34.
 Harry H. (Rip) Van Winkle, interview by Arnold R.
- Harry H. (Rip) Van Winkle, interview by Arnold R. Standing, Jackson, WY, June 1965, p. 20, Historical Files, Regional Office. Tangren interview, p. 1.
- 28. The consideration of problems of personnel is based on: J.B. Lafferty, "Forest Personnel," and the discussion among supervisors which followed in District Four, "Minutes of Supervisors' Meeting, Idaho and Wyoming Forests, Boise, Idaho, January 2-4, 1910 [sic should be 1911]" (n.p., 1911), pp. 249-257. Historical Files, Boise.
- On this point see: William M. Anderson, "Forest Personnel" in District Four, "Minutes of Supervisors' Meeting, Utah and Nevada Forests," 1911, pp. 215-217 and the discussion that followed.
- 30. District 4, "Minutes of Supervisors' Meeting, Idaho and Wyoming Forests," 1911, pp. 273-79.
- District Four, "Minutes of Supervisors' Meeting, Idaho and Wyoming Forests," 1911, pp. 257-265, 268-273. Sterling R. Justice, <u>The Forest Ranger</u> on Horseback (n.p., 1967), p. 86.
- 32. File: D (O), Personnel, Pack, W.I., "Memorandum of Discussion of Above Case Held November 24, 1913," E.A. Sherman to W.I. Pack, November 25, 1913, Henry S. Graves to District Forester, December 4, 1913, and Sherman to Graves, December 28, 1913, File: 1658- Historical Data-15- Personnel, Uinta. In a 1908 inspection on the Uinta, F.W. Reed discovered that Deputy Supervisor Dan S. Marshall had been careless and ineffective in answering correspondence and submitting reports. He was reassigned as a ranger. Clyde Leavitt to Dan S. Marshall, December 18, 1908, File: 1658-Historical Data-15, Personnel, Uinta.

- 33. Woods, "Thirty-seven Years in the Forest Service," pp. 30-33. In another case, by mapping a ranger's movement from diary entries, Woods showed that he was not covering his district, he was not inspecting the grazing allotments regularly, and he was spending too much time in town. The ranger was dismissed, but he gathered sufficient evidence of drinking to force his supervisor's resignation as well. After a 1915 inspection of the Santa Rosa, Woods found that the rangers were spending only a third of their time on the grazing allotments. He considered that far too little, since the forest had virtually no other activities. C.N. Woods, Memorandum for the District Forester, October 30, 1915, File: Inspection--Humboldt, 1909-1915, Humboldt.
- L.F. Kneipp to Guy B. Mains, February 1, 1916, File: G- Inspection, Boise (Payette), 1904-1929, Lands and Recreation Library, Regional Office.
- James O. Stewart, Memorandum for the District Forester, June 6, 1927, File: Regional Office, 1927, Box 4993, Toiyabe National Forest Records, RG 95, San Bruno FRC.
- 36. Arlene Burk, interview by Thomas G. Alexander, February 6, 1985, Historical Files, Regional Office.
- 37. On the establishment of the division see Jenks Cameron, <u>The Development of Governmental</u> Forest Control in the United States (Baltimore: Johns Hopkins, 1928), p. 312.
- 38. Peterson, "Wasatch-Cache," p. 254.
- 39. Justice, <u>The Forest Ranger on Horseback</u>, pp. 47, 84.
- 40. Edwin Cazier, interview by Arnold R. Standing, Afton, WY, May 1965, p. 6. Historical Files, Regional Office.
- 41. Sherry H. Olson, <u>The Depletion Myth: A History</u> of the Railroad Use of Timber (Cambridge: Harvard University Press, 1971), pp. 141-54. Forest Service Report in Agriculture Department Report, 1919, p. 178; 1920, p. 222; 1922, pp. 243-44; 1923, p. 290; 1929, p. 3.
- 42. George P. McCabe to Henry S. Graves, April 19, 1912, File: S-Sales-General, 1912-1923, Regional Office Records, RG 95, Denver FRC.
- 43. See Table 5.
- 44. John Raphael to District Forester, March 24, 1919, File: S- Supervision, Fishlake, 1924-1950, Regional Office Records, RG 95, Denver FRC.
- O.M. Butler, "District Market Plan, District 4," pp. 1-13, File S-Supervision-General, 1912-1915, Regional Office Records, RG 95, Denver FRC. For sales from each of the district's forests in 1913 and 1914 see Table 6.
- W.W. Blakeslee to District Forester, February 26, 1919, File: S-Supervision, Toiyabe, 1919-1950, Regional Office Records, RG 95, Denver FRC.
- C.E. Favre to District Forester, March 4, 1919, and C.B. Morse to H. Wisener Hammond, October 29, 1921, File: S- Supervision, Humboldt, 1919-1920, Regional Office Records, RG 95, Denver FRC.

- 48. J.W. Humphrey, "My Recollections of the Manti Forest," p. 6, Historical Files, Manti-LaSal.
- 49. "Minutes of Supervisor's Meeting, Utah and Nevada Forests, 1911," pp. 49, 236-37.
- "Minutes of Supervisor's Meeting, Utah and 50. Nevada Forests, 1911," pp. 47-49. "Minutes of Supervisor's Meeting, Idaho and Wyoming Forests, 1911," pp. 161-65.
- 51. "Minutes of Supervisor's Meeting, Utah and Nevada Forests," pp. 52-53.
- 52. W.B. Greeley to L.F. Kneipp, June 23, 1915, File: S- Sales- General, 1912-1923, Regional Office Records, RG 95, Denver FRC.
- 53. For a statement of general policy see: Forest Service Report in Agriculture Department Report, 1910, pp. 382-85.
- 54. C.E. Dunston, "Reconnaissance of the Targhee National Forest, Idaho-Wyoming, 1910," pp. 1-3, File: S-Plans, Timber Surveys--Targhee Report by C.E. Dunston, 1910-and Working Plan by Peters and Boison (1910), Targhee National Forest Records, RG 95, Seattle FRC.
- 55. Dunston, "Reconnaissance of the Targhee," pp. 3-4.
- Dunston, "Reconnaissance of the Targhee," 56. pp. 38-42.
- 57. Dunston, "Reconnaissance of the Targhee," p. 43.
- Dunston, "Reconnaissance of the Targhee," p. 47. Dunston, "Reconnaissance of the Targhee," 58.
- 59. pp. 52-53.
- 60. Samuel W. Stoddard to District Forester, March 6, 1919, File: S-Supervision, Targhee, 1906-1950, Regional Office Records, RG 95, Denver FRC.
- 61. C.B. Morse, Memorandum, August 4, 1925, File: S-Supervision, Targhee, 1906-1950, Regional Office Records, RG 95, Denver, FRC.
- D.M. Lang, "Report on the Forest Resources and 62. Logging Conditions, Teton National Forest, Wyoming, 1911," and H.B. Maris, "Supplement to the Report of D.M. Lang," MS 1912, File: S-Plans, Timber Surveys- Teton, 1908-1950, Regional Office Records, Denver FRC.
- 63. C.B. Morse, Memorandum for Lands, November 23, 1922, and U.S. Swartz, Memorandum for Forest Management, October 13, 1923, File: S-Plans, Timber Surveys, Teton, 1908-1950, Regional Office Records, Denver FRC.
- 64. See Table 7.
- Forest Service Report in Agriculture Department 65. Report, 1911, pp. 359-60.
- Butler, "District Market Plan," pp. 32-33. 66.
- 67. Compare these prices with the market prices in Table 6.
- Butler, "District Market Plan," pp. 14-31. For an 68. example of the Washington Office position see H.S. Graves to District Forester, May 26, 1911, File: S-Sales- Policy, 1908-1915, Box 601099, Regional Office Records, RG 95, Denver FRC, which says in effect that the districts should push sales in order to reach "a self-supporting basis as rapidly as possible," but that it could not be accomplished by "any market reduction in the stumpage prices hitherto prevailing." See also Forest Service Report in Agriculture Department Report, 1911, pp. 359-60.

- 69. Butler, "District Market Plan," pp. 47-48.
- 70. Forest Service Report in Agriculture Department Report, 1913, p. 157.
- 71. Forest Service Report in Agriculture Department Report, 1914, pp. 140-41. E.A. Sherman to Forest Supervisor, March 4, 1913, File: S-Sales, Sales at Cost, 1912-1949, Regional Office Records, RG 95, Denver FRC.
- The following is based on A.C. McCain to William 72. B. Greeley, November 13, 1914, File: S, Sales Policy, 1908-1915, Regional Office Records, RG 95 Denver FRC.
- 73. In 1911, the supervisors had been divided as to which method to use. See: "Minutes of Supervisor's Meeting, Idaho and Wyoming Forests, 1911," pp. 126-32.
- 74. W.B. Greeley to District Forester, January 18, 1915, File: S-Sales, Policy, 1908-1915, Regional Office Records, RG 95, Denver FRC.
- 75. Chester B. Morse to M.W. Thompson, July 27, 1926, File: Sales-General, 1925-1927, Regional Office Records, RG 95, Denver FRC
- R.H. Rutledge, "Resolutions Adopted at the 76. Forest Management Meeting held at the Beaver Creek Ranger Station, November 2 to 7, 1925," pp. 9-10, File S- Supervision- General, 1916-1926, Regional Office Records, RG 95, Denver FRC.
- 77. Clinton G. Smith, Memorandum to the District Forester, December 3, 1915, File: S- Supervision, General, 1912-1915, Regional Office Records, Denver FRC.
- 78. L.F. Kneipp to Forest Supervisor, February 26, 1915, File: S-Sales- General, 1912-1923, Regional Office Records, Denver FRC.
- 79. Leon F. Kneipp to The Forester, November 8, 1918, and John F. Preston, "Financial Aspect of Silvicultural Measures in Timber Sales: Western White Pine Type," File: S- Supervision- General, 1916-1926, Regional Office Records, RG 95, Denver FRC.
- 80.
- Cameron, Forest Control, pp. 351-52. Albert C. Blood, "Timber Sale Report," June 24, 81. 1921; Charles DeMoisy to District Forester, June 30, 1921, File: S- Sales, Slash Disposal, 1907-1929, Regional Office Records, RG 95, Denver FRC.
- Ralph S. Hosmer, "The National Forestry Program 82. Committee, 1919-1928," Journal of Forestry 45 (1947): 627-45. See also Steen, Forest Service, pp. 177, 185-89, 190.
- 83. Steen, Forest Service, pp. 122-25.
- "Resolutions Adopted at Ashley Forest Ranger 84. Meeting," November 7 to 11, 1924, File: Supervision, Ashley, 1917-1950, Regional Office Records, RG 95, Denver FRC. C.F. Korstian, "Silvicultural Practice in the Intermountain Region," File: S-Supervision- General, 1916-1926, Regional Office Records, RG 95, Denver FRC. E.E. Carter to District Forester, December 16, 1925, and attachment, File: S- Supervision-General, 1916-1926. See also interest in use of unwanted species such as white fir, Lyle F. Watts to Forest Supervisor, December 18, 1926, S-Sales- General, 1924-1927, Regional Office Records, RG 95, Denver FRC. On proposed use of

aspen for excelsior on the Uinta see: Charles DeMoisy, Jr., to District Forester, April 29, 1926, File: S- Plans-Timber Surveys, Uinta-1906-1950, Regional Office Records, RG 95, Denver FRC.

- Forest Supervisor to District Forester, April 1, 1921, File: 1658, Historical Data 8, Timber Management, Uinta.
- Lyle F. Watts, Memorandum for District Forester, October 11, 1926, Historical Files, Fishlake.
- Forest Service Report in Agriculture Department Report, 1919, p. 186. On the price rise see William M. Anderson to District Forester, April 23, 1918, File: Supervision, Ashley, 1917-1950, Regional Office Records, RG 95, Denver FRC. E.E. Carter to District Forester, May 17, 1918, ibid.
- R.H. Rutledge to The Forester, September 26, 1923, File: S- Sales, General, 1912-1913, Regional Office Records, RG 95, Denver FRC.
- R.H. Rutledge to Carl M. Stevens, June 21, 1929, David T. Mason to R.H. Rutledge, January 16, 1928, and Carl M. Stevens to R.H. Rutledge, January 9, 1928; and C.N. Woods, Memorandum for Forest Management, December 5, 1928, File: S- Supervision- General, 1927-1928, Regional Office Records, RG 95, Denver FRC.
- 90. Cameron, Forest Control, p. 352.
- 91. Forest Service Report in Agriculture Department Report, 1910, p. 393-94.
- 92. Distances were either chained or paced, and the team members followed compass lines from the base line in order to sample the timber stand, usually over 5 or 10 percent of the forest. Along each line, examiners made timber volume estimates on quarter-acre circular plots (59-foot radius) each two and one-half chains. In cruising, the team used standard tables to estimate the volume of various species. For examples see Clinton G. Smith to District Forester, April 11, 1911, File S- Plans- Timber Surveys-Payette (Weiser) 1908-1911; and Project Plan, Timber Survey, Weiser Valley Working Circle, Weiser National Forest, 1927, File: S-Plans-Timber Surveys, Payette (Weiser), 1912-1944, Regional Office Records, Denver FRC. "Project Plan--Payette Lakes Working Circle, Idaho National Forest, April 11, 1927," File: S-Plans, Timber Surveys, Payettc (Idaho), 1909-1939, Regional Office Records, Denver FRC.
- 93. C.B. Morse to John Raphael, February 13, 1930, and attachments, File: S-Plans, Timber Surveys-Payette (Weiser)--1912-1944, Regional Office Records, RG 95, Denver FRC. J.B. Lafferty to District Forester, January 5, 1915, File: RS (M) Weiser, CY 1914, 2; Box of Forest Studies, Payette.
- 94. Charles DeMoisy, Jr. to District Forester, July 2, 1925, File: S- Plans-Timber Surveys, Uinta-1906-1950, Regional Office Records, RG 95, Denver FRC.
- 95. "Report of the Juniper Areas, Both On and Off the Forest, Fillmore National Forest," 1922, Historical Files, Fillmore Ranger District, Fishlake National Forest, Fillmore.

- 96. See "Management Plan, Star Valley Working Circle, Wyoming-Caribou National Forests, 1928," File: 2510, Plans, Star Valley Working Circle, Historical Records, Caribou.
- Daniel F. Seerey Memorandum for District Forester, August 19, 1915, File: S- Plans- Timber Surveys- Uinta, 1906-1950, Regional Office Records, RG 95, Denver FRC.
- 98. Dewitt Russell, "Early Days on the Old Weiser," MS, 1968, p. 11, Personnel Files, Payette. This situation was not unique to the Weiser, see William B. Rice, "Reminiscences of W.B. Rice," MS, File: McCall, Historical Files, Payette, p. 7, for the situation on the Idaho.
- 99. Stokes interview, p. 6. Isbell, <u>Historical</u> <u>Development of the Spanish Fork Ranger District</u>, p. 94. Charles DeMoisy, interview by Arnold R. Standing, April 1965, p. 4, Historical Files, Regional Office. Interview with Floyd Bartlett by Thomas G. Alexander, March 15, 1984, Historical Files, Regional Office.
- 100. Russell, "Early Days," pp. 11-12.
- 101. Emmett Index, June 15, 1916, and Idaho Statesman, September 24, 1916, loose clippings, Boise. Elizabeth M. Smith, <u>History of the Boise</u> National Forest, 1905-1976 (Boise: Idaho State Historical Society, 1983), p. 85.
- 102. Smith, Boise, p. 86.
- 103. Stokes interview, p. 6. On the legislation favoring such exchanges see Steen, Forest Service, p. 147.
- Peterson, "Wasatch-Cache," pp. 133-34. "Large Sales of National Forest Timber: Timber Sales on California & Utah Forests," <u>American Forestry</u> 22 (1916): 303. John J. (Jack) Albano, interview by Arnold R. Standing, May 1965, p. 12, Historical Files, Regional Office; Cazier, interview, p. 5.
- 105. C.B. Morse Memorandum for Files, March 28, 1922, File: S-Sales, General, 1912-1923, Regional Office Records, RG 95, Denver FRC. C.B. Morse, Pocatello Treating Plant, File: RP- Laboratory Studies, 1925, Caribou.
- 106. A.B. Greeley to District Forester, June 15, 1915, and attachments, File: S- Supervision, General, 1912-1915, Regional Office Records, RG 95, Denver FRC.
- 107. Forest Service Report in Agriculture Department Report, 1910, p. 386. Stokes, interview, p. 4. DeMoisy interview, p. 3.
- Nils B. Eckbo, "Forestation Plan, Manti National Forest," 1916, File: Timber, Nils Eckbo, Manti-LaSal.
- 109. Forest Service Report in Agriculture Department Report, 1911, pp. 372-78; 1912, pp. 505-08; 1913, p. 163; 1914, p. 144; 1915, p. 168; 1916, pp. 166-68; 1917, p. 176.
- Carl B. Arentson, interview by Arnold R. Standing, April 1965, Historical Files, Regional Office, p. 14; Utah's First Forest's First 75 Years (Provo, UT: Uinta National Forest, ca. 1972)), p. 32.
- 111. Forest Service Report in Agriculture Department Report, 1923, pp. 317-18; 1927, p. 26.
- 112. Forest Service Report, 1929, p. 16.
- 113. Smith, Boise, p. 115; Mains Memo, p. 8.

- 114. Steen, Forest Service, pp. 110, 145.
- Grandjean, "History of the Boise," p. 9. 115.
- Forest Service Report in Agriculture Department Report, 1911, pp. 369-70. Rakestraw, Pacific 116. Northwest, p. 248.
- Peterson, "Wasatch-Cache," p. 149. Smith, Boise, 117. p. 115. Forest Service Report in Agriculture Department Report, 1913, p. 160. In some cases, the caches were unattended and allowed to deteriorate.
- Forest Service Report in Agriculture Department 118. Report, 1910, p. 378.
- 119. Smith, Boise, p. 115. Forest Service Report in Agriculture Department Report, 1912, p. 502. Smith, Boise, p. 115.
- 120.
- 121. Lyle Watts to John T. Matthews, April 18, 1949, File: Watts Life, Historical Files, Payette, pp. 1-2.
- 122. Smith, Boise, p. 116.
- 123. Smith, Boise, p. 117.
- 124. Forest Service Report, 1927, p. 19; 1929, pp. 26-27.
- Forest Service Report in Agriculture Department Report, 1911, p. 370; 1912, p. 500. 125.
- 126. Mains Memo, p. 8.
- Rakestraw, Pacific Northwest, p. 245; Smith, 127. Boise, p. 115.
- Smith, Boise, p. 117. 128.
- 129. Cazier interview, p. 7; Smith, Boise, p. 117.
- 130. Van Winkle interview, p. 19.
- Forest Service Report, 1930, p. 9. Forest Service 131. Annual Report, 1927, p. 6.
- Forest Service Report, 1928, pp. 3-4. Forest 132. Fires in Idaho: A Brief Survey of the Problems and Remedies (Boise, ID: Idaho State Co-operative Board of Forestry, n.d.).
- 133. Smith, Boise, p. 116.
- 134. Report of the Regional Forest Protection Board, Calendar Year 1929, File: S- Supervision-General, 1927-1929, Regional Office Records, RG 95, Denver FRC.
- Woods, "Thirty-seven Years with the Forest 135. Service," p. 40. Cameron, Forest Control, pp. 320-21.
- 136. James C. Evenden, interview by Ronald C. Larson, Coeur d' Alene, March 1979, p. 9, Historical Files, Uinta.
- 137. Forest Service Report in Agriculture Department Report, 1922, p. 213.
- C.B. Morse to James C. Evenden, November 28, 138. 1923, File: S- Control-Insect, General, 1913-1926, Regional Office Records, RG 95, Denver FRC.
- James C. Evenden, interview by Ronald C. 139. Larsen, March 1979, p. 9-24, Historical Files, Uinta.
- 140. James C. Evenden, "Report of Insect Control Committee," in "Report of Regional Forest Protection Board, Calendar Year 1929," pp. 24-26. Forest Service Report, 1927, pp. 21-22; 1929, p. 29.
- 141. Evenden interview, pp. 26-27, 30-31.
- Peterson, "Wasatch-Cache," p. 161; Smith, Boise, 142. D. 86.

- Cazier, Last Saddle Horse Ranger, p. 65; Justice, Forest Ranger on Horseback, p. 65. 143.
- 144. Utah Power & Light Company v. United States 243 U.S. 389 (1917); Cameron, Forest Control p. 306; Forest Service Report in Agriculture Department Report, 1910, p. 371; 1914, p. 152; 1916, pp. 175-76; 1917, pp. 164, 183.
- 145. Cameron, Forest Control, p. 307.
- Cameron, Forest Control, p. 328; Peterson, "Wasatch-Cache," p. 253. 146.
- 147. C.J. Olsen, Dictated Reminiscence in Response to Written Questions, January 12, 1962, pp. 13-14, Historical Files, Fishlake.
- 148. C. Frank Brockman, "The Recreational Use of Forest Lands in the United States," in Clepper, American Forestry, p. 153.
- 149. L.F. Kneipp to Forest Supervisor, December 17, 1915, File: S-Sales- General, 1912-1923, Regional Office Records, RG 95, Denver FRC.
- 150. Forest Service Report in Agriculture Department Report, 1919, p. 194.
- Forest Service Report in Agriculture Department Report, 1922, p. 227; 1929, p. 40. 151.
- 152. Forest Service Report in Agriculture Department Report, 1923, p. 325.
- 153. Forest Service Report, 1927, pp. 31-32; 1928, p. 38.
- 154. Steen, Forest Service, p. 120.
- 155. Frank A. Waugh, Recreation Uses on the National Forests (Washington: GPO, 1918), pp. 17, 42.
- Frank A. Waugh, "Recreation Problems in District 156. 4 National Forests," MS, 1922, Historical Files, Regional Office.
- 157. Cameron, Forest Control, p. 375.
- Steen, Forest Service, pp. 152-53. Brockman, "Recreation," p. 153, argues that the Service did 158. not begin developing recreation management plans until 1924. Actually, forests in District 4 had begun doing so before World War I.
- 159. M.S. Bert and H.L. Cairncross to Robert Miller, December 20, 1914, File: 1650, Historical Library, Jackson Hole Elk Herd, 1909-1917, Bridger-Teton; Recreational Features of the Dixie National Forest and Vicinity, File: Recreation, Historical Files, Dixie; Recreational Information, Idaho National Forest, File: Idaho National Forest History, Payette; Ernest Winkler, Memorandum for the District Forester, August 9, 1918, File: Targhee N.F. History, File 3, Targhee; Olsen Reminiscences, p. 13; Justice, Forest Ranger on Horseback, p. 27; Utah's First, p. 39; Peterson, "Wasatch-Cache," p. 256; Arentson interview, pp. 14, 17; Van Winkle interview, p. 7; Rice Reminiscences, p. 7; K.E. Barraclough, "The Development of Recreation by the Forest Service in the Big Cottonwood Canyon," Empire Forester 7 (1921): 20-22; Recreational Features of the Toiyabe National Forest, File: Appendix 3, History of Toiyabe NF, Toiyabe.
- Kneipp, "Land Planning and Acquisition," p. 77. 160.
- Steen, Forest Service, p. 118. Utah's First, pp. 34-35; Peterson, 161. "Wasatch-Cache," p. 62.

- 162. Frank A. Waugh, "Bryce Canyon National Monument and Cedar Breaks: Studies of Physical Development, Powell National Forest, Dixie National Forest," MS, 1923, Historical Files, Regional Office.
- 163. R.E. Gery, Memorandum Report, October 31, 1921; C.B. Morse to The Forester, November 1, 1921; Cedar Breaks National Monument- Utah, A Proclamation, August 22, 1933, File: LP Boundaries, Dixie, Cedar Breaks Park, 1921-1933, Historical Files, Regional Office.
- 164. Will C. Barnes, Memorandum for District Forester, August 1, 1914, File: 1650, Historical Library, Historical Items (General) Teton, 1900-1940, Bridger-Teton.
- 165. Robert W. Righter, <u>Crucible for Conservation:</u> <u>The Creation of Grand Teton National Park (n.p.:</u> Colorado Associated University Press, 1982), pp. 32-42. On the Forest Service response see A.C. McCain, Memorandum for Lands, September 13, 1923, File: S- Sales, General, 1912-1923, Regional Office Records, RG 95, Denver FRC.
- 166. Cameron, Forest Control, p. 374; John Ise, <u>The</u> <u>United States Forest Policy</u> (New York: Arno Press, 1920), p. 305. <u>Forest Service Report</u> in <u>Agriculture Department Report</u>, 1911, p. 398-99; 1914, p. 151; 1916, p. 172.
- 167. Forest Service Report in Agriculture Department <u>Report</u>, 1914, p. 151; Aldo Leopold, <u>A Sand</u> <u>Country Almanac and Sketches Here and There</u> (New York: Oxford University Press, 1949), pp. 130-32; Frank G. Beitia, interview by Thomas G. Alexander, May 1984, pp. 8-11, 24-26, Historical Files, Regional Office.
- 168. Forest Service Report in Agriculture Department Report, 1916, p. 172; 1914, p. 151; 1927, p. 33. Fish and Game-Teton, Cooperation, State of Wyoming, File: 1650, Historical Library, Jackson Hole Elk Herd, 1930-1939, Bridger-Teton.
- 169. Forest Service Report in Agriculture Department <u>Report</u>, 1913, p. 171. Smith, <u>Boise</u>, p. 100; Peterson, "Wasatch-Cache," p. 254; <u>Utah's First</u>, pp. 32-33; DeMoisy interview, p. 10; <u>Wells</u> Thursby, interview by Arnold R. Standing, June 1965, p. 6, Historical Files, Regional Office; Humphrey interview, p. 3.
- 170. Synopsis of Correspondence Regarding Complaints by Walter B. Sheppard, File: W, Management, Sheppard Case, 1913-1924, Historical Files, Bridger-Teton.
- 171. The following discussion is based on James C. Foster, "The Deer of Kaibab: Federal-State Conflict in Arizona," <u>Arizona and the West</u> 12 (Autumn 1970): 255-68; and Benjamin Swapp to F.S. Old Timers Club, June 15, 1966, in the possession of James Jacobs, Ogden, UT.
- 172. I am particularly indebted to William D. Hurst for supplying documents and other information on the Kaibab Deer Situation. Since Mr. Hurst was

Regional Forester in Region 3, to which the Kaibab was transferred in 1933, in addition to his long service in Region 4, he had access to considerable documentary evidence as well as personal experience with foresters like Walter G. Mann. Among the documents supplied by Mr. Hurst from his personal files are: Walter G. Mann, "The Kaibab Deer: A Brief History and the Present Plan of Management" (n.p., 1931), pp. 36, 41; "Report on Government Killing of Surplus Deer on Kaibab National Forest," 1929, January 19, 1929; "Game Management Plan for Mule Deer on the Kaibab National Forest," 1934; and William M. Mace to Gifford Pinchot, February 9, 1940.

- 173. On Service policy in re-elimination of agricultural lands see: "Principles Governing the General Agricultural Classification of National Forest Lands and the Segregation of Lands Chiefly Valuable for Agriculture, and Instructions Thereunder," MS, 1913, File: U-Classification, General, Mono, 1914-1926, Toiyabe. For general policy on mining claims see: Forest Service <u>Report in Agriculture Department Report</u>, 1912, pp. 477-78.
- 174. Forest Service Report in Agriculture Department Report, 1915, p. 159; 1917, p. 167; 1923, p. 300; Arentson interview, p. 11; Utah's First, pp. 1-2.
- 175. Charles DeMoisy, "Some Early History of the Uinta National Forest," MS, 1963, Historical Files, Uinta, pp. 1-2.
- 176. Peterson, "Wasatch-Cache," p. 55.
- 177. Forest Service Report in Agriculture Department Report, 1918, p. 174; Mains memo, pp. 3-4; Koziol interview, p. 2.
- 178. Forest Service Report in Agriculture Department Report, 1910, p. 405.
- 179. Forest Service Report in Agriculture Department Report, 1915, p. 176. Cameron, Forest Control, p. 322.
- 180. Cameron, Forest Control, pp. 326-29. Forest Service Report in Agriculture Department Report, 1920, pp. 241-42; 1922, pp. 233-35; 1923, p. 330.
- Arval L. Anderson, interview by Al J. Brady, ca. 1983, Historical Files, Regional Office.
- 182. Justice, Forest Ranger on Horseback, p. 42.
- 183. George E. Kreizenbeck, "Statement of George E. Kreizenbeck, December 1975," pp. 3, 5, 7, 14-15, MS, Historical Files, Boise.
- 184. Forest Service Report in Agriculture Department Report, 1911, p. 400. Walter T. Berry, interview by Elizabeth M. Smith, December 1974, p. 12, Historical Files, Boise. Rice Reminiscences, pp. 4-5; Russell Reminiscences, p. 1; Fest interview, pp. 24-26; Cazier, Last Saddle Horse Ranger, pp. 36-37; Mains memo, pp. 22-25.
- 185. Fest interview, pp. 30-31; Mains memo, pp. 20-21; Justice, <u>Forest Ranger on Horseback</u>, p. 42. Stokes interview, p. 2.



Chapter 5 Range Management and Research: 1910 to 1929

While various activities helped to promote a favorable image for the Forest Service, many resource management and public relations problems derived from range management, which was undoubtedly the most difficult and pervasive problem with which Region 4 officers had to work. Unlike timber where they managed an abundant resource with a small demand, in range management, demand far exceeded supply. Forest officers had to work against enormous pressure to reduce livestock numbers and seasons of use to the carrying capacity of the range. This required a continuation of the measures begun during the early years of forest administration, including working with stockmen's associations and individual permittees, monitoring the condition and trend of the range and of animals leaving it, subjecting the operations to periodic inspections, critiquing grazing methods, and striving for support through periodic meetings.

Region 4 managed the most range in the National Forest System. In 1927, the net land area was 28 percent greater and the net usable national forest range (21.8 million acres) was 21 percent greater than any other region. Though lower in animal months for cattle and horses than Region 2 (Colorado and Wyoming) or Region 3 (Arizona and New Mexico), it grazed more of the two species at 386,553 than any other except Region 2. With 8.9 million animal months of sheep (at 4:1 sheep to cows, the figure then used), no other region even came close to the numbers in Region 4.1

In an attempt to provide more effective range management, between 1910 and 1929 the Intermountain Region passed through three phases. Between 1910 and America's entry into World War I in 1917, the Service began systematic evaluations of range conditions. This was done through range reconnaissance and carrying capacity studies. In addition, managers tried new techniques, such as bedding out sheep and rotation and deferred grazing, to improve range lands. In 1917 and 1918 the region slowed down these studies and tried to increase meat production through additional overstocking of the range, promoted by the Washington Office.²

A sharp depression followed an immediate postwar boom, and the period from 1919 through 1929 witnessed a number of changes in management. These included the inauguration of period studies, designed to determine the date at which stock should be allowed to enter and leave the range, and palatability studies to catalog preferred plants. In addition, the Service tried to revise fee schedules upward to place them more in line with the actual value of the range. During the same period, stockmen mounted the first of a number of attempts to gain control over national forest grazing lands.

Controlling Numbers of Stock

Perhaps the status of range management at the beginning of the period was best summarized in meetings held for supervisors at Boise and Ogden in January 1911.³ In the Boise meeting a major part of the discussion concerned the extent of stocking that ought to be allowed. The opinions of the supervisors diverged greatly. A number of them, led by C.N. Woods of the Sawtooth and including Guy Mains of the Payette, J.B. Lafferty of the Weiser, J.E. Rothery of the Idaho, Emil Grandjean of the Boise, and Dan Pack of the Palisade, believed that foresters ought to pay particular attention to the condition of the grazing land itself. Woods argued that the range ought to be considered fully stocked when use reached three-fourths of presumed capacity. The most vocal opposition came from David Barnett of the Targhee and N.E. Snell of the Caribou. They thought forest officers ought to stock to the range's full presumed capacity, reduced only to mitigate potential damage to timber reproduction and watershed. Under this conception, herders would have to remove their animals after they ate all the forage whether this occurred early or late in the season. Several of the supervisors did not express themselves on the question, but Woods's proposition lost by an 8 to 9 vote.⁴

Although the Secretary of Agriculture nominally granted permission for the numbers of stock grazed on each forest, he based his decision on the recommendation of the supervisor, the approval of the regional forester, and whatever information previous inspections had revealed. Until the supervisors had access to the results of reconnaissance and carrying capacity studies to formulate plans they based most recommendations on precedent and user pressure.

In many ways, the situation in 1911 on the Caribou epitomized the problems in the region. Early in the 1911 grazing season, Forest Supervisor George G. Bentz had asked special approval for permittees to graze 322,000 sheep on the forest, since three former permittees had failed to submit their requests on time and he wanted to accommodate them. Sherman disapproved the request.² Later Bentz admitted that even "320,000 head is considerably in excess of the number the range will support without injury." Nevertheless, he said, "It is not deemed advisable . . . to recommend a reduction in the allotment at this time because of the 50,000 cut made last year, and because of the adverse [economic] conditions surrounding the sheep business of today." He proposed, instead to take "advantage" of "forfeitures, lapses of permits, and reductions made on transfers," where the reduced numbers were not needed for permittees below the protective limit and for new Class A permittees. Still, he believed that more cattle actually grazed on the forest than the 7,000 permitted, and apparently in response to user pressure, he recommended that if that proved to be the case, "an increase in the allowance of cattle will be necessary."6

The general trend of stocking on the Caribou was quite consistent with the pattern throughout Region 4. By 1916 numbers of sheep had been reduced to 290,000 and cattle had been increased to 13,200. Nominally, the grazing season could last as long as all year for cattle and horses and from May 15 to September 15 for sheep.⁷

Range Reconnaissance and Carrying Capacity Studies

Range reconnaissance began in the Forest Service in 1910 and in Region 4 on the Targhee in 1911, the Manti in 1912, and the Caribou in 1913.⁸ Since these studies could proceed only with available limited funds, carrying capacity studies had been done on only five forests by 1915.⁹ Many forests did not get them until the 1920's, and some not then. The reconnaissance itself consisted of a survey resulting in a map and description of land and vegetation of the area studied, much like a timber cruise. Grazing examiners used the Geological Survey maps where possible, but where such maps were unavailable, they often made form line maps, using control points established by the Division of Engineering and a plane table, alidade, and Abney level. In addition, the examiners collected plants for a forest herbarium, estimated the percentage of each plant and the palatability of various species in the surveyed area.¹⁰

Carrying capacity studies followed the reconnaissance. Carrying capacity was defined as "the minimum acreage required to maintain a foraging animal in good, thrifty condition through the grazing season stipulated," and the studies proceeded in two phases. One consisted of various long-range sample plot measures of trend and the other secured immediate data by measuring the weight gains of animals.¹¹

During the period to 1929, perhaps the most careful investigations in the entire national forest system took place on the Caribou. There, examiners intended "to conduct tests on every distinctly different and representative unit of the range." This required the cooperation of sheepmen to a greater extent than before, since they now had to graze in "accordance with a definite plan" rather than as they wished. Expecting each study to last over a 3- to 5-year period, Fenn said it would "be considered complete when sufficient data has been collected to serve, together with the reconnaissance data, as a basis of an intensive plan of grazing management for every part of the Caribou Forest and as much range on neighboring forests as similarity of conditions will permit."¹²

In general, the method of determining carrying capacity was worked out by Arthur W. Sampson of the Great Basin Experiment Station, James T. Jardine of the Washington Office, and Mark Anderson, grazing examiner. They incorporated the data gathered on the Caribou and other forests in published studies. Anderson began work on the Caribou in 1913, a forest ranger took over in 1914, and Clarence E. Favre and W. Vincent Evans, with



Figure 34—Great Basin Experiment Station, winter 1913.

the assistance of C.H. Shattuck of the University of California and R.E. Gordon, expanded the studies in 1915 and 1916. The 1913 and 1914 studies consisted of selecting a few test allotments and measuring the weight gain of lambs grazed under prescribed conditions. 13

The 1915 studies under Favre's direction and those in 1916 under Favre and Evans were much more extensive. These included animal weight measurements and the establishment and carefully controlled harvest of sample plots consisting of eight quadrats and two seasonal variation enclosures on each of five allotments. The quadrats were square divisions of various sizes, though for intensive studies meter square units were used.¹⁴ Favre and Evans charted the plant types in each quadrat and photographed them.¹⁵ They harvested the plants on the 10 enclosures twice during each year and weighed them, both green and dried. Sampson considered enclosures particularly important to determine the rate of revegetation.

Favre and Evans achieved essentially two results: they determined the forage area required to feed a sheep, and they reported on the method of grazing best adapted to Caribou conditions. In evaluating their work, Homer Fenn considered the "reconnaissance and supplemental studies conducted on the Caribou . . . the most intensive and systematic range inspection that has ever been made of a Forest."

By World War I, Shattuck could cite the Caribou as a model of range management.¹⁶ During the mid-1920's, rangers were brought to the Caribou to "see how other rangers were handling problems similar to those . . . on [their] own districts."¹⁷

With data from such reconnaissance and carrying capacity studies, Sampson, Jardine, and Anderson proposed a standard forage acre as the determinant of proper stocking. This measure took the total land area multiplied by the fraction of surface supporting vegetation, the fractional density of cover, and the percentage of palatable forage. Thus, an area of 80 acres covered with 70 percent vegetation, with a density of 80 percent, and with 80 percent of the area covered with palatable vegetation would equal 36 forage acres.¹⁸ On the Caribou, Favre's experimental results determined that a mature sheep needed 0.78 forage acre for a grazing season.¹⁹ This figure was close to the 0.79 figure that Jardine and Anderson found when averaging a number of similar studies for a season of 72 days. They reported that a mature cow needed 2.65 forage acres per season of 100 days. 20

The weather played an important part in determining the carrying capacity of the range. After a period of abnormally wet years from 1905 through 1909, the climate from 1910 through 1920 was, on the average, much drier than normal.²¹ The years 1910 and 1911 were two of the driest on record.²² 1912 was quite wet and 1913 and 1914 were moderately so; the remainder of the decade was quite dry. The 1920's, on the other hand, tended to be generally wetter than normal.

Grazing Prescriptions

After their studies, Evans and Favre also tested suggestions Sampson had made, based on experiments in



Utah and Oregon. Sampson proposed that stockmen defer grazing until the seed crop had ripened to produce a greater volume of feed and more vigorous plants. He had also found that when stockmen rotated animals from one portion of the allotment to another in different annual cycles, the plants generally grew better.²³

Evans and Favre believed Caribou ranges to be unsuited for deferred and rotation grazing. "Where there is an extreme diversity of types and a considerable range of altitude on each allotment," they said, "it is particularly difficult to secure a division of allotments into rotation areas that will conform to the best use of the range and that will provide a uniform amount of forage per allotment each year." With regard to deferring, "with grasses," they agreed, "it appears to be true that there is no very rapid deterioration in food value for some time after physiological maturity, ... the same [was] not true of most palatable weeds." On weed range like the Caribou, they noted "a rapid decay in food value after maturity, so much so that sheep will prefer" living browse "much inferior in mutton-producing qualities" to the weeds. On a practical level, they found both systems difficult to implement, since they required "an extra large amount of supervision," which was not available. Nevertheless, they recommended deferred grazing "in those cases where, through internal mismanagement of the range, areas are overgrazed."24

Conditions were not uniform throughout the region. On some of the less steep allotments on the Targhee, by contrast, deferred and rotation grazing had been put into practice by World War I.²⁵ On the Sawtooth deferred grazing could be practiced, but rotation seemed impracticable as late as 1928 because reconnaissance and carrying capacity studies had not been completed on the forest.²⁶ Charles DeMoisy used rotation grazing on the Ashley.²⁷

Favre's objection to deferred and rotation grazing on the Caribou was practical rather than ideological. By the late teens he had been appointed supervisor of the Humboldt, with the largest grazing load of any forest in the entire Forest Service. There, with decidedly different conditions than the Caribou, he instituted deferred and rotation grazing.²⁸

In the absence of grazing reconnaissance and carrying capacity studies, the forest officers based their decisions on hearsay and observations. Mark Anderson assumed 0.53 forage acre per sheep on the Sawtooth in 1914, and Clarence Woods estimated 5 forage acres per cow as a rule of thumb in an inspection of the Minidoka in 1915.²⁹ Moreover, in the absence of reliable data, stockmen were likely to overestimate the value of the range by relying on their memory of past conditions or to insist on counting oak-brush or other browse species in determining carrying capacity.³⁰

Because assigning specialists to do reconnaissance and carrying capacity studies like those on the Caribou was relatively expensive, the regional office could not afford to have these studies done everywhere. In an attempt to provide data for range management, some forest supervisors provided their own studies or enlisted the help of regional personnel for limited periods. Supervisor Guy Mains had his rangers do a reconnaissance on the West Mountain district of the old Payette.³¹ Forest officers undertook similar limited studies on the Santa Rosa and Toiyabe in 1915.³² Fenn, however, vetoed a proposal by Woods and Wyoming Supervisor James Jewell to have forest personnel establish sample plots in 1914.³³ Fenn's attitude may have changed somewhat late in his administration.

Woods and his assistant, Ernest Winkler, definitely felt differently and approved local reconnaissance and carrying capacity studies.³⁴ In 1923, general instructions from the Washington Office placed primary responsibility on the forest supervisor, for such studies "to meet local needs."³⁵

At times, supervisors expected scientific research to overcome problems that only reductions in stocking could solve.³⁶ On the Nevada, in 1915, Supervisor George Thompson increased the permits of Class B stockmen on overgrazed range. He apparently, but erroneously, believed that an extensive grazing reconnaissance could resolve many of his problems.³⁷

Two seemingly contradictory conditions existed on many of the forests, both of which resulted from the conflict between efforts of forest officers to reduce numbers of livestock from the range and at the same time to provide range for new permittees and accommodate the pressures from stockmen for predictability of permitted numbers and seasons. Some ranchers grazed below their permitted numbers (usually of sheep), while others consistently put more stock (ordinarily cattle) on the range than permitted. In an inspection of the Sawtooth in 1916, C.N. Woods criticized Supervisor Miller S. Benedict for allowing up to 2 years nonuse of permitted numbers. At the same time, Woods found some permittees grazing more stock than permitted because of lax enforcement by forest officers.³⁸ Benedict said that this had happened because in trying to provide range for qualified applicants, he had allotted a smaller area to established permittees than "needed for the preference number with the understanding that the permittee concerned would have to utilize it as best he could by shorter grazing season or by running part of his sheep outside the Forest."³⁹ Inspections found similar patterns on a number of forests, including the Boise, Uinta, Wyoming, Santa Rosa, and Ashley.⁴⁰

Nevertheless, in the interest of protecting the range or distributing it to new permittees, the supervisors pressed for reductions. These reductions bore most heavily on larger stockmen and often caused anguished outcries.⁴¹ On the Cache in 1910, for instance, Clinton Smith had an authorization to permit 93,000 sheep. Even though he reduced the number of permittees above the 1,000 protective limit as much as 20 percent, he had 73 percent more applications than places to distribute to present and new permittees.⁴² In another case, after an inspector had divided the range between two permittees, one became quite dissatisfied, and C.N. Woods came from the district office to investigate. "Your man divided the range between us," complained the stockman. "It's ridiculous. He didn't give me enough forage for a jack rabbit." After reviewing the situation, Woods thought the forest officer "had done a pretty fair job."⁴³

The problem of distributing permits to stockmen was closely related to the issue of commensurability. On the Uinta in 1928, for instance, commensurability rules for cattle and horses required croplands capable of providing a ton of hay per head or "its equivalent in other forage

Year and Type	Idaho	Nevada	Utah	Wyoming	Total
FY 1906					
Cat. & Hors.	29,584	Unavailable	93,549	87,986	211,119
Sheep & Goat	878,550		1,148,771	594,699	2,622,020
FY 190/	110 000	16 821	116 380	66 974	310 274
Sheen & Cost	1.825.484	89,450	917,963	734.022	3.566.919
FY 1908	2,025,404	07,450	721,705	134,022	3,300,717
Cat. & Hors.	116,116	34,570	118,640	70,734	340,060
Sheep & Goat	1,796,731	106,430	899,184	798,770	3,601,115
FY 1909					
Cat. & Hors.	120,104	54,925	124,858	73,094	372,981
Sheep & Goat	1,782,978	433,946	905,446	783,950	3,906,330
FI 1910	110 977	57 494	122 646	76 088	376 205
Sheen & Cost	1.811.147	442.492	896.295	799,147	3,949,081
FY 1911	2,022,210	,	,	,	.,,,,,,,,
Cat. & Hors.	109,033	49,900	127,486	82,165	368,584
Sheep & Goat	1,641,581	434,667	899,476	790,322	3,766,046
FY 1912					
Cat. & Hors.	95,019	62,575	145,538	86,531	389,663
Sheep & Goat	1,561,970	514,963	1,279,868	1,049,772	4,406,573
FY 1913	100 706	69 940	156 051	82 400	416 176
CAL. & HOTS.	1 716 560	00,04U 515 279	1 000 976	02,477 810 652	410,1/0
FV 1914	1,/14,303	313,270	1,000,970	010,432	4,041,273
Cat. & Hors.	118,004	74.165	172.930	99.821	464.920
Sheep & Goat	1.651.525	494,959	945,993	786.377	3.878.851
FY 1915	-,,		· · · , · · ·		-,,
Cat. & Hors.	117,476	79,786	184,152	111,524	492,938
Sheep & Goat	1,594,726	454,615	919,834	707,622	3,676,797
FY 1916					
Cat. & Hors.	171,475	86,623	182,818	114,976	555,892
Sheep & Goat	1,703,519	482,397	872,155	830,170	3,888,241
FI L91/	104 460	81 964	198 325	132 479	597 237
Sheen & Cost	1 672 218	395 225	802 068	692,673	3 562 184
FY 1918	1,0/2,210	,	,		0,200,200
Cat. & Hors.	204,033	89,685	189,532	137,399	620,649
Sheep & Goat	1,960,161	467,473	842,442	779,056	4,058,132
FY 1919					
Cat. & Hors.	204,402	81,752	182,160	146,815	615,129
Sheep & Goat	1,758,877	390,753	811,620	680,670	3,641,920
FI 1920	185 011	80.065	172 606	123 550	562 019
Sheen & Cost	1 686 681	347 860	757 796	580,696	3 372 961
CY 1921	1,000,001	547,000	/ 3/ 1/24	500,070	5,572,701
Cat. & Hors.	174,078	75,297	169,657	139,351	558,333
Sheep & Goat	1,374,836	341,947	766,337	681,895	3,165,015
CY 1922					
Cat. & Hors.	171,482	73,982	171,589	141,939	558,992
Sheep & Goat	1,557,223	325,364	783,471	670,130	3,336,188
CT 1923	164 082	60 649	167 201	127 100	\$18 220
Sheep £ Cost	1 663 336	07,040 201 067	750 971	605 487	3 090 859
CY 1924	1,445,554	291,007	/30,7/1	005,407	5,070,057
Cat. & Hors.	160.601	71,489	143.556	109.220	488.290
Sheep & Goat	1,424,571	293,832	730,797	612,967	3,062,167
CY 1925					
Cat. & Hors.	146,027	63,187	135,431	108,621	453,659
Sheep & Goat	1,338,029	302,861	718,075	644,729	3,003,694
CY 1926					
Cat. & Hors.	141,930	61,194	125,888	103,576	432,588
Sneep & Goat	1,303,215	299,400	/32,003	039,144	2,9/4,428
Cat. & Hore.	132 837	00A A2	120 113	107 358	417 002
Sheep & Goat	1,300.125	307.890	755.895	649.670	3,013,580
CY 1928	-,,	,	,		-,,
Cat. & Hors.	128,498	53,369	115,555	109,873	407,295
Sheep & Goat	1,336,161	316,538	758,990	656,383	3,068,072
CY 1929					
Cat. & Hors.	126,891	50,339	113,260	107,887	389,337
Sheep & Goat	1,378,240	313,534	778,884	631,247	3,101,914

Table 7--Number of livestock allowed under grazing permits in Idaho, Nevada, Wyoming, and Utah, 1906-1929

Source: Forest Service Annual Reports, 1906 through 1930. The major problem with the data is that they were available by states instead of by regions. Since a number of the forests in Idaho and Wyoming were within Regions 1 and 2, only the data for Utah and Nevada come entirely from Region 4.

crops," or privately owned pasture to feed stock for at least 90 days while they were off the forest. For sheep, the requirement was sufficient cropland or spring, fall, or winter range to provide forage for each sheep at least 75 days while off the forest. Pasture land was at such a premium that only those living in valleys immediately adjacent to the forest could hope for permits for their stock.⁴⁴

In 1910, because of the excessive overgrazing on the Manti, A.W. Jensen reduced the permits of old users and allowed virtually no new stockmen on the forest. In order to allow more graziers to keep sheep on the forest, he had set the protective limit at 500 (later reduced to 200), undoubtedly the lowest in Region 4. Even at that, many who owned sufficient base property to feed their stock during the winter could not obtain permits. Jensen had granted 5-year term permits in 1909, so the reductions caused considerable resentment. Though Jensen tried to protect small stockmen, the farmers interpreted his actions as an attempt to promote the interests of large owners, and they held several meetings to protest Forest Service policy. As late as 1912, Jensen had failed to satisfy the grazing advisory boards.⁴⁵

Differences of opinion emerged over commensurability requirements. In 1911, W.I. Pack of the Uinta, Orrin C. Snow of the Sevier, and Henry A. Bergh of the La Sal argued against commensurability requirements, saying that they discriminated against small operations.⁴⁶

E.A. Sherman disagreed quite strongly, believing that dropping the requirements would create a property right in the grazing privilege. Carl Arentson of the Fishlake and Clinton G. Smith of the Cache agreed with Sherman, arguing that the commensurability rules protected the small rancher from competition for permits with the large operator who might graze on the forest in the summer and the desert during the winter.⁴⁷ The dispute arose again in 1912 on the Ashley, and Sherman again ruled in favor of commensurate property qualification.⁴⁸

In practice the presence of small or large stockmen was less a function of the commensurability rules than of grazing conditions and protective limits on and near the particular forest.⁴⁹ The Manti, for instance, contrary to the charges leveled at Jensen, hosted mostly small farmers, and Forest Service publications cited the forest as an example of the success of their social policy that promoted small holdings.⁵⁰ Most permittees on the north slope of the Uinta, on the other hand, were large operators.⁵¹ On the Humboldt, C.S. Tremewan resigned in protest after Sherman followed what the supervisor perceived to be a policy of raising the preferences for larger operations and reducing the smaller units.⁵² The evidence on Tremewan's allegations is somewhat mixed since by 1915 the protective limit for sheep had been reduced from 2,000 to 1,250, while the maximum limit had increased.⁵³ As regional forester, Kneipp was decidedly against control by large operators, and he warned Supervisor J.M. Ryan of the Ruby against granting permanent increases to larger permittees, 54 In 1919, Kneipp cautioned Toiyabe Supervisor Vernon Metcalf against continuing to allow a large permittee to graze double the forest's established maximum limit of stock.55

In an effort to help small permittees, the Sawtooth and some other forests created class A zones near the forest boundary and refused to allow anything but a B or C permit even to qualified stockmen who lived further away. In 1916, under pressure from Senator William E. Borah, in part because of complaints of conditions near the Sawtooth, the Chief abolished the class A zone so that any owner "of improved ranch property, who is willing to drive his cattle from the ranch to the Forest ranges and back again each season" could get a class A permit if range capacity permitted.⁵⁶

To avoid loss of an allotment for distribution to other ranchers, some sheepmen believed that it was actually advantageous to overgraze. In his inspection of the Humboldt in 1911, A.C. McCain found some permittees who thought that "the only way to be sure of their allotment not being reduced in area is for them to graze it out to such an extent that is is, if anything, just a little over the line between a conservatively grazed range and an overgrazed one." They said that if they handled their stock properly and their allotment was found to be in good shape, they ran "a very great risk of . . . having a piece chopped off and given to some less careful man."⁵⁷

On occasion, Forest Service officials themselves promoted overgrazing, by basing recommendations on dubious theories. A 1915 inspection of the Humboldt found "extensive" grass areas in some portions of the forest. Homer Fenn suggested that "a much higher carrying capacity and a more uniform production of forage plants may be secured [in such a case] by common use by both sheep and cattle." The reason, he said "is that weeds are more palatable to sheep and grass more palatable to cattle, with the result that the nongrass-like plants are not fully utilized by the latter class of stock, while the same is true of grasses on the sheep ranges." In defense of his argument for common use, he pointed out that on the Powell, "grass ranges have been converted into weed ranges and weed ranges into grass ranges by continuous heavy grazing by one class of stock."58

Some observers considered this "surplus" grass in northern Nevada a range conservation blessing rather than an opportunity for greater stocking. In retrospect, W.E. Tangren said that the large percentage of grass range was a major reason "for the less deterioration."⁵⁹

Controlling Trespass

The forest supervisors experienced a greater problem in controlling grazing trespass than timber trespass in part because they had to handle it differently. In timber trespass cases, the ranger could estimate the damages, assess them on the spot, and, if the trespasser agreed to pay, transmit a proposition through the supervisor to the regional forester for approval. In the case of grazing trespass, the ranger had to collect affidavits adequate to allow successful prosecution by the United States Solicitor General.

In practice, this meant more time and paperwork for the forest officers and fewer payments for damage. When confronted by the ranger, the herder would generally offer to settle the matter, but after learning that the ranger had to supply affidavits and admissible testimony, the trespasser often reneged. Then for cases resting on hearsay or the unsupported testimony of the ranger, the solicitor would not approve prosecution. Consequently, the supervisors proposed that the Federal Government change the rules in grazing trespass cases to allow rangers to accept settlements with the approval of the regional forester in cases of less than \$250 in damages.⁶⁰

In general, permittees resented measures taken to secure compliance with trespass regulations, whether fines or revocation of permit privileges-even though they were infringing on the rights of other permittees or damaging the range.⁶¹ The regional administration sent Chester J. Olsen to the Humboldt in the 1920's for an investigation that led to the successful prosecution of nine trespassers by the Justice Department.⁶² The creation of the La Sal National Forest had had the support of smaller stockmen, but the larger ranchers, who controlled most of the range, did not like the restrictions on their operations and often disregarded the trespass regulations.⁶³ On the Fishlake, trespass became a problem in part because of large blocks of private land within the forest, which made it difficult to control drifting.⁶⁴ On the Cache during the mid-1920's, Carl Arentsen found that on-and-off permits contributed to trespassing. He dealt with this problem by fencing the boundaries and reducing the number of permits.⁶⁵ In attempting to control trespass, rangers conducted wintertime, feedlot, and ranch counts, rode the range, bushed the tails of unpermitted stock, painted the excess stock, and tagged permitted stock. 66

In some cases, the supervisors just gave in to the pressure. On the Minidoka, cattle trespass became such a difficult problem to solve that in 1915 stockmen were allowed to readjust their allowances to the average numbers they had actually been grazing on the forest. This did not solve the problem, however. On the Toiyabe trespass became so pervasive by the mid-teens that the supervisor required all permittees to sign affidavits stating the number of stock they actually grazed, then issued temporary permits for the stock in excess of regular permitted numbers. The regional administration prohibited temporary permits after 1919, so the practice had to stop.⁶⁷ Perhaps because of the vigorous efforts to deal with the problem, by 1926, the trespass situation in Region 4 was, on the whole, better than in other regions.⁶⁸

Stock Driveways

A major difficulty on many of the forests came in the administration of stock driveways. Stockmen generally drove their sheep or cattle from the ranch to the forest over such routes. Overgrazing on and near the driveways was a concern, as was proper posting to ensure that stock moved across the driveways quickly with as little damage as possible. In an inspection on the Targhee in 1918, Ernest Winkler was surprised by the good condition of one driveway over which 70,000 to 80,000 sheep were driven each season.⁶⁹ In an inspection of the Sawtooth in 1918, Grazing Chief Homer Fenn found a particularly bad driveway along a ridge.⁷⁰

The driveway situation in Idaho was also critical because of the practice of marketing lambs in the middle of the grazing season. This practice required driving the sheep along the route four times per year, instead of two as in most other areas, causing particular pressure on the driveways. $^{71}\,$

In Utah, perhaps the worst situation existed on the Lakefork driveway on the Manti. There, the earth was so denuded that erosion had become endemic. Moreover, there seemed no alternative if grazing were to continue in the area, according to C.E. Rachford of the Washington Office's grazing division, who inspected conditions in 1926.⁷²

By the late 1920's, some permittees were beginning on their own initiative to haul lambs to the railroad and to truck ewes and lambs to their grazing grounds. In 1928, J.W. Newman, a permittee on the Boise, Challis, and Sawtooth, used an REO speedwagon converted to a double-deck truck to carry as many as 68 lambs on each trip between the Middle Fork of the Salmon River and the railhead at Ketchum.⁷³

Grazing Advisory Boards

At the 1911 supervisors' meetings, the participants discussed grazing advisory boards.⁷⁴ Speaking for the regional administration, Fenn pointed out that the Service had a great deal less trouble in Idaho than in Utah. He attributed the difference to "advisory boards entirely," and to "the mutual feeling that results from the cooperation and the understanding of the parties concerned."⁷⁵ With the exception of E.H. Clarke of the Wasatch and A.W. Jensen of the Manti, the Utah supervisors had not organized advisory boards, and most were decidedly against them. W.I. Pack of the Uinta feared that boards would interfere with his administration, and others discounted their value for similar reasons. After Pack's removal, Jensen organized advisory boards on the Uinta, but he ran into considerable difficulty in securing their cooperation.⁷⁶ Following the 1911 supervisors' meeting the La Sal stockmen organized a board.⁷⁷ As late as 1915, the regional administration was trying to convince the Humboldt supervisor of the utility of a grazing advisory board.⁷⁸ Because of domination by one permittee, Toiyabe Supervisor Vernon Metcalf found considerable difficulty in working with the forest's grazing associations until the forest was divided in two in 1915.⁷⁹

Some observers thought that the advantages Fenn saw in the associations were, in fact, liabilities that undermined the social purposes of the Forest Service's program. Wyoming Congressman Frank Mondell claimed that because the Service tied the interests of members of the grazing associations to the forest, those who were rich and powerful were able to get permits while small operators with little influence could not, as the demand for space far exceeded the supply.⁸⁰

Although the boards helped the supervisors, they also created more work for them since the forest office had to enforce the association's rules. On the Caribou and Uinta, for instance, the supervisors took action to deny permits to graziers who failed to pay their association fees or who refused to go along with association rulings on such matters as distribution of bulls.⁸¹

At times, the supervisors found large permittees who did, indeed, try to circumvent the social purposes of the Service. In the early 1920's, Senator Robert N. Stanfield of Oregon controlled permits for about 19,500 head of sheep on the Weiser and Idaho National Forests through hidden ownership in various sheep companies. Lyle F. Watts tried unsuccessfully to get sufficient evidence for a cancellation. After William B. Rice became supervisor, however, Stanfield's disgruntled former partner Mac Hand brought the evidence that led to the cancellation. Stanfield appealed Regional Forester Rutledge's decision upholding Rice, but the Secretary of Agriculture sustained the region's decision.⁸²

Extent of Range Deterioration

Even though western Idaho was generally perceived as in better shape than Utah, range problems existed on many national forests there as well. In 1912, Idaho National Forest Supervisor Herbert Graff wrote that "when we have such a vast acreage of overgrazed territory on which even the grass roots are no longer in evidence, we cannot begin to make an estimate of the damage to reproduction."⁸³ In 1916, Graff said the forest consisted of readily accessible lands that were badly overgrazed and inaccessible back country into which no one wanted. By 1924, Watts had made "more progress . . on the grazing job . . than ever before," but "the range in the back country is for the most part a poor range."⁸⁴

In part, the inattention to grazing problems on western Idaho forests like the Idaho and the Weiser resulted from the lower priority placed on grazing than on other functions. Ernest Winkler wrote after an inspection in 1919 that the "grazing business" was of such a nature "it can be put off until other pressing activities [such as repairs, timber sales, and fire suppression] had been attended to."⁸⁵

In contrast with other forests in Region 4, the Salmon ranges at this time were in generally good shape, largely because of lack of demand. There, as late as 1916, managers could get away with somewhat more lax enforcement of salting and other regulations and with failure to implement recommendations based on reconnaissance.⁸⁶

The Manti lay at the other end of the spectrum. Stockmen resisted every attempt to reduce numbers, and particularly fierce battles in 1917 and 1919 led to an appeal to the Secretary of Agriculture, who sustained Supervisor J.W. Humphrey's reductions.⁸⁷ Humphrey and his staff continued to work on the situation. Though they lost some battles, they drafted working plans based on extensive range reconnaissance and had improved some of the worst ranges by 1926 when C.E. Rachford conducted an inspection.⁸⁸ Still, conditions were bad enough that at some of the ranger meetings "the Manti was used as a horrible example so often" that it was finally agreed to fine anyone who mentioned it!⁸⁹

Permittee Control of the Range

Because of intense pressure for permits on scarce grazing lands range managers in Nevada had more political problems than those in Idaho or Utah. In the Silver State, the demand for reductions led to counter-pressure from stockmen for control or ownership of the grazing lands. The leadership of the movement rested in the Nevada Land and Livestock Association whose executive secretary, Vernon Metcalf, had served as supervisor of the Toiyabe National Forest and chief of the division of operations for Region 4.⁹⁰ Meetings of stockmen at Tonopah, Reno, Winnemucca, and Salt Lake City in 1925 and 1926 called for the recognition of grazing on public lands as property right based on "priority and preference."⁹¹

The pressure for control over grazing permits also led to proposals for legislation to give stockmen more power. In late 1925, the Senate Public Lands and Surveys committee held hearings throughout the West on several bills, one of which was sponsored by Senator Stanfield and Senator Tasker L. Oddie of Nevada. Though it did not pass, the Stanfield-Oddie bill would have made the grazing advisory boards the final authority in disputes between the stockmen and the Forest Service.⁹² In 1928, Oddie cosponsored with Senator Key Pittman a bill that would have redesignated the three Nevada forests as grazing reserves under the Interior Department, thus removing the ranges and stockmen from Forest Service jurisdiction. In their view, this change would have solved the problem of permit reductions and local control.⁹³

Permits and Fees

In view of the pressure for autonomy and the depressed economic conditions in agriculture during the 1920's, the Service proposed a number of measures to provide stability. In 1923, it announced the awarding of 10-year permits, which were given the status of contracts in 1926. In addition, the Service permitted stockmen to pay fees in two installments instead of a month before the animals went on the range. It also set an exemption limit below which permittees would not be required to make reductions in favor of new applicants, so that stockmen would not be forced to reduce their herds to numbers below which they could expect to "maintain a reasonably profitable enterprise."⁹⁴

From the beginning of Forest Service administration, the question of what fees ought to be charged for the use of the grazing privilege had faced the Forest Service and forest users. Three contradictory tendencies appeared over time. At first the Service wanted to subsidize small stockmen. Then, as budget deficits mounted, Pinchot and Graves promised that the Service would pay its own way from receipts from resource uses. Some congressmen applied pressure to raise grazing fees to the market level of private grazing lands.⁹⁵ Stock interests, on the other hand, argued that the Forest Service ought to keep fees stable or even reduce them to the cost of administration.⁹⁶ Annual fees in 1910 ranged from \$0.35 to \$0.60 for cattle and \$0.10 to \$0.18 per head for sheep. In 1915-16 and 1917-19, rates were raised somewhat. Thereafter, they remained essentially stable until the early 1920's.⁹⁷ By 1919, receipts from grazing exceeded the amount earned from timber for the Forest Service as a whole.98

The issue of grazing fees plagued Region 4 as well as the Service in general. In 1911, Supervisor Orrin Snow rgued that grazing ought to be put on a competitive-bid

's instead of a preference basis. Supervisor C.S.

Tremewan of the Humboldt believed that if the Forest Service offered rangeland on a competitive basis like timber it would create monopolies. Clinton G. Smith of the Cache said that a purely competitive system would tend to create instability, since the rancher would have to bid each time his permit ran out and if he did not get one, he would be forced to sell his livestock.⁹⁹ In 1913, Woods, then Sawtooth supervisor, argued unsuccessfully that because ranchers received high prices for livestock, the States took 35 percent of the gross forest receipts, and the forests were being pressured to be selfsupporting, annual grazing fees for sheep ought to be increased to 25 cents per head.¹⁰⁰

Regional Forester Sherman said that under current social policy, the Service was "selling five dollar gold pieces for one dollar and a quarter," and operating a different "machine" to help small stockmen. "Under the competitive system, the difference between the \$1.25 and the \$5 gold pieces, or \$3.75 goes into the Treasury. Under the present system it goes into the hands of the permittees." The problem the Service had to solve was "what way can we best distribute these five dollar gold pieces in order to get the best results for the country?" The Service's answer was "to support the greatest number of homes." The Service chose to provide "cheap feed" to the small operator where the grazing privilege made "the difference between failure and success."101 Supervisors Snow and William M. Anderson presented a resolution to the 1911 supervisors' meeting favoring a market system, but the majority voted to reject it. 102

A major problem in determining the rate at which fees ought to be set was the absence of an appraisal of the comparative value of forest ranges and private rangelands. In an attempt to correct that problem, in 1921 Chief Greeley assigned C.E. Rachford of the Washington Office's grazing division to conduct a market-based appraisal.¹⁰³

By the time Rachford completed his report in 1924, considerable opposition to increased fees had grown among stockmen and their congressional supporters. Opponents questioned the market assumptions upon which Rachford had done his work. The public lands, they argued, had become integral units of established ranching operations before the forests were created, and increases in grazing fees served only to upset the existing balance. Thus, the ranchers denied that forest grazing lands ought to be treated like property they might lease or purchase.¹⁰⁴

The stockmen's negative response to the Rachford report led to the Agriculture Department's appointment in January 1926 of Dan D. Casement, a Kansas stockman, to review the report. Casement's review, submitted in June 1926, accepted Rachford's criteria, although it raised some questions about the method. In general, Casement found Rachford's work as it applied to the Intermountain Region to have been fairly, accurately, and exhaustively completed. The private land Rachford had selected for comparison was generally representative--in fact, the values were on the conservative side. Casement faulted Rachford's report only for its failure to consider and quantify the restrictions placed on permittees, in the public interest, that they would not have faced in the rental of private lands.¹⁰⁵

Upon completion of the Casement review, the regional office prepared a summary, together with its own recommendations, which it passed on to the forest supervisors. The summary provided a tabulation of the current fees, the Rachford recommendations, the Casement revisions, and the proposed fees. In 1927, the average monthly fees stood at 10 cents a head for cattle and 2.8 cents for sheep. Rachford recommended an average of 17.5 cents for cattle and 4.7 cents for sheep; Casement revised the figures to 16 cents for cattle and 4.2 cents for sheep. These proposals were scaled down somewhat in negotiations between the Agriculture Department and the livestock associations. The final regional recommendation was 15.6 cents for cattle and 4 cents for sheep.¹⁰⁶ This amounted to a 56-percent increase over the old rates for cattle and a 43-percent increase for sheep. The Secretary of Agriculture agreed to phase them in by 25-per-cent increments over 4 years beginning in 1928.¹⁰⁷

One important feature of Forest Service decentralization that facilitated grazing administration by 1911 was a reform in the appeals procedure. The new regulations made it necessary for the appellant to present his entire case to the supervisors. No new evidence could be introduced later before the regional forester or the secretary. This strengthened the hand of the supervisor, because the only basis for an appeal became the allegation that the supervisor's decision had not been in accordance with the regulations.¹⁰⁸

Grazing and Land Protection

Initially, foresters believed sheep generally injured tree growth.¹⁰⁹ Bryant S. Martineau reported on studies on the Old Payette between 1912 and 1914 that ought to have laid the attitude to rest. In conducting these investigations, methods of bedding out pioneered by Arthur



Figure 35--Weighing lamb at end of grazing season, experimental band, Deadwood Basin, Old Payette National Forest, 1913.



Sampson on the Wallowa in Oregon were utilized. Instead of bringing the sheep back to a central camp each evening, the animals were allowed to bed down wherever they happened to be grazing. Moreover, dogs were used only to protect the flocks against predators and not to force the stock over the same ground. Martineau found that with this method "these areas may be fully stocked, provided they are properly handled, without injury to the reproduction of yellow pine or other conifers."¹¹⁰ Old habits died hard, and as Jack Albano found on the Targhee, getting herders to adopt the bedding out system was difficult.¹¹¹ By 1926, however, 93 percent of all herders in Region 4 (the highest percentage in the Service) used the bedding out system.¹¹²

Many familiar with the livestock industry argued that inadequate herd supervision and the grazing habits of cattle made them a potentially more serious threat than sheep. C.N. Woods pointed out that in spite of sufficient feed on the allotments, cattle tended to "remain too much on the lower, less steep country and along the water and among the willows." The remedy, as he pointed out, was driving and holding cattle "in rougher country and in putting salt higher in the mountains." Sheep, he indicated, "graze the range more evenly than either cattle or horses."¹¹³

In practice this meant that some areas of a cattle allotment could be badly overgrazed while others in the same allotment were hardly used at all. An inspection on the Diamond Fork in the Uinta National Forest in 1927, for instance, showed some areas as much as 90 percent utilized and other portions "lightly grazed," largely because of inadequate herding by the permittees.¹¹⁴ In the early 1920's, Charles DeMoisy secured some reductions on the La Sal for range improvement because cattle tended to congregate on the "high yellow pine ranges," instead of grazing the allotments evenly.¹¹⁵

In general, supervisors indicated that getting cattlemen to cooperate in promoting uniform allotment use through salting was more difficult in Utah and Nevada than Idaho. The problem was, however, almost universal since stockmen "didn't want to take the fat off of them walking after salt."¹¹⁶ Supervisor J.M. Ryan cited "poor distribution of salt and lack of handling" as the reason for overgrazing on some cattle ranges on the Ruby. Nevertheless, Ryan tended to favor cattle over sheep because of "the sentiment of the majority of the people."¹¹⁷ Vernon Metcalf on the Toiyabe pointed to the difficulty in getting cattlemen to salt properly as a reason for overgrazing.¹¹⁸

A result of the overgrazing was the destruction of favored and most palatable species and the succession of less palatable and often poisonous plants. The problem with plant poisonings in Region 4 was among the worst in the National Forest System. A 1916 report indicated that 42 percent of all sheep and 25 percent of all cattle poisonings on forest lands took place in Region 4.¹¹⁹ By 1926, the region retained its proportionately high place.¹²⁰ A major problem in determining the cause of livestock losses was the general habit of turning cattle onto the range and allowing them to forage unattended.¹²¹ Even the Salmon with its relatively sparse livestock load reported problems with larkspur and death camas.¹²² In his 1911 report, Guy Mains on the Old Payette pointed out that most losses came about in areas "closely fed and overgrazed." He said that "the best remedy seems to be to give an allotment large enough [for the number of livestock] to make close grazing unnecessary."¹²³ On the Lemhi and some other forests, employees reduced the incidence of larkspur by digging.¹²⁴ On the Humboldt, herders moved sheep into areas with larkspur to eat it down, since the plant was poisonous to cattle but not to sheep.¹²⁵ On some forests, such as the Toiyabe, poisonous plants were not perceived to be a particularly great problem.¹²⁶

Quarantine Regulations

Throughout the period, the Service worked with the States and the Bureau of Animal Industry (BAI) in enforcing quarantine regulations on the forests. In 1912, for instance, because of an outbreak of lip and leg ulcerations, forest officers inspected animals on the Cache, Caribou, and Pocatello in Idaho and all forests in Nevada and Utah except the Ashley.¹²⁷ Where scab appeared, the Forest Service required herders to dip their sheep in a sulphur and lime solution.¹²⁸ The Chief Forester, however, would not approve requests such as the one made by Supervisor F.J. Ryder of the Palisade to control distemper or J.B. Lafferty's on the Weiser to require vaccination for blackleg, because there were no pertinent BAI or State regulations.¹²⁹

Range Rehabilitation

Some forests tried experiments with range reseeding. On the Targhee in 1910, the experiment was "a total failure," owing to the "drouth of that season."¹³⁰ In 1912, after this and other such failures, Regional Forester Sherman told forest supervisors who requested permission to reseed ranges to wait until the Great Basin station completed experiments to determine "the plants that are most likely to succeed in soil and climatic conditions common to the Utah Mountain ranges."¹³¹ His successor Kneipp and other forest officers, as well, believed that "range improvement by reseeding must be done largely by natural methods," particularly through careful management by bedding out and by deferred and rotation grazing.¹³² On that basis, he rejected an initiative of the Mill Creek Grazing Association on the Wasatch to reseed its range.¹³³

Stocking Trends and World War I

In the period between 1910 and the American entry into World War I in 1917, two trends in stocking were evident.¹³⁴ First, there was an increase of 59 percent from 376,000 to 597,000 in the number of cattle and horses. At the same time, there was an increase in sheep from 3.9 million in 1910 to 4.4 million in 1912 followed by a decrease to 3.5 million in 1917, for a net 10-percent decrease. In 1918, the number of cattle and



horses, 620,000, reached its highest point since the Forest Service began administering the lands. The number of sheep increased to about the 1913 level.¹³⁵

The net effect of these changes for cattle, horses, and sheep was to increase stocking dramatically. If one uses the forage acre estimates accepted at the time, with 0.8 forage acre per month for a cow and 0.3 for a sheep (a ratio of 2.6 to 1), animal units had actually increased from about 1,895,082 to 2,181,469 between 1910 and 1918, or about 15 percent, largely because of the increase in cattle. 136

When he dictated his memoirs in 1964-65, Leon Kneipp believed that Region 4 had resisted the pressure to increase meat and wool production during the war.¹³⁷ If one were to measure only sheep, that would be true. The increase in cattle, however, more than offset the decrease in sheep and exacerbated an already serious situation.

At the time, Kneipp knew that overgrazing had been permitted. In 1919, he wrote to Supervisor Lafferty that "economic conditions and the labor situation incident to the war have led us during the past couple of years to tolerate conditions which obviously are not in accord with the purpose for which a particular forest was created, and the result has been in many instances detrimental to the interests of the Service and the purposes for which it stands." Such exceptional conditions had disappeared by 1919, and Kneipp urged the "vigorous application of proper principles of Forest administration, including grazing management, to enable us to regain lost ground and to make the progress in the improvement of the Forest lands which may reasonably be expected as a result of our expenditures of funds and effort."¹³⁸

Clearly, in fact, the wartime pressure for increased stocking had come from both the regional administration and the Washington Office. Ernest Winkler, for instance, recommended an increase on the Targhee.¹³⁹ The situation was undoubtedly the worst in Utah. In his annual report for 1917, William M. Anderson of the Ashley estimated a grazing capacity on the forest of 96,000 sheep and 10,300 cattle and horses.¹⁴⁰ The Secretary of Agriculture, however, approved 106,000 sheep and 11,400 cattle for 1918 as "a purely temporary emergency measure" to "be discontinued at the close of the war" or before that "if it becomes evident that the grazing of the additional number of stock may result in permanent injury to the Forest and range."¹⁴¹

In an apparent attempt to justify the action, Anderson reported that, except in a couple of unusual cases, he did not believe that the increased stocking had hurt the range.¹⁴² With somewhat more detachment, Rachford, who conducted range appraisals in 1921, found the situation in Idaho better than in Nevada, where the range was improving, and worst in Utah, where land deterioration had become critical.¹⁴³

Moreover, the wartime emergency necessitated the curtailing of range reconnaissance. Crews worked only on the Uinta in 1917 and the Salmon in 1918. The regional office had planned to complete work already begun on the Sevier and to initiate work on the Fillmore and Fishlake, but had to suspend all three projects. ¹⁴⁴

Postwar Grazing and Reconnaissance

During the war, increased stocking seemed patriotic.¹⁴⁵ Afterward, concern for the condition of grazing lands began to weigh more heavily. In 1920, the permitted number of sheep was lower than any year since 1906, when the number of forests and extent of acreage in the Intermountain Region were far lower. By 1921, even the level of cattle stocking was down to approximately that of 1916, and it continued to decline during the decade.¹⁴⁶

After the war, the Service reinaugurated studies to determine proper stocking. First, it undertook reconnaissance on a number of forests where it had not been done before World War I. Second, on those where studies had been made, followup investigations on the quadrats and enclosures were undertaken; and, in some cases, new quadrats were established. Third, period studies were inaugurated to determine the proper time for stock to be allowed on and removed from the range. Fourth, additional palatability research was undertaken to determine what sorts of grass, forbs, and browse different classes of animals preferred. In some cases, as on the Uinta after 1925, these phases were combined in a single study.¹⁴⁷ Finally, these studies were followed with management plans in which forest officers tried to incorporate the research data.

Region 4 led the Forest Service in reconnaissance and carrying capacity studies during the 1920's. 148 In 1919, sample reconnaissance was undertaken on the Humboldt. 149 In 1922 reconnaissance was undertaken on the Fillmore and Minidoka and on a new addition to the Caribou. 150 In succeeding years, similar studies were undertaken on a number of other forests in the region including the Idaho, Payette, Weiser, Boise, Cache, and Wasatch. 151 By 1926, 41 percent of all Forest Service quadrats and more than half of all check enclosures were located on Region 4 ranges.

In retrospect, it is clear that in addition to excessive livestock numbers, a major part of the problem with overgrazing came because of the excessively early date when livestock were permitted to enter the allotments. After a 1915 inspection of the Santa Rosa, Woods and Kneipp both thought that a major reason for the overgrazing on the forest was that cattle were allowed to enter as early as April 15, "when the grass has barely started." Kneipp suggested that Supervisor W.W. Blakeslee consider delaying until May 1, which would be "more in keeping with natural conditions" on the forest.¹⁵²

Something more than the range reconnaissance and carrying capacity studies was needed to provide information on when range plants were ready for grazing, since even though working plans were written on the basis of these studies, supervisors allowed animals on allotments before plants had begun to mature.¹⁵³ Following a drought in 1919, some of the cattle associations agreed to change the opening date on the Caribou to May 5 because of overgrazing in particular areas. By that time, Supervisor Earl C. Sanford had

recognized the need for additional tests to "arrive at proper grazing seasons and generally to secure a proper adjustment of the grazing on these allotments." 154

Period studies were begun in 1919 on the Uinta, on the Caribou in 1921, and the La Sal in 1922.¹⁵⁵ On the Caribou, after a survey of 4 allotments consisting of 12 cattle units, on which the current season began between April 20 and May 1, H.E. Malmsten recommended deferring the opening of grazing by 10 to 15 days during an average year. After a particularly severe winter, 1920-21, for example, snow still covered some north slopes and vegetation was not ready for grazing until May 20. In line with general Service policy, Ernest Winkler, Woods's assistant in the regional office, recommended that Sanford phase in the new dates over a period of time to minimize economic dislocations.¹⁵⁶

Some supervisors had to work in the absence of a full reconnaissance of the forest. A partial reconnaissance of three allotments of the Humboldt in 1919 indicated that a reduction of at least 25 percent of both sheep and cattle numbers would have to be made in 1920 in addition to a cut of 25 percent that Favre had instituted in 1919.157

Since no full-scale studies had been undertaken on the Humboldt, Supervisor Favre had to work through trial and error. No other supervisor in Region 4 was as well suited to do that; Favre had been intimately connected with the Caribou reconnaissance. During the early 1920's, Favre began the annual closing of 40,000 to 50,000 acres of grazing land on the Santa Rosa division to allow reproduction of grazing lands and aspen. Will Barnes, Chief of Grazing in the Washington Office, questioned the practice, indicating that their studies had shown that "the same results in range revegetation can be accomplished by deferred grazing together with proper stocking and adequate distribution." Favre was already practicing deferred grazing, reducing number of stock, and insisting on adherence to working plans, and as the range continued to deteriorate, the closures were allowed.¹²⁸

Unfortunately, the various studies and the new management plans did not solve the problems. Management plans completed on the basis of a reconnaissance (1923-27) on the Weiser had continued to result in some overgrazing. They proved unworkable, in part, because some of the range counted in the estimates had not been grazed and plant species differed in western Idaho from those on the Caribou where the forage-acre estimates had been formulated. A.R. Standing, who investigated the situation at the request of Supervisor John Raphael, believed the only solution was closer cooperation between the reconnaissance crew and the forest personnel along with adequate palatability tables and carrying capacity studies for each forest.¹⁵⁹

On the Fishlake, a similar situation was apparent. Supervisor Hanmer Christensen and his rangers had used the studies to make range management plans and adjustments, in the face of considerable user resistance.¹⁶⁰ In the summer of 1927, Ernest Winkler and a large party inspected the range. While some improvement was evident, and "grass and other vegetation" now covered some "areas once almost bare," lack of satisfactory improvement on some ranges led Standing to comment that



Figure 36--Forest supervisors' meeting at Great Basin Experiment Station, July 1926, Manti-LaSal National Forest-

"grazing surveys cannot be criticized for estimating less stock on this range, for under present use and management, it is still being overgrazed."¹⁶¹

In 1928, James O. Stewart, grazing inspector from the regional office, returned to the original Caribou quadrats and mapped those which had not been obliterated. The results were somewhat mixed, since a great many had been destroyed. On 12 sample plots Stewart found grasses had decreased on 8, increased on 2, and changed little on 2. Less palatable species had tended to increase.¹⁶²

These and other examples of lack of improvement led range managers to question the standard forage-acre estimates. As early as 1921, in replying to Sanford's report, D.A. Shoemaker of the regional office wondered whether the estimates were representative, suggesting that the forage-acre standard for cattle might have been biased because cattle drifted onto sheep allotments and private land.¹⁶³

By the late 1920's, the regional officers tended to reject the standard forage acre. In 1927 at a meeting of the Society of American Foresters, Charles DeMoisy argued that problems had resulted from the application of standard monthly forage-acre figures (0.8 and 0.3) to fallacious palatability estimates. He said further that only through intensive study of individual ranges could examiners determine the proper stocking.¹⁶⁴ In a report of 1927, Dean Phinney said that "the old forage acre estimates continue to be high. Palatability percentages used on the old reconnaissance are in the main responsible for the high forage acre figures."¹⁶⁵

Moreover, more recent research in certain areas has shown other standards to have been faulty, something that range managers in the 1920's could not have known. Forest officers based forage volume estimates during the 1920's on the assumption that animals could eat 75 to 85 percent of the vegetation without damaging its reproduction. More recent studies have shown that there "should have been closer to 50 percent forage left at the end of the grazing season."¹⁶⁶ In carrying capacity weight gain estimates, lamb weights of 65 to 70 pounds were considered acceptable in the 1920's, whereas by the late 1960's, weights of more than 90 pounds were not unusual. Even the 70-pound animals were a considerable improvement on the 40-pound lambs produced on the Humboldt in 1909.¹⁶⁷

What these figures seem to reveal is that even conscientious managers who stocked their ranges somewhat conservatively, on the basis of the research-produced and generally accepted standards, could cause overgrazing.¹⁶⁸ This is not to disparage the value of research, since the questions raised about the previous forage-acre estimates came through additional research. It does, however, indicate that managers could have done well to have asked some hard questions about the considerable difference--as much as 89 percent--between the forage requirement estimates for cattle based on range reconnaissance and the higher estimates based on experience.¹⁶⁹

Not surprisingly, reports from the forests indicate that supervisor's rule-of-thumb carrying capacity estimates generally followed quite closely the ideological trends and economic pressure. On the Boise, for instance, one notes an upward swing in carrying capacity estimates for both cattle and sheep during World War I, then a considerable decline in the late 1920's as the forests came under pressure to improve ranges. 170

Some change there may have come about as the result of the appointment of Guy Mains as supervisor. Looking at the forest with a fresh eye in 1926, Mains said that he was "forced to the conclusion that past estimates of carrying capacity of the Boise will have to be revised before we can formulate a grazing management plan."¹⁷¹ His predecessor, E.C. Shepard, had come from the Cache, and the Boise ranges must have looked good to someone from an overgrazed Utah forest. Mains, however, came from the Old Payette, which was then in relatively good shape.

In some cases, managers allowed prevailing economic conditions to bias the results of some of the "scientific" studies. In the case of the Minidoka, for instance, Grazing Assistant Milo H. Deming admitted that a potential economic dislocation "largely influenced" a number of his period study recommendations for excessively early grazing. In his view, stockmen had no place to put their cattle once spring work on the farms began, so he revised his results to allow them on the forest. He apparently did not consider using homegrown or purchased hay or more rigorous commensurability standards acceptable alternatives.¹⁷² Similar grounds were given in period study reports on the Ashley.¹⁷³ Moreover, Forest Service policy dictated that reductions made on the basis of such research were to proceed gradually, so permittees "may adjust their business to meet the changes."¹⁷⁴

In view of the depressed economic conditions in the livestock industry of the 1920's, such concern is quite understandable. Unfortunately, this approach did not help improve the condition of the ranges.¹⁷⁵

This is not to say that some improvement did not take place. Reductions came about as a result both of reconnaissance figures, period studies, and horse sense.¹⁷⁶ On the Caribou, for instance, the number of cattle and horses approved declined from 22,900 in 1921 to 18,000 in 1929 and the number of sheep from 265,000 to 235,000.¹⁷⁷ The reductions in numbers were accompanied by reductions in the length of the season. By 1927, the longest grazing season on the lower country along the Snake River on the Caribou was from May 1 to October 31. Most seasons began on May 16 or 20, and one started as late as June 1. In 1929, the starting date for the Snake River allotment was set back to May 15. Similar changes were noted on the Wasatch, the Ashley, the Old Payette, and the Targhee.¹⁷⁸ As might be expected, the reductions in numbers of stock and length of seasons came about in the face of considerable "opposition and vigorous criticism."¹⁷⁹

The Development of Forest Service Research

Implementation of research results contributed heavily to the success the Forest Service experienced in range management.¹⁸⁰ In providing research findings, Forest Service experiment stations served as the backbone of the research effort. The goal of these stations was to establish a scientific basis for management policy.¹⁸¹ Even though the Great Basin Experiment Station was not the first station established, by 1913 the Service had made the conscious decision to center its intensive experiments in range management there.¹⁸² Established in 1912 in Ephraim Canyon on the Manti National Forest, the station was first named the Utah Experiment Station.¹⁸³

After the Forest Service had carried on research for more than two decades without specific statutory authority, Congress recognized the situation in the McSweeney-McNary Act of 1928 by authorizing the creation of experiment stations. On July 1, 1930, the Intermountain Forest and Range Experiment Station was established as an umbrella entity for all research and the Great Basin Station became a branch of the larger organization.¹⁸⁴

The Great Basin Station was extremely fortunate for a number of reasons. Arthur W. Sampson became its first director. Already noted for his range and forest research, he brought recognized competence to the station. He and his successors drew in a number of bright and creative scientists who laid the groundwork for an understanding of the management of western grazing lands. Sampson himself and Frederick S. Baker of the station were later recruited by the University of California faculty. There, Sampson authored the standard texts on range management, which he based on research done under the auspices of the Great Basin Station. W.R. Chapline, who started his career as a student researcher at the station, ultimately became Chief of Range Research for the Forest Service. Clarence L. Forsling, who succeeded Sampson as director in 1922, eventually became head of the Forest Service Division of Forest Research and later Director of the Grazing Service in the Department of the Interior.

Most important by 1929 were the watershed and range management studies. Sampson began his first research on two watersheds of 11 and 9 acres called A and B at the Great Basin Station. By manipulating the extent of grazing on them, the researchers demonstrated they could control water and sedimentary runoff, and they established beyond any reasonable doubt that proper management of vegetative cover could protect the land from excessive erosion. Other aspects of these studies included artificial revegetation; range readiness (when animals should be allowed on the range); plant vigor studies (how long and extensively the range could be grazed); methods to eradicate poisonous plants; the relation of grazing to aspen reproduction; the relationship between weather and plant development; and, perhaps least important at the station, revegetation with ponderosa pine. 186

Significantly, the range and watershed studies had immediate application to range management in Region 4. The system of sample plots and quadrats that Sampson developed at the station beginning in 1913 became the basis for the range reconnaissance system introduced on the Caribou and elsewhere.¹⁸⁷ The range readiness and plant vigor studies provided the techniques for the period studies and the management plans designed to keep the animals from going, on the range too early or staying too long.¹⁸⁸ The research on eradication of poisonous plants provided the rationale for grubbing and grazing the plants. Sampson's work in Utah and Oregon provided the justification for deferred and rotation grazing.¹⁸⁹ Because of the lack of success in revegetation studies, for many years artificial revegetation was largely curtailed in Region 4.¹⁹⁰ Research showed, however, that forest officers could achieve good results using hardy native species grown under conditions similar to those in the area to be seeded.¹⁹¹ Research also showed that recovery of valuable vegetation was an extremely slow process.¹⁹² Studies reported in 1920 showed that the removal of vegetation more than once or twice per year was detrimental to the plant community.¹⁹³

Closely associated with the Great Basin Station was the work of the field station for research on poisonous plants at the Salina Experiment Station on the Fishlake National Forest. Set up in cooperation with the Bureau of Animal Industry, the station under C.D. Morse conducted research on toxicity of plants and on methods of larkspur eradication.¹⁹⁴ On the basis of this research, demonstration eradication projects were undertaken on the Fishlake, Sevier, Palisade, Minidoka, Lemhi, Targhee, Dixie, Kaibab, La Sal, and Weiser in 1917.¹⁹⁵

Other research in Region 4 included studies on the Dixie of feeding sheep from browse as a substitute for grazing on grass and weeds.¹⁹⁶ The studies showed that the extent of feeding necessary to utilize the browse was detrimental to the total community of vegetation and resulted in increased erosion.¹⁹⁷

Beginning in 1929, the Great Basin Station worked in cooperation with the Bureau of Animal Industry's Sheep Experiment Station at Dubois, ID. Tests there supplemented the range readiness research.¹⁹⁸

Every effort was made to see that research addressed the Forest Service's management needs. In 1912, Chief Henry S. Graves set up a central investigating committee in the Washington Office with three divisions: silviculture, grazing, and products. Each district established similar committees. The original committee for Region 4 consisted of O.M. Butler, assistant regional forester for silviculture, Homer E. Fenn, assistant regional forester for grazing, and Clinton G. Smith, Cache forest supervisor.¹⁹⁹

Although in June 1915 Graves nominally separated research from both the national and district administration, he expected to place field research under the regional foresters.²⁰⁰ In fact, research in Region 4 was closely tied to administration. The regional investigative committee consisting of representatives of the regional administration, the Great Basin Experiment Station, forest supervisors, and, by 1926, representatives of Utah State Agricultural College (now Utah State University) planned the agenda of research. This committee sought to ensure that those studies most needed in the region would receive the highest priority.²⁰¹

Moreover, the Agriculture Department intentionally linked research with the practical needs of the forest users. In the 1920's, Secretary of Agriculture Henry C. Wallace and his successor William M. Jardine secured the appointment of research advisory committees in the various regions to maintain a close relationship between the public and the Forest Service and to prevent duplication of work and waste of time on problems of no particular urgency. The committees consisted of 20 men representing the interests of the region such as lumbering, banking, grazing, and manufacturing.²⁰²

The regional administration consciously tried to implement research findings on the ranger district level. Various forest officers were brought to the Great Basin Station, the Fishlake poison plant project, and other research points to study the conditions.²⁰³ The staff of the station reviewed some allotment management plans during the 1920's to see whether they met the standards set by research findings.²⁰⁴

Although much had been accomplished between 1910 and 1929, forest officers had to accomplish a great deal more before the ranges could be said to be in optimum condition. The problems remained essentially fourfold. First, the managers had to find and use techniques to measure range condition, trends, and extent of deterioration much more precisely than before. Second, in view of the resistance of stockmen to reductions in grazing, they had to continue to develop public relations skills to deal with range users and political allies and sidetrack the movement for user control of Federal grazing lands. Third, they had to develop management plans and techniques that they could realistically implement in the face of practical range conditions and user resistance. Fourth, they had to develop the skills necessary to implement needed range improvements at the cost of some economic dislocation. On their ability to accomplish these four tasks rested the future of the forest grazing lands in Region 4.

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- 2. The Washington Office authorized this through a memorandum of April 17, 1917, copy personal papers of William D. Hurst, Bosque Farms, New Mexico.
- See: District 4, "Minutes of Supervisor's Meeting, Idaho and Wyoming Forests, Boise, Idaho, January 2-4, 1910 [actually 1911]" (n.p., 1911); and District 4, "Minutes of Supervisors' Meeting Utah and Nevada Forests, Ogden, Utah, January 23-25, 1911" (n.p., 1911), copies, Historical files, Boise.
- 4. "Minutes of Supervisor's Meeting, Idaho and Wyoming Forests," 1911, pp. 30-45. The vote was recorded on p. 45.
- George G. Bentz to District Forester, June 10, 1911, and E.A. Sherman to Forest Supervisor, June 14, 1911, File: G-Management, Allowances, 1907-1916, Caribou National Forest Records, RG 95, Seattle, FRC.
- 6. Grazing Chapter Annual Forest Plan, Caribou National Forest, 1911, File: G-Management, Ailowances, 1907-1916, Box 32115, Caribou National Forest Records, RG 95, Seattle, FRC. On the Sawtooth National Forest in 1911 it was usual to require a 20-percent transfer reduction. Ray Ivie, "Grazing on the Sawtooth National Forest and Some Forage Plants Thereon," File: O-Supervision, General, Historical Files, Sawtooth.

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- 8. <u>Forest Service Report in Agriculture Department</u> <u>Report</u>, 1910, p. 402; 1911, p. 397; 1913, p. 185.
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- Sampson, <u>Range and Pasture Management</u>, p. 330; for a discussion of carrying capacity see pp. 328-33.
- Homer E. Fenn to George G. Bentz, February 10, 1915, File: G- Studies, Carrying Capacity, 1914 and 1915, Historical Files, Caribou.
- 13. Mark Anderson, "Carrying Capacity Tests for Caribou National Forest, 1914," MS, 1914, File: G- Studies, Carrying Capacity, 1915 and 1914, Caribou; and "Carrying Capacity Working Plan," MS, 1915, ibid. Though Anderson's report might lead one to believe that the weight gain measurements were sufficient, his work on the Sawtooth the next year which included the establishment of sample plots indicates his recognition of the need to use other measures of trend to determine carrying capacity. Mark Anderson, "Report on Sawtooth Carrying Capacity Test, 1914," File: G- Studies, Carrying Capacity, Sawtooth, 1914, Grazing Records, Sawtooth. On the practical side, the forest supervisor coupled this examination with information on monthly changes in lamb prices in order to determine the relative economic advantage of leaving the sheep on the range or selling them early because of declining rate of weight gain later in the season.

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- 27. Charles DeMoisy, interview by Arnold R. Standing, April 1965, p. 8, Historical Files, Regional Office.

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- 87. The correspondence and documents on this appeal are quite voluminous, but some of the more important pieces are L.F. Kneipp to Alex Barton, May 2, 1917; In the Matter of the Decided Reduction of 11,487 sheep by the Forest Service on the Manti Forest for 1920, February 5, 1920; J.W. Humphrey to District Forester, March 5, 1920, all in File: Range Management, Manti, Controversy 1919-1920, Manti-LaSal; J.W. Humphrey, Grazing Memorandum, October 31, 1919, File: Grazing, Manti, Fd 17, Manti-LaSal.
- C.E. Rachford to District Forester, September 7, 88. 1926, File: I- Supervision, Church Affiliation, Manti, Fd 15, Manti-LaSal.
- 89. J.W. Humphrey, interview by Arnold R. Standing, April 1965, Historical Files, Fishlake,
- 90. Nevada Land and Livestock Association, An Outline of the Reasons for the Proposal that the Humboldt, Nevada and Toiyabe National Forests in Nevada, be Redesignated and Administered Thereafter as Federal Grazing Reserves (Reno, 1928), File: G- Supervision (Nevada Grazing Reserves), 1925-1929, Grazing Files, Humboldt.
- "Demand of Nevada Stockmen," File: Appendix 2, 91. History of Toiyabe NF, Toiyabe.
- 92.
- Rowley, Grazing, p. 135-37. See Senate Bill 3841, 70th Cong., 1st Sess. 93.
- 94. Forest Service Report in Agriculture Department Report, 1923, pp. 193 and 323; 1929, p. 36; and Rowley, Grazing, pp. 134-35.
- Harold K. Steen, The U.S. Forest Service: A 95. History (Seattle: University of Washington Press, 1976), p. 108.
- 96. Rowley, Grazing, pp. 119-21; Jenks Cameron, The Development of Governmental Forest Control in the United States (Baltimore, Johns Hopkins, 1928), p. 334.
- 97. Steen, Forest Service, p. 164. Rowley, Grazing, pp. 119-21.
- 98. Forest Service Report in Agriculture Department Report, 1919, p. 181.
- 99. District Four, "Minutes of Supervisors' Meeting, Utah and Nevada Forests," pp. 129-34.
- Clarence N. Woods, "Grazing Chapter--Supervisor's Annual Working Plan, Sawtooth 100. National Forest," 1913, pp. 11-12, File: D-Supervision General, Historical Files, Sawtooth.
- 101. District Four, "Minutes of Supervisors' Meeting, Utah and Nevada Forests," 1911, pp. 134-37.
- District Four, "Minutes of Supervisors' Meeting, 102. Utah and Nevada Forests," 1911, pp. 234-36.
- 103. Cameron, Forest Control, pp. 334-38; Steen, Forest Service, pp. 166-67.
- 104. The Nevada Land and Livestock Association, An Outline of the Reasons for the Proposal that the Humboldt, Nevada and Toiyabe National Forests in Nevada, Be Redisignated and Administered Thereafter as Federal Grazing Reserves (Reno, 1928). See also U.S. Congress, House, Grazing

Fees: Hearings Before the Committee on Agriculture House of Representatives, 68th Cong, 2nd Sess. (Washington: GPO, 1925).

- 105. Dan E. Casement, "Report on Forest Grazing Fees (Intermountain District Only)," June 30, 1926, File: 1380, Reports, Valuable Records, 1917 through 1950, 2200 Grazing, Uinta.
- 106. Ernest Winkler to S.W. Stoddard, November 29, 1927, and summary of range appraisal, File: G-Management, Annual Reports, Targhee, 1927, Targhee National Forest Records, RG 95, Seattle FRC.
- 107. Forest Service Report, 1927, p. 29.
- 108. District Four, "Minutes of Supervisors' Meeting, Idaho and Wyoming Forests," 1911, pp. 194-96. In 1925, on the Boise, a grazing advisory board was elected to hear appeals. Guy B. Mains to District Forester, December 16, 1926, File: G- Management, Boise, Reports, 1925-1927, Boise National Forest Records, RG 95, Seattle FRC.
- 109. Noel C. Heath, "Sheep Grazing and Its Effects on the Reproduction of Yellow Pine on the Sawtooth National Forest," File: D- Supervision, General, Historical Files, Sawtooth. Forest Examiner William Spearhawk made intensive studies of the effect of sheep grazing on forest reproduction on the Boise from 1912 through 1914. Elizabeth M. Smith, History of the Boise National Forest, 1905-1976 (Boise: ID State Historical Society, 1983), p. 85.
- 110. Bryant S. Martineau, "A Resume of the Grazing Studies Conducted on the Payette National Forest, 1914," File: G- Studies: Payette, Management of Grazing in Yellow Pine, 1911-1914, Pierson Collection, Payette. See also Smith, <u>Boise</u>, p. 95. Smith seems not to have had access to Martineau's report, since her version of it is much more negative than Martineau's narrative.
- 111. John J. (Jack) Albano, interview by Arnold R. Standing, May 1965, p. 5, Historical Files, Regional Office.
- 112. Ernest Winkler to Forest Officer, November 25, 1927, File: 1, 1650, Historical Library, Range Allowances, 1925-38, Bridger-Teton.
- 113. C.N. Woods, "Grazing Chapter--Supervisor's Annual Working Plan, Sawtooth National Forest," 1913, p. 2. File: D- Supervision, General, Historical Files, Sawtooth. Woods found this problem also on the old Payette in 1925, where in spite of fine grazing plans, the cattle did not always go where the plans indicated they ought to and overgrazing of certain areas resulted. C.N. Woods, Memorandum for District Forester, September 16, 1925, File G- Inspection, Boise (Payette), 1904-1929, Lands and Recreation Library, Regional Office. In commenting on an early draft of this paper, Gordon Watts took issue with this view. He wrote, "In my opinion it hasn't been easier to deal with sheep problems--except that in some areas you were dealing with one sheep owner who had several thousand animals, where for a similar sized area you might have to deal with an association made up of a number of cattlemen--usually, the more people, the harder to reach an acceptable solution." Watts may be commenting

from his later experience. It should be borne in mind, however, that his father, Lyle F. Watts, served as a forest supervisor during the period under consideration, and his comments may well reflect attitudes from the earlier period as well. Still, the comments I have found in contemporary reports and correspondence from Region 4 seem to support Woods's views.

- 114. W.E. Tangren, Memorandum for Forest Supervisor, November 10, 1927, File: 1658- Historical Information, 7, Range Management, Uinta.
- 115. C.N. Woods to Charles DeMoisy, January 26, 1921, and February 17, 1921, File G- Supervision, General, LaSal, 1906-1926, Manti-LaSal.
- 116. Albano interview, p. 5.
- 117. Ryan, "Grazing Chapter-Supervisor's Annual Working Plan 1916," File: G- Management, Annual Report, 1913, Humboldt.
- 118. Vernon Metcalf, "1915 Grazing Report, Toiyabe National Forest, Nevada, Part I Administration," File: Appendix- Volume 1, History of Toiyabe NF, Toiyabe.
- L.F. Kneipp to J.M. Ryan, January 16, 1916, File: G- Plans, Humboldt (Ruby), General, 1912-1916, Humboldt.
- 120. Ernest Winkler to Forest Officer, November 25, 1927, File: 1, 1650, Historical Library, Range Allowances, 1925-38, Bridger-Teton.
- 121. "Grazing Chapter--Supervisor's Annual Working Plan," 1913, File: G- Management, Annual Reports, Targhee, 1913, Targhee National Forest Records, RG 95, Seattle FRC.
- 122. C.N. Woods, "Memorandum for Grazing," July 3, 1916, File: 1680, Forest Service History: Salmon Forest History, data, 1916-1937, Historical Files, Salmon.
- 123. Guy B. Mains, Annual Grazing Report, 1911, File: G- Management, Boise, Reports, Old Payette, 1909-1934, Boise National Forest Records, RG 95, Seattle FRC.
- 124. Homer E. Fenn to S.B. Arthur, October 19, 1915, File: Inspection, Humboldt, 1909-1915, Humboldt. Some contemporary observers spoke of eradicating larkspur by digging. In commenting on an early draft of this paper, James Jacobs wrote that his "first job on the Lemhi in 1929 was to make a larkspur infestation survey of the Antelope Cattle allotment to determine if digging appeared feasible. The year after the patches of larkspur were dug by a crew--I was in charge of the digging crew--[Arnold R.] Barney Standing and I inspected the dug areas. Larkspur roots dug 7-inches deep were sending up live shoots. The numbers of plants per acre were almost doubled the number that grew there before digging but the volume of larkspur plant growth was down to almost nothing and the poisoning problem was solved for a number of years until plants enlarged."
- 125. A.C. McCain to S.B. Arthur, February 12, 1915, G- Plans, Humboldt, General, 1912-1919, Grazing Records, Humboldt.
- 126. Vernon Metcalf, "1915 Grazing Report, Toiyabe National Forest, Nevada, Part 2 Protection and

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Development," File: Appendix 2- History Toiyabe NF.

- 127. Forest Service Report in Agriculture Department Report, 1912, p. 552.
- 128. Rowley, <u>Grazing</u>, p. 75; Leonard Hay and William D. Thompson, interview by James Jacobs, Historical Files, Regional Office, pp. 18-20.
- 129. E.A. Sherman to Forest Supervisor, December 9, 1912, File: G- Management- Annual Reports, Targhee, 1913, Targhee National Forest Records, RG 95, Seattle FRC. Will C. Barnes to District Forester, February 18, 1914, File: G- Plans Payette (Weiser), General, 1912-1924, Pierson Collection, Payette.
- Charles A. Beam to District Forester, November 22, 1911, File: Targhee NF History, File 3, Targhee.
- E.A. Sherman to W.M. Anderson, December 12, 1912, File: G- Management-General, Hold Historical, Folder No. 6, Ashley.
- 132. Kneipp to Ryan, January 16, 1916, File: G- Plans, Humboldt (Ruby), General, 1912-1916, Humboldt.
- 133. Peterson, "Wasatch-Cache," p. 211.
- 134. See Table 4. It should be noted that the figures for Idaho and Wyoming include forests not in Region 4 and allowance should be taken for that fact in accepting these generalizations.
- 135. See Table 5.
- 136. The relationship between sheep and cattle at the time is derived from Charles DeMoisy, "The Value of Range Reconnaissance in Grazing Administration," presented to the Intermountain Section of the Society of American Foresters, Ogden, UT, January 1, 1927, File: GS- Reconnaissance 1924 to 1927, Caribou.
- 137. Leon F. Kneipp, "Land Planning and Acquisition, U.S. Forest Service," interview by Amelia R. Fry, Edith Mexirow, and Fern Ingersoll, 1964-65 (University of California Regional Oral History Office, 1976), p. 74.
- 138. Leon F. Kneipp to J.B. Lafferty, July 30, 1919, Folder: G- Inspection: Payette (Weiser), 1909-1919, Pierson Collection, Payette.
- 139. Ernest Winkler, Memorandum for the District Forester, August 9, 1918, File: Targhee, N.F. History, File 3, Targhee.
- 140. "Grazing Chapter--Supervisor's Annual Working Plan, 1917, Ashiey," File: G- Management General, Hold Historical, Folder No. 6, Ashley. During 1917, a temporary increase to 96,600 sheep had been approved. Homer E. Fenn to William M. Anderson, April 25, 1917, File: G-Management General, Hold Historical, Folder No. 6, Ashley.
- 141. C.N. Woods to William M. Anderson, December 6, 1917, File G- Management General, Hold Historical, Folder No. 6, Ashley. See also J.H. Ratliff to L.F. Kneipp, January 19, 1918, and Kneipp to Ratliff, January 23, 1918, File: G-Management General, Hold Historical, Folder No. 6, Ashley.
- 142. "Grazing Chapter, Supervisor's Annual Working Plan, Ashley, Utah 1919," File: G- Management General, Hold Historical, Folder No. 6, Ashley.

- 143. Peterson, "Wasatch-Cache," p. 204.
- 144. Homer E. Fenn to Forest Supervisor, December 12, 1917, File: GS- Studies, Reconnaissance, Caribou, 1916-1917, Caribou.
- 145. For an analysis of this situation from the perspective of the Forest Service as a whole see Rowley, Grazing, pp. 112-13. See Table 5.
- 146. See Table 5.
- 147. DeMoisy interview, p. 8; Merrill Nielson, "My Forest Service Career," pp. 4-6, MS, 1960, Historical Files, Uinta.
- 148. Ernest Winkler to Forest Officer, November 25, 1927, File 1, 1650, Historical Library, Range Allowances, 1925-38, Bridger-Teton.
- 149. L.F. Kneipp to Clarence E. Favre, December 26, 1919; and L.J. Palmer, Memorandum for Grazing, October 9, 1919, File: G- Plans, Humboldt General, 1912-1919, Grazing Records, Humboldt.
- 150. Forest Service Report in Agriculture Department Report, 1923, p. 324.
- 151. See for instance, Smith, Boise, p. 95. Peterson, "Wasatch-Cache," p. 208. James O. Stewart, Memorandum for Mr. Helm, March 25, 1925, File: G- Management, Inventories: Payette (Weiser) 1918-1925, Pierson Collection, Payette.
- 152. L.F. Kneipp to W.W. Blakeslee, November 5, 1915, File: Inspection, Humboldt, 1909-1915, Humboldt.
- 153. "Annual Grazing Report of the Forest Supervisor, Caribou National Forest, 1918," File: G- Management, Allowances, 1916-1921, Caribou National Forest Records, RG 95, Seattle FRC. See for instance Arentson interview, pp. 16-17, and A.R. Standing to The Record, May 17, 1955, Standing Papers in possession of G. Robert Standing, Chico, CA. Nevertheless, the situation with reconnaissance and carrying capacity studies did improve matters. On the LaSal, rancher Charles Redd said that cattle would move onto the forest in "a free-for-all" over the "snow and mud," as early as April 1, so they could "get there before someone else did." Charles Redd interview by James Jacobs, March 1968, p. 4, Historical Files, **Regional Office.**
- 154. "Annual Grazing Report of the Forest Supervisor, Caribou National Forest, 1920," File: G- Management, Allowances, 1916-1921, Caribou National Forest Records, RG 95, Seattle FRC.
- 155. D.A. Shoemaker Memorandum for Messrs. Deming and Cronemiller, March 29, 1922, File: Period Studies of 1921, Grazing Studies and Salting, 22, Caribou.
- 156. H.E. Malmsten, Memorandum for Grazing, October 26, 1921, and Ernest Winkler to Earl Sanford, November 1, 1921, File: Period Studies of 1921, Grazing Studies and Salting- 22, Caribou.
- L.J. Palmer, Memorandum for Grazing, October 9, 1919, File: G- Studies, Carrying Capacity, Humboldt, 1915-1926, Humboldt.
- 158. Will C. Barnes to District Forester, April 11, 1922, File: G- Plans- Humboldt, General, 1920-1930, Humboldt; Annual Working Plans, Humboldt, Grazing Files, Humboldt.
- 159. A.R. Standing, Memorandum for Range Management, October 24, 1929; Ernest Winkler to John

Raphael, November 14, 1929; and John Raphael to District Forester, November 6, 1929, File: G-Management, Inventories, Payette (Weiser), 1926-1932, Pierson Collection, Payette.

- 160. Hanmer Christensen interview, p. 4.
- 161. Standing, Memorandum, January 4, 1962, pp. 5-7.
- 162. James O. Stewart, Memorandum for Forest Supervisor, April 6, 1928, File: RG- Carrying Capacity-Caribou, 1928, Caribou.
- 163. E.C. Sanford to District Forester, March I, 1921, and D.E. Shoemaker, Memorandum for Grazing, March 11, 1921, File: GS- Carrying Capacity-Caribou, 1921, Caribou.
- 164. Charles DeMoisy, "The Value of Range Reconnaissance in Grazing Administration."
- 165. T. Dean Phinney, "Progress Report, Caribou National Forest, 1927," File: GS Reconnaissance 1924 to 1927, Caribou.
- 166. DeMoisy interview, p. 8. See Sampson, <u>Range and</u> <u>Pasture Management</u>, pp. 62-65.
- 167. Delbert and Ora Chipman, interview by James Jacobs, February 1968, p. 3, Historical Files, Regional Office; John Yelland to Chester J. Olsen, February 8, 1933, File: Range Management, Timber Management, Wildlife Management, Engineering, Humboldt.
- 168. E.C. Sanford to District Forester, March 1, 1921, and D.E. Shoemaker, Memorandum for Grazing, March 11, 1921, File: GS- Carrying Capacity-Caribou, 1921, Caribou.
- 169. See above the estimate of C.N. Woods.
- 170. "Twenty-four Years of Range Conditions on the Boise National Forest, Extracts from Annual Grazing Reports, 1906-1929, inc." File: G-Inspection, Boise, 1927-1945, Lands and Recreation Library, Regional Office.
- I71. Guy B. Mains to District Forester, December 16, 1926, File: G- Management, Boise, Reports, 1925-1927, Boise National Forest Records, Seattle FRC.
- 172. Milo H. Deming, "Period Study Report, Minidoka National Forest," 1923, File: R- Management--Period Studies--Minidoka, Grazing Records, Sawtooth.
- 173. James O. Stewart, "Period Study Report for Ashley National Forest," File: G- Supervision, General (Folder No. 2), Ashley.
- 174. Forest Service Report, 1927, pp. 28-29.
- 175. Rice, Reminiscences, pp. 2-3; for a general discussion of the economic condition of the agricultural industry in Utah during the period see: Thomas G. Alexander, "The Economic Consequences of the War: Utah and the Depression of the Early 1920s," in Leonard J. Arrington and Thomas G. Alexander, <u>A Dependent Common-wealth: Utah's Economy from Statehood to the Great Depression</u>, ed. Dean L. May (Provo, UT: Brigham Young University Press, 1974), pp. 62-70.
- 176. Dana Parkinson to Forest Supervisor, April 13, 1926, File: Results of the Grazing Investigative Studies of 1925, Caribou.

- 177. See Table 5 for the condition in the region as a whole.
- 178. Peterson, "Wasatch-Cache," pp. 209-211. James O. Stewart, "Period Study Report for Ashley National Forest," File: G- Supervision, General (Folder No. 2), Ashley. George W. Craddock, Jr., "Period Study Payette National Forest, 1926," File: R.G. Management, Period Studies Payette, Pierson Collection, Payette. "Grazing Chapter--Supervisor's Annual Working Plan," Targhee National Forest, January 1923, File G- Management, Annual Reports, Targhee, 1923, Box 33934, Targhee National Forest Records, RG 95, Seattle FRC; Ernest Winkler to S.W. Stoddard, March 23, 1927, File: G- Management, Annual Reports, Targhee, 1927, ibid.
- 179. Figures based on the annual allowance letters, File: G- Allowances, 1921-1930, Caribou. Ernest Winkler to Earl Sanford, February 5, 1927, and idem to Forest Supervisor, January 11, 1929, ibid.
- 180. In commenting on an earlier draft of this paper, William D. Hurst indicated that "Research results were helpful, but much of the success was due to the application of 'horse sense' by the District Rangers and others who worked on the difficult problems of the teens and twenties."
- 181. Lawrence Rakestraw, <u>A History of the Forest</u> Service in the Pacific Northwest, 1891-1913 (New York: Arno Press, 1979), p. 254. Cameron, Forest Control, pp. 256-57.
- Control, pp. 256-57. 182. Forest Service Report in Agriculture Department Report, 1913, p. 185.
- 183. The following is based on: Wendell M. Keck, Great Basin Station: Sixty Years of Progress in Range and Watershed Research, USDA Forest Service Research Paper INT-118, 1972 (Ogden, UT: Intermountain Forest and Range Experiment Station, 1972).
- 184. Keck, Great Basin Station, p. 1.
- Arthur W. Sampson, Memorandum for District Forester, November 7, 1919, File: Grazing, Manti, Fd 17, Manti-LaSal.
- 186. For a summary of activities in research see: Annual Program, District Investigative Committee, District IV, FY 1917, File 1680, History, National Forests of the Intermountain Region, Historical Files, Regional Office. On grazing in ponderosa pine see: C.B. Morse, Memorandum for District Forester, December 5, 1925, File: RS-Regeneration Seed Studies, 1912-1928, Regional Office Records, RG 95, Denver FRC.
- 187. Forest Service Report in Agriculture Department Report, 1914, pp. 158-59. See also, Elbert H. Reid and Raymond Price, "Progress in Forest-Range Management," in Henry Clepper and Arthur B. Meyer, eds., American Forestry: Six Decades of Growth (Washington, D.C.: Society of American Foresters, 1960), p. 116. It is not at all surprising that Mark Anderson did not set up quadrats in his studies on the Caribou in 1913, since Sampson had not yet devised the system.

- 188. See for instance, C.L. Forsling, "Why the Range Should not be Grazed Too Early in the Spring, attached to Ernest Winkler to Forest Supervisor, April 26, 1926, File: 1650, Historical Library, Range Allowances, 1935-38, Bridger-Teton.
- 189. Forest Service Report in Agriculture Department Report, 1916, p. 183.
- 190. Forest Service Report in Agriculture Department Report, 1917, p. 192. Homer E. Fenn to Forest Supervisor, February 10, 1917, File: G- Studies, Caribou, Natural Reseeding, 1927, Caribou.
- 191. Forest Service Report in Agriculture Department Report, 1920, p. 253. The major problem in implementing these findings was in securing a reasonably extensive and economical seed supply.
- 192.
- Forest Service Report, 1928, p. 56. Forest Service Report in Agriculture Department Report, 1920, p. 234. 193.
- 194. Forest Service Report in Agriculture Department Report, 1915, p. 184. Forest Supervisor to Forest Officers, August 30, 1916, File: Grazing, Manti Fd 17, Manti-LaSal.

- 195. Forest Service Report in Agriculture Department Report, 1917, p. 192. Homer E. Fenn to T.B. Nichols, July 5, 1917, File: G- Management, Allowances, 1916-1921, Caribou National Forest Records, RG 95, Seattle FRC.
- 196. Forest Service Report, 1929, p. 57.
- Forest Service Report in Agriculture Department Report, 1922, p. 247. 197.
- 198.
- Forest Service Report, 1929, p. 57. See Herbert A. Smith, ed., Review of Forest 199. Service Investigations, 2 vols. (Washington: GPO, 1913).
- 200. Steen, Forest Service, pp. 136-37.
- 201. Investigative Program, D-4, 1926, File: 1680, History, National Forests of the Intermountain Region, Historical Files, Regional Office.
- 202.
- Cameron, Forest Control, p. 294. Olsen reminiscences, p. 12. Humphrey interview, 203. pp. 9, 15; Tangren interview, p. 6.
- 204. C.L. Forsling to John Raphael, February 17, 1925, File: 1380, Reports- Valuable Records 1917 through 1980, 2200 Grazing, Historical Files, Uinta.

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Chapter 6 Forest Management in a Depression Era: 1930 to 1941

In October 1929, the United States began to sink into the worst economic disaster in its history. National unemployment reached more than 25 percent of the labor force by the winter of 1932-33. Wages and property values dropped, and poverty became a way of life for numerous Americans. In general, the States of the Intermountain Region were harder hit by the depression than was the Nation as a whole. In Utah, for instance, nearly 36 percent of the labor force was unemployed in 1932.¹

The impact of the depression on the Forest Service in Region 4 was essentially twofold. In the first place, because of the decline in markets, receipts from timber sales and grazing permits declined significantly. Second, because of additional public works funds, particularly those given to the Civilian Conservation Corps, and to a lesser extent to the Works Progress Administration and the Public Works Administration, the recreational and administrative facilities of the region were substantially improved. As early as 1932, Congress appropriated additional funds for forest highways and trails to assist the unemployed.²

Farm Resettlement

The situation was extremely serious, and as farming became increasingly unprofitable on marginal lands, the Service assisted the Resettlement Administration in relocating people. H.H. Van Winkle, for instance, was detailed from the Service to assist the Southeastern Idaho Project to purchase farms and make it possible for people to move. Most relocated in the Willammette Valley of Oregon or the northern panhandle of Idaho.³

With the Resettlement Administration (later the Farm Security Administration), the Forest Service also assisted in administering three projects in the Intermountain Region. These were the Southeastern Idaho Project (later the Curlew Grasslands) and two projects in Utah; the Widtsoe Project, situated in the Sevier River drainage near the Escalante Mountains; and the Central Utah Project, near the Vernon Division of the Wasatch National Forest. The Widtsoe project later became part of the Powell and later the Dixie National Forest, and the Central Utah Project later became the Intermountain Station's Benmore Experimental Range.⁴

Organization

Between 1929 and 1934, a number of other administrative and facilities changes affected the Intermountain Region. On May 1, 1929, the Secretary of Agriculture approved a change in the official designation of the nine Forest Service districts. Henceforth, they were to be called "regions," perhaps to avoid confusion with the increasingly important ranger districts.⁵

Several other administrative changes were made. In 1931, the Service began a shift to a cost accounting system that was designed to provide control of expenditures and accurate investment and depreciation records. By 1940, the system had been implemented in most regions.⁶ At the same time, accounting and warehouse functions were decentralized to the regions and forests.⁷ Moreover, correspondence during the 1930's indicates an attempt to cut costs by careful management in the use of telephones and travel funds.⁸

A number of changes of regional significance took place. In late 1930, as an economy measure, the Forest Service decided to transfer all purchasing and distribution functions, except stationery and office supplies, from the Ogden Supply Depot to Government Island at Alameda, CA.⁹ Earlier in the year, the Service had moved the headquarters of the Intermountain Forest and Range Experiment Station to Ogden to facilitate closer cooperation with the regional office. The Ogden office functions were expanded to include supervision of all research in the region. The Service considered locating Intermountain Station headquarters at Logan or Salt Lake City, but decided on Ogden because of its proximity to the regional office.¹⁰

During the same period, the Service decided to construct a new regional office building in Ogden. Deficiencies previously noticed in the existing building had become more apparent, and new defects had appeared.¹¹ At first it appeared that the Service might purchase and renovate the existing building. Senator Reed Smoot seemed to favor this option, but Regional Forester Rutledge was definitely opposed, since he believed the asking price far too high and the cost of renovation excessive.¹² The regional officers favored fireproof brick and steel construction (rather than the existing brick and wood building) and a location in a "more respectable and cleaner part of town."¹³ Also, while the space vacated by the Supply Depot was about the size the Intermountain Station needed, it was not suitable for their purposes.

These considerations led to the construction of a building on the corner of Adams Avenue and 25th Street. Owned by Julia Kiesel, the site was situated across from the Weber College campus, in a very desirable neighborhood.¹⁴ Achitects Leslie S. Hodgson and Myrl A. McClenaham of Ogden designed the lovely Art Deco structure, completed in February 1934.¹⁵



Figure 37--Intermountain Regional Office Building at Adams Avenue and 25th Street. Ogden, Utah, 1938.

Over the period, facilities on the forests also changed. A number of forest offices, the Minidoka, for example, were housed in local Federal buildings.¹⁶ In 1934, the old Assay Office in Boise was remodeled: the Payette National Forest moved upstairs, and the Boise National Forest used the main floor.¹⁷ Some ranger district offices were located in facilities constructed during the period, as in the case of the Kamas Ranger District of the Wasatch National Forest.¹⁸ In others, as in the case of the Spanish Fork Ranger District of the Uinta National Forest, officers were located in the basement of post office buildings.¹⁹ As late as the 1930's, on the Stanley district of the Sawtooth, a ranger cabin was constructed of logs.²⁰

Between 1933 and 1945, the Service made several changes in configuration of the region, rounding it out to approximately its present size. In 1933, since the construction of a bridge over the Colorado River above Lee's Ferry and the imminent completion of Hoover Dam established highway communication between the Arizona Strip north of the Grand Canyon and the remainder of the State, the decision was made to transfer administration of the Kaibab National Forest to Region 3 (New Mexico and Arizona). The Chief Forester believed that, even though most of the forest users were from Utah, the division of responsibility between the two regions for contact with Arizona State officials made the transfer advisable.²¹

Another important change consolidated jurisdiction over the national forests in Nevada in Region 4. During the 1930's, Region 4 made a number of changes in the forests in Nevada. In 1932 the three Nevada forests (the Nevada, Humboldt, and Toiyabe) were consolidated into two (the Nevada and Humboldt) eliminating the Toiyabe supervisor's office at Austin. In early 1938 the region redivided Nevada into three forests (Nevada, Humboldt, and Toiyabe) with headquarters at Ely, Elko, and Reno and subsequently transferred the Charleston Mountain division from the Dixie to the Toiyabe.²²

In 1938, the headquarters of the Mono National Forest (in Region 5) was moved from Minden to Reno.²³ The Service recognized the problem of having two forest headquarters in one city each responsible to different regions. Even though Reno was much closer to San Francisco than to Ogden, the Service decided to consolidate its operations under Region 4 rather than Region 5 for a number of reasons. Most of Nevada was already in Region 4, so the same logic that dictated the transfer of the Kaibab to Arizona favored that decision. In addition, although, as the disputes over continued Fed-



Figure 38--Old Boise Assay Office, headquarters of the Boise and Payette National Forests. Regional Forester Richard H. Rutledge and Boise Supervisor Guy B. Mains, September 1933.

eral regulation of grazing indicated, Nevadans tended to be antigovernment, ties within the livestock communities in Utah and Nevada were quite close. In the mid-1930's, Region 4 had begun cooperative research programs with the University of Nevada. Furthermore, the personality and experience of Alexander McQueen, Toiyabe National Forest supervisor, helped considerably. He had worked in Nevada for 20 years, serving on all three forests. By contrast, his Mono Forest counterpart, D.M. Traugh, had been transferred from California to Reno only in 1938.²⁴ McQueen had developed broad political and social friendships throughout the state. Consequently, in early 1939, the Chief designated him and thus Region 4 as Forest Service representative for state relations in Nevada.

The Service considered the Toiyabe-Mono consolidation in 1939, but did not consummate it until 1945 when the Mono was abolished and its lands transferred to the Toiyabe and Inyo National Forests and lands on the Nevada side of the Tahoe Basin transferred from the Tahoe to the Toiyabe National Forest. In the exchange, Region 4 actually gained a foothold in California, since that portion of the Mono transferred to the Toiyabe stretched into the Golden State.²⁵

One major change that did not materialize would have transferred the Forest Service to the Interior Department, which was to have been renamed the Department



Figure 39--Map of western regions, Forest Service, 1943. Note Region 4 in center.



of Conservation. Agriculture Secretary Henry A. Wallace, Gifford Pinchot, and conservation organizations like the Izaak Walton League opposed the move. Interior Secretary Harold Ickes pressed for the change at first, but by 1939, opposition was so great that even he declined to recommend continuing the battle.²⁶ Within the Agriculture Department, officers were ordered not to openly oppose the reorganization and to refer any questions dealing with the transfer to the regional forester.²⁷

Land Acquisition

The national attitude favoring positive governmental action during the depression facilitated the expansion of Forest Service administered land within Region 4. A congressional resolution of March 1932 produced by March 1933 the "Copeland Report," named after Senator Royal Copeland of New York.²⁸ The report, written largely under the supervision of Earle H. Clapp, proposed that the Federal and State Governments purchase more of the Nation's forest land to prevent depletion of the lumber supply. The National Industrial Recovery Act of 1933 included a provision for carrying out this proposal.²⁹ Earlier, the Clarke-McNary Act of 1924 had authorized the Federal Government to accept donations of lands from the States, and by 1933 Idaho had donated 113,120 acres.³⁰

Other legislative changes in the 1930's further facilitated Forest Service land acquisition. By late 1935, a number of States, including Idaho and Utah, had authorized the Service to purchase lands within their boundaries.³¹ In that same year, Congress authorized the appropriation of receipts from the Wasatch and Uinta National Forests to acquire private lands within the forest boundaries.³² Such acts were used principally to buy damaged and eroded watersheds in which floods had often occurred, such as those above Davis County towns and in the Spanish Fork, Hobble Creek, and Diamond Fork watersheds of Utah County in Utah and above Arrowrock Dam in the Boise River drainage in Idaho.33 In addition, during the 1930's, the exchanges of private land for national forest timber were continued with the Boise-Payette lumber company.³⁴ In 1939, lands in Dog Valley on the Carson District of the Toiyabe National Forest were purchased largely for watershed rehabilitation.35

Personnel

During the 1930's, the backgrounds of staff members changed considerably. When James Jacobs started work on the Lemhi in 1929, there were very few college graduates he knew of in the region. Some college men worked in the regional office, but nearly all the supervisors and rangers were "horseback" field men who had passed the old ranger examination.³⁶ From about 1930, the Service required a degree in forestry or range management for appointment.³⁷ Appointment came after successful completion of the Junior Forester or Junior Range Examiner test. Forestry schools such as Utah State helped their graduates to prepare for Civil Service exams by keeping files of old tests and asking students to write down questions and submit them to the school as soon as they completed the exam.³⁸ Both the college-trained and horseback foresters took training courses in various aspects of forest and range management during the winter. When a horseback ranger had completed a certain number of courses he was given a certificate designating him a Practicing Forester.³⁹

The makeup of office staffs remained much as before. As late as 1960, most rangers had no secretaries, and they did their own office work.⁴⁰ They had, however, field crews that worked during the summer on such functions as trail and building construction and maintenance and on fire control.⁴¹

Turnover and movement into and out of the Forest Service and region continued to be the norm for regional officials. In 1930, of 24 officials who had served either as regional forester or as head of a division within Region 4 (excluding incumbents), 15 (or 63 percent) were no longer with the Service. One was deceased, and six were serving elsewhere in the Service (including two--Sherman and Kneipp--in the Washington Office). Only two--A.C. McCain, Supervisor of the Teton National Forest, and Clarence N. Woods, then Chief of Operations--were serving in Region 4.42



Figure 40--Richard H. Rutledge, Regional Forester, 1920-38.

In 1939, Woods became the first of three consecutive regional foresters who worked up through the ranks in Region 4. In 1935, Woods had moved from Operations to become Associate Regional Forester. After serving more than 36 years in other positions in the region, he became Regional Forester on January 11, 1939, replacing Rutledge, who was appointed Chief of the Grazing Service in the Interior Department.⁴³

Inspection

The inspection system continued as an important means of regulating work in the region. Until the late 1930's, most inspections were of specific functions, such as grazing or office procedures, or they were general inspections in which the various functions were considered.⁴⁴ In 1939, the Service started what were called General Integrating Inspections of the regions by Washington Office personnel. In this type of inspection, in contrast to previous methods, inspectors made a conscious attempt to determine how the various functions fit together, how the regional officers related to the public, and how well their various styles of administration worked.⁴⁵



Figure 41--Clarence N. Woods, Regional Forester, 1939-43.

Public Works and Civilian Conservation Corps Programs

Perhaps the most important changes during the 1930's came about because of the increased availability of labor on the forests, particularly through the introduction of public works programs, especially the Civilian Conservation Corps (CCC). The Intermountain Region benefited, on a per capita basis, from CCC expenditures more than any other area in the Union. Nevada (\$213 per capita), Idaho (\$127 per capita), and Wyoming (\$108 per capita) ranked first, second, and third in the Nation. Utah (at \$70 per capita) ranked seventh. Moreover. CCC enrollees constituted a sizable portion of the total labor force in these States. In Utah, where the enrollment was lower per capita than the other States in the Intermountain Region, 4.4 percent of the labor force in 1940 consisted of CCC enrollees, making the CCC the third largest source of employment, behind agriculture and metal mining.46

Moreover, the Forest Service benefited more than other conservation agencies from the work of the CCC enrollees. The program was designed principally to improve conservation of natural resources, and since the Forest Service already had a number of such programs underway and had drawn up plans for much more work, it surpassed other agencies in the allocation of camps. Though the Army actually administered the camps, the Forest Service planned and supervised the work.⁴⁷

The situation in Utah was typical of the Intermountain Region. Of 116 CCC camps in Utah the Forest Service operated 47--nearly twice as many as the second-ranked U.S. Grazing Service, which operated 24.48

Watershed Protection and Improvement

Although the CCC benefited the region through the construction and improvement of a variety of facilities, its greatest importance was undoubtedly in building erosion control devices, roads and trails, and recreation facilities.

From the beginning, much of the research at the Great Basin Station consisted of work on the causes and prevention of flooding and watershed deterioration. This was extremely important in Region 4, where overgrazing had produced such devastating floods for so long.

Particularly severe were drv-mantle floods, following summer thunderstorms, which continued to be frequent occurrences for many communities. Floods from the Manti National Forest descended in August 1909 on Ephraim, ⁴⁹ and in June 1918 on Mount Pleasant.⁵⁰ Between 1923 and 1936, floods from above Willard in Box Elder County near the Cache National Forest destroyed 40 homes, killed 2 people, washed out the municipal irrigation systems, and destroyed the municipal powerplant.⁵¹ Floods that originated above Davis County towns north of Salt Lake City near the Wasatch National Forest wreaked havoc on farms and homes during the 1920's.

Similar flash floods in uninhabited areas caused considerable damage through sheet erosion on hillsides, digging gullies through forests and ranges, and washing out irrigation works. A report on the Powell National Forest in 1915 revealed a number of watersheds on which erosion had done considerable damage.⁵² An investigation in 1927 of the LaSal National Forest by Regional Engineer J.P. Martin, Regional Forester Richard H. Rutledge, and Acting Forest Supervisor L.T. Quigley found erosion problems in a number of places throughout the forest.⁵³ A 1930 investigation of the Sawtooth by C.N. Woods, M.S. Benedict, and F.G. Renner discovered "widespread" sheet erosion. Gully erosion of the sort found on the LaSal had not yet become a serious problem, but the investigators recognized it as a threat which at the current rate of grazing would materialize within 5 years.⁵⁴

The first steps in dealing with damage involved working with individual communities to stabilize damaged watersheds. The Manti forest watersheds had more serious problems than most, but the interests there were quite similar. Forest Examiner Robert V.R. Reynolds completed a study of flood conditions on watersheds in 1910.⁵⁵ Townspeople petitioned the forest supervisor, complaining of the destruction of their irrigation works and crops and urging restraint in granting of grazing privileges.⁵⁶ Stockmen, on the other hand, resisted the reductions, appealing to Senator Reed Smoot to help them.⁵⁷ Some reductions in numbers of sheep did take place, but by the early 1920's, conditions were still far from optimal.⁵⁸

In some cases, people in the cities and towns petitioned to have damaged watersheds included within the forest. In the case of Hobble Creek above Springville, for instance, petitions from the mayor, the president of the Board of Trade, and people from Springville and nearby Mapleton asked that the drainage be included in the Uinta National Forest.⁵⁹ The situation remained critical, and in 1929, the Federal Government considered purchasing nonagricultural private lands in the Hobble Creek drainage.⁶⁰

In other cases, the Service planned watershed treatment in addition to permit reductions. This was the case on the LaSal National Forest, where such measures as timber cribs and check dams were proposed for those watersheds that were above areas of expensive improvements. 61

Flooding from watersheds above Davis County towns became so serious that in 1930 Utah Governor George H. Dern appointed a committee to investigate. Headed by Sylvester Q. Cannon, formerly Salt Lake City Engineer and then Presiding Bishop of the Church of Jesus Christ of the Latter-Day Saints, it included engineers, geologists, foresters, and public representatives.⁶² The committee's recommendations included acquisition by the State or Federal Government of the watersheds of Parrish, Ford, Davis, and Steed Canyons, prohibiting grazing in the area, reseeding, constructing check dams, and establishing fire prevention measures. On a more general level, the committee recommended that the State inaugurate a comprehensive watershed control policy.⁶³

The major problem in developing erosion control projects was in conceptualizing the means of dealing with the problem.⁶⁴ During the 1920's, the State of Utah constructed catchment basins below some of the canyons subject to heavy mud and rock floods. This



Figure 42--Ford Creek sheep corral and water hole, Davis County experimental watershed, 1946. Note recovery of vegetation.

caught some of the runoff, but did not stop the flooding itself.

After a mud and rock flood in Davis County in July 1930, Clarence L. Forsling of the Intermountain Forest and Range Experiment Station asked Reed W. Bailey. then professor of geology at Utah State, to investigate the situation. Bailey opined at first that the cause was simply runoff from cloudbursts dumping water on the mountaintops. Forsling suggested, however, that the runoff might have resulted from the denudation of watersheds. Bailey rethought the problem, and the two brought in others including Raymond J. Becraft, professor of range management at Utah State, and Milo H. Demming of the Forest Service. Working with a subcommittee from Davis County headed by Joseph Parish, Davis F. Smith, and Delore Nichols, they coordinated their efforts with Supervisor Chester J. Olsen of the Wasatch National Forest and Ranger Felix Koziol of the Farmington Ranger District.

Forsling, Bailey, and Becraft published the results of their research in 1934. They argued that the floods, rather than being common phenomena over a long period of geologic time, were of recent origin, starting from relatively small areas at the heads of canyons depleted of plant cover.⁶⁵ Their theories were not universally accepted. Opposition came from Frederick F. Hintze of the University of Utah, Ralph R. Wooley of the Geological Survey, and J. Cecil Alter of the Weather Bureau. They argued that such floods were prehistorically common and the natural results of geological conditions. Forsling and the others got support, however, from Walter P. Cottam of the University of Utah and George Stewart, then at the Desert Range Experiment Station, who argued that the contradictory data were faulty. General acceptance of Forsling committee views within the Forest Service allowed them to use their theories as a means of conceptualizing a solution.⁶⁶





Figure 43--Severe erosion at Ford Creek flood source, Davis County experimental watershed, 1930.

However, carrying out the work required both money and labor, neither of which was available until the CCC was organized in 1933.⁶⁷ Five CCC camps in Utah were set up to deal with watershed control. Arnold Standing assumed general supervision for the Forest Service, and Forsling and Bailey (the latter on loan from Utah State) mapped out work on three projects--Willard Basin in Pox Elder County, the mountains above Davis County towns, and Kolob Basin above Provo and Springville in Utah County.

During 1933 the CCC enrollees used methods adapted from those pioneered by Arthur Sampson at the Great Basin Station in 1916. Attempting to retain part of the water and reduce the speed of its flow high on the mountain, they constructed small outsloping trenches using horse-drawn plows and ditchers. In addition, they reseeded the hillsides and constructed rock and wire gabions and checkdams in the gullies. Significantly, they also succeeded in getting livestock removed from the watersheds.⁶⁸

Unfortunately, the small trenches did not work as well under these large-scale conditions as they had on the micro-plots at the Great Basin Station. To improve their holding capacity, Forsling and Bailey revised the design to specify an outsloping contour trench of sufficient size to hold all the runoff from any anticipated summer storm. They also specified the use of bulldozers rather than horse-drawn equipment in the construction. Using this plan, the CCC constructed trenches above Davis County, in Willard Basin, above Provo, and in other areas throughout the region.⁶⁹

In the meantime, A. Russell Croft, who emerged as a leader in watershed research in the west, and George W. Craddock, who became acting director of the Intermountain Station when Forsling transferred to the Appalachian Station in 1935, established the Davis County Experimental Watershed. On this project, they experimented further with methods of watershed con-



Figure 44--Ford Creek flood source rehabilitated, Davis County experimental watershed, 1945.

trol. Croft eventually designed the large-capacity insloping contour trench, which became the standard for use on projects throughout the region. 70

CCC enrollees constructed other watershed and stream improvements on many forests throughout the region. In southern Nevada, they built dams, levees, ditches, and other structures.⁷¹ On the La Sal, they did flood control work.⁷² On the upper Provo River they improved fish culture by constructing small dams and shelters.⁷³

CCC Recreation Facilities

As with watershed improvement, in the development of recreation facilities, the Forest Service provided planning, expertise, and supervision, and the CCC furnished the labor. Before the CCC was organized, the region had received very limited recreational funds-usually \$4,000 to \$7,000 per year. Thus, virtually all the region's recreational facilities were either constructed or reconstructed by the CCC.⁷⁴ At times the Service would furnish as many as three or four landscape architects to design the facilities. The engineering department worked out the plans and technical specifications for recreation area water and sewer systems, roads, and buildings.⁷⁵ On the Boise National Forest the CCC constructed such recreational facilities as tables, toilets, and bathhouses.⁷⁶ In Big Cottonwood and Mill Creek Canyons and at Aspen Grove on the Wasatch, they constructed a number of amphitheaters.⁷⁷ At Mirror Lake, they burned into plywood a large map of the High Uintas Primitive Area for the information of users.⁷⁸ The CCC constructed virtually all the campgrounds on the Payette, since there had been only two established campgrounds prior to the 1930's.⁷⁹ On the Wasatch and Cache, they constructed ski lodges at Alta and Snow Basin.⁸⁰

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Figure 45--Cars parked for recreation at Theatre-in-the-Pines, popular alpine loop recreation site built by the CCC.

CCC Road and Trail Construction

CCC work on road and trail construction was of immense importance. In western Idaho, the CCC constructed roads in virtually all the major drainages including the Middle and South Forks of the Boise, South Fork of the Payette, and South Fork of the Salmon.⁸¹ They constructed at least 13 trails on the Wasatch.82 In some cases, the CCC reconstructed primitive roads to a higher standard, as on the South Fork of the Payette.83 In southern Utah, they constructed a new road from Escalante to Boulder, providing the first road access for Boulder.⁸⁴ On the Humboldt, the CCC built a road in Lamoille Canyon.⁸⁵ A major project in Central Idaho was the construction of a road down the Salmon River from North Fork toward the Middlefork.⁸⁶ The CCC also constructed a landing field at Hoodoo Meadows on the Salmon.⁸⁷

CCC Forestry Work

The CCC assisted in timber stand improvement, seed collection, reseeding, and insect detection and control. On the Uinta, they worked on thinning lodgepole pine stands.⁸⁸ On the Boise they gathered tree seeds and planted seedlings. In October 1940, they planted 80,000 ponderosa pine seedlings on the Elk Creek burn

near Idaho City.⁸⁹ On the Spanish Fork district of the Uinta, the first artificial grass reseeding other than that done on sample plots was done by the CCC in October 1935.⁹⁰ In Utah, the CCC planted more than 100,000 trees during 1933-34.⁹¹

CCC Building Construction

CCC crews aided immensely in improving the physical facilities within the region. In 1938, the region realized it needed centrally located repair shops to maintain its equipment. George Kreizenbeck was assigned to supervise CCC labor constructing shops in Salt Lake City, Cedar City, Reno, and Boise.⁹² Crews built warehouses, lookouts, barns, and ranger stations.⁹³ Dewitt Russell remembers that the number and condition of ranger stations on the Weiser were quite inadequate until the CCC constructed new stations or reconstructed old ones.⁹⁴ On the Fishlake they constructed a complex consisting of an office, three dwellings, a warehouse, a painthouse, and storage building at Twin Creeks.⁹⁵ On the Hum-boldt, crews constructed a ranger station at Lamoille.⁹⁶ In fact, administrative and living quarters were constructed by the CCC on most forests in the region.

As the Intermountain Station continued the expansion of its experimental work, the CCC assisted in the development of new research facilities. In 1933 the Chief





Figure 46--CCC enrollees from Camp F-167 transplanting beaver from Terry Ranch on Panther Creek to Big Deer Creek, August 1938.

approved establishment of the Boise Basin Experimental Forest for research on timber management, soil erosion, and range management problems. A great deal of the construction was done by CCC crews.⁹⁷ They also built about 100 miles of fence and 95 miles of roads on the Desert Experimental Range in Pine Valley.⁹⁸

CCC work in the region did not go forward without some difficulties. Controversy developed, for instance, over political intervention. Congressmen from districts containing CCC camps forwarded names of prospective appointees to Julian N. Friant, special assistant to the Secretary of Agriculture, who in turn expected Forest Service officials to select supervisors from a list he prepared.⁹⁹ In 1933, the regional office received a letter from a congressman asking them to fire a politically unacceptable camp superintendent. The regional office resisted and was saved from dealing with the problem when the camp was discontinued.¹⁰⁰

Congressmen Abe Murdock of Utah and Thomas C. Coffin of Idaho were particularly insistent that the Service appoint deserving Democrats since in 1933 the majority of the camp supervisors were Republicans. Ernest Winkler from the Regional Office came to the Escalante Ranger District to ask Carl Haycock to remove the Republicans and hire Democrats. Haycock refused, and was transferred to the Humboldt National Forest.¹⁰¹ Whether this was an isolated case is not known.

CCC Engineering

The Forest Service benefited so much from the CCC work largely because the engineering division planned facilities effectively, forest officers implemented the plans with sensitivity, and forest officials conducted thorough inspections of the ongoing work. In 1935, for instance, the division revised its building construction manual, outlining specifications for everything from alteration of roof lines to yard development.¹⁰² In routing a telephone line from Dubois, ID, across Togwotee Pass to Moran, WY, Teton Supervisor McCain insisted that the Mountain States Telephone Co. take scenic values into consideration.¹⁰³ Engineering inspections and to make sure that the job was done in a conscientious manner.¹⁰⁴

Forest Service improvement Work

CCC crews did not do all construction work, since some of it was still done by the rangers. Before CCC days, rangers on many forests were organized into improvement crews during nonfield seasons to build bridges, barns, and other improvements and to work on insect control and timber surveys.¹⁰⁵ John Raphael had two of his rangers build a log cabin in the high country





Figure 47--CCC enrollees from Redfish Lake Camp painting Stanley Ranger Station, 1933.

for a late fall camp. After it was completed, Raphael went on an inspection trip. After looking over the cabin, he inspected the two-hole privy out back and was somewhat mystified to find one very large hole and one very small one. Posted by each were the instructions, "Rangers with \$1.20 per diem, use the small hole" and "Supervisors and visiting inspectors with \$2.40 per diem, use the large hole." 106

As technology changed, the Service adopted those features that seemed most appropriate. Until the 1930's mapping generally was done with the traditional plane table and alidade; after that the Service began using aerial photography.¹⁰⁷

In the late 1930's, the regional forester assigned Francis W. Woods to improve the region's telephone system and to develop a radio system. 108 By then the region had perhaps 5,000 miles of telephone circuits, all of them of the ground-return type. Cross-talk with adjacent lines was often a problem. Woods concentrated on improving the telephone installations in Idaho, since in Utah and Nevada the systems were provided by local independent telephone companies.

In an attempt to improve one system, Woods put in a new phone at a ranch on Big Creek on the Idaho. They had trouble getting a good ground, so Woods went to the outhouse and drove a couple of rods into the pit. He then called Supervisor J.W. Farrell at McCall, who commented on how good the connection was. Woods told him they had used an old outhouse for the ground. Farrell replied that he had heard a lot of the stuff over the line before, but "this is the first time I've talked through it."

In addition to improving the telephone system Woods also began development of a regional radio network. He went to the Forest Service radio laboratory at Portland to learn about available equipment. Since none was available commercially, the Service designed its own. The Service developed three types of radios, the M set, an SPF semi-portable, and a smaller set.¹⁰⁹ After

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Figure 48---Telephone engineer R.B. Adams operating a portable wireless set in the field.

designing the equipment, the Service convinced General Electric and Motorola to build it for them. They picked the Lemhi to receive the first radio system, since it had such poor telephone service. Thereafter they assigned systems to other forests in the region with frequencies for both AM and FM reception.

Woods worked out an arrangement with Utah State Agricultural College to train operators. In return the Service allowed the college to use its equipment, which was superior to others on the market.

At times, Woods found it difficult to get operators to read and follow instructions. On one occasion he received a call at Ogden from the fire chief that the radio on Jackson Lake, WY, would not work. Woods drove all night and after arriving he asked the operator what was wrong. 'I don't know," the employee replied. "It won't work." Woods checked the receiver and found it functioning normally. On the side of the unit were instructions on how to tune the transmitter. He asked the operator if he had read the instructions, which said to tune the radio below the "dip." The operator said "Yes, but I thought I would get more power if I tuned it above the dip." Woods then realized he had spent all night driving nearly 400 miles to teach the operator to follow instructions!

Watershed Management

The Service moved to improve its watershed management techniques. As early as 1915, the Service had begun to cooperate with the Weather Bureau in "snow stake" measurements. In 1930, snow surveys were established by the Utah Experiment Station in cooperation with the Forest Service and the Weather Bureau. As part of the agreement, the Service made surveys over 45 snow courses on national forests in Utah. As early as 1931, these snow surveys made possible annual planning of sugar beet contracts by the Amalgamated Sugar Company on the basis of anticipated runoff.¹¹⁰ Similar snow courses were established and surveyed in the mountains of Nevada, Idaho, and Wyoming.¹¹¹ The Service determined the dimensions of watershed problems through detailed studies of the various important drainages. In 1936, for instance, it published reports on the three major drainages in the region--Great Basin, Snake River, and Colorado River.¹¹² In 1940, the Forest Service, in cooperation with the Soil Conservation Service and the Bureau of Agricultural Economics, produced a detailed survey of the problems of runoff, waterflow retardation, and soil erosion prevention on the Boise River watershed in Idaho, where serious flooding, siltation, and erosion had occurred.¹¹³

Recreation Management

While some forest officers had begun to recognize the importance of recreation by the 1920's, it was not until the 1930's that it really achieved a significant place in the Service's overall planning. By then the Forest Service provided recreation for four times as many people as the National Park Service. Robert Marshall, who authored the recreation portion of the Copeland Report, recognized the importance of recreation to the increasingly multiple-use oriented philosophy of the Service. To address these concerns, the Washington Office organized the Division of Recreation and Lands in 1935.¹¹⁴

Conditions in Region 4 were similar to those in the Service in general. During the 1930's, visits to the national forests of the Intermountain Region increased considerably. Moreover, the emphasis of the visits changed from hunting and fishing to camping and picnicking. (See table $8.)^{115}$

Because of increasing use, planning for recreation became vital. Before Kenneth Maughan left to pursue a graduate degree in forestry at Syracuse, he told an assistant regional forester that he thought recreation had a big future and that he wanted to get additional training in the field. The officer discouraged him, saying that the future did not justify such a step. Nevertheless, T.G. Taylor, head of the forestry school, urged him to do so.¹¹⁶ Maughan had the full cooperation of the Washington Office: L.F. Kneipp, by then assistant chief, approved the distribution of a recreation questionnaire, which Maughan developed, to all forest supervisors.¹¹⁷

As a result, Maughan wrote a master's thesis that included a nationwide sample of information on recreation. The results showed that although many supervisors did not believe that recreation development was important, those in California, the Pacific Northwest, and parts of Utah, Idaho, and Arizona considered it significant.¹¹⁸

After reviewing the literature and compiling the results, Maughan reached some important conclusions. By 1931 "recreation use was far in advance of recreational development." He predicted that such use might "cause destruction of many outstanding recreational areas unless plans are immediately made and executed." Maughan concluded that recreation was an important economic resource, with implications for a wide range of other forest uses and that the Service could not continue with little planning for such an increasingly important function.¹¹⁹

Between 1931, when Maughan finished his thesis, and the late 1930's, the region moved vigorously to develop



Year	No. of Visitors	% of Change Since 1934	No. of visits					
			Campgrounds	Picnic Areas	Resorts & Hotels	Special Use		
1934	712,125		344,590	298,240	37,440	31,885		
1935	882,510	24	·	·		-		
1936	1,400,240	97						
1937	1,360,610	91						
1938	1,473,570	107	389,010	919,660	110,870	54,030		
1939	2,260,598	217	-	-	•	•		
1940	2,520,947	254						
1941	2,295,072	222	519,579	989,826	167,429	39,209		
1942	1,698,593	139		• • • • •	•			

Table 8--Trend of recreational use on some National Forests of Region 4, 1934-42

Source: "Trend of Recreational Use, Within Some National Forests of the Intermountain Region. 1934-1942," File: 1650. Historical Library. Historical Items (General) Teton, 1940-1970, Bridger-Teton. Unfortunately, the data did not indicate which forests in Region 4 were included in the survey.



Figure 49--Custer campground, Yankee Fork, 1937.



Figure 50--Packing up at G.P. Bar Ranch, a guest ranch, 1935.

recreational opportunities. The availability of emergency appropriations and CCC crews allowed this acceleration. In 1935, the region hired A.D. Taylor, a consulting landscape architect, to prepare a report on recreation facilities and needs.¹²⁰ In 1935, the Regional Office published a separate recreation handbook replacing the section in the previous lands handbook.¹²¹ Regional officials concentrated on the development of recreational facilities in particularly significant areas such as the Sawtooth-Salmon river country.¹²² The forests wrote and initiated action on recreation master plans.¹²³ By the late 1930's, inspections increasingly emphasized the condition of recreational facilities.¹²⁴

Public recognition of the importance of recreation was increasingly evident. At the national governors' conference in October 1931, Governor George H. Dern of Utah, the chairman, rated the three great uses of the national forests as timber, grazing, and recreation, adding that "in some cases recreation is the highest use."¹²⁵ At its annual convention at Cody, WY, in October 1937, the dude ranch association passed resolutions urging the Forest Service to restrict tie hacking operations, permits for summer homes, and road construction to foster their businesses, which sought a solitary--if not a wilderness-experience for their customers.¹²⁶

Even with such recognition of its importance, recreation did not receive as high priority as timber, range, or watershed management. James Jacobs remembers that while he was a ranger on the Caribou in the 1930's, when campground garbage cans needed emptying, his wife would drive the pickup truck, he would dump the cans, and the two of them did the campground cleanup.¹²⁷

Wilderness Management

The designation and protection of wilderness areas became an important facet of recreation, particularly as a result of the desire of many to recapture the feeling of outdoor life in times past. Evidence indicates that in the designation of primitive areas in Region 4, this nostalgic quest was a much more important consideration than the desire for solitude. Wilderness leadership in the Forest Service came from Arthur Carhart, Aldo Leopold, Robert Marshall, and William Greeley. Greeley thought that the National Park Service seemed most interested in developed recreation and that the Forest Service could provide an alternative.¹²⁸

In 1924, Greeley had designated the first wilderness area in the Gila National Forest in New Mexico, and he urged the consideration of other areas.¹²⁹ In December 1926, Greeley had asked all regional foresters to review road development plans to make sure that they did not needlessly invade areas best adapted for wilderness and to safeguard such areas against summer homes, hotels, and commercial enterprises.¹³⁰ Under Greeley's policy, L.F. Kneipp had drawn up general regulations for wilderness designation in 1928.¹³¹

The concept of wilderness in the late 1920's and early 1930's differed from that generally understood today.

Since a major purpose of the wilderness areas under that concept was to recapture a sense of past times, Robert Y. Stuart, Greeley's successor, could argue quite consistently in 1928 that wilderness designation would not unduly "curtail timber cutting, grazing, water development, mining, or other forms of economic utilization . . . but rather . . . guard against their unnecessary invasion by roads, resorts, summer-home communities, or other forms of use incompatible with the public enjoyment of their major values."¹³² Thus. some forms of environmental change could be allowed, but economic activities and recreation involving technological development were excluded. Stuart envisioned areas "within which primitive conditions of subsistence, habitation, transportation, and environment will permanently be maintained to the fullest practicable degree."¹³³

By 1937, the Service had set aside 72 primitive areas of 13.5 million acres in 10 Western States.¹³⁴ Within Region 4, the Chief designated the first primitive areas in 1931 after study and recommendation by the forest supervisors and the regional forester. These included the High Uintas Primitive Area in the Wasatch and Ashley National Forests, the Idaho Primitive Area in the Payette, Boise, Challis, and Salmon National Forests, 135 and the Bridger and Teton Wilderness areas in the Wyoming (later Bridger) and Teton National Forests.¹³⁶ The Hoover Wild Area was established in the Mono (later Toiyabe) National Forest in 1931, and the Sawtooth Primitive Area in the Boise, Challis, and Sawtooth National Forests was designated in 1937. The only other wilderness area designated before the Wilderness Act in 1964 was the Jarbidge Wild Area in the Humboldt National Forest in 1958,137

Region 4's rationale and conception of the primitive areas were essentially the same as throughout the Service. The High Uintas and Idaho Primitive Areas can serve as examples.

The High Uintas area was seen as offering an opportunity "to the public to observe the conditions which existed in the pioneer phases of the Nation's development, and to engage in the forms of outdoor recreation characteristic of that period, thus aiding to preserve national traditions, ideals, and characteristics, and promoting a true understanding of historical phases of national progress." Use of "timber, forage, or water resources" was not precluded, "since utilization of such resources, if properly regulated," was not perceived as "incompatible with the purpose for which the area is intended."¹³⁸

The various considerations in primitive area designation also were apparent in the proposal for the Idaho Primitive Area. A committee of various interest groups appointed by Idaho's governor and chaired by Harry C. Shellworth of the Boise-Payette Lumber Company considered the proposal. In general, livestock, farming, timber, game, mercantile, and horticultural interests favored such an area. The opposition came from mining interests and some who feared control by bureaucracy or the creation of a playground for the wealthy at the expense of hard-working ranchers and miners.¹³⁹

During the 1930's, some primitive areas, such as the Bridger, were not heavily used, whereas others, such as the High Uintas, had many visitors. On the latter, the principal problem was trail maintenance, particularly to prevent erosion. This was done by putting in cross-bars to direct the runoff into ground cover as soon as possible. 140

Wildlife Management

By the 1930's, the problem of excessive wildlife, which had become such a burden on the Kaihab in the 1920's was apparent throughout the region. Most significant was the expansion of deer herds and, to a lesser extent, of wild horses and elk. Statistical evidence indicates that the populations of virtually all big game animals, with the exception of mountain goats, bighorn sheep, and bears, increased rapidly.

The increase in deer was most significant: they constituted 86 percent of all big game animals on the national forests in 1935.¹⁴¹ The situation on some forests, especially those in southern Utah, was extremely serious. Hanmer Christensen said that during the 1930's all browse plants were highlined, and they could not find an aspen leaf within reach of a deer.¹⁴²

Wildlife specialists and ranchers pressed the Service and the Utah Fish and Game Department to control populations of elk and deer to improve survivability and prevent excessive competition with livestock. Inadequately staffed with professional people, the Fish and Game Department seemed unable to deal with the conflicting pressures. Under the circumstances, the Forest Service officers were placed under enormous pressure to take action similar to that taken on the Kaibab.

The Utah State legislature tried to address the problem of big game overpopulation.¹⁴³ In 1927, the legislature created the Board of Elk Control with members representing sportsmen, wool growers, cattle and horse breeders, the Forest Service, the State Park Commission, and the commissioners of the county in which each game refuge was situated. Elk permits were granted by public drawing.

This did not, of course, address the problem of deer overpopulation, and the board itself was quite large and somewhat unwieldy. In March 1933, the legislature established the State Game Refuge Committee and Board of Big Game Control, usually called simply the Board of Big Game Control, consisting of five members to replace the Board of Elk Control. Members represented the cattle and horse breeders, wool growers, sportsmen, the Forest Service, and the State Fish and Game Director, who served as chairman. The board was empowered to conduct investigations, designate game refuges, set special hunting seasons, and designate the areas and number and sex of big game animals to be killed.

The board faced enormous resistance from the general public, particularly from hunters, to the idea of killing does. 144 In the fall of 1934, for instance, the board issued the first special doe hunting licenses. As Orange Olsen put it, one would have thought the doe hunter was killing "something holy, more so than the 'sacred cow' of India." While the board authorized antlerless deer permits in 1935 as well, they were not issued in 1936 or 1937, since hard winters had taken a heavy toll of animals. In 1937, the Utah legislature authorized the Fish



Figure 51--State deer checking station, Beaver Canyon, Fishlake National Forest, Utah, 1938.

and Game Commission to use license fees to protect the animals and commissioners expended the money to buy winter game ranges and to feed deer. These measures proved inadequate and a study by Everett R. Doman and D.I. Rasmussen of the Intermountain Region indicated the need to further reduce numbers. As a result, special doe hunts were reinstituted in 1938 and continued into the 1940's.¹⁴⁵

Range Management

Because big game and livestock fed in the same areas, their condition was closely related. In fact, the range deterioration attributed to deer in southern Utah was at least partly the result of livestock overgrazing.¹⁴⁶ In general, the problems encountered during the teens and twenties continued into the 1930's. A major obstacle to concerted action was in achieving a consensus within the Service on how far to go in reducing livestock numbers to protect the range resource, in the face of economic distress on the part of stockmen. This was a particularly pertinent question because of the drought during the years 1933 through 1935.¹⁴⁷

The Service continued to have difficulty with grazing fees. On the basis of the negotiations following the Casement report, the Service increased grazing fees between 1928 and 1931. By 1933, however, livestock prices had declined so much that ranchers pressed again to relate grazing fees to market conditions. In May 1933, the Agriculture Department agreed to set grazing fees by using a ratio of the previous year's average livestock prices to prices during the 1920's using the 1931 grazing fees, comparable to the agriculture commodity parity ratio used in setting price supports.¹⁴⁸

The generally depressed economic conditions caused a number of permittees on the forests to become delinquent in the payment of their grazing fees. In response, the regional officers resisted pressure to forgive the fees, but urged that forest officers continue to try to make collections without being offensive in pursuing the matter. 149

Inspections during the early 1930's revealed that measures taken during the late 1920's had been insufficient to produce satisfactorv improvement on the region's range. An inspection of the Minidoka in 1930 revealed that on many allotments little attempt had been made to use grazing survey recommendations to achieve proper stocking.¹⁵⁰ In his 1930 grazing report, Guy Mains on the Boise admitted that the stocking "allowance requested is not based upon a reasonable permanent carrying capacity of the range: it is based upon grazing preferences already established. The allowance for the next few years" he said, "will be downward, since the range is overstocked and overgrazed."¹⁵¹ Data from the Sawtooth indicated a general deterioration in forage conditions on charted quadrats between 1925 and 1931.¹⁵²

The difficulties in arriving at a consensus on the methods for securing proper stocking were evident in two events during the mid-1930's. The first was a meeting in November 1934 of officers from various regions and the Washington Office on management of the range. The second was the publication in 1936 of the Norris report on ranges and their management in 1936.

The diversity of sentiment at the 1934 meeting indicated that range managers still lacked agreement on either the desirability of reductions for range improvement, if it might endanger the short-term economic well-being of the permittees, or on the extent of the problem of overgrazing.

At the meeting, Chester J. Olsen presented statistics that suggested that while allotments were overstocked in all regions except Region 6, overstocking was worst in Region 4. The participants deplored the decline in vegetative quality and the increase of erosion, but arrived at no consensus on investing the money and time to maintain the necessary sample plots and quadrats to provide comprehensive measurements of trend.

Perhaps the divisions among Region 4 personnel were as deep as anywhere. Some officers, such as Olsen, A.R. Standing, and Charles DeMoisy, favored action to study the problem and to take those measures necessary to reduce overgrazing. Others, like Ernest Winkler and James E. Gurr, urged more concern for the economic interests of the stockmen. A third group, including Dana Parkinson and Richard H. Rutledge, took a middle position supporting studies, but urging extreme caution in making reductions.¹⁵³ Those at the meeting did agree to reduce numbers about 10 percent in 1935 for range protection.¹⁵⁴

By 1936 when the Norris report (named for Nebraska Senator George Norris and entitled <u>The Western Range</u>) was published, the internal differences apparent in the 1934 meeting seem to have vanished, at least in public.¹⁵⁵ Prepared under the editorship of Earle Clapp by representatives of the Washington Office, the various regions, and the forest and range experiment stations, the report revealed a consensus, that, despite range improvements under Forest Service administration, depletion caused by overgrazing was still a critical problem. The report recommended a broad range of



legislative and administrative initiatives to deal with this problem. It specifically recognized the principle of "multiple use," and recommended that any action taken consider the broad implications for all forest uses.¹⁵⁶ The bulk of the report was written by officers from outside Region 4. Those prominently involved from the region included Arnold Standing, Reed Bailey, George Stewart, and Charles Connaughton.

The report evoked considerable negative comment from some sources.¹⁵⁷ Since it was written by Forest Service personnel and recommended transfer of Interior Department grazing districts to Agriculture Department jurisdiction, it raised opposition within Interior.¹⁵⁸ Because it set the virgin condition of the land as the basis for range rehabilitation, stockmen questioned its conclusions. In addition, critics challenged the statistical information on erosion, overstocking, and a number of other matters.

The extensive discussions in the 1934 meeting and the data collection in preparation for the Norris report seem to have galvanized internal Forest Service opinion in favor of action to further reduce stocking and improve the ranges. Total animal unit months (AUM's) grazed was about 3.2 million for the entire region in 1930, approximately the same level as 1927. Between 1930 and 1933, the number declined to 2.9 million. This likely was largely the result of non-use resulting from adverse market conditions; the numbers rose to about 3.3 million AUM's declined to about 2.7 million by 1938.¹⁵⁹ Reductions could be made more easily after 1935 because of the expiration of the first 10-year permits, with a new permit term beginning in 1936.¹⁶⁰

A change in Forest Service policy in 1940 established regional responsibility for future reductions. In that year, the Service expanded the decentralization begun with the establishment of regions in 1908. Regional foresters were authorized to set their own livestock allowances without reference to the Washington Office. As Regional Forester C.N. Woods opined, this authority meant that "after 1940, there is no limit to the amount of reduction on established preferences we can make for protection." To capitalize on this opportunity, he called upon all forest supervisors to plan reductions to achieve the goal of proper stocking.¹⁶¹ Supervisor I.M. Varner of the Caribou replied that "the protection program on the Caribou contemplates reaching proper use of each and every allotment through cooperative arrangements by the opening of the 1944 grazing season."162 An inspection in October 1940 indicated that the expectation seemed realistic.¹⁶³

Unfortunately, Varner was unable to implement the actual results of the studies made on his ranges. Regional office trainers showed rangers how to classify the watersheds which showed accelerated erosion into three classes according to degree of severity.¹⁶⁴ "Class I was light erosion; Class II, moderate; and Class III was severe. Erosion varied by forests, but in most cases involved only small isolated forest areas." After using techniques learned in the training, rangers sent their classifications to the supervisor's office, and the Caribou sent its combined report to the Regional Office. Since most of the forests in the region reported much less erosion than the Caribou, the Regional Office told Varner to move each classification up one level. According to James Jacobs, one of the participants in the study, the rangers nevertheless undertook substantial reductions on the Caribou and achieved good results.

Contemporary records indicate a rather mixed situation elsewhere in the region. An inspection of the Sawtooth in 1938 and Weiser in 1939 revealed some improving areas and others where overgrazing and improper trailing had allowed erosion.¹⁶⁵ When F.C. Koziol transferred to the Wasatch as supervisor in the mid-1940's, C.N. Woods told him he was going to a forest "where the grazing adjustments have been well carried out" and assured him that he would "have no overstocking problems." Koziol shortly found the situation was quite otherwise.¹⁶⁶

Conditions in Nevada were of particular concern in the early 1930's because of the antagonistic attitude of State officials and the livestock association toward the Forest Service. The Nevada Land & Livestock Association worked to "prejudice grazing permittees against the Forest Service," and the movement continued to try to wrest control of grazing lands from the Service and transfer them to the State or the permittees.¹⁶⁷ After the passage of the Taylor Grazing Act, however, general sentiment tended to accept Forest Service regulation of the lands.¹⁶⁸

The region's methods used in analyzing the condition and trend of the range during the 1930's changed only slightly from those developed earlier. The term "range survey" replaced "range reconnaissance" in about 1935. Procedures included the use of enclosures, palatability studies, and quadrats.¹⁶⁹ Some species plots were established in an attempt to determine the progress of plant depletion or improvement in critical areas.¹⁷⁰ Between 1932 and 1936 George Stewart and Selar S. Hutchings developed the point-observation-plot method of estimating vegetation density, which was adopted in 1937.¹⁷¹ Some of their proposals derived from their work at the Desert Experimental Range, established by executive action in February 1933.¹⁷²

Most important, perhaps, was the attempt during the late 1930's to improve forage-acre standards and palatability tables. The situation on the La Sal seems to have been typical. There, studies in 1938 and 1939 revealed that forage-acre requirements (FAR) and forage-acre allowances (FAA) varied considerably from allotment to allotment within the same forest.¹⁷³ By the late 1930's also, some forests like the Caribou realized that the palatability estimates made between 1929 and 1931 were too high and asked for their revision.¹⁷⁴ Research at the Intermountain Station published in 1939 indicated that utilization standards that had previously allowed forage cropping of 75 to 90 percent had to be reduced by 34 percent to bring about range improvement.¹⁷⁵

Throughout the 1930's, Forest Service personnel worked with the available information and under the pressures at hand to accomplish some improvement of the ranges. To get the cooperation of stockmen, officers worked to help by allowing non-use, by agreeing to limit the reductions for distribution, and by considering distribution and protection reductions separately.¹⁷⁶

With this sense of cooperation, trespass tended to decline in most areas, and both the Service and stockmen contributed to range improvements.¹⁷⁷ The Service

continued to work on eradication of poisonous plants, construction of water developments and fences, and reseeding of ranges.¹⁷⁸ On the Dixie, for instance, experiments were tried (with indifferent success) in planting Kentucky bluegrass, smooth brome, and crested wheatgrass.¹⁷⁹ On some forests, such as the Caribou, Targhee, and Nevada, water improvements were undertaken.¹⁸⁰ The Humboldt kept careful records of salting.¹⁸¹

Various methods were used to try to reduce stocking. The Fishlake and the Weiser and most other forests that relied on tagging had Service employees tag cattle because they found tagging by the permittees unsatisfactory.¹⁸² Some forests, the Idaho, for example, reduced sheep breeding on the range.¹⁸³ On the Caribou, the Service established a system of individual allotment responsibility. Permittees agreed to take grazing cuts for improvement, and in return, the Service agreed to allow them to benefit from any capacity increases resulting from improved conditions, rather than distributing the increased capacity to new permittees.¹⁸⁴ On the Uinta, the rangers worked to reduce the length of grazing seasons.¹⁸⁵

By the 1930's, allotment administration was generally more effective. Some supervisors, like Alexander McQueen on the Humboldt, resisted the development of individual allotment records and maps, but they seem to have been the exception.¹⁸⁶ Fishlake rangers expected reports from each permittee on actual use, including the number of animals grazed, length of season, weight of iambs on leaving the forest, number of losses, and reasons for losses. Each year the rangers furnished each permittee an allotment plan indicating the grazing rotation, a map of the allotment, and the general rules for grazing.¹⁸⁷ On the Caribou, allotment plans were rewritten to take the best available data into consideration.¹⁸⁸

Timber Management

Comparable to the decline in grazing, a drop in timber cutting occurred in Region 4 during the 1930's because of depressed conditions,¹⁸⁹ In Region 4, the cut on national forest lands reached 69.9 million board feet in 1930, but did not get that high again until 1940. The low of 20 million board feet occurred in FY 1933 (table 9).

In part because of the lack of adequate markets and in part because of the fear of timber depletion, debate continued throughout the 1930's on the best means to achieve a balance between production and consumption.¹⁹⁰ During the late 1920's, battles had raged between the Service, which pressed for regulation, and the lumber industry, which feared Federal domination.¹⁹¹ In 1930, President Hoover appointed a timber conservation board charged with developing a workable program of private and public effort. The board was deeply divided between those who favored Federal cooperation in sustained yield units consisting of national forest and private lands and those who wanted some sort of Federal control and regulation of private lands.¹⁹²

As on the national level, the timber depletion theory governed analysis of conditions in southern Idaho. In 1938 a preliminary estimate showed 41,846 thousand

1911	183	18,707	2,539	12,468	3,137	37,035
1912	98	13,974	2,030	11,614	3,300	31,016
1913	329	13,311	3,122	11,396	4,043	32,201
1914	532	16,019	3,308	13,591	4,646	37,996
1915	399	17,678	2,803	24,850	3,032	48,762
1916 (FY)	384	11,059	1,607	25,844	3,382	42,276
1917 (FY)	395	8,415	1,391	16,869	1,546	28,616
1918 (FY)	285	13,957	1,658	16,284	1,147	33, 331
1919 (FY)	225	12,935	1,565	14,674	1,807	31,206
1920 (FY)	190	15,757	1,583	12,400	7,714	37,644
1921 (FY)	263	18,448	1.232	11.368	12,959	44.270
1922	426	14,804	1,944	8,504	11,478	37,156
1923	468	26,093	1.711	7.658	10,648	46.578
1924	262	39,240	1,689	9,546	11.088	61.825
1925	140	51,338	1.667	7.154	15,289	75.588
1926	343	46.654	1.749	9.249	8.141	66.136
1927	373	40,435	1,142	6,192	2,628	50.770
1928	528	48,566	1.533	8,905	4.071	63,600
1929	597	42.465	1.080	11.056	9.324	64.522
1930	227	44,296	1.266	13.292	10.862	69.943
1931	54	23,007	995	8,130	4,492	36.678
1932 (Jan.		•		•		• • •
to June)	92	5,124	147	505	992	6,860
1933 (FY)	47	12,424	631	5,296	1,592	19,990
1934 (FY)	*	10,273	687	10,912	1,996	23,866
1935 (FY)		21,143	660	14,242	1,471	37,516
1936 (FY)		24,222	807	13,776	14,135	52,940
1937 (FY)		31,466	800	10,977	7,571	50,814
1938 (FY)		37,861	958	11,556	8,885	59,260
1939 (FY)		37,689	1,319	11,715	10,361	61,084
1940 (FY)		48,292	795	15,300	6,207	70,594
1941 (FY)		38,627	589	17,809	4,871	61,896
1942 (FY)		69,706	522	21,605	5,079	96,912

Source: Table TM-9 File: "Region Four Statistics and Other Information, Part I, Historical Files, Regional Office. Cost sales would include those like S-22 sales at minimum prices. This would not include lumber given to farmers and others.

*Kaibab National Forest transferred to Region 3 in 1933.

board feet of timber (MFBM) in southern Idaho with an annual increment of 513 MMFBM. The Service estimated that 164 MMFBM were being cut each year (presumably on both public and private lands). At the same time, the Service argued that "there is a serious overcutting that will probably cause the closing of the two largest operations within the next 10 years [by 1948] and reduce the present cut by two-thirds" (to 54,000 MFBM). Even though the estimated net increase in timber volume was thus 359,000 MFBM per year and the existing timber, with no new growth, could have lasted 255 years at the current rate of cutting, the Forest Service argued that "sustained yield for local use is not now possible except on a greatly reduced basis." The reason, it said, was the presence of "inferior species that have a very limited market and also inaccessible areas which cannot be economically logged."193

Most of this analysis reflected conditions on the Boise, Idaho, Payette, and Weiser National Forests and the private lands adjacent to them. Particularly important were ponderosa pine stands in the Boise Basin, Long Valley, Meadows Valley, and Council Valley. By the mid-1930's, the supply of accessible timber on many private lands had become exhausted. By 1935, for instance,



Table 9--Quantity of National Forest timber cut under commercial and cost sales in Region 4, 1911-42 (in thousands of board feet)

Nevada

Utah

Wyoming

Total

Idaho

Year

Arizona



Figure 52-Ranger J.W. Farrell scaling logs at Brundage Mountain, August 1930.

private timber lands in the Boise Basin had become depleted and the Barber mill was abandoned and dismantled. Under these circumstances, the Service continued with its land-for-timber exchange program and in the late 1930's opened new areas of national forest timber through road construction in order to provide opportunities for mills to continue in business.¹⁹⁴

The regional office outlined objectives consistent with this point of view in a 1939 report. Objectives included, among other things, to keep forest lands productive, to "supply local [as opposed to export market] needs with local products;" to "maintain timber production on a sustained yield basis," which it said was possible only "for local use;" to consolidate forest holdings, through exchange or purchase to achieve sustained yield; and to determine "the most desirable ultimate ownership of all forest lands and the inauguration of a systematic acquisition program by the State and Federal Governments,"195

In part, the perception of timber depletion derived from the state of logging technology, which by present standards was quite primitive. Only in the most accessible stands was logging economically viable. The usual methods of logging included horse logging, tractor logging, and donkey logging (with a donkey engine and cable). By far the most prevalent was horse logging; much of the intermountain forest was too steep and rough for tractor logging, and the timber was considered too small for donkey logging. In some cases where the land was too rough, hand logging was used. Timber was generally removed from the forest by railroad or river driving.¹⁹⁶

In spite of the depletion theory, in practice the region often paid more attention to keeping mills open than to



Figure 53--Hauling logs by horse, Ashley National Forest, August 1938.

potential stand diminution. Since the lumber business was so depressed during the 1930's, the Service acceded to the requests of the timber companies to engage in "high grading" or cutting only the choicest trees with butts of clear timber, especially in productive areas like the South Fork of the Payette River, then on the Old Payette, and on the Boise National Forest. Only the butt cuts without limbs were taken and the upper limby trunks were left to rot.¹⁹⁷ The Service was reluctant to open new areas, such as the South Fork of the Salmon River, for fear there would be no market for its timber or it would be costly and difficult to get out.¹⁹⁸

The general practice--as opposed to the theoretical policy--was understandable, since lumbering was of extreme importance to the people of Idaho. Employing more than 12,000 people in 1929, lumber and other timber products ranked first among the manufacturing industries of Idaho in value of product and number of employees.¹⁹⁹ Lumbering and logging ranked second, and saw and planing mills ranked fourth among all industries in Idaho in 1930 in production of exports from the State and thus as a source of outside income. First and third were agriculture and lead and zinc mining.²⁰⁰

The most productive lumber businesses in southern Idaho were highly concentrated. In 1938, of 181 mills with an annual cut of about 164,000 MFBM, about 75 percent of the volume was cut by only two mills, largely for export. The other 179 mills produced small amounts for the local market.²⁰¹ The only other extensive commercial lumbering was in the tie-hacking operations of the lodgepole pine belt of western Wyoming, northeastern Utah, and to a lesser extent extreme eastern Idaho.

In most of Utah, on the other hand, the lumbering tended to be almost exclusively for local markets. Estimates in 1940 fixed the State's total stand at 7.8 billion board feet of sawtimber and 7.4 million cords of wood. Most of the sawtimber (7.3 billion board feet) grew on national forest lands. On the average the Service sold 10,000 MFBM and gave away 20,000 MFBM of timber in free use each year. Since the Service estimated 80,000 MFBM could be cut in Utah on a sustained yield basis, the cut was only three-eighths of what could reasonably be harvested.²⁰²

In spite of the large volume of potentially harvestable timber, Utah continued to be a net importer of lumber during the 1930's. In the mid-30's, it produced only 12 percent of the timber it consumed and imported fully 75 percent from Oregon and Washington. The major reason for the absence of a viable local logging industry seems to have been the quality of the timber and the lack of technical knowledge of most operators, most of whom could produce only "native lumber"--usually unseasoned or poorly seasoned--for the local market.²⁰³ As it was, most operations were very small.²⁰⁴

On some of Utah's national forests, the timber business was so small that management plans seemed superfluous. In 1939, for instance, neither the Dixie nor



Figure 54--Loading ponderosa pine with Marion Loader, Boise-Payette Lumber Company, August 1930.

the Powell National Forests had written timber management plans and neither anticipated doing so.²⁰⁵

Still, the region tried to encourage both the continuation of old businesses and the expansion of new ones in Utah. The Western Wood Excelsior company of California, for instance, opened an excelsior operation in Cedar City in the 1930's to utilize quaking aspen.²⁰⁶

Under depressed conditions in the 1930's, both the region and the lumber operators had difficulty. Under Forest Service regulations, while the forest officers reappraised timber periodically, its selling price could not be reduced even if conditions worsened after the sale contract was signed. Thus, fewer companies were willing to bid on sales, and less timber was sold. Regional law officer Manly Thompson suggested that conditions might improve if timber sales were made for much shorter periods of 5 to 7 years rather than the 20 to 25 years then common.²⁰⁷

The cost of administering sales in less productive national forests in Region 4 was quite high. In FY 1931, the indirect administration cost in the LaSal forest of \$3.03 per MFBM was higher than any other except the Lolo in Region 1. Indirect costs on the region's other forests (except the Lemhi) were generally in line with other regions except Regions 5 and 6, where the costs were lower.²⁰⁸

Still, the general integrating inspection made in 1940 found timber management practices in Region 4 to be quite realistic. Because many of the forests in the region, especially the Fishlake, Targhee, and Wasatch, conducted mostly small sales for local use, the inspectors approved the methods used to try to cut costs, particularly using sample tree measurements and cutters selection on small sales. The inspectors cautioned regional officials against overusing such practices; but complimented them for not trying to enforce practices generally suited to extensive timber stands in the relatively sparse and scattered intermountain timber.²⁰⁹

In spite of the minor role played by the lumber industry in Region 4 during this period as compared with Regions 5 and 6, regional officials were still concerned



Figure 55--Railroad tie boom, Horse Creek near Daniel, WY, 1937.

about proper management. In 1938, the region produced a revised timber management handbook designed to provide readily available information on policy and practices.²¹⁰

In addition, the region, in cooperation with the Intermountain Station, continued its experimental reforestation work. In 1932, the station tried to restore a burn in the Boise Basin by broadcasting ponderosa pine seed. Unfortunately, the experiment failed because birds ate the seed. In the early 1930's, the region planted 20,000 to 30,000 trees annually with volunteer labor--mostly in Utah. The region continued to monitor older plantations.²¹¹ Research on sample plots in Idaho focused on logging techniques to promote maximum growth, natural restocking, and watershed protection; to improve immature stands by thinning and pruning; to reforest burned or denuded lands; and to protect against forest fires.²¹²

In the mid-1930's, the region began to plant more extensively. In 1934, a cooperative planting was started on the Quartzburg burn in Idaho, and in 1935, the Boise Basin Branch Experimental Station planted about 10,000 seedlings on the Bannock Creek brush field, the Elk Creek burn, and the Quartzburg burn.²¹³ In 1936, the region opened the Tony Grove Nursery in Logan Canyon, designed to produce 2 million seedlings annually for use in Utah and Idaho.²¹⁴ In 1936, the Boise National Forest opened a small nursery on Bannock Creek.²¹⁵ By the early 1940's, a second major nursery had been opened at McCall, and despite some problems, it was expected to help significantly in supplying the region's needs.²¹⁶ Most stock planted in Region 4 during the 1930's, however, came from the Monument Nursery in Region 2.²¹⁷

Unfortunately, even in the late 1930's, techniques of tree planting were poorly understood. Experiments in the Boise Basin and on the Davis County watershed showed that seedlings did not survive well. Boise Basin survival rates for Douglas-fir and ponderosa pine averaged, respectively, 22 percent and 45 percent. In Davis County the survival rate in 1937 for a 1935 planting was only 20 percent.²¹⁸

Fire Control

Since timber trespass had been greatly reduced by the 1930's, the two greatest hazards to timber production were wildfire and insects. The romantic lore about fire-fighting grew considerably. Many stories told by fire-fighters have an epic quality scarcely touched by any other activity in the Service. These stories have some common elements, reminiscent of tales of wartime exploits and other acts of heroism.²¹⁹ In a sense, fire-fighting became the moral equivalent of war in building esprit de corps in the Service. Even though class C, D, and E fires were less common than the smaller class B or the burning snags characteristic of the many class A fires, they tended to be more memorable for many foresters.

Stories of arson-caused fires abounded during the 1930's, often reportedly set by the unemployed looking for firefighting jobs. Disruption of routine was often an element in the stories, particularly in mobilizing the food for the fire crews or in manning lines around the clock.





Figure 56--Bald Mountain Lookout in the early 1930's.

Lore emphasized that firefighting was a team operation, and no one who did a support job was excluded from recognition. Fire dispatchers, lookouts, suppliers, and wives who pitched in to help got their share of praise, as did the men on the fireline. Often fire crews were picked up in town, and the CCC crews became important elements of fire lore. Men fought side by side on a fireline, like soldiers on a skirmish line in a battle. As in battle, discipline was a particularly important element. Reportedly, two men who were killed on the 1931 Quartzburg fire had disobeyed orders, leaving the fireline and the relative safety of their crew.

Stories emphasized that many fires were dangerous--a few deadly. At times fires surrounded the firefighters. Crown fires sometimes blew over the heads of the crew. In the Quartzburg fire, in addition to the two men killed, parts of at least two towns were destroyed. In some cases, the danger of fire might come from a deranged individual like "Crazy Pete," who reportedly threw sticks of dynamite at what he imagined to be an intruder in the neighborhood of his cabin near a peak in the Toiyabe range.

There were many incidents involving heroic acts. Two CCC enrollees on the Santa Rosa Division of the Toiyabe lost their lives trying to save a colleague who had broken his ankle in fighting a fire.

The late 1930's and early 1940's produced the smokejumpers, a specialized kind of firefighter. Initial experiments such as those by T.V. Pearson of the Intermountain Region in 1934 demonstrated the possibility of using parachutes for dropping firefighters near the fires. The first actual use of smokejumpers came in July 1940 on the Nezperce National Forest in Region 1.²²⁰ These men used the latest technology, including lightweight radios, glide chutes, and braces to prevent injury, in accomplishing their firefighting duties.²²¹

It would be difficult to overestimate the importance of such firefighting lore to building the morale of employees within the Service. These stories emphasized the value of obedience, teamwork, new technology, proper training, and prudent initiative. The smokejumpers worked as a team. The men who approached Crazy Pete's cabin to put out the fire knew he might shoot at them, but they willingly took the risk in order to save the forest. In short, the firefighting stories taught many values useful in managing the diverse resources and interests of a large forest.

Many of the fire stories emphasize crisis management--not planning--yet planning was an important part of fire management. Greeley's emphasis on the importance of planning and training in the 1920's continued into the 1930's.²²² Forest officials emphasized the need for counties, States, and Federal agencies such as the Soil Conservation Service to plan for cooperative fire protection, under programs authorized by such legislation as the Clarke-McNary Act.²²³

In the 1930's, Forest Service officials worked on fuelmapping to classify all forest fuels for fire purposes. They introduced new technology and training into the work of the lookouts and trained Forest Service and CCC employees in firefighting techniques.²²⁴

In a 1940 inspection, Region 4 rated about average in its firefighting capability. The region got high marks for its spirit, organizational skill, and ability to accomplish a great deal with limited resources. The inspectors faulted some forests in the region as needing more careful instruction and others for lacking care in maintaining tools.²²⁵



Figure 57--CCC enrollees being trained in fireline construction near Idaho City, May 1941.



In the 1930's, fire policy emphasized the need to control all fires as rapidly as possible.²²⁶ The goal, formulated in Region 5 by Regional Forester Stuart B. Show and adopted on the national level, was to control any fire by 10 a.m. on the day after it was discovered. This seemed an achievable goal during the New Deal when CCC crews were available. Nevertheless, some officials outside Region 4, for example Roy Headley and Elers Koch, wondered whether such a policy could possibly be implemented 100 percent and whether it was economically realistic in low-value back-country timber.

Proposals for the use of "light burning" or "broadcast burning" to reduce hazardous forest fuel buildups and for other purposes had been set forth earlier. By the 1930's, the ideas had generally been rejected largely because of opposition by Show and E.I. Kotok in California.²²⁷ Most foresters thought such treatments would be imprudent except possibly in the Southeastern States.

One dissenter was in Region 4. In 1935, Payette Supervisor J.W. Farrell proposed a cooperative project to be carred on by the Intermountain Station and the region to determine the value of light burning or controlled burning. He argued that this treatment could be used for timber stand improvement and that "in many stands it appears doubtful whether we will be able to successfully prevent and hold losses from fire, insects, and disease to a reasonable figure without some continued process of fire hazard reduction, insect, and disease control."²²⁸

The results of the experiment indicated that such burning could be successfully used under certain circumstances. Preliminary studies in southern Idaho showed that forage production on sagebrush-wheatgrass ranges could be increased by burning when the soil and vegetation were not too dry. Heavy burning, on the other hand, tended to reduce organic matter and nitrogen content in the soil.²²⁹

Insect Control

In spite of the relatively high cost of controlling insect infestations, there appears to have been little research on alternative control methods in the 1930's. Forest officers tried to eradicate or control bark beetle infestations, which constituted the major threat to the timber stands in Region 4. The method generally used was surveying the forest to determine the extent of the infestation, followed by felling, peeling, or burning.²³⁰

Mining

As the population in the region continued to grow, recreational uses and watershed protection became more important. It became necessary to restrict mining development in particular areas of the national forests. A ruling by the Agriculture Department's solicitor in 1932 prohibited mining in campgrounds and other withdrawn areas.²³¹ The act of May 26, 1934 (48 Stats 733), allowed the Federal Government to control the right of mining claimants to prospect and locate claims on critical Wasatch National Forest watersheds.²³²



Figure 58--Burning lodgepole pine infested with bark beetles, Targhee National Forest, 1930.

Public Relations

Relations between the Forest Service and the States were relatively good during the late 1930's. Nevada's congressional delegation pressed the Federal Government to turn the public domain over to the States during the early 1930's, but the proposed legislation got little support.²³³ The passage of the Taylor Grazing Act and the subsequent creation of grazing districts generally diffused State sentiment for a while.

Thus, the hearings of the Joint Congressional Committee on Forestry, chaired by Senator John H. Bankhead of Alabama, in San Francisco and Portland, OR, in December 1939 took on the aspect of a love feast between the Forest Service and forest users.²³⁴ Far from calling for a return of Federal lands to the States, the Nevada representatives asked the Federal Government to take over and rehabilitate logged-over lands. They and other participants called for the Federal Government to appropriate more money for reforestation and range improvement and to strengthen the Forest Service's hand in watershed management. Virtually all the statements recognized the multiple-use aspects of Service activities and called for the Congress



to do more to recognize and strengthen those efforts. Representatives of Idaho counties asked the Federal Government to provide payments in lieu of taxes lost as a result of the timber-for-land exchanges, but did not oppose the exchanges themselves.²³⁵

The favorable comments at the hearings were attributable largely to a change in public sentiment, but Region 4 officials did all they could to see that this sentiment was expressed before the committee. Chester J. Olsen was assigned to attend the San Francisco hearings, and William B. Rice went to Portland. After making lists of public officials and representatives of user organizations planning to attend, where possible, the region facilitated their attendance and the presentation of favorable points of view.²³⁶

Summary

In summarizing the successes and challenges of the previous decade on the eve of World War II, perhaps the situation in Region 4 is best characterized by the findings of Earl W. Loveridge and Walt Dutton in their General Integrating Inspection in 1940. Most success seems to have come in three categories. First, in those programs relating to public relations; second, in the planning of programs that depended upon research findings; and third, in the implementation of practical solutions to pressing problems.

The Intermountain Region public relations program stood first among all regions in the Service. Regional personnel tended, more than in other regions, to become community leaders. Esprit de corps and morale were very high. The region excelled in its cooperation with stockmen and livestock associations. The amount and number of wilderness areas seemed adequate. Cooperation in fire control, especially with the Southern Idaho Timber Protective Association, got special emphasis.²³⁷

The work of the Intermountain Station and its predecessors had a profound impact on Region 4. Utilizing research funding, the region did exceptionally well in planning and carrying out terracing and other methods for erosion control, in writing grazing plans, and in reseeding ranges. The region did excellent planning and training in erosion survey; their methods were recomnended to other regions.

Region 4 had done well in finding practical solutions to pressing problems. In conducting small timber sales, rangers had shown "good horse sense." On high-hazard forests presuppression practices were effective. The region's long-range acquisition program was adequate, and credit was due particularly for the pioneering use of receipts acts and donations for acquisition of critical watersheds. The region had not been carried away with additional emergency funding during the 1930's, commiting itself to projects unsupportable under normal conditions.

Major shortcomings in the region came in those areas where there occurred a potential for conflict with forest users and public officials. Too many cases of "unsatisfactory range management" existed. Better coordination was needed with other Federal agencies. Though some progress had been made, "the game problem in some cases is completely out of control." Much more needed to be done in improving watersheds. Slash disposal in lodgepole pine stands often failed to conform to Service policy. Timber appraisal methods were often deficient. Some campgrounds seemed to have been overdeveloped, to a standard needed only on July 4th rather than a normal weekend. Too much CCC work might have been devoted to road construction.

Whether the region would continue to capitalize upon its successes and at the same time adequately address these problems in future decades remained to be seen. In the meantime, as chapter 7 will demonstrate, dislocations caused by World War II certainly set the region back significantly in addressing some of its most pressing difficulties.

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- 155. <u>The Western Range</u>, Senate Document 199, 74th Cong., 2nd Sess., 1936.
- 156. The term "multiple-use," while implicit in the letter from James Wilson to Pinchot in 1905, gained its first substantial use in the Copeland Report of 1933 and seems to have been in regular use in the Forest Service after that time. Steen, Forest Service, pp. 202ff.
- 157. This is based on Earle H. Clapp to Forest Officers, November 11, 1936, and attachments, File: R(G) Special Range Report, Caribou Forest 1936, Caribou.
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- 172. Warren P. Clary and Ralph C. Holgren, "Desert Experimental Range: Establishment and Research Contribution," Reprint from <u>Rangelands</u> 4 (December 1982):261.
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- 177. Forest Service Report, 1930, p. 42.
- 178. Forest Service Report, 1934, pp. 26-27, 29; 1937, pp. 12, 21; 1939, pp. 25, 42.
- 179. James E. Gurr to Regional Forester, October 23, 1935, File: Grazing, Historical Files, Dixie.
- 180. Annual Grazing Report, Caribou National Forest, 1931, File: G- Management Allowances, 1931-1940, Caribou National Forest Records, Seattle FRC. S. W. Stoddard to Regional Forester, December 12, 1931, File: G-Management, Annual Reports, Targhee, 1931, Targhee National Forest Records, RG 95, Seattle FRC. Ernest Winkler to Forest Supervisor, January 22, 1932, File: G- Management, Reports, Nevada, 1922-1933, Grazing Records, Humboldt.
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- 182. Supervisor's Annual Grazing Report Weiser National Forest, 1932, and Memorandum for Forest Supervisor, January 28, 1933, File: G-Management Reports: Payette (Weiser) 1926-1933, Pierson Collection, Payette.
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- 185. Nielson reminiscences, p. 9.
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- 188. Jacobs interview, pp. 9-10.
- 189. A. L. Nelson to Regional Foresters, September 23, 1941, File: S- Sales General, 1941-1945, Regional Office Records, RG 95, Denver FRC.
- 190. Sherry H. Olson, <u>The Depletion Myth: A History</u> of Railroad Use of Timber (Cambridge: Harvard University Press, 1971), pp. 155-61; <u>Forest</u> <u>Service Report</u>, 1932, pp. 1-4; 1937, p. 1; 1938, p. <u>44</u>.
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- 226. The following is based on Pyne, Fire in America, pp. 272-87.
- 227. On the light burning controversy see Pyne, Fire in America, pp. 100-22.
- 228. J. W. Farrell, "Summary of Proposed Study to Determine Practicability and Desirability of 'Light Burning' and/or 'Controlled Burning' Particularly as Applied to the High Fire Hazard Forests in Region 4," December 31, 1935, File: S-Supervision, General, 1932-1935, Regional Office Records, RG 95, Denver FRC.
- 229. Forest Service Report, 1935, p. 52.
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- 231. Elton L. Marshall to R. Y. Stuart, October 3, 1932, File: L- Status, 1921-1938, Regional Office Records, RG 95, Denver FRC.
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- 233. George W. Malone, "To the Committee on Conservation and Administration of the Public Domain," November 17, 1930, File: Appendix, Historical Records, Humboldt; S. B. Show Memorandum for Forest Supervisors, April 8, 1932, File: LP- Boundaries, Mono, Public Domain, 1930-1932, Toiyabe National Forest Records, RG 95, San Bruno FRC.
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Chapter 7 Organizing and Pianning for Intensive Management: 1942 to 1949

By 1941, following CCC construction of new facilities and attempts at proper management based on grazing and timber surveys, Region'4 had laid the basis for initiating the intensive management of national forest resources. However, a number of things stood in the way of achieving this goal. The major requisites were staffs large enough to manage the extensive areas covered by the forests, management plans adequate for each ranger district, concepts and accurate data for successful management prescriptions, sufficiently good relationships with forest users, and a means of achieving sustainedyield timber management. During the 1940's, Region 4 developed adequate concepts, staffs increased considerably, and forest officers drafted good management plans. Still, range management data were defective or inadequate, the demand for timber was too low to secure sustained-yield use, and the relationships with stockmen were often tense. In spite of this, the accomplishments of the period provided a basis for better management in the decades to follow.

The Impact of World War II

The Japanese bombing of Pearl Harbor in December 1941 and the subsequent declaration of war with Japan, Germany, and Italy plunged the United States into the second major war in a generation. Nearly 2,000 Forest Service personnel joined the armed forces, significantly reducing the number of qualified employees. Although the Forest Service had learned from its experience in World War I that it could not play fast and loose with grazing policy, wartime conditions created other prob-lems for the agency.¹ The Federal Government estimated that it required products from three trees to equip and maintain each soldier, and the War Production Board classified softwood as critical material and froze its use by civilians.² Still, excessive timber demand was not a problem in Region 4. While the region's total timber cut reached levels higher than the 1930's, the absence of adequate markets along with labor shortages continued to leave the region overstocked with overmature and deteriorating stands.

The situation on the Boise National Forest seems to have been typical. During 1942, the forest lost clerks, typists, and stenographers, which it tried with great difficulty to replace by transfers and new appointments. The forest was short 40 to 50 guards during much of the hazardous fire season.³ Moreover, after the CCC was abolished, enrollees were not available to fight fires or to construct or repair facilities as during the 1930's. Conscientious objectors from Civilian Public Service Camps, such as Camp 37 on the Toiyabe Nationai Forest, were available for such service, but these camps were fewer in number than the CCC camps.⁴

The Service also had to spend some time guarding against possible sabotage. Very little took place on the forests of Region 4, but during the spring of 1945 in an apparent desperation move, the Japanese launched ricepaper balloons carrying incendiary bombs on the prevailing westerly winds. Most of the balloons landed in the Northwest, and 288 floated into the Boise area. They did little damage because they landed early in the wet spring season.⁵ A major problem in dealing with the balloons was the unwillingness of civil defense authorities to share details of the potential threat with Forest Service and National Park Service employees until some time after the bombs had started to land.⁶

Of necessity, the region undertook a number of costsaving measures during the war. Office employees were admonished to reuse carbon paper from interleaved forms 7 to 10 times.⁷ The regional administration promoted a share-the-ride program, and the Ogden City Defense Transportation Committee got the regional forester to change regional office hours to 8:30 to 5:30 from the normal 8 to 5 to remedy traffic congestion.⁸ To promote efficiency, employees were asked to review programs and procedures, particularly for the more effective use of scarce labor resources.⁹ Reports late in 1944 indicated that these programs had succeeded on a number of national forests.¹⁰

During the war, the Service began to plan for the postwar period. Expecting that general unemployment would increase following the war, the Service began planning for large-scale public works projects, on the CCC model, for returning veterans.¹¹ In general, the plans were not needed and did not materialize.

Postwar Administration

In the period following World War II, in part as a result of the need to deal with increasingly large staffs, the style of administration began to change. In the regional and supervisor's offices, the change consisted principally in a shift from a personal to a more formal form of management. Under these conditions, management and employees adhered more closely to fixed rules for promotions and pay. In general, the organization became more bureaucratic.¹²

A number of indications of this trend are evident. Perhaps the best evidence is found in a series of letters from the Washington Office in 1948 and 1949. Questions discussed included the size of the work load needed to justify hiring district rangers at particular salary levels (then called P-3 and P-4). It was expected that a P-3 district would be small enough that a ranger with a qualified alternate could manage it. It was anticipated, however, that the ranger would himself be involved in much of the actual hands-on operation rather than functioning solely as an administrator. Salary levels P-5, P-6, and P-7 were designated for forest supervisors, assistant regional foresters, and regional foresters.¹³

The Service also wrestled with the problem of the status and pay of professional staff. The Washington Office recognized staff positions on the national forest level as roughly equivalent in responsibility to rangers, but carrying fewer perquisites, since the staffer was seldom furnished government quarters and thus usually paid higher rent, had less opportunity to cut living costs, and had to spend more time away from home. There was some feeling in the regions that a P-4 staff position should be an assistant supervisor. Earl Loveridge argued for promoting national forest staffers to P-4 as a matter of status. An office with a large work load, he believed, should warrant higher salaries.¹⁴

In addition, a definite separation in status was evident between clerical and fiscal positions on the one hand and professional positions on the other. Pay grades for professional positions fell in the "P" category, whereas those in the clerical ranks were labeled "CAF." CAF grades ranged from CAF-11 for a fiscal agent down to CAF-6 for a chief clerk.¹⁵

With increasing decentralization, the size of staffs in supervisors' offices and on ranger districts increased. The supervisor's office would generally have several clerks, an administrative assistant, a receptionist, a road foreman, and a couple of junior foresters.¹⁶ The oneperson district became the exception rather than the rule. Kenneth Maughan remembers that when he arrived on a Wasatch National Forest district in 1940, he was allowed to hire a secretary. Shortly thereafter, he had a staff of two stenographers, which was unusual. In the mid-1940's, he was able to hire a full-time maintenance man, and by 1950, some of the district timber staff were full-time employees.¹⁷

Even with staff expansion, by 1947 the demographic composition of the professional officers had changed little from the time the Forest Service had been organized. The major change was in education--most were now college educated. Most still came from the farms and ranches of the West. During the congressional hearings of the 1940's, there was a tendency for stockmen to accuse rangers and supervisors of being impractical college men with no livestock experience. However, this was decidedly not the case (table 10.)

Some attempts on the part of Federal officials to promote efficiency failed to meet Forest Service needs. The Federal Government created a procurement division to purchase supplies for all its agencies. Because the regional office had already established contacts with suppliers and since Ogden lay on a major transcontinental rail route, the regional administration found that procurement division "prices as a rule are no better than prices we can obtain, their services are slower than we must obtain from manufacturers or distributors, and their packaging is frequently inefficient." In a letter to Chief Lyle F. Watts, Regional Forester William B. "Ben" Rice pointed out that Region 4 could purchase paper at the same or lower base price, and since they had to pay freight charges from the warehouse in Denver, the procurement division product actually cost more. The region had experienced similar higher prices for firstaid supplies, fire extinguishers, pencils, brooms, and brushes. A number of items, such as paint, hardware, and radio tubes, provided by the procurement division were often either out of stock or of inferior quality. Packaging of fragile items such as inks, glues, and typewriters was found to be inferior, and such items often arrived damaged. $^{18}\,$

Since the construction of the Forest Service vehicle repair shops in Salt Lake, Boise, and Reno during the 1930's, the region had begun centralizing other functions as well. By 1947, for instance, the number of vehicles in the region's motor pool had created a parking problem at the regional office. This was solved by regulations requiring that vehicles be parked in the driveways on the south and east of the building.¹⁹ In 1948, as an economy move, the region's central warehouse facilities were moved from Ogden to Fort Douglas in Salt Lake City.²⁰

During the 1940's, most of the region's employees who had entered the Forest Service before the creation of regions had left active employment. In 1943, for instance, after a lifetime career in Region 4 and 6 years of service as regional forester, Clarence N. Woods retired. He was replaced in January 1944 by Ben Rice, a Yale forestry school graduate, who, though he started his career in 1912 in Region 2, had served since 1914 in Region 4. His experience included work as a supervisor on the Weiser and Payette National Forests in staff positions, and as associate regional forester. He continued as regional forester until his sudden death in January 1950 at age 61.²¹

National Forest Reorganization

With the exception of some lands purchased in critical watershed areas, by the 1940's the general outlines of forests in Region 4 remained unchanged. Major changes in the 1940's consisted of national forest consolidations and interforest land transfers.

Typical of the smaller changes was the transfer of the Malad Division of the Cache to the Caribou in 1942. In this case, the regional administration and the forest supervisors contacted forest users and other interested parties to poll them about their views on the proposal. About 75 percent of the users--those living in the Malad-Downey-Swan Lake area of Idaho--tended to favor transfer. The 25 percent in the area from Preston, Idaho, south into Utah tended to oppose the transfer. Under those conditions, the change was made for administrative convenience, since Pocatello tended to be the regional trade center for the Malad area.²²

In spite of wartime conditions and pressure on budgets, the Service did not reduce its commitment to decentralization. Shortly after his appointment as Chief of the Forest Service in 1943, Lyle F. Watts appointed a regional office study committee to investigate the relationship between the Washington Office, the regional office staffs, and the forest supervisors' staffs. Based on the philosophy that "the practical limits of decentralization expand as experience and training increase the ability of administrators," the committee was designed in part to see that too much centralization of functions did not take place in the regional offices to the detriment of the forest supervisors²³

In the spirit of Watt's view, an important change in 1943 further decentralized administration, placing more authority and greater responsibility with the supervisors. In that year, for the first time, grazing authorizations no longer needed regional office approval. Supervisors, however, were cautioned to base their stocking on "good grazing capacity estimates and adjusted thereto as quickly as possible in the public interest."²⁴

The most dramatic changes came about as a result of Watt's desire to create larger, more cost-effective forest units. In trying to accomplish this, Watts appointed Ben Rice and two other regional foresters to study the job loads of forest officers to determine what consolidations could be made of the "operating units to obtain greater efficiency and promote more economical use of Government funds." In making the study, they concluded that a ranger district ought to have a minimum load of 2,000 hours per year, and a national forest should have i8,000 to 25,000 hours of ranger work.²⁵ Table 10---Demographic composition of Region 4 in 1947: rangers, supervisors & staffs, regional forester, and range managers

	Rangers		Supver	Supvervisors <u>& Staff</u>		RO-Div. of RM & RF		
			<u>4 5t</u>					Total
	NO.	Pet.	<u>NO.</u>	Pet.	<u>NO.</u>	Pct.	NO.	Pct.
Total Number	122		34		5		161	
Native State								
Resident States	48	39	15	44	1	20	64	40
Other Western	45	37	15	44			60	37
Middle West	27	22	3	9	3	60	33	21
East and South	2	2	1	3	1	20	4	2
Years of RM Experience								
Average	15		20		24		17	
Minimum	1		8		17		1	
Maximum	37		38		37		38	
Practical Experience								
Raised on farm/ranch	62	51	23	68	3	60	88	55
Farm/stock exp.	90	74	30	88	5	100	125	78
W/o farm/stock exp.	32	26	4	12			36	22
Education								
Grade	15	12					15	9
High School	32	26	12	35	1	20	45	28
College	75	62	22	65	4	80	101	63
Civil Serv. Exam Passed								
Jr. Ranger Exam.	29	24	10	29	4	80	43	27
Jr. Forester	33	27	9	27	1	20	43	27
For. Ranger	53	43	15	44			68	42
Other	7	6	_				7	4

Source: File: Data Compiled for House Public Lands Committee. 1947, D-File, Regional Office Records, RG 95, Denver FRC.

In Region 4, the changes suggested by this study that were later implemented included the consolidation of the Powell and Dixie under the name Dixie, the Manti and La Sal under the name Manti-LaSal, and the division of the Mono into the Toiyabe and Inyo as previously discussed. Also included was an unusual experiment with two large forests, the Boise and the "old Payette," which were combined under the name Boise, and the Idaho and Weiser, which were joined to create the "new" Payette.

These decisions were often wrenching since the removal of a supervisor's headquarters from a city often created considerable opposition there. In the case of the removal of the Powell headquarters in 1944, for instance, Pangultch and the surrounding towns on the east side of the high plateaus were home to more livestock, but more of the stockmen and other forest users lived on the west side near Cedar City.²⁶ In addition, Iron County, of which Cedar City was county seat, had a larger population (8,331) than Garfield County (5,253) with its county seat at Panguitch.²⁷ The headquarters was located in Cedar City.

In 1944 the Forest Service began an experiment with the two "superforests," the Boise and Payette with headquarters at Boise and McCall.²⁸ These forests had much larger and more specialized staffs than other Region 4 forests. By mid-1946, the Service evaluated the experiment and found some advantages and some disadvantages. The major disadvantages were in reporting--a single office had more difficulty in collecting reports from a larger number of units, in direct contact between the forest headquarters and forest users, and in the tendency for supervisor's office staffs to undercut the authority and assume the responsibilities of line officers, particularly rangers. The major





Figure 59--William B. Rice, Regional Forester, 1944-50.

advantages came in the division of labor. The larger and more specialized staffs could concentrate on particular areas of expertise. Also, some salary savings also were realized by the elimination of duplicated positions.²⁹

A major anomaly continued to be the extremely small La Sal National Forest with headquarters at Moab. Some consideration was given to transferring it to Region 2 or consolidating it with the Uinta National Forest, headquartered at Provo, to which it had been attached for administrative purposes in the late 1940's.³⁰ Conditions, however, seemed to favor its consolidation with the Manti, then headquartered at Ephraim, and moving the combined headquarters to Price, which lay between Moab and Ephraim and was then the largest town in Utah (7,000) that did not have supervisor's headquarters. After some consideration and negotiation (because of the opposition to moving the headquarters from Ephraim) the consolidation was consummated in 1949, under the name Manti. In 1950, in deference to southeastern Utah sentiment, the name was changed to Manti-La Sal.³¹

Watershed Purchases

Beyond the acquisition of portions of the Mono National Forest by the Toiyabe, most of the expansion of the forests of Nevada took place according to provisions of the Weeks Act and other lands acquisition acts, with the consent of the State. Acts passed by the Nevada legislature in 1937, 1939, and 1947 authorized the Federal purchase of lands or water rights within the boundaries of national forests, with the consent of the State tax commission and the stipulation that the Federal Government would make payments to the State in lieu of taxes and that private parties occupying the lands would pay regular State taxes.³²

Perhaps the most critical watersheds along the Sierra Front were those above Reno, Verdi, Carson City, and Minden. The lands had been cut over, overgrazed, and otherwise abused, and the Toiyabe-Nevada Receipts Act passed in the 1930's authorized purchase of such lands.³³

In general, the people of Nevada favored such purchases, but there was some opposition. The principal opponent was Senator George W. Malone, who was against any extension of the Forest Service into areas not capable of growing merchantable timber. Senator Pat McCarran also opposed Federal acquisition of private lands, but seems not to have been as strident as Malone. Congressman Walter Baring agreed to sponsor a bill extending the boundaries of the Toiyabe when he learned that local people supported the acquisition. Those favoring the change included the county commissioners of the counties affected, the Reno Chamber of Commerce, the Nevada Farm Bureau, and other interested organizations. Both Howard Hopkins, assistant chief, and Chester J. "Chet" Olsen, assistant regional forester, testified in favor of the bill, which was approved on June 6, 1950.³⁴

One of McCarran's principal objections was the potential loss of land from the tax base of Washoe County. The chairman of the board of county commissioners, however, pointed out that the county got approximately \$3,635 in taxes from the lands in the proposed extension but that they spent between \$3,500 and \$4,000 for fire protection alone. Thus, as private lands, these areas were a liability rather than an asset to the county.³⁵

Typical of the work that followed was the project in Dog Valley, a 30,000-acre area west of Reno. The Forest Service purchased the valley in 1939, and a number of rehabilitation projects were undertaken beginning in 1941. Projects conducted between 1941 and 1949 included gulley plugs, contour trenching, fencing for stock exclusion, and tree planting.³⁶

In general, watershed protection was the principal motive for the acquisition of land in the national forests. During 1947, resolutions from the Idaho state legislature, chambers of commerce, farm organizations, irrigation associations, ranchers and waters users, labor organizations, dude ranchers, and sports and conservation groups supported watershed land acquisition in Idaho.³⁷

Watershed deterioration had become a problem in Utah according to Walter P. Cottam of the University of Utah in his book Is Utah Sahara Bound?, the 1947 Reynolds lecture.³⁸ Outlining watershed deterioration, which he attributed principally to overgrazing, he presented evidence of vegetational change as iess desirable plants such as pinyon-juniper, sagebrush, rabbitbrush, and greasewood took over on overgrazed lands. The results, he said, following the Bailey-Forsling-Craddock analysis of the 1930's, were devastating floods



descending on the towns and cities of Utah's populated valleys. The only solution, he opined, was public education and watershed protection and rehabilitation.

Utah people had already experienced the floods Cottam detailed, and local groups had already begun work to protect and restore the lands. Perhaps the major support came from those living on the Wasatch Front. Techniques already begun in the 1930's included the passage of receipts acts which authorized the use of a percentage of the income from fees on the Uinta, Wasatch, and Cache National Forests to acquire critical watershed lands, the extension of forest boundaries to include critical lands, and the collection of private and public funds to purchase private lands within the national forest boundaries. The Service reduced livestock numbers and lengths of season or completely removed animals from critical watersheds and undertook watershed rehabilitation of the newly acquired lands. 39

Efforts to acquire land in Willard Basin began in 1933. There, a group of citizens from Box Elder and Cache counties, led by Robert H. Stewart of Brigham, John O. Hughes of Mendon, and William Lathum of Wellsville, organized the Wellsville Mountain Watershed Protective Association in 1936, to acquire lands on Wellsville mountain. Successfully lobbying to secure the extension of the Cache National Forest boundary, they collected money to purchase private lands for watershed rehabilitation.⁴⁰

The Weber County Commission organized the Weber County Watershed Protective Corporation to receive donations from municipal and private corporations to purchase lands along the Ogden-North Ogden portion of the Wasatch Front and in the North Fork of the Ogden River drainage and transfer them to the Forest Service.⁴¹ The corporation was headed by Julian Heppler of the Ogden Kiwanis Club and included such Ogden citizens as businessmen Lorenzo Williamson and W.R. White, and Ezra J. Fjeldsted of the chamber of commerce.⁴²

In his biography of Bernard DeVoto, Wallace Stegner considers it "surprising" that the Ogden Kiwanis Club rather than some conservation organization should have stood at the forefront of the conservation movement in Utah.⁴³ From the first flash floods, however, it had been the western townspeople who had suffered most from the overgrazing and deterioration of mountain watersheds. It was their homes and property that paid the ultimate price for this watershed abuse, and it was they who had the most to gain from the conservation movement.

In each case, the various groups worked closely with forest officers. These included forest supervisors such as James O. Stewart and Arthur G. Nord on the Cache and Felix C. Koziol on the Wasatch and concerned district rangers.⁴⁴ Similar watershed programs were inaugurated throughout the region. Sore spots on the Manti, Fishlake, Wasatch, Dixie, Boise, and Bridger also received attention.⁴⁵

The Great Land Grab Proposal

At the same time that those groups interested in watershed rehabilitation pressed the Service to acquire

critical watersheds, a contradictory movement grew in the livestock industry, aimed at selling national forest lands or giving the ranchers control over the range allotments. During World War II, stockmen centered their lobbying efforts on hearings by the Senate Committee on Public Lands and Surveys. The 76th Congress had passed Resolution 241 authorizing the committee to investigate "the purchase, withdrawal, and allocation of land and the administration and use thereof by or on behalf of the Federal Government or any agency thereof." These hearings continued intermittently from June 194i through November 1945, as subsequent congresses renewed the resolution.⁴⁶

Generally referred to as the McCarran Committee hearings since Senator Pat McCarran chaired them at first, the hearings at first focused mainly on the Interior Department's Grazing Service.⁴⁷ Nevertheless, the testimony on Forest Service policy opened questions that were to continue to plague the Service well into the 1960's. The hearings tended to pit the stockmen against both the Forest Service and State wildlife authorities.⁴⁸

Though legislation based on the McCarran hearings failed to pass, the Service actually had little disagreement with most of its proposals. The legislation proposed to codify existing practice on the role of advisory boards and to require publication of commensurability standards. The major change the Service strongly opposed would have recognized a legal tenure in the grazing permits by prohibiting reductions for distribution to new owners. It would, however, have allowed continued reductions for multiple use management or range improvement.⁴⁹

No hearings were held in 1944, but they resumed again in 1945. As they proceeded, particularly those held in Ely and Salt Lake City in May 1945, it was apparent that McCarran had developed a friendly relationship with Regional Forester Rice, and although the Forest Service anticipated some opposition, particularly at the Salt Lake City meeting, a crisis did not materialize,⁵⁰ Instead, many local community leaders who had benefited from watershed rehabilitation testified in favor of the Service.⁵¹

The major dispute in the 1945 hearings was the reopening of the question of reductions for redistribution. In his testimony, Washington Office range management director Walt Dutton indicated that the Service was contemplating a provision in the new 10-year term permits, which would begin in 1946, allowing reductions for redistribution of up to 25 percent annually for livestock in excess of the protective limit. Although he promised that the question would be submitted to the livestock industry before a final decision, ranchers greeted the proposal with a storm of protest.⁵²

The source of this opposition is quite understandable. Some ranchers had paid a premium for the permits at the time they purchased their ranch property. While in theory the permits had no market value since they carried no legal tenure, in practice they were quite valuable. Because they sold with the base property, lending institutions recognized their value when making ioans to ranchers, and the Internal Revenue Service subjected the permits to inheritance taxes. In practice, a reduction in the number of permitted animals meant also a reduction in the value of the rancher's base property both for his livestock and for operating loans.⁵³



Figure 60---Branding cattle at Baker Ranch, Baker, NE, August 1943.

In most cases, however, the permits were valuable property for which the ranchers had not paid. A study made in Region 4 in the late 1950's and early 1960's, while William Hurst served as assistant regional forester in range management, showed that a large number of the original permittees were still active and that more than 50 percent of the stockmen had acquired their permits either directly from the Forest Service or by inheritance.⁵⁴

In addition, some witnesses argued that the reductions for protection were based on invalid data. Regional Forester Rice and Clarence E. Favre, assistant regional forester for range management, fairly well demolished that argument with specific factual information on the indicators of range condition.⁵⁵ McCarran himself seems to have been persuaded by their data; when it appeared that one permittee was spending too much time detailing reductions on the Pine Valley allotment on the Dixie, the senator cut him off and invited Rice to present rebuttal testimony.⁵⁶

However, when the hearings moved to Casper, WY, the climate changed, and the Forest Service bore the brunt of the attacks. McCarran surrendered the chair to Wyoming Senator Joseph C. O'Mahoney, and the only other senators in attendance were McCarran, Edwin C. Johnson of Colorado, and Edward V. Robertson of Wyoming. O'Mahoney and Robertson dominated the questioning, and Congressman Frank Barrett chimed in regularly. The tenor of the hearings was much less conciliatory. O'Mahoney began to badger range management director Walt Dutton. Wyoming Governor Lester C. Hunt's attitude was quite different from that of Utah Governor Herbert B. Maw, who had praised the Forest Service administration. Hunt called for a law guaranteeing basic permitted numbers and disposing of the surface rights on the public domain to the States for eventual sale to private interests.⁵⁷

Edwin V. Magagna, a Bridger National Forest permittee and secretary of the Bridger-Washakie Forest Association, followed Hunt. Magagna made a number of allegations in regard to Forest Service administration. Obviously upset with proposals for reductions, he charged the Service with dictatorial methods in writing regulations beneficial to itself and detrimental to the forest users and stated that it was "the apparent policy of the Forest Service to eliminate all livestock grazing on the forest ranges." While accepting the position of the Service that reductions for range improvements were legitimate, he opposed their intention to reduce for range protection "at any time," instead of "prior to the beginning of any grazing season."

Dutton attempted to answer the allegations, but he had a number of things going against him. Perhaps because the Salt Lake City hearings had ended on such a
positive note, the transcript of his replies indicates that he was quite poorly prepared for the negative questions and comments. He lacked specific information, and, although western Wyoming was situated in Region 4 and Magagna was a permittee on the Bridger, no one from the Region 4 administration had been invited to attend. This omission may be attributable to the fact the Forest Service had been informed that the Wyoming hearings would consider only Region 2 and that "the Region 4 part of the program could be carried out without too much difficulty."⁵⁸ Unlike Rice and Favre, Earl D. Sandvig, Region 2's assistant regional forester for range management, seems to have been unprepared for questions on conditions in Wyoming. A number of the allegations made by Magagna and others either went unchallenged or were only partially answered. On a number of occasions, Dutton was forced to have material inserted into the record after the hearings were completed because he did not have it at hand. In contrast, at the Salt Lake City hearings, the Region 4 officers had the exhibits with them and could refer with some confidence to the data while giving their testimony. 59

Under these circumstances, the livestock interests had an advantage in Casper. McCarran was much less conciliatory.⁶⁰ The permittees particularly called upon their congressional representatives to help in creating stability through legal tenure. Most important, the permittees and the Service differed on their interpretation of deterioration of the range resource. Permittees tended to look only at the condition of animals as they came from the land. The Forest Service considered the condition of the animals but emphasized most the condition of the land as indicated in measurements.

Undaunted by the failure of the legislation proposed by the McCarran committee and violently opposed to reductions for redistribution and what they perceived as excessive reductions for protection, the livestock industry began lobbying more vigorously for laws that would grant the desired tenure. In 1946, they organized the Joint National Livestock Committee on Public Lands and drafted legislation to transfer ownership of grazing lands to the stockmen.⁶¹

Perhaps in response to these hearings, the Forest Service changed its policy on reductions for distribution. The Service had placed a moratorium on these reductions for the 10-year permits from 1936 to 1945 and agreed to extend that moratorium for all except a small handful of large permittees. The livestock industry accepted this compromise.⁶²

Nevertheless, the livestock associations wanted the Service to recognize grazing as the predominant interest on portions of the public land. In a speech to the Idaho Cattlemen's Association in 1946, Rice recognized this tendency and emphasized his profound concern. In a forthright, if cautious, statement, he called upon the stockmen to recognize the multiple interests of the public lands, and "to adjust their interests with those of others through friendly and far-sighted cooperation."⁶³

Conservationists perceived the efforts of the stockmen as an attempted land grab, and Bernard DeVoto, Lester Viele, William Voigt, and others prepared articles critical of both the ranchers and the Forest Service, charging that the stockmen aimed at nothing less than transfer of ownership of the public lands to themselves. They challenged the makeup of the grazing advisory boards, saying they gave undue representation to grazing interests at the expense of other multiple-use concerns, and called upon the Federal Government to broaden the membership of these boards.

These articles rankled a number of congressmen, particularly Barrett and Robertson. 64 Both they and representatives of the livestock industry denied that they wanted private ownership of all western public lands, asserting that they merely sought stability for livestock operations. In counterattacking, the congressmen and industry representatives charged the Forest Service with collaborating in writing and publishing the critical articles. 65

The stockmen and congressmen asserted that Chief Forester Watts had fed information to DeVoto and the others, but apparently this was not true. DeVoto, a native of Ogden, had developed a longstanding friendship with Chet Olsen, then assistant regional forester. When the transplanted westerner traveled through the West in 1946, he met with Olsen, who talked with him about the proposals for land control and gave him copies of the stockmen's resolutions. As Wallace Stegner put it, "DeVoto went West in 1946 a historian and tourist. He came back an embattled conservationist," who wrote more than 40 articles about the West after January 1947, most of them about conservation.⁶⁶

By 1947, things had changed. The livestock interests tended to favor policies of the recently created Bureau of Land Management (BLM) over those of the Forest Service. At the time, the very features of the BLM's grazing administration that had ingratiated it with the stockmen struck fear into those with interests other than grazing.⁶⁷ The BLM safeguarded tenure by recognizing the primary right of present graziers and did not reduce permits for redistribution, whereas the Forest Service denied any tenure right.⁶⁸ The BLM had no maximum limits; the Forest Service did. Grazing fees under the BLM were set at the cost of administration; Forest Service fees were based on a modified market-value basis.⁶⁹

Recent large reductions by the Service for watershed and range protection had antagonized stockmen, but met with the hearty approval of other interests. In contrast, the BLM and its predecessor, the Grazing Service, moved much more slowly to make reductions for protection. In fact, in 1943, BLM Director R.H. Rutledge announced a 10-percent increase in numbers of stock allowed, to the dismay of Forest Service officials who understood the actual depleted condition of Grazing Service lands.⁷⁰

Stung by the conservationists' attacks on the livestock interests and the Forest Service's proposals for reductions for range protection and wanting tenure for stockmen, the House appointed a subcommittee headed by Barrett to investigate. The hearings ran from April through October 1947. Dubbed "Barrett's Wild West Show" by the <u>Denver Post</u>, these hearings took up where the McCarran hearings of 1945 had ended. Governor Lester Hunt of Wyoming led off as he had eariier and called on Congress for legislation transferring surface rights to the States, for sale to the livestock interests. Differentiating between lands necessary for "forest growth, watershed protection, national parks and monuments," F.E. Mollin, executive secretary of the American National Livestock Association, said that his organization and the Joint Livestock Committee on Public Lands wanted reclassification of the lands and sale to the users of land principally valuable for stock raising.⁷¹

At the same time, the Service was subjected to considerable abuse from some conservationists. In a retrospective interpretation, Voigt charged that the Service capitulated to the stockmen by failing to reduce livestock for protection. He rightly charged that the Forest Service had transferred some officers who favored land protection, for example Earl Sandvig, if they tended to rankle the stockmen. He went on, however, to make the absurd charge, citing Walt Dutton, that the Service never had undertaken reductions for protection.⁷² In fact, in the period between 1920 and 1946, the Service had reduced animal-months by amounts averaging 35 to 49 percent on the ranges of Region 4 in addition to reductions in periods of use.⁷³ (See table 11.)

Table 11--Livestock permitted on the National Forests of Idaho, Nevada, and Utah, 1920-46 (in thousands of animal-units, 5 sheep = 1 cow)

Year	Idaho	Nevada	Utah	
 1920	470	151	360	
1921	467	143	350	
1922	456	142	344	
1923	447	137	342	
1924	426	147	323	
1925	413	145	313	
1926	396	136	312	
1927	388	121	308	
1928	386	133	310	
1929	368	136	303	
1930	351	123	294	
1931	349	121	291	
1932	347	116	289	
1933	352	117	284	
1934	359	121	289	
1935	345	114	266	
1936	330	112	284	
1937	327	109	261	
1938	316	109	258	
1939	306	104	255	
1940	294	103	253	
1941	288	102	271	
1942	286	105	254	
1943	279	99	249	
1944	267	95	247	
1945	245	95	240	
1946	239	91	232	
Pct. reductio	n			
(1920-1946)	49	40	36	

Source: File: Data Compiled for House Public Lands Committee. 1947- D- File, Regional Office Records, RG 95, Denver FRC. At the hearings, the Region 4 administration was well prepared to answer the charges. As each permittee testified on what he perceived as Forest Service abuses, the regional officers and forest supervisors presented rebuttal testimony. For instance, in the case of the testimony of L.K. Olson on the removal of his stock from the Afton, WY, watershed, Edward P. Cliff, I.M. Varner, and Carl B. Arentson all testified citing allotment analysis done by Irwin "Hap" Johnson and others, specific information on conditions on various portions of the range, and information gathered in collaboration with the permittees as they rode over the range.⁷⁴

Following complaints by permittees on proposed reductions, Teton Supervisor Arthur Buckingham was there with specific information on the condition of allotments. Congressman Barrett would not allow him the time to testify, but his testimony was entered into the record.⁷⁵

In view of Barrett's opposition in Wyoming and Colorado, the regional office prepared itself for the worst in Salt Lake City. All supervisors were called and told to bring in their files so they would be prepared for any questions that might come up. Ivan Sack, Uinta supervisor, was particularly concerned since the presidents of both of the Utah grazing associations were permittees on this forest. Supervisor A.E. Briggs of the Minidoka responded to Rice's request by outlining his experiences in dealing with livestock associations.⁷⁶ In addition, the regional office prepared a briefing book with statistics on virtually all aspects of range administration, including related questions concerning wildlife, rainfall, and age and experience of administrators. It also contained sample answers to possible questions.⁷⁷

In Salt Lake City, in addition to the prepared and rebuttal testimony, the Service had a number of ready allies. Representatives of cities, chambers of commerce, watershed improvement committees, and water users associations--such as Earl J. Glade and Gus P. Backman of Salt Lake City, Ezra J. Fjeldsted of Ogden, Mark Anderson, and Vasco Tanner of Provo, and T.M. DeCoursey of Canyon County, Idaho--appeared to praise the Service for reducing numbers of livestock and acquiring and improving watersheds.⁷⁸

By October 4, 1947, when the committee held its last hearing in Ely, NV, both Nevada Congressman Charles Russell and Congressman Barrett himself went to some length to repudiate publicly the idea of selling forest lands or turning the public lands over the the States.⁷⁹

Vernon Metcalf led off the hearing, spending more than an hour arguing for the transfer of national forest lands principally valuable for grazing to the BLM.⁸⁰ While several stockmen supported his views, the majority of the witnesses appeared to support the Forest Service. As witness after witness representing city and county governments, mining interests, chambers of commerce, sportsmen's associations, the Boy Scouts, and labor organizations praised the Forest Service and condemned the proposed transfer, stockmen began to charge that the Service orchestrated the hearings. Representative Norris Poulson of California asked one of the witnesses about the charge, and he denied that he came at the request of the Forest Service.⁸¹ Most importantly, although the Service had sent Dutton from Washington and Regional Forester Rice and two staff members as well as the director of the Intermountain Station and all

three Nevada supervisors, none of them had to testify except Rice, who replied briefly to one question.⁸² Beyond this, the Nevada Democratic Party organization, represented by chairman Roy Cassidy, interceded with Senator McCarran to express opposition to the movement for private ownership.⁸³

In a sense, the recommendations of the Barrett committee issued in 1948 indicated how far the committee had moved from its original intentions. Its principal recommendations, like those of the McCarran committee, simply called for codification of existing Forest Service multiple-use policy. Recommending that the Forest Service's organic act be amended to include grazing, recreation, and wildlife among the basic uses of forest lands, it also called for providing legal status for advisory boards. The major change proposed by the report was the end of transfer reductions on grazing permits.⁸⁴

Range Management

In part, the disputes addressed by the McCarran and Barrett hearings were attributable to previous overly optimistic Forest Service projections of range improvement based on range surveys, palatability tables, and cropping estimates. Permittees had come to expect certain improved outcomes, but while cattle and sheep came off the range fatter than before, the vegetation did not regenerate itself as rapidly as expected, and watershed deterioration continued.

By the 1940's, it was clear that at least two things were wrong. First, the grazing surveys made earlier were based on faulty principles, and second, the amount of vegetation that had to be left to produce a new crop was underestimated. Additional research had shown that livestock needed to leave 50 percent or more of the vegetation for dry western ranges to improve.⁸⁵ Merle Varner, then supervisor on the Caribou, began to question the effectiveness of the older surveys since "he could see a lot of the areas... were overused where grazing survey figures showed there was ample forage.⁸⁶ The existence of records dating from Clarence Favre's grazing surveys in 1914 and Dean Phinney's 1928 rechecking showed that, far from improving, "range conditions had deteriorated.⁸⁷

In trying to deal with this problem, Region 4 turned to research to propose new systems of analysis to help them understand where they had fallen short. In 1943, Lincoln Ellison of the Intermountain Station and Walter P. Cottam of the University of Utah introduced photo-plot transects as a means of analyzing trends of plant growth and watershed condition. These transects were 250 feet long with photo-plots 1 yard square spaced at about 25-foot intervals along the transect. Plots were identified with iron pegs and were to-be rephotographed at 5-year intervals to measure trend.⁸⁸ In addition, the region began to use aerial photography to determine change over time in large areas.⁸⁹

In 1949, the region issued instruction for a "grazing allotment analysis" that included classification as to condition and trend, usability, and grazing capacity. These instructions constituted the inauguration of "a reanalysis of all grazing allotments for the purpose of developing a more realistic basis for range and water-shed management."⁹⁰

In undertaking these measures and dealing with other problems as well, the region worked closely with the Intermountain Station. Research at the Desert Experimental Range, for instance, indicated that a moderately stocked sheep range could produce more wool and higher financial returns per ewe than a heavily stocked one.⁹¹ In 1945, the region published and disseminated a book titled <u>Book of Grazing Facts</u> in which is summarized the conclusions from research for various problems faced by range managers.⁹²

Largely because of experiments begun during the 1920's by the Intermountain Station, the region by the late 1930's learned how to replant overgrazed ranges.⁹³ A major problem was in determining which sorts of plants did well. Trial and error showed that crested wheatgrass, siender wheatgrass, several types of brome, and several types of ryegrass produced the best results.⁹⁴

The region at first had tried to adapt farm practices to range reseeding. However, these techniques worked only in the areas with favorable moisture conditions and were extremely expensive.95 Experiments with other methods were undertaken on a large scale in reseeding open range on the Uinta in 1933 and 1934 in Payson Canyon and Diamond Fork. The region did similar work on the Davis County watershed on the Wasatch and at Arrowrock Dam on the Boise. By 1938, the experiments had worked so well that they were tried on a large number of national forest ranges in Utah, Idaho, and Nevada. By 1940, experiments with the single-disk drill and heavy seeding proved satisfactory. Regional officers "felt we had gotten far enough along in the experimental stage" so they could undertake a program of range rehabilitation. Some experiments were attempted with airplane reseeding, but these proved generally unsuccessful.⁹⁶

Beginning in 1945, largely through the efforts of Congressman Walter K. Granger of Utah, the Forest Service started receiving direct appropriations for reseeding. About two-thirds of the money went to Region 4. By 1947 when Regional Forester Rice testified at the Barrett Committee hearings, he could confidently reply to the charge that the only way the Service knew to rehabilitate land was through permit reductions with the information that the Service had reseeded "117,000 acres, of which 56,000 was reseeded in Utah."⁹⁷

Appropriations went to finance other range improvements such as fence construction, stock driveway rehabilitation, and water developments as well. By 1947, contrary to the stockmen's charges that the Forest Service was doing nothing, the region was spending about \$150,000 annually on such improvements.⁹⁸ A 1948 <u>Range Improvement Handbook</u> outlined policy and methods for a wide range of improvements including fences and cattle guards, corrals and chutes, water developments, driveways, bridges, pest control, and revegetation.⁹⁹

A notable, if largely unsatisfactory, effort in cooperative range rehabilitation was undertaken in Ruby Valley on the Humboldt from 1944 through 1949. Agreements were negotiated with a number of permittees, allowing fence repair, sagebrush removal, and reseeding on BLM, private, and county lands. In return, the Service reserved the right to use the resulting increased grazing on these lands for a period of 10 years in place of grazing on the national forests. Crested wheatgrass was used for reseeding, and forage conditions were monitored closely through clipping on sample plots to determine capacity. Unfortunately, by the end of 1949, the project had achieved only limited success.¹⁰⁰

It is not true, as alleged by William Voigt, that the Service used reseeding and range improvements as a substitute for needed grazing reductions.¹⁰¹ Reseeding and range improvements were part of a two-pronged range rehabilitation program, the other prong of which consisted of reductions for protection. Comments like this one in the 1949 Caribou grazing report--"due to voluntary reductions [those agreed to by permittees on the recommendation of forest officers] and transfer reductions, total numbers of livestock permitted on the Caribou in 1950 will be less than during the 1949 season"--are common.¹⁰²

In 1943, shortly before his retirement, Regional Forester Woods issued instructions to reduce all grazing allotments to carrying capacity within 5 years. In 1945, Ben Rice, Woods' replacement, reaffirmed the goal of reducing all allotments to capacity within 5 years. This evoked resistance both from permittees and from some personnel. Nevertheless, many employees moved toward the goal with only limited success, largely because of the short timeframe.¹⁰³

In spite of these efforts, many ranges continued to decline. In 1949, for instance, Edward Cliff, assistant regional forester for range management, inspected the ranges on the Boise. He recommended that the supervisor move slowly to fill permits for the ranges that had improved, because they were going to need some slack to deal with other very serious problems.¹⁰⁴

By early 1947, even before the Barrett hearings had begun, Forest Service officials recognized that they faced problems in dealing with many ranchers. Several appeals from reductions had been forwarded to the Secretary of Agriculture, and he gave "his wholehearted support to . . . efforts to bring stocking into line with carrying capacity and abate the continued deterioration of some of our ranges and watersheds." He said, nevertheless, that the forest supervisors could handle ranchers



Figure 61-Stripped sagebrush and highlined juniper on overused winter range, Powell Ranger District, March 1949.

with more finesse. In dealing with this situation, Rice asked for examples of problems from each of the supervisors and recommended that they improve their public relations skills, particularly by working closely with advisory boards and consulting in advance with stockmen whose interests might be affected by planned administrative decisions.¹⁰⁵

Relations with the St. John Forest Users Association on the Caribou indicated the ideal means of approaching needed range reductions. At the annual meeting in 1943, for instance, Edward Cliff talked about the need for tagging, the carrying capacity of the range, and the length of the grazing season. After explaining the situation to the ranchers, he found it unnecessary to force the reductions on them, as they proposed and approved the necessary changes themselves, including a reduction in the length of the season and the abolition of temporary permits. 106

It was not as easy to deal with permittees on all forests as it was on the Caribou. On the Fishlake, Carl Haycock remembered the 8 years after 1940 as extremely difficult. Concerned "with their bread and butter," stockmen vigorously opposed any reductions. Progress required years of tough bargaining, range rides, meetings, and work with advisory boards. Stockmen insisted they knew range needs better than anyone else, because they were the ones who used the ranges. Haycock had the respect of the permittees since he had grown up operating a ranch, but even he experienced almost unbearable difficulty.¹⁰⁷ Some of the Fishlake problems probably stemmed from the reputation Supervisor Blaine Betenson had for being hardnosed and unyielding.¹⁰⁸

In some cases, attempts to create better relations with the permittees where range problems existed resulted in transfers for Forest Service employees. The evidence currently available indicates that such transfers were ordinarily done for public relations purposes, not merely because the forest officer had insisted on grazing reductions or observance of regulations.¹⁰⁹ The transfers usually either came because the ranger or supervisor was unable to get along with the permittees or because the permittees believed they could not get along. Ordinarily, the regional officers agreed with and supported the substance of the actions that the local officers proposed.

An example of this approach was James Jacobs' experience on the Boise. Both the old Payette and old Boise were headquartered in Boise in 1944 when they were merged to form the Boise "superforest." Thomas H. Van Meter, supervisor of the old Payette, was named supervisor of the Boise and most of the supervisory positions were filled by men who had worked under Van Meter on the Payette. About a month after the merger, permittees who thought Van Meter too aggressive complained at what they interpreted as his attempt to stack the administration with his men. Chet Olsen came from Ogden to assess the situation. He switched Jacobs, whom Van Meter had appointed to the range staff position, to timber staff and replaced him with Louie Dremolski. Dremolski had been handling range work on the old Boise and was slated for transfer to the Targhee. This change placated the permittees, and the forest then operated with little conflict. In order to placate the permittees, however, Jacobs had been assigned to a

timber staff position for which he had little background. $^{110}\,$

Forests continued to have problems with cattle trespass. The most common means of trespass control was by feedlot counts conducted by forest officers prior to the grazing season. After the counts, permittees were told to enter the forest with the permitted numbers and to leave surplus cattle on the ranches where the rangers could recount them. In some cases, rangers would brush the talls of surplus cattle for easy identification. Cattle with brushed tails found on the forest were clted for trespass. Where cattle were not kept in feedlots but were wintered on outside ranges, arrangements were made to count permitted cattle as they were driven onto the forest. In practice, all of the methods were unsatisfactory, and rangers recognized that dishonest permittees could graze surplus cattle on the forest with little chance of detection.

Forest Officers found tagging of permitted cattle with numbered tags to be the most effective method of trespass control, and this practice was adopted on most of the heavily stocked forests, especially on the forests in Utah where there were many stockmen with small permits. Each spring, old tags were removed, and new tags of a different shape were put on. Often, rangers tagged the opposite ear each year to aid in identification.¹¹²

Even though tagging was the most effective method, permittees still found ways to circumvent it. On the Fishlake, for instance, Carl Haycock found evidence of a permittee stealing tags from the ears of other ranchers' cattle. When he did the tagging one spring, Haycock saved all the tags he took from the suspected permittee's cattle and compared the serial numbers with his list. He found more than 20 tags belonging to other permittees. The regional office refused to prosecute on the basis of the evidence, however, because Haycock had not found the cows on National Forest land.¹¹³

In most cases, though, tagging programs proved successful. In 1947, the Minidoka advertised its intention to impound all untagged stock. The supervisor subsequently reported that the ranchers had sold large numbers of stock, apparently to avoid impoundment.¹¹⁴ Ranger Allen Folster on the Ferron District of the Manti reported that when he started tagging, owners sold about the same number of cattle as they had been permitted, which indicated to him that the ranchers had been running about twice as many cattle as their allotted numbers.¹¹⁵ The Dixie supervisor also reported a successful tagging program.¹¹⁶

In some cases, supervisors had to deal with chronic trespassers. Ivan Sack on the Uinta, for instance, suspended one permittee's term permit and issued a temporary permit until he stopped trespassing. The permittee appealed what he perceived to be a "malicious, arbitrary action," and Regional Forester Rice came to Provo for a hearing. After Rice sustained Sack's decision, the permittee was so angry that he threw his hat on the floor and began to stomp on it to the accompaniment of vigorous claps of thunder!¹¹⁷

Forest officers found problems also stemming from common use of allotments by sheep and cattle. The Salmon National Forest, for instance, worked to eliminate common use as a means of improving range management. Problems had been created because unattended cattle would often graze over the same areas as sheep had grazed, causing range deterioration.¹¹⁸ Similarly, rangers on the Ashley faced considerable difficulty with common use, especially on extremely overstocked and fragile land at high elevations.¹¹⁹ The Humboldt achieved some success in eliminating common use, and Ed Cliff recommended in a 1948 report that reseeding efforts be tied to agreements eliminating common use.¹²⁰

All of this work was accompanied by management plans drafted for each ranger district. On the Fishlake, for instance, the 1945 management plan for the Scipio Ranger District indicated that grazing was the principal use of the district, but recognized the interrelationship of other uses such as watershed protection, recreation, wildlife, and timber. The pian outlined commensurability standards and allotment use and indicated whether allotments were properly grazed or overstocked. Plans for needed improvements in herding and salting and in education were detailed.¹²¹

Wildlife Management

Closely related to difficulties with watershed and range were the continuing problems with big game. In both the McCarran and Barrett hearings, stockmen complained about the inordinate increase in deer, which they blamed for the overgrazed condition of the national forest watersheds. J.A. Hooper, secretary of the Utah Woolgrowers Association, charged in 1941 "when the permittee comes to graze the areas which he has paid for, . . he finds that it is almost denuded of feed by big game."¹²²

Considering these circumstances, Regional Forester C.N. Woods told the Utah State Cattle and Horse Association in the spring of 1940 that it would be his policy not "to reduce livestock on deer-congested areas till the deer were reduced . . . fairly close to what we [the Service] thought the ranges should carry."¹²³

In part, this management problem resulted from policy decisions in which the Forest Service had some options. Since the Supreme Court decision in the Kaibab case, the Service undoubtedly had had the authority to remove excess wildlife. In practice, however, the Washington Office issued regulations that required regional and forest authorities to work with State game officials and prohibited extraordinary measures. During the 1930's and early 1940's, although the States did authorize the removal of some does, they were reluctant to move as rapidly as necessary to protect either the welfare of the deer or the land because of pressure to save the does. Since deer are polygamous, the population could not be kept under control through buck hunting alone.

The Service's unwillingness to initiate measures adequate to reduce herd size was probably the result of an accurate belief that the State officials resented Federal intrusion into what they perceived as their domain. Even Congressman Barrett, who was so critical of Forest Service wildlife management, opposed the idea of the Service reducing game in the absence of State approval. But the States resisted such action and the stockmen blamed the Service for the large deer herds, putting the Forest Service in a "damned if you do, damned if you don't" situation.

Some State officials and sportsmen had an inordinately optimistic assessment of their success in dealing with such problems.¹²⁴ Many also were unwilling even to acknowledge the severe pressure deer populations exerted on overgrazed and disappearing winter feeding grounds.¹²⁵ In a meeting in Beaver County, UT, a game warden attacked the Service for its concern about the high-lining of junipers (stripping the trunks clean as high as the deer could reach). "To hear them [Forest Service people] talk," he said, "you would think Juniper is one of the prettiest plants that mother could grow in her garden. Do you folks know what it is? It is nothing but a Cedar tree. Give it to them [the deer]. There are worlds of it." What he did not realize was that when the deer population had reached the point where the deer had to high-line unpalatable juniper for feed, the normal browse plants such as bitterbrush, cliffrose, and even sagebrush "would be severely damaged or outright killed."126

In the early 1940's, a number of agencies tried to gather the information necessary to educate the public on the seriousness of the big-game problem in Utah. An interagency committee consisting of representatives of the Forest Service, BLM, and State Fish and Game Department coordinated efforts. The committee studied deer herds, determined browse utilization, checked on numbers, assessed damage to private property, and furnished information to the State Board of Big Game Control. The control board also held meetings throughout Utah to collect evidence on these matters.¹²⁷

On the basis of this information the Forest Service and other agencies began a public relations program to try to convince people of the need to reduce deer numbers. Brochures, pictures, and show-me trips were used.¹²⁸

As enlightened officials changed their positions and the wildlife authorities tried to attack the deer overpopulation, public opinion often lagged. In Utah, for instance, when herd censuses revealed an excessive population of deer and the Board of Big Game Control opened hunts for does, sportsmen's organizations lobbied to abolish the board and in some cases actually bought up and destroyed doe permits. The board continued to authorize the antlerless hunts, but such opposition undoubtedly reduced its effectiveness.¹²⁹ In 1948 and 1949, the excess deer population necessitated 95 special hunts in the region's four States.¹³⁰

By the late 1940's, both the State wildlife authorities and some sportsmen's groups had come to recognize the extent of the problem. After the Barrett committee hearings, the Weber County Wildlife Federation issued a critique pointing out the seriousness of excess deer population and urging authorities to handle the situation.¹³¹

At the same time, some groups emphasized the economic importance of wildlife and urged Congress to recognize wildlife maintenance as an important aspect of forest management. In testimony before both the McCarran and Barrett committees, sports enthusiasts emphasized the economic contribution of hunting and urged a more tolerant attitude toward sportsmen. Stockmen, while indicating their interest in hunting, perceived it as of decidedly secondary importance. They argued that hunting only passed money around within the local population, rather than bringing in outside revenue.¹³²

Although elk overpopulation was also severe, it was not as severe during the 1940's as that of deer.¹³³ The most critical area was undoubtedly in Wyoming, where the Jackson Hole and Greys River elk herds required drastic control measures.¹³⁴

Although big game was undoubtedly the most prominent concern, Forest Service personnel managed other wildlife as well. Upland game birds, particularly chukar partridge, lived on some national forest ranges. In addition, the rangers assisted in planting fish and maintaining fish habitat.¹³⁵

Another serious problem that emerged during the 1940's was a large number of wild horses ranging over the region's forests, especially those in Utah, Nevada, and Idaho. Some had run away from ranches, others had belonged to the army remount service, and some ranchers had simply turned loose to go wild on the range.¹³⁶ The Service rounded up many of the horses for redemption by owners or for sale to others, but that practice generally proved unsuccessful. Where the situation became unusually severe, the Secretary of Agriculture issued a closing order that authorized officers to shoot the horses and thus stop their overgrazing of the range.¹³⁷

Timber Management

As we have seen, in Region 4, unlike in the East and Midwest, the bulk of timbered land was in the public domain. A 1945 estimate suggested that 71 percent of the Intermountain Region's forest land lay within the national forests, an additional 11 percent was under other Federal administration, and the States owned 9 percent. Thus, about 91 percent of the timber was under public ownership. Timber companies owned only 5 percent of the timber, private farm woodlands encompassed 4 percent, and Native Americans owned about 1 percent.¹³⁸

Moreover, the timber on private lands was being cut more rapidly than public timber, and with the reduction of private timber supplies, logging companies' interest in national forest timber increased. This development led to two important trends. First, the exchanges of timber on public lands in return for cutover private lands continued, especially on the Boise, Caribou, Payette, and Weiser.¹³⁹ Second, large companies began to press the Forest Service to open new national forest areas for cutting.

As the Boise-Payette Lumber Company became more interested in national forest timber, its relationship to the Forest Service began to change from an "independent if not arrogant attitude" to a much more cooperative stance.¹⁴⁰ The company loggers had cut over their lands with little regard for the future and by 1944 were "within easy sight of the end of their operation" on lands subsidiary to the Emmett mili. Under the circumstances, the company increasingly secured national forest timber through purchase or through the exchange of cutover land. 141 The exchanges began in 1935 and by 1950, six cutting blocks had been approved, largely on the Payette and the Boise. 142

During the 1940's project logging by large companies increased in importance in southwestern Idaho, southwestern Wyoming, and northeastern Utah, but small operators continued to carry on most logging on the region's national forest lands.¹⁴³ Often these small mills lacked the expertise, equipment, and capital to produce high-grade products, so lumber dealers and customers were understandably prejudiced against native lumber. The inefficiency of these small operations contributed to the prejudice. "The output of most of the [small] mills . . . [was] poorly manufactured," particularly as to uniform thickness and end finish. Surfacing was poor, and lumber was often sold unseasoned.¹⁴⁴ Gordon Watts saw one small mill with a sign reading: "The Thick and Thin Lumber Company--Our Best is None Too Good."¹⁴⁵

In addition, builders were often unfamiliar with species that have since proved to be excellent construction lumber. Favored species were western white pine (generally found in northern Idaho and virtually absent from Region 4) and ponderosa pine, which together constituted only about 38 percent of all timber in Idaho and a much smaller percentage in Utah and Nevada. Douglas-fir, which was actually stronger than ponderosa pine, was not popular and lumber yards were reluctant to handle it.¹⁴⁶

Because of the prejudice against Douglas-fir, the Service virtually gave it away. At the large Hallack and Howard sale on the South Fork of the Payette River in the mid-1940's, for instance, it was sold at 50 cents per MFBM, and even after the war, as prices soared, sales at \$1.00 per MFBM were not uncommon.¹⁴⁷ (See table 12.)

For the time being, Region 4 faced two contradictory goals. Even though the administration recognized the shortcomings of the small mills, particularly in developing a sustained-yield system, regional officials also understood their importance. The small mills helped to create stability in small towns, which Forest Service officials perceived as an important objective. At the same time, the administration wanted to create a good relationship with large companies like Boise-Payette



Figure 62-Boise-Payette Lumber Company loading logs near New Meadows, ID, April 1942.

Table 12---Timber cut under regular and cost sales, Region 4, 1940-48

FY	Timber cut (thousand bd. ft.)	Value (\$)	Average commercial selling price/ thousand bd. ft. (\$)
1940	70,594	108,953	1.64
1941	61,896	97,681	1.69
1942	96,912	165,560	1.78
1943	112,426	205,077	1.88
1944	113,906	229, 524	2.09
1945	96,320	199,266	2.20
1946	100,000	254,532	2.55
1947	161,857	473,221	2.92
1948	151,253	525,793	3.47

Source: W.L. Robb to Regional Forester, July 16, 1948, File: S- Supervision, General, 1947-1949; Regional Office Records, RG 95, Denver FRC. Note: These statistics are not totally comparable since no figures were given for sales at cost for 1946, 1947, and 1948. They are also not comparable with those in Tables 13 and 14 since the timber cut under free use is not included in Table 12. The selling price is the price of the timber not of finished lumber and is not comparable to the lumber prices shown in Table 14.

because only these large operations were capable of cutting overmature and deteriorating stands. The two goals conflicted. In trying to resolve the conflict, the Service seemed reluctant, at least during World War II, to consider a large sustained-yield unit in southwestern Idaho and instead urged Boise-Payette to open small mills. 148

As might be expected, Boise-Payette, searching for economies of scale, sought opportunities for largeproject sales on the Boise and Payette superforests---not places for small mills.¹⁴⁹ Of the 10 areas the Boise-Payette Lumber Company examined for potential large sales in 1943, the North Fork of the Boise River and the South Fork of the Salmon River seemed most promising. The North Fork seemed best, because of the relatively large stand of 240,000 MFBM and the relatively favorabie trucking grades. Although the South Fork held the largest virgin timber stand in southwestern Idaho, the company was concerned because, though the trucking distance would not be excessive (30 to 80 miles), the hauling grades were adverse both to McCall and to Cascade, where their nearest mills were located.

Immediately after the war the region came under pressure to make more timber available to the Boise-Payette Company. In October 1946, Regional Forester Rice met with Harry Shellworth of Boise-Payette, who argued that the Service should build timber access roads and open the Middle Fork of the Weiser River as soon as possible. Rice indicated that they would probably not sell timber there, since he feared that if the area were opened to the company it would have to be on the basis of "having the company take off the cream," as they had in the 1930's, and he was dubious about such an arrangement. For Rice, the goal of achieving a sustained-yield operation by cutting the overmature timber was more important.¹⁵⁰

Even with these problems the cut did increase, and by 1947, the region began making plans for stabilizing operations at a somewhat higher sustained-yield level. W.L. Robb, assistant regional forester for timber management, argued the need for stability. He thought that the region could "support a cut of around 200,000 MFBM to 210,000 MFBM annually." In order to achieve this, he said, it would be necessary to stabilize the cuts on forests such as the Boise, Payette, Dixie, and Uinta, which had tended to have relatively large but often fluctuating production. In addition, the cut on national forests such as the Ashley, Bridger, Teton, and Targhee that had relatively large commercial stands of lodgepole pine, would have to be increased.¹⁵¹ (See tables 13 and 14.)

Robb recognized a number of obstacles in achieving these goals. First, companies like Boise-Payette and Hallack and Howard had built large mills at Emmett, Council, and Cascade to cut private timber and were pressing the region to allow them to cut national forest "timber at a faster rate than could be sustained." Some of these mills would undoubtedly have to close. Second, management plans on the national forests were out of date and had generally been drafted in anticipation of a much "iarger cut than can be maintained." Third, the region would have to move aggressively to promote alternative timber uses. $^{152} \end{tabular}$

Immediately after the war, the Service ordered "overcutting," cutting beyond the sustained-yield capacity, in order to facilitate reconversion from wartime to peacetime. A report in late 1946 indicated overcutting on the Boise, Dixie, and Uinta totaling about 10,200 MFBM for the year.¹⁵³ Competition for timber on some forests was quite vigorous, and some small local operators disliked the increasing tendency for lumbermen from some distance to move into what they perceived to be their territories.¹⁵⁴ The Washington Office made it abundantly clear, however, that there was no legal basis for any provision in timber sale contracts giving preference to local needs.¹⁵⁵

Achieving the maximum possible sustained-yield cut seemed absolutely necessary to diminish loss by fire, insects, and disease. By the late 1930's, the supply of timber in all of Idaho was actually declining more rapidly than the estimated annual growth by 410,600 MFBM. Rice estimated that the annual average cut between 1935 and 1938 was 788,300 MFBM, while disease, insects

Table 13--Total timber cut in Region 4, 1939-45 (ranked by cut in 1943) (thousand board feet)

Forest	1945	1944	1943	1942	1941	1940	1939
Idaho*		<u></u>	24,547	16,106	2,333	23	94
Boise*	22,166	29.768	21.017	20,444	3.878	2.897	1,781
Weiser*			16.740	10,776	7.789	1.721	2,898
Pavette*	34.251	57.470	12.022	12,688	7.934	23,115	24.331
Bridger	6,103	4,885	6,118	3,883	3,649	6,722	8,998
Targhee	5,350	7,994	5,793	11,230	8,755	8,538	7,630
Uinta	6,258	4,523	4,061	3,330	2,406	2,641	2,446
Powell	4,722	6,376	3, 545	2,271	1,603	1,615	835
Ashlev	5,583	4,752	3.315	4,173	5.076	3,656	3.251
Dixie	4,049	4.742	3,151	2,128	1.724	1,782	785
Cache	4,192	3.657	2,934	3,990	3,462	4,194	2.850
Wasatch	2.769	4,992	2.382	3,699	4.572	3,205	2,652
Caribou	2,853	1.497	1.844	1.824	1,756	1.766	1,408
Sawtooth	2,438	2,329	1,709	4.097	4,400	4,494	2,500
Salmon	4,538	2.070	1.540	1.604	1.704	1.608	1,692
Minidoka	1,360	1.697	1.278	2.054	1.753	2,068	1,199
LaSal	750	744	1.260	678	141	231	272
Manti	1.144	1.540	1.143	994	1.546	1.461	1.103
Challis	990	1.194	823	1.425	1,183	1.331	977
Fishlake	1,092	966	513	342	714	709	576
Toivabe	1.211	559	132	313	261	262	160
Humboldt	61	67	103	129	226	213	228
Nevada	12	23	29	80	102	320	931
Total	112,660	142,857	116,885	109,454	68,216	74,057	70,960

*In 1944 the Boise and Payette were consolidated to form the Boise and the Idaho and Weiser were joined to form the Payette superforests.

Source: W.L. Robb to James D. Curtis, June 9, 1947, File: S- Supervision, General, 1947-1949, Regional Office Records, RG 95, Denver FRC. These figures are not comparable with those in Table 12 since they include total cut rather than simply the timber sold and would thus include free timber.

Table 14--Total timber cut and average lumber selling price for Region 4, 1946-48 (thousand board feet and organized in order of volume cut in 1948)

Forest	1948	1947	1946
Boise	45,000	46,200	24,476
Pavette	23,100	41,000	32,528
Dixie	15,700	11,300	12,697
Ashley	10,700	6,500	4,269
Targhee	8,400	9,400	4,098
Bridger	7,500	5,400	3,721
Cache	6,500	5,600	3,489
Uinta-LaSal*	5,700	6,500	2,557
Sawtooth	5,700	4,800	1,865
Caribou	3,900	2,400	1,626
Salmon	3,800	2,500	4,418
Wasatch	3,500	7,900	2,543
Teton	2,500	2,200	808
Manti	2,300	2,800	921
Challis	2,500	1,600	1,040
Toiyabe	2,000	500	1,718
Minidoka	1,500	800	1,203
Fishlake	1,000	1,400	1,348
Humboldt	1,000	70	117
Nevada	800	500	42
Total	153,100	159,300	110,573
Ponderosa pine lumber prices/			
million			
bd. ft. (\$)	72.60	58.12	41.58

*The LaSal was administratively attached to the Uinta during this period.

Source: W.L. Robb to Forest Supervisors, January 20, 1948, and January 13, 1949, and W.B. Rice to Supervisors, June 30, 1949, File: S- Sales General, 1949-1950, Regional Office Records, RG 95, Denver FRC. These figures are not comparable to those in Table 12 since they include total cut rather than just timber sold and thus include free timber. The prices shown here are for finished lumber and not for the timber as in Table 12.

and fire took an estimated 653,300 MFBM. Thus, the annual sawtimber drain was approximately 1,441,600 MFBM, whereas an estimated 1,031,000 MFBM grew each year.¹⁵⁶

Only by cutting the old growth, the foresters reasoned, could they remove the deteriorating trees, reduce loss by fire, disease, and insects, and stabilize the resource at the level of the annual sustained-yield cut. Thus, regional officers worked closely with the timber industry to promote such uses as pulp plants, the harvesting of fence posts and power poles, the manufacture of excelsior, and the utilization of mill waste products. 157

In achieving this goal of stepped-up cutting, Region 4 faced problems that regions with large widespread timber stands, such as Region 6, did not. Since the Region 4 stands were relatively small and most cutting was done by small local operators, the region tended to have a large number of small sales. In 1946, for instance, the region had more than 3,000 sales under contract. Under the circumstances, the region spent a great deal of time and money for sale administration, and the average cost per unit sale was higher than the Forest Service average. Rice estimated the cost per MFBM for administering an S-22 sale in Region 4 at \$1.90. the Service allowed an administrative base of \$0.40 per MFBM. This high cost made administration extremely difficult, especially right after the war, when the region did not have adequate funds to prepare sales to meet demands.¹⁵⁸

Forest Improvement

A major goal in timber operations was the development of a more productive forest. In order to facilitate the rehabilitation of cutover forest areas, the Congress passed the Knutson-Vandenberg Act in 1930, which authorized the creation of a revolving fund for reforestation and timber stand improvement. Each sale included a charge to the operators for improvement ranging from \$0.05 per MFBM to as much as \$1.20 per MFBM depending on the time and the condition of the stand.¹⁵⁹ The region also collected additional money from operators for slash disposal and erosion control.¹⁶⁰ Timber purchases also were expected to make the necessary improvements on roads and stands or pay the Service to do it.¹⁶¹

Prior to 1944, Forest Service policy generally required piling and burning of virtually all slash. A modified policy issued in 1944 required that contractors pile and burn all slash along roads and 30 to 60 percent in other areas depending upon the terrain and silvicultural prescription.¹⁶² During World War II, lumber companies had difficulty in securing labor to dispose of the slash. In



Figure 63--Sawmill on Green River.

1943, the Boise-Payette Lumber Company tried unsuccessfully to get the Service to take over the work or alternatively to secure prisoner-of-war or Japanese-American internee labor to do it.¹⁶³ In general, slash disposal had been done by hand, but in 1943 the Service undertook some experiments on the Idaho, Payette, Boise, and Weiser in the use of horses, tractors, bulldozers, and loaders to speed up the work and do it more economically. Experimentation with a Caterpillar tractor showed that the work could be done for \$0.30 per MFBM, rather than the \$1.00 previously paid for hand labor.¹⁶⁴

Improved Logging Technology

New technology seemed to bring the goal of achieving sustained-yield cuts closer. By 1944, the development of truck logging, for instance, brought "into the market timber that as recently as 12 or 15 years [ago]... was economically unmerchantable and seemed destined to remain so." 165

During the 1940's, operators introduced other technological improvements to make their businesses more efficient. Perhaps the most important was the general introduction of tractor skidding to replace the singlehorse skidding that small operators had generally used before. ¹⁶⁶ Some operators also began experimenting with gasoline-driven power saws for felling trees. The power saws used in the early 1940's were relatively heavy (between 127 and 137 pounds) compared with the present-day chain saw, and they were not used for bucking. In an experiment in Wyoming it was found that a 4-man crew, consisting of 2 men with a power saw (perhaps a gasoline-powered chain saw), one doing undercutting, and the fourth assisting in clearing debris, could keep 30 men busy trimming and bucking. ¹⁶⁷

A few small mills began to introduce drying kilns as part of the lumber operation. Ward W. Blazzard was the



Figure 64—Brown Tie & Lumber Company unloading logs into Payette Lake at McCall, ID, April 1942.

first to introduce one in the Kamas area on the Wasatch.¹⁶⁸ Small milling operations also tended to shift from steam to internal-combustion engines. The Bartlett mill on the Ashley, for instance, used steam power until about 1940 when it converted to an old diesel engine. The operators used this engine through 1948 when they purchased a newer Caterpillar diesel engine.¹⁶⁹

Another innovation was the introduction of the Idaho jammer. This was a mixed blessing at best. The jammer consisted of a crane mechanism with skidding cables. The crane would operate from a series of parallel roads constructed horizontally around the mountains. From those roads, operators would use the crane to hurl the cables down and to snake the logs up the hillside.

During the 1940's, some forest officers became concerned about the potential for environmental damage from this type of skidding. Jim Jacobs, then head of timber staff on the Boise, feared that the loose granitic soil of the Idaho batholith could not stand such treatment. He reported that on a 56-million board foot sale on the Garden Valley Ranger District on the South Fork of the Payette River, there were some real problems with erosion during World War II. $^{170}\,$ In a 1948 report W.L. Robb said that the greatest environmental damage "has to do with the skidding and hauling of timber which has been cut" rather than cutting itself. Robb recognized, particularly, the excessive danger to the granitic soils of the Boise and Payette forests. Eventually, in order to mitigate such impacts, the region had slash or grass seed broadcast on the skid trails, and required cross-ditching or outsloping of logging roads. 171

Timber Stand Improvement

The region continued to seek ways to improve timber stands. The Intermountain Station continued research and experimentation begun on the Boise Basin Experimental Forest in the 1930's. Various studies included stand improvements, factors of natural reproduction, and planting and seeding techniques.¹⁷²

The region resumed tree planting. Previously, such efforts had proved largely unsuccessful. In his annual planting report in 1942, John N. Kinney reviewed a rather sorry picture. In the period from 1909 until 1917, the region had spent \$128,000 for tree planting and \$40,000 for direct seeding. The results of the direct seeding were "nil," and planting had produced only a 17-percent success rate. In 1917, the efforts were broken off until 1937, when planting was resumed. The region tried no direct seeding, but began planting seedlings furnished from the Tony Grove nursery. Some of these seedlings were transplanted in the McCall nursery for replanting in southwestern Idaho. The efforts during the 5 years between 1937 and 1942 were not particularly satisfactory; after 1942 the wartime economy required the closing of the nurseries. The region sold as much of the remaining stock as possible and plowed up the remainder.

Research had shown that May rainfall was critical to tree generation. In general, if the newly planted seedlings received 2 inches of rainfall in that month, they would survive; if not, they generally died. Unfortunately

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in the period from 1910 to 1941 the region had adequate May rainfall in only 6 years. $^{173}\,$

In the virgin forest other forces removed and regenerated the trees. Insects, disease, and fire destroyed one crop, and fire prepared the seedbed for the new growth. "When man became the harvester, these old relationships were disturbed. The immediate effect [of man's intervention] was to greatly increase the occurrence and effect of fire." Man's attempts to regulate and harvest the crop of trees broke the chain in the natural cycle at crucial points. As a corollary, once the forester had placed his foot on the path of forest management, he could no longer rely upon the natural process.¹⁷⁴ Consequently, an important aspect of the attempt to manage forest lands was the protection of timber stands against fires, diseases, and insects.

Insect Control

The general policy of the Service, stated clearly in a memo in 1945, was to "suppress epidemic insect attacks where there appears to be a sound entomological basis to anticipate that the control measures will be successful." The application of this policy was limited by the availability of funds. 175

In Region 4, the major problem continued to be various pine beetles. In general, policy dictated that when the beetles attacked a particular stand, foresters tried to eradicate them in the entire area infested. By 1941, the region had become convinced that spraying with oil and burning the live tree was not effective, and it had adopted felling and decking, then burning or spraying with orthodichlorobenzene.¹⁷⁶

Epidemics ran in cycles. Reports in 1942 indicate that the situation was worst in the lodgepole and ponderosa pine, particularly on the Wasatch, Ashley, Powell, and Dixie. In 1945 the Caribou, Targhee, and Teton seemed most infested.¹⁷⁷ Treatment was expensive, ranging as high as \$5.00 per tree in 1942, but was done to the extent of the money available.¹⁷⁸ (See table 15.)

Table 15--Number of trees treated for insect infestations, Region 4, 1940-48

Year	Number of trees treated		
	32,736		
1941	34,021		
1942	7,449		
1943	6.526		
1944	9,237		
1945	13,637		
1946	2.383		
1947	55,150		
1948	103,000		

Source: W.L. Robb to Regional Forester, July 16, 1948, File: S- Supervision, General, 1947-1949, Regional Office Records, RG 95, Denver FRC.

The 1945 infestation on the Caribou led entomologist James C. Evenden of Coeur d'Alene and others to wonder whether the Service ought not consider the relative value of the stand and the potential for insect infestation of other more valuable trees as compared with the cost of treatment. Since the Caribou infestation was widespread and the stand was of marginal value, both the Washington Office and the regional administration began to question whether conditions warranted expensive treatment. Some 40,000 trees were affected, and the region had not undertaken an adequate survey before beginning control measures. The Caribou tried some salvage sales but, because of the wartime scarcity of labor, the operator cut fewer trees than expected.¹⁷⁹ Most important, Congress had been appropriating only \$100,000 annually for Forest Service treatment of insect infestations, and more than that would have been required to treat the infected trees on the Caribou alone. 180

By the late 1940's, Evenden's reservations were largely forgotten as Congress began appropriating substantially more money for insect treatment. In 1947, Public Law 104 recognized the Federal concern and responsibility for control of insects and diseases and paved the way for increased efforts at detection and suppression.¹⁸¹ In 1948, the region received \$490,000 to treat an estimated 95,000 trees on the Teton, Targhee, Caribou, and Bridger; officials anticipated a large appropriation in 1949 for followup work and for treatment on the Wasatch, Ashley, and Payette.¹⁸²

Fire Control

As before, wildfire constituted the other major hazard to forest management. During World War II, the call to arms and the elimination of the CCC significantly reduced fire control forces. Getting a fire crew together became a major undertaking. In some cases a Forest Service employee would drive through the streets of town with a bullhorn recruiting firefighters. Crews



Figure 65--Contractors at work with Caterpillar tractor on the Ball's Canyon Fire, 1949.

were often composed largely of relatively able Mexican nationals together with older men, young boys, and bar habitues.¹⁸³ The Office of Civilian Defense helped somewhat by establishing a volunteer force of noncombatants and the Civil Air Patrol assisted in spotting. The regional office provided a list of available personnel and equipment in Ogden, at various national forests, and in military installations in Region 4. Regional Forester Rice said he expected "a free exchange of forces between forests" and unstinting "help to your neighbor."¹⁸⁴ Preseason arrangements were made with housewives, ranchers, and others to assist in detection and reporting.¹⁸⁵

The National Advertising Council, state foresters, and others assisted in carrying on a campaign against fires.¹⁸⁶ The ad council originated the Smokey Bear idea in 1944 and issued the first poster in 1945. In 1947, the council added the slogan "Remember, Only You Can Prevent Forest Fires."¹⁸⁷

Clearly the situation was not ideal. Ranger Basil Crane found himself on a fire on the Toiyabe with a crew of men picked up on the streets of Reno and 25 convicts from Folsom Prison. Trees began burning like giant torches in the intense fire; the Reno crew proved so incompetent that Crane fired all of them.

Wartime labor shortages sped up the utilization of smokejumpers, since foresters believed that if fighters could reach the fire quickly fewer men would be needed. In 1943 a five-man squad trained at Missoula, MT, was sent to McCall, ID, for duty on the Payette. Dropping from a Curtis Travelaire owned by Johnson Flying Service, John Ferguson and Lester Gohler made the first jumps for the unit on August 14, 1943. The Forest Service moved CCC buildings to McCall for the jumping operations. By 1947 the unit consisted of 50 men, and training facilities were established at McCall. In 1948, the region established a 10-man unit, under James "Smokey" Stover, in Idaho City.¹⁸⁸ At first, they used a single-engine Noordyne to transport the jumpers to fires. Later, the Service used Ford Trimotors because their high-lift airfoil enabled these planes to fly at low speeds and their strong landing gear allowed the use of rough backcountry airstrips.¹⁸⁹

Labor shortages also necessitated the increased use of mechanical equipment in firefighting. Bulldozers became standard equipment as the Service tried to find



Figure 66--Smokejumpers preparing to jump on a fire.



quicker and more effective ways to dig firelines and move fuel away from the lines, $190\,$

In late World War II and afterward, the Service began experimenting with other types of mechanical equipment in fire suppression. In 1945 the Wasatch tested a highpressure water tank and pump mounted on a crawler tractor, which it found somewhat effective on grass and brush fires.¹⁹¹ From 1947 through 1949, the Service experimented with such equipment as helicopters, improved radios, aerial-delivered fire retardants, power saws, mechanized trail builders, tank trucks, and wetting agents, all of which were used operationally in later years.¹⁹²

In 1945, Congress approved an amendment to the Clarke-McNary Act which authorized increased appropriations for cooperative protection on State and private land. In 1947 the Forest Service made an agreement with the Fibreboard Products Company for protection of private lands near the Toiyabe National Forest.¹⁹³

During the war, the Service employed as firefighters some Mexican nationals who were working in the United States as agricultural laborers. In one case a crew of 20 Mexican nationals worked on slash disposal for the Halleck and Howard Company on the South Fork of the Payette River when they were not needed as firefighters.¹⁹⁴ Following the war, the Service continued the use of Mexicans under arrangements made with their private employers and the Mexican Government.¹⁹⁵

Seasonal employees fought fires as well. Students hired as trail construction and maintenance crews and maintenance workers understood that they were on call to fight fires. Lookouts were expected to survey the country for 20 minutes each daylight hour.¹⁹⁶

Recreational Development

Increasingly, the national forests of Region 4 became less and less the preserve of the logger and stockman as many people sought recreation away from the towns and cities in which they lived. ¹⁹⁷ While visits to the forests declined during the war, afterward they surpassed prewar levels. ¹⁹⁸

There is perhaps no better evidence of the growing importance of recreation designed for urbanites than the development of winter sports areas. The expansion of skiing in Region 4 is most closely associated with the work of Felix C. Koziol. Koziol had been an avid skier since the opening of the first chair lifts in the United States at Sun Valley, ID, in 1936. At Sun Valley, Koziol came to know Averill Harriman, who had financed the resort. The financier invited the forester to work with some of his people. His company planned to expand its operations from the private land on which they were currently situated to the adjacent Sawtooth National Forest. Regional Forester R.H. Rutledge approved the proposal, and afterward he assigned Koziol as "sort of a winter sports specialist to look over and examine prospective . . . areas throughout the region." Alf Engen, an expert skier who was then working as a specialist in the CCC camps, was assigned as a collaborator. The two of them investigated and pioneered resorts such as Bogus Basin, McCall, and Magic Valley in Idaho, Snow Basin in Utah, and Jackson Hole in Wyoming.¹⁹⁹

In the late 1930's, the regional office promoted the development of winter sports in other areas as well. Alf Engen went to explore eastern Idaho for possible locations, and a group of Idaho Falls skiers led by Charles Blazius and Targhee personnel together with James Jacobs made several trips to look over locations on the Targhee and Caribou. They selected the Bear Gulch areas on the Targhee, and a tow was installed. In 1940, Engen conducted a ski school for forest officers, and more than 20, from as far away as the Minidoka, attended.²⁰⁰

The Alta development, by contrast, had its origin in a venture of George H. Watson and other businessmen. They cooperated with Wasatch Supervisor James E. Gurr in consolidating mining claims under forest jurisdiction and in securing a special use permit for the development of a lift in 1938 and 1939.²⁰¹

After his appointment as supervisor on the Wasatch, Koziol supported the development of sophisticated means of studying avalanche conditions near Alta. Familiar with work done in Switzerland and other places in Europe, Koziol organized the Alta avalanche studies, which resulted by the late 1950's in the publication of a Forest Service avalanche handbook.²⁰² During the late 1930's and early 1940's, snow rangers had used handplaced explosive charges to precipitate potential avalanches. Koziol worked out an agreement with the Army to use 75-mm pack howitzers and 75- and 105-mm recoilless rifles for shooting down avalanches, following the European model.²⁰³

Other important developments in the field of recreation took place during this period. The Humboldt National Forest, which surrounds much of the Lehman Cave National Monument, provided much of the scenic attraction in the area. Consequently, cooperation between the Forest Service and National Park Service was of prime importance.²⁰⁴ In 1942, the Forest Service acquired more than 9,000 acres of land near Lake Tahoe, which it developed as Nevada Beach.²⁰⁵ After World War II, white water float trips on the Middle Fork of the Salmon became increasingly important.²⁰⁶

Public use of recreational facilities increased a great deal after World War II. Campgrounds in some forests, particularly those near the Wasatch Front urban areas on the Uinta and Wasatch National Forests, came under exceptionally great pressure.²⁰⁷ Unfortunately, funds were generally not available for new facilities during the 1940's. Most facilities had been constructed by the CCC during the 1930's.²⁰⁸

Engineering

Closely associated both with the development of recreational, logging, and other facilities the regional engineering division managed a holding operation during World War II and expanded greatly afterward. During the war when Henry M. Shank became regional engineer, he and his staff managed to keep two crews busy in constructing timber and mineral access roads. One of the roads led to a mine in the old Payette National Forest at Stibnite, ID, which produced 60 percent of the world's supply of tungsten. Shank found it extremely difficult to keep 100 miles of mountain road open in





Figure 67-Orvil Winkler, Averill Harriman, and companion on Bald Mountain, Sun Valley.

winter with 7 feet of snow and temperatures as low as 60 degrees below zero. 209

Following the war, Shank and Ernie DeSilva were assigned to make a 2-year study of the national forest trail system, and Arval Anderson, who had previously served as regional engineer, returned from the military to that position.²¹⁰ The Forest Service building at 25th and Adams in Ogden was not large enough to hold the expanded staff, and Anderson moved his 90 engineering people to the Eccles Building on the corner of 24th Street and Washington Boulevard. Occupying nearly a floor of the building, they expanded their operations to include such techniques as photogrammetry and stereoplanigraphy.²¹¹

Late in the war, in anticipation of the need for postwar economic development, the regional administration began to press for further funds for roads. In late 1944, Ben Rice and Chet Olsen began working, particularly with Congressman J. Will Robinson, to get such funding, arguing that new roads would promote economic development.²¹² After the war, anticipating increased timber cutting, the region constructed a number of new roads. In 1944, when the old Payette and Boise were consolidated, George Kreizenbeck was transferred to the Boise as forest engineer, the first in the Forest Service.²¹³ Prior to the war, roads had been constructed to such a low standard that they could not accommodate the heavy trucks removing timber from the forest. Thus, after the war, the Boise undertook a major construction program.²¹⁴

Summary

By 1949, conditions in Region 4 had changed considerably. A progressive attitude seemed to pervade the Intermountain Region, the Forest Service, and, indeed, the United States as a whole. The introduction of mechanization into firefighting and logging and especially the introduction of truck logging had created the potential for much more extensive operations, as the demand for forest products increased during the 1950's. The





Figure 68--A just-completed fire trail.

increased appropriations for firefighting and insect control seemed to promise eventual successful management of the timber resources. The defeat of the effort to transfer control of the public lands to stockmen indicated more than anything the strength of the increasing diversity of public opinion as urbanites, conservationists, recreationists, and sportsmen significantly influenced resource decisions. The public was beginning to accept the need to control wildlife populations, in the interest of maintaining other resource values. The effects of these changes in attitude were to be increasingly apparent during the 1950's.

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Chapter 8 Toward Stewardship and Multiple-Use Management: 1950 to 1959

Between 1950 and 1959, the administration in Region 4 built upon the patterns established earlier to try to gain better control over the resources under its stewardship. Perhaps Floyd Iverson best stated the goal in his commentary on the 1958 General Integrating Inspection of the Teton National Forest when he wrote that the program of the forest over the next few years "will be extremely important. It will set the stage for the transition of administration from a custodial status to planned integrated use of the forest's many resources . . . [through] multiple-use management planning."¹

Personnel Changes and Management

With the death of William B. Rice in January 1950, Chester J. Olsen became Regional Forester. Born in Mayfield, UT, "Chet" Olsen graduated from Utah State Agricultural College. He served as a ranger and supervisor on forests in Nevada and Utah from 1919 to 1936, when he moved to the regional office to become assistant regional forester in operation, recreation and lands, and information and education (I and E). Known as an "able, persuasive conservationist," he concerned himself with such problems as destructive timber practices



Figure 69—Chester J. Olsen, Regional Forester, 1930-57.

and grazing abuses. While maintaining a close friendship with nationally prominent conservationists like Bernard DeVoto, Olsen also ingratiated himself with many of the region's prominent civic and business leaders. An associate called him the "best I and E man in the Forest Service." In 1956, a panel of prominent citizens named him Utah's outstanding Federal employee.²

Olsen continued to serve until retirement in 1957 when Floyd Iverson replaced him. Born at Bieber, CA, Iverson grew up on a ranch. His father held a prior use grazing permit on the Modoc National Forest, and he had long been acquainted with the Forest Service. Iverson received a degree in forestry and plant ecology from the University of California at Berkeley. After serving as a ranger and forest supervisor in California, he moved to Region 6 as assistant regional forester in charge of range and wildlife activities. In 1952, he became assistant regional forester covering the same activities in Region 1. He came to Region 4 in 1955 as assistant regional forester in charge of range and wildlife management.³ Iverson continued as regional forester until his retirement in 1970, earning a reputation as a quiet, resolute, and capable resource manager.

The selection of Floyd Iverson is consistent with a pattern in major Forest Service administrative appointments that has continued to the present time.



Figure 70--Floyd Iverson, Regional Forester, 1957-70.

Since the late 1950's, experience in more than one region and often in the Washington Office has generally been requisite to appointment as regional forester, and, in some cases, to major staff positions. Region 4 regional foresters before the late 1930's had all worked outside the region; thus, in a sense, Woods, Rice, and Olsen constituted a temporary anomaly. Both their predecessors and their successors spent large portions of their careers elsewhere.⁴

Moreover, employees could cut themselves off from advancement in the Service by refusing to accept transfers, either because they preferred to live in a particular area or because they did not believe the transfers would help their careers. Ivan Sack, for instance, refused a transfer to become supervisor of the Boise National Forest because he wanted to live in Nevada.⁵ Kenneth Maughan declined a transfer from a ranger's position to become assistant regional landscape architect, because he believed there would be little chance of advancement in the position. He was not offered another position and completed his career as a ranger.⁶

During the 1950's the operations of the Forest Service elicited some interest among outside observers. A_good example is Herbert Kaufman's The Forest Ranger, a study of the grass roots of national forest management. Kaufman identified the diversity of the rangers' management responsibilities that made them "executives, planners, and woodsmen."⁸ With considerable insight, he argued that from the point of view of the ranger, Forest Service organization appeared "as an inverse pyramid with himself at the apex."⁹ The ranger had to be a generalist who devised plans on the basis of prescriptions and instructions from line and staff officers in the regional and forest supervisors' offices and mediated the implementation of these plans with forest users. This position often led to conflicting demands on the ranger's time and abilities, particularly when forest users abused the lands or resources under permit.10

A number of conditions also militated against a uniform resource management policy. Each ranger carried a particular cultural baggage containing his individual beliefs and notions about resource protection, management, and use. Many rangers had considerable empathy with the problems of ranchers and loggers, among whom they often had spent their early years. The deliberate decentralization of Forest Service administration, which made the rangers "kings of their own domains," reinforced these attitudes.¹¹

At the same time, other forces operating within the Service pressed for considerable uniformity of management practices. These forces included the statutes governing policy, the Forest Service Manual, which by 1960 consisted of seven looseleaf volumes, budgetary control by superiors, management plans which required their approval, and supervisor resolution of differences of opinion between his staff and the line officers.¹²

In addition, the Forest Service had means of detecting and discouraging deviation. These included reporting in various forms, keeping and analyzing official diaries, reprimands and sanctions, transfers, and, most important, inspections. Inspectors--ordinarily staff officers from one level above--were instructed not to "waste time on details already being accomplished to a satisfactory standard." Although inspectors were encouraged "to be alert to outstanding accomplishments," the reports were to be "frank and unvarnished." Forest officers were expected to respond to and correct deficiencies detected in these inspections.¹³

Most important, the Forest Service spent considerable time and energy in creating an atmosphere designed to help its personnel accomplish the Service mission. Like the Marine Corps, the Forest Service sought "a few good men," and it advertised for and selected those who could commit themselves to its ideals. Following entry into the Service, training programs helped in the initiation of employees and the building of an identification with the organization. Training included practical lessons in commitment to the interests of the agency, including a willingness to accept transfers for the good of the organization. The rewards of loyalty and hard work appeared in the respect shown employees at all levels; forest supervisors and regional foresters sought and seriously considered the advice of rangers and staffs in making policy decisions.14

Moreover, dedication to the agency was voluntary. During the 1950's, professional forestry schools produced many more foresters than the Forest Service could absorb. Since many positions were available at higher salaries in industry, the Service did not hire or keep a majority of the graduates. The evidence seems to indicate that ordinarily only the most dedicated joined and stayed in the Service.¹⁵

Although Kaufman does not say so, many of his generalizations about rangers could as well apply to other line officers, particularly forest supervisors and regional foresters. They, too, were subjected to the contradictory demands of public relations and resource management, their offices were inspected, and they participated in periodic meetings and training. If anything, their positions were even more difficult than the rangers'--they stood as if at the neck of an hourglass, with sand flowing first in one direction, then the other, as the glass was turned. In their positions they had to work to maintain equilibrium between the competing demands of Washington Office staffs, rangers, and the public.

Inspection

Inspections, especially General Integrating Inspections (GII's), provided an important means of checking on performance and conformity. This is evident from the GII of Region 4 in July 1955, the third GII for Region 4, succeeding those of 1939 and 1948. From July 13 through 30, Howard Hopkins and Lloyd Swift of the Washington Office inspected three of the region's forests in detail and eight others in a more cursory way. They also spent 3 days in the Regional Office and 2 days at the Intermountain Station.¹⁶

Most important, the Region 4 GII was a process rather than an event. The regional forester responded to and undertook correction of deficiencies noted in the report and provided information on the solution to problems.



Correspondence specifically addressing the means of correcting problems noted in the 1955 report continued through the remainder of Chet Olsen's term and into that of Floyd Iverson, at least through 1961.¹⁷

Extremely thorough, the report covered all functions. Emphasizing what the inspectors perceived to be the major functions--watershed, range, wildlife, timber, and recreation---it included substantial sections on public relations, research, and inspection procedures. The report spent less time on protection, administration, safety, land management and ownership, engineering, quarters, the youth rehabilitation program, fiscal control, and mining.¹⁸ Comments were both general and specific, addressing those areas in which the region was doing exceptionally well and those where improvement was needed.

Region 4 inspections, at 7- to 9-year intervals, came less frequently than the regional GII's of national forests, which were generally every 3 or 4 years. As in the regional GII's, followup was expected, and supervisors were required to report periodically on their success in solving problems noted in the inspections.¹⁹

Superior officers also conducted inspections of their specific areas of responsibility. Called "functional inspections," these provided thorough inspections of one function such as timber or fiscal management.

Planning

In addition to inspection, the Service gave considerable attention to adequate planning of work. The motivation for careful planning had at least two roots. Forest Service ideals had always emphasized careful planning based on scientific research. In addition, a congressional investigation in 1950 that faulted the Agriculture Department for poor planning on a number of projects led to instructions from Chief Lyle F. Watts calling specifically for preparation of careful forest management plans and for followup to see that the plans were implemented.²⁰

This emphasis on planning led to the development of an annual regional program of work begun in 1953. A committee on the program of work consisting of selected regional staff officers and forest supervisors was appointed. Committee members assisted in establishing annual and long-range goals, planning, and reporting.²¹ The program of work included sections dealing with each major division, in addition to a general statement from the regional forester.²² Each forest was to cooperate by developing its own program of work and reporting progress at the end of the year.²³

In line with instructions from the Washington Office, the annual report also emphasized cost-saving measures taken at the regional level and on the various national forests. In 1953, for instance, one forest saved \$9.50 per cubic yard by having premixed concrete delivered to jobs rather than purchasing the materials and mixing it at the site. Another forest saved \$175 by "rehabilitating" 25 used paint brushes.²⁴

Multiple-Use Management and Increased Personnel Complexity

At the same time, Region 4 began to emphasize the need for multiple-use planning. Region 5 had moved ahead with multiple-use planning more rapidly than Region 4, and while Ivan Sack was supervisor of the Toivabe in the early 1950's, he was invited to participate with Region 5 in the development of a Sierra Nevada subregional multiple-use plan. After that experience, Chet Olsen asked Sack to present the concept of subregional multiple-use plans to the forest supervisors at a meeting in Ogden in 1956. Some expressed skepticism about such plans, but, after Floyd Iverson became regional forester in 1957, the region moved ahead vigorously in preparing them.²⁵ In addition, following an approach adopted in Region 2, some of the Region 4 forest supervisors appointed multiple-use advisory boards representing a variety of interests, such as education. water, recreation, timber, livestock, business and industry, labor, the general public, women's organizations, and wildlife.²⁶

By late 1959, the region had begun to publish multiple-use management guides for each of the major subregions. The guides provided essentially a context within which each forest was expected to prepare its multiple-use management plan. The guides outlined the general Forest Service missions, such as timber, grazing, water, and recreation management, as they related to each subregion. General comments were then provided on various altitude and influence zones. Zones defined were: crest, middle slope, lower slope, travel influence, and water influence. The subregional guides also provided for the inclusion of special zones, such as a wilderness area or research site peculiar to a particular forest. The basic objective of the guides was "to assist in correlating use and production of national forests for maximum over-all benefit to the public," and to provide direction which would result in "consistency in policy between units and successive administrators where similar situations exist."²⁷

Reversing the trend apparent in World War II and afterward, the Service came under more pressure in the 1950's to pursue its work by contract with private businesses rather than force account. In 1951, Olsen indicated that they had been "getting considerable criticism, especially in connection with our reseeding. range fences, and other work, to the effect it is costing us more to do the job by force account than it could be done by contract." He suggested that various divisions might have overlooked the use of competitive bidding on insect control, slash disposal, forest rehabilitation, and road construction, and asked for the opinion of various staffs on that possibility. In general, the assistant regional foresters responding indicated that on most jobs force account seemed most desirable. The exceptions were large construction projects and other large undertakings where adequate information on appropriations was available to allow advertising for the 90 days required by regulations.²⁸

In attempting to deal with budgetary problems, the region faced a number of conflicting pressures. At the same time that demand intensified to increase the sustained-yield cut, gain control of overgrazing on forest rangelands, and meet demands for recreation facilities, budgetary constraints and manpower limitations were putting enormous pressure on the service. The region stood in essentially a no-win situation. If it did not meet the demands for resource use, it came under censure, and if it spent too much money or tried to utilize current employees through overtime, it was in danger of exceeding its budget.²⁹

The problem of meeting these conflicting demands and maintaining employee morale at the same time was the subject of considerable discussion in the region. The focus of the supervisors' and division chiefs' conference in 1951, for instance, was on human relations. In his cover letter sent with the preliminary material, Olsen wrote that "in our whole job of National Forest administration we are dependent for success on our abilities in human relations and the degree of our success is measured by the amount of those abilities we possess."³⁰ Some of the other conferences during the decade emphasized similar themes. The 1954 conference focused on "Executive Development," and the 1958 conference was entitled "Progress through Cooperation and Teamwork."³¹

Measures taken to deal with employee management included a continuation of the emphasis on work-load analysis begun during the late 1940's. On the Targhee National Forest in 1957, for instance, Supervisor Gordon L. Watts launched an investigation into correlated work-load standards of all ranger districts after the regional office raised questions about the load of three districts. Each district was intended to have a minimum 2,700-hour load; the review showed all at or above the standard.³² Moreover, Watts recommended upgrading the Ashton district to a GS-11 position because, while the work loads in timber management and fire control were below the national average, those in range management, wildlife management, soil and water management, and recreation were above average, with range management and recreation 63 percent and 50 percent above the average.33

With the increasing demand for multiple-use management came concurrent pressure to provide a more professional approach to solving problems on the national forests. Robert Safran dates the change to 1957. Before that time the relatively large staffs on Boise and Payette had been exceptions. In 1953, when Safran went to the Teton, the forest had a supervisor, assistant supervisor, a roving forester, four rangers, an administrative officer, a typist, and a maintenance foreman. After 1957, however, the forest created staff positions for hydrologists, soil scientists, wildlife specialists, and others.³⁴ In 1959, when Don Braegger moved to the Cache National Forest, that forest had recreation, timber, and wildlife staff as well.³⁵ Other national forests expanded similarly.

Previously, when the agency hired a married ranger it actually got the services of two for the price of one as the ranger's wife generally did various jobs around the district. Ed Noble remembered his service in the late 1940's and early 1950's as a ranger on the Salmon and Minidoka: "If you couldn't type and your wife couldn't type, you were in trouble." Wives were "classed as collaborators, which entitled them to no pay," but since they "did have regular appointment papers" they could get a "driver's license so they could drive the government equipment." Noble's wife "would run the district, answer the phone and the radio," while he was out on week-long pack trips. If a fire broke out, she would "get some people to go fight the fire." Because he could not type very well, he would "go in and babysit while she did" his typing.³⁶

By the mid-1950's, this situation had begun to change on ranger districts on some of the larger forests. Noble transferred to the Boise and felt he was "kind of in seventh heaven." Because of the large timber sales, clerks would be hired for the summer on ranger districts, to answer the phone and radio and do needed typing. The press of business, however, eventually necessitated hiring full-time clerks for the rangers.³⁷

In the regional office the number and diversity of staff specialists increased materially as well. In 1956, Ollie C. Olsen came to the regional office as a soil scientist in the division of engineering. The following year A. Russell "Bus" Croft, who had transferred from the Davis County Experimental Watershed to the Regional Office in administration in 1951, was asked to head a new group in soil and water management; Olsen came into this group.³⁸ Before long, hydrologists joined the staff as well. The regional landscape architect's office expanded, and its duties were increased.³⁹

Moreover, the emphasis in the supervisors' conferences shifted from personnel to resource management. With the increased concern over various functions, the 1956 conference emphasized "Making Multiple-Use Management Work!" While the 1958 meeting focused on cooperation and teamwork, considerable time was spent on range management, timber management, recreation, and relations with State and Federal agencies whose work affected the Forest Service.⁴⁰

Interagency Cooperation and Public Relations

Successful resource management included interregional cooperation. By the 1950's, for instance, a number of people had become concerned about the protection of Lake Tahoe, which lay in Regions 4 and 5. As a result of the work of newspaperman Joe McDonald for the Fleischmann Foundation and the cooperation of people such as Supervisor Ivan Sack of the Toiyabe National Forest, casino owner Bill Harrah, and Barney Lowe of Sierra-Pacific Power and Nevada National Bank, the Lake Tahoe Area Council was organized. The council concerned itself with water quality, land use planning, and multiple-use management. With the creation of the Lake Tahoe Regional Planning Agency, in the 1960's, both Nevada and California appointed representatives, and Nevada Governor Paul Laxalt appointed Sack his representative on the agency.⁴¹

An important part of any successful program was the public relations aspect. Called I and E within the Service during the 1950's, this aspect of the program included working with local civic and business groups and concerned local, state, regional, and national political



figures, finding and keeping friends in conservation organizations, and developing and maintaining good relations with various user groups. As the functions of the Service became more complex, interaction with various State and Federal agencies became increasingly important.

Chet Olsen was a master at public relations. During the 1950 election campaign he made it a point to meet with Wallace F. Bennett, Republican candidate for the Senate, who had been quite critical of Federal programs. Bennett admitted "a keen interest but lack of knowledge of many" of the Forest Service's problems. "He stated he would be very pleased to make a trip over some of the forests during the ensuing year." Bennett admitted "that he might have made some statements that were in error concerning the administration of the national forests, and that he was willing to learn more about them." 42 By July 1951, correspondence passing between the two, who had not known each other before October 1950, was addressed "Dear Wallace," and "Dear Chet," and Senator Bennett presented testimony supporting additional appropriations for the Forest Service, calling the forest "the poor man's playground."43

Forest Boundary Alteration and Consolidation

During the 1950's, alterations in national forest boundaries continued for essentially the same reasons as during the previous decade. That is, the work load on some of the forests simply was not great enough to justify national forest status and consolidations resulted.⁴⁴ Major forest dissolutions included the 1957 division of the Nevada in which southern Nevada went to the Toiyabe and central Nevada to the Humboldt.⁴⁵ In 1953, the Minidoka and Sawtooth National Forests were combined, with headquarters at Twin Falls.⁴⁶

The major problems in such divisions and combinations were the public relations difficulties associated with the elimination of a supervisor's office. In the cases of the Sawtooth-Minidoka consolidation and the Nevada division, supervisors' offices at Hailey and Burley, ID, and Ely, NV, were made into ranger district headquarters. In general, the regional and forest officers succeeded in preparing the public to such a degree that they accepted the changes with little difficulty.⁴⁷

Other changes included several interforest transfers. These came about to adjust the work load between forests or for administrative rationalization. In 1952, for instance, the Santa Rosa division of the Toiyabe was transferred to the Humboldt.⁴⁸ In this case, the Toiyabe had a much larger work load than the Humboldt.⁴⁹

Several other forest boundaries also were altered, including that between the Teton and Targhee, 50 and those separating the Uinta, Wasatch, and Ashley. At the time, Mount Timpanogos, which was within eyesight of the Uinta National Forest Headquarters at Provo, was in the Pleasant Grove district of the Wasatch. Moreover, the ranger district headquarters at Duchesne was much closer to the Vernal headquarters of the Ashley than to Provo, but was a division of the Uinta National Forest. James Jacobs, then Uinta National Forest supervisor, pushed for a boundary change, and the regional office adjusted the boundaries between the three forests, transferring the Pleasant Grove ranger district to the Uinta and the Duchesne district to the Ashley.⁵¹ Other important land status actions included the completion of the land-for-timber exchanges with the Boise-Payette Lumber Company between 1956 and 1960,⁵² the receipts act purchases of watershed lands, especially in the Wasatch and Sierra Fronts of Utah and Nevada, and the retention of the southern Idaho resettlement administration project.

Grazing Issues

The broadly based sentiment against single use that was evident in the derailing of Congressman Barrett's Wild West Show in 1947 continued during the 1950's. An early example was the passage of the Granger-Thye Act in 1950. The original bill was drafted by the Forest Service and sponsored by Congressman Walter K. Granger of Utah and Senator Edward Thye of Minnesota, at the request of Assistant Chief Forester Raymond Marsh.⁵³ During the Barrett and McCarran hearings considerable misinformation had surfaced about Forest Service policy, particularly the charges that the Service did not consult with permittees, that it was not interested in revegetating overgrazed lands, and that it wanted to eliminate grazing from the public lands.

The Granger-Thye Act basically contradicted such charges by codifying existing Forest Service policy. It specifically authorized cooperation between the Service and stockmen in improvements on grazing lands, the expenditure of portions of the receipts from grazing fees for range improvements, the issuance of 10-year grazing permits, and the establishment of grazing advisory boards.⁵⁴

The Forest Service had done all these things for years. A portion of the receipts from grazing fees had been used for range improvements as early as 1924.5^{55} The Anderson-Mansfield Act of 1949 had reinforced this practice by authorizing the reseeding of 4 million acres of range. Even though advisory boards had been in existence for decades, if the perception of the Humboldt supervisor in 1950 is any indication, the permittees were less than enthusiastic about the Granger-Thye authorization because it simply acknowledged the status quo. What they wanted, he said, was "authority to sue in court where the managing agency does not happen to see eye to eye with them."²⁶

Through certain western congressmen, stockmen continued to press for legislation that would give them greater control over grazing permits. As before, principal opposition centered in those who favored Forest Service regulations to protect watersheds and manage big game.³⁷ At the time, the livestock interests seemed to have considerable power; but, in retrospect, it is clear that the combined opposition from cities and towns anxious to preserve their watersheds, from sportsmen's groups and their allies in the business community, and from conservation organizations was powerful enough to sidetrack such legislation.

The inability to assure their tenure as a right on the public lands did not set well with livestock interests, and they continued to press for increased stability by opposing reductions in numbers. In 1950, as a gesture of conciliation, Secretary of Agriculture Charles F. Brannan ordered the Service to abolish its policy statement





Figure 71--Forage utilization basket on allotment in Upper Big Creek, 1958.

allowing reductions for distribution to new settlers. In practice, this change was more cosmetic than substantive since reductions for distribution had been largely nonexistent since the 1930's. The policy had, however, remained on the books as a vestige of the economic democracy of the Progressive Era and had served to irritate permittees.⁵⁸

More serious were stockmen's complaints about transfer reductions and reductions for range protection. After hearings in 1950, the Washington Office's National Forest Advisory Council, which had been reconstituted from the National Forest Review Board established in 1948, recommended retention of transfer adjustments, but suggested clarification of procedures.⁵⁹ This recommendation did not satisfy stockmen. After the inauguration of President Dwight D. Eisenhower in 1953, Montana Congressman Wesley D'Ewart introduced the Uniform Federal Grazing Bill, designed to provide continuity of grazing privileges, which would have effectively eliminated transfer reductions. Various conservation and business groups opposed the D'Ewart bill, and Congress killed it. Nevertheless, stockmen threatened to have the Forest Service budget slashed if transfer reductions continued. Chief Richard E. McArdle, who had replaced Lyle F. Watts in 1952, recognized that although Congress had not agreed to the D'Ewart bill, it might indeed reduce the budget, and

agreed to eliminate transfer reductions, except when they were needed for range protection. 60

With the elimination of transfer reductions for distribution, it seemed reasonable to adopt the policy of giving permittees the full benefit of improvements on their allotments. In 1953, the Service ruled that where carrying capacity improved through permittee cooperation in range improvement, the permittee was to be given the benefit of the increases.⁶¹

In 1953 the Service also recodified its appeals procedure. Appeals were taken from the ranger to the forest supervisor, through the regional forester to the Chief of the Forest Service, and finally to the Secretary of Agriculture. In lieu of the supervisor, the appeal might go to the grazing advisory board. If not satisfied with the board's recommendation, the appellant might continue through Forest Service channels. At the Agriculture Department level, a National Forest Advisory Board of Appeals was established of qualified Federal employees from outside the Forest Service to advise the Secretary on appeals from the Chief's decisions. From the Secretary, dissatisfied appellants could take their cases to the Federal courts.⁶²

These changes were procedural, not substantive. They did not address such problems as numbers of livestock and seasons of use, grazing fees, and competition between big game and livestock. The grazing fees were not a source of general complaint during the 1950's. As we have seen, such fees were derived from a base put into effect in 1931 and determined by fluctuations in the market price of cattle and lambs. In 1953, the national forest grazing fee was substantially below that paid for comparable private range, but higher than BLM rangeland and most State-leased land.⁶³

The oversupply of big game continued to rankle stockmen, but they were most concerned about reductions in numbers of livestock and in length of grazing season.⁶⁴ The basis of the dispute was the stockmen's demands that the Forest Service determine the condition of the range by the condition of the animals leaving it rather than by the condition and trend of the soil and the plants growing on it. Most important from the Service's point of view was the introduction of the Parker three-step method, which Region 4 had adopted by 1949. The three steps consisted of: (1) periodic collection of data at permanent benchmarks on representative sections of the range (the transects); (2) classification of, condition of, and estimation of trend on range units (analysis of data); and (3) establishment of permanent photopoints.⁶⁵

Such systematic estimates of trend were necessary because of the conflicting perceptions of changing conditions of the ranges obvious in interviews collected to document trend. Memory tends to be highly subjective, and the Forest Service sought an objective measurement of trend under the assumption that condition of the soil and plants provided the best measurement of the quality of grazing lands.⁶⁶

By the 1950's the Service had data that suggested changes over time in the composition of vegetation. On the Grantsville Division of the Wasatch, for instance, maps made in 1921 revealed a particular configuration of pinyon-juniper type. In 1941, aerial photographs showed that the pinyon-juniper had expanded. Aerial photographs in 1959 and 1960 showed continued pinyon-juniper encroachment on grass and brush lands.⁶⁷ Involved in the process of allotment analysis were a number of systems for trend measurement. These included the 250-foot photoplots introduced in 1943 by Lincoln Ellison and Walter Cottam, with photopoints identified by iron pegs. The region stopped installing new photoplot transects in 1951, but asked rangers to continue to make followup measurements, since they were perceived as "effective in showing visible proof of trend in vegetation or soil."⁶⁸ Other earlier measures to determine trend included enclosures (called exclosures by the 1950's), quadrats, species plots, and browse study plots. The establishment of all of these methods had been discontinued by 1940, and line intercept transects were laid out as an experiment on the Teton and old LaSal between 1940 and 1943.⁶⁹

The Parker transects were 100 feet in length. They were placed in key range areas to measure average range condition by charting the progress of key plant species over time. In measuring, the range conservationist would drop a 1-inch or 3/4-inch hoop every foot along the transect, and the plants hit were identified and recorded. A point near the beginning of the transect, at which photographs were taken, was marked with iron stakes. In addition, the conservationist would clip and weigh the vegetation at points along the transect and estimate forage production and the amount of grazed land. During the 1950's, another system of analysis was used in which similar transects were established and a hoop 13.27 inches in diameter was dropped at intervals with the hits on plants recorded.⁷⁰

Results of such analyses were recorded, analyzed, and filed. The documents produced for each allotment included a "Range Condition and Trend Map," a "Range Allotment Record and Analysis" (which superseded in 1954 the "Grazing Allotment Analysis" (summary sheet)), and an "Allotment Action Plan" dated and signed by the forest supervisor and the district ranger.⁷¹

In implementing this program, the regional office conducted periodic range management inspections. In inspecting analytical procedures, range conservationists from the regional office went to the ranger districts and reviewed the transects and records to determine the validity of the studies and to provide further advice and training where necessary.⁷²

After the inauguration of the Parker three-step method, the attitude of forest officers might best be summed up by a comment of Toiyabe Forest Supervisor Ivan Sack. In his 1951 annual report he said that "stocking to proper grazing capacity on each range is our objective, but material accomplishment will require several years and depends upon sufficient basic data."⁷³

While the measurement of trend by charting the condition of the land and vegetation might have seemed threatening to stockmen, the service also offered those cooperating a portion of the income from grazing fees for range improvements. These improvements included projects such as fences, corrals, water developments, rodent control, weed eradication, and range reseeding.

By 1956, the region had been involved in reseeding projects for 15 years, and revegetation policy took the results of those years of experience into consideration. Reseeding was to be allowed only on allotments devoted to single use; common use allotments (those with sheep and cattle grazing together) were not eligible. Preference was given to those allotments with the best cooperation from permittees and where there was a "guarantee of . . . [permittees] resuming use not to exceed the carrying capacity of the treated unit or allotment." Large areas were to be treated first. Permittees were encouraged to participate financially if possible. Proper measures were required to prevent destruction of seedlings by rodents and big game. Spraying of herbicides was strictly controlled and allowed only where desirable species could not reestablish themselves through natural protection. Preference in reseeding was given to accidentally burned areas.⁷⁴

With the passage of the Anderson-Mansfield Act in 1949 and the codification of the customary policy of using money from grazing fees for reseeding in the Granger-Thye Act in 1950, the Washington Office launched a projected 15-year range improvement program. Within that time, the Service expected the bulk of the work to have been completed.⁷⁵

Service employees found the permittees and livestock associations generally cooperative. The Santaquin Association, for instance, "held all their cattle off the range for three years" while the reseeded area established itself. The largest project was under Supervisor Albert Albertson on the Dixie National Forest in John's Valley near Widtsoe, UT. A number of areas were seeded by airplane. Recent observers have indicated that the reseeding projects "materially increased forage production on many areas throughout the region."⁷⁶

Success of the reseeding program depended upon research information available by the 1950's, which had demonstrated those species better suited to particular geographic and climatic conditions. As Ed Noble pointed out, in canyon bottoms they could use brome, orchardgrass, timothy, and bluegrass. Crested wheat grass did well in dry areas. Although crested wheat was not the most desirable grass, since it grew in bunches and robbed the soil of moisture to such a degree that little could grow between the clumps, it was exceptionally hardy, its seed was readily available, and it produced palatable forage.⁷⁷

Results of these efforts are evident from the annual range revegetation report for 1955, which seems to have been typical for the decade. During 1955, the region spent a total of \$262,609, allocated in amounts ranging from \$42,360 on the Dixie to \$200 on the Wasatch. The appropriation allowed the region to rehabilitate 30,175 acres, bringing to nearly 396,000 acres the total treated to that time. Of the acres treated in 1955, 19,000 were reseeded. Competing plants were removed on 11,000 acres. This was only a drop in the bucket, however, since forest officers estimated that a total of 1.9 million acres needed to be rehabilitated. Between 1950 and 1955, the region had rehabilitated an average of 24,554 acres per year. To complete the work in the 15 years projected would have required treatment of 131,905 acres per year. The region would have needed an estimated \$1.5 million per year. Clearly, at the 1955 rate of appropriation, it would have taken far more than 15 years to complete the projects.⁷⁸

With the data gathered from systematic range allotment analysis, the region moved ahead on reductions in livestock numbers and grazing seasons to improve the condition of the ranges. In general, the procedure followed was for the ranger, supervisor, and their staffs to analyze the data, then arrive at a course of action. The ranger would then invite members of the stockmen's association to ride the allotment. At that time, he would point out the problems, listen to their point of view, tell them of the forest's proposal for dealing with the difficulties, and consider any counter proposals. Ordinarily, he would follow this meeting with a letter indicating his decision.⁷⁹

While the appeals from these decisions have gained considerable publicity, it should be understood that appeals were the exceptions rather than the rule. In perhaps 90 percent of the cases, the permittees accepted, however reluctantly, the decision of the district ranger. Ordinarily, the permittees did not like to have to reduce the numbers of stock, but they usually gave in.⁸⁰ Rangers on the Fishlake National Forest, for instance, made reductions as high as 70 percent without appeals. The success came in part because of the range improvements the Service was able to use as an incentive.⁸¹ On the Ashley, Richard Leicht said that the program to eliminate common use initially appeared to be "like throwing Bengal tigers and elephants . . . in a big box," but that the Forest Service succeeded both in eliminating common use and reducing numbers.⁸² By the mid-1950s, the Service had gotten "a good handle" on the range on the Humboldt.⁸³ The Payette had no appeals, and Foyer Olsen remembered none on the Dixie.⁸⁴ On the Manti-LaSal, between 1946 and 1956, the number of animal units of cattle and of sheep and goats combined were reduced, respectively, by 35,280 and 144,530.85

In some cases, dissatisfied stockmen would try to apply pressure on the Forest Service through their congressmen. Ordinarily, when a permittee wrote to a congressman, the letter would be sent through Forest Service channels, eventually reaching the forest supervisor, who was expected to respond with dispatch.⁸⁶



Figure 72--Return of sagebrush to overgrazed North Ephraim common-use allotment, where fenced, 1958. Enclosure established in 1951.

The Payette provides a good example of a forest where appeals were the exception. In 1950, for instance, Supervisor J.G. Kooch reported that progress had been made on allotment analysis. On the basis of the analysis, a number of allotments--two, particularly, on the South Fork of the Salmon with steep slopes and loose granitic soils--were scheduled for retirement in 1951.⁸⁷

As might be expected, the Payette received considerable flack from stockmen because of the intention to reduce the number of livestock. At a hearing held at Boise in January 1951, stockmen complained, saying that the best evidence of good range conditions was the 80to 100-pound lambs coming off the ranges. Many were upset because they had paid a per head premium for the permits they held and consequently felt they were losing part of their investments. Some argued that the reductions would cut their herds below economically viable units.⁸⁸

Despite these complaints, the forest reduced the number of livestock allowed. A General Functional Inspection (GFI) of Payette range management made by Oliver Cliff in 1959 pointed out that there were some deficiencies in proper training of personnel conducting the allotment analysis work, but that in general, the forest had proceeded, in spite of serious opposition from permittees, and had been generally successful.⁸⁹

These efforts on the Payette were extremely difficult. In the 1940's, members of the Idaho congressional delegation had thwarted efforts to obtain corrective action on the Mann Creek allotment. During the late 1950's and early 1960's, forest and regional officers worked on the problem. As late as 1963, a difficult appeal case seemed in the offing. By then Edward Cliff was Chief of the Forest Service, and he told the regional officials that he would not back up any formal appeal if the region proceeded with a forced reduction program before making a large expenditure for range improvements. Through persistent efforts and successful negotiation, a formal appeal was avoided. Considerable progress was made on Mann Creek, but in many cases, progress was not rapid enough to stop deterioration, especially in the granitic soils of western and central Idaho. 90

The GFI's helped by providing a stamp of approval on the allotment analysis and by monitoring progress on the forests. The Sawtooth National Forest Range Management GFI conducted by Oliver Cliff in 1957, for instance, recognized the progress the forest had made, but emphasized particularly the need to eliminate grazing from a number of steep, high-elevation areas, to correct problems caused by damage on stock driveways, and to improve planning of range rehabilitation projects.⁹¹ A GFI of range management on the Boise by Floyd Iverson in 1956 indicated some deficiencies in allotment inspections and in installation of three-step transects. By 1960, some progress had been made, but the situation was far from ideal.⁹² A major problem on the Boise continued to be the ability of well-placed stockmen to reach political leaders for support.

On some of the forests, grazing trespass continued to be a problem. On the Toiyabe, for instance, Ivan Sack reported in 1956 that the Austin and Tonopah districts had about 800 miles of unfenced boundary adjacent to BLM lands. Fencing could have controlled the trespass,



but the cost of installation was prohibitive. Funds for boundary posting were not available either.⁹³ Forests often dealt with these problems by tagging regulations and impoundment procedures, as on the Minidoka. When range managers impounded trespassing livestock, the owners had to pay the impoundment costs to redeem them.⁹⁴

At times, disputes between stockmen and Forest Service employees almost came to open warfare. Richard Leicht remembered going out with a ranger on the Payette to meet a permittee, George Speropulous, who planned to drive his sheep through a campground. The ranger told Speropulous, "You cannot go through the campground." Speropulous told the ranger he was going to drive his sheep through because it was the easiest way. "Okay," said the ranger, "only after the fight." Speropulous said, "What fight?" The ranger took off his coat and handed it to Leicht and said, "Now George, if you whip me, you can take them through the campground; if you cannot whip me, you go around." Finally Speropulous "just broke out in a big smile and said, 'I will go around.""⁹⁵

In some cases, several years after reductions had taken place, permittees would change their views. Some found that their calf crops increased as the grazing lands improved. One Minidoka permittee who had originally objected told Ed Noble, "You know, we thought you were a dirty guy, but you did us the biggest favor of any man we ever had in the country. You made us get control of the trespass and made us get down to managing that range. We developed a lot of forage of our own, and we are getting a lot better calf crops now, and fatter cattle. You made us money in the long run, by doing that."⁹⁶

Whereas in Idaho most of the serious cases were dealt with in the political realm, the most serious disagreements in northern Utah forests led to appeals. On the Cache, the Logan Canyon Association appeal of a forest supervisor's decision that the regional forester, the Chief, and the Secretary of Agriculture had all upheld, denied the permittees' tenure by right on the grazing land and affirmed the adequacy of grazing allotment analysis.⁹⁷ Several appeals involved permittees in the Heber and Kamas areas, in part because of the aggressive attitudes of Don Clyde, president of the Utah Wool Growers Association, and Levi Montgomery, president of the Utah Cattlemen's Association, both of whom lived there.⁹⁸

Most national publicity came from the Grantsville cattle permittees' appeal on the Wasatch National Forest because of the prominent figures involved and because the issues in the case addressed directly the rights to tenure of permittees and the question of the stewardship of the Forest Service for the land involved. The prevalent attitude among livestock interests, but probably not in the Grantsville community in general, seemed to be that by right of history, right of conquest, or right of continuous use, the Federal grazing lands really belonged to the permittees rather than to the Federal Government. This attitude found expression in the thoughts and actions of a number of members of the leading councils of the Church of Jesus Christ of Latterday Saints. Strikingly, the opposite attitude--that the Federal Government had responsibility to exercise

stewardship over the lands under its jurisdiction--also found expression among other members of the same governing bodies.

Incidents prior to the Grantsville appeal had made the Forest Service aware of the attitudes of some of the Mormon hierarchy. In January 1947, representatives of the Forest Service met with members of the LDS Church's First Presidency in Salt Lake City to discuss Forest Service policy. Then on February 12, 1950, at a stake conference in Mount Pleasant, UT, Elder Henry D. Moyle of the Council of the Twelve Apostles opened an attack on Forest Service management of grazing allotments and on proposed grazing reductions. He argued that the lands belonged to the permittees by right of prior settlement and that if they surrendered to Federal officials the right to make their own management decisions, they lost their freedom.⁹⁹

Two days after the conference, Ivan L. Dyreng, ranger on the Ephraim District of the Manti-LaSal National Forest, wrote the First Presidency asking to meet with Elder Moyle. He requested also that Neil Frischknecht, a specialist in watershed management, Julian Thomas, assistant forest ranger from Monticello, and several others be allowed to attend. 100

The meeting took place on February 21 in Moyle's office at the church office building in Salt Lake City. Dyreng and Thomas came as did Leslie L. Shelley, President of the Mount Pleasant Cattle Association and counselor in a local LDS bishopric, and D.A. Shelley, a permittee in the association and bishop who attended at Moyle's request. Dyreng and Thomas tried to explain the deteriorating condition of the watershed and invited Moyle or other church officials to come down and ride over the range. Moyle again called Forest Service management dictatorial, arguing that the people who lived near the lands ought to decide how to use them. Though he said he opposed destruction of the watersheds, he indicated that he would not trade the people's freedom for watershed protection, and he declined to ride the range.¹⁰¹

Following the meeting, Dyreng and Thomas submitted reports and the regional I and E office worked out a plan to deal with the problem. It was agreed that Thomas would maintain a contact with Moyle and that the region would initiate "an aggressive I&E program" with other church leaders to acquaint them with local problems. Officers were to contact more of the church leaders, especially Elder Ezra Taft Benson and President J. Reuben Clark, and to arrange show-me trips for members of the church welfare committee.¹⁰²

As early as 1945, Elder Benson had shown considerable concern about the condition of the public lands. He declared in a conference address that Mormons should use information from the Forest Service and other sources to improve the range.¹⁰³ In 1953, Elder Benson became Secretary of Agriculture in the Eisenhower administration, and he continued the proconservationist policy.¹⁰⁴ In the mid-1950's, a committee in the Washington Office, including William D. Hurst, formerly with Region 4, recommended that the Service return the southern Idaho resettlement project to private ownership. Benson, who had grown up in the area near the project, wanted to keep the area in public ownership to demonstrate the benefits of sound grassland management. As a result, he overrode the committee recommendation and placed the project under Forest Service administration as the Curlew Grasslands, ¹⁰⁵ While he generally opposed governmental interference in agricultural businesses, he felt quite strongly about the concept of stewardship over publicly owned resources.

Until about 1957, J. Reuben Clark, at the time second counselor in the First Presidency of the LDS Church, seems to have been concerned about good range management. When the Forest Service began to press for extensive grazing reductions among Grantsville permittees, however, he changed his position and began attacking the Service. 106 He laid out his views in a speech before the Utah Cattlemen's Association in December 1957.¹⁰⁷ For him, as for Moyle, the stockmen of Utah had "a moral right [to the federal grazing lands] by all considerations recognized in territorial acquisition," through exploration, conquest, and use. The contribution of Federal tax revenues to their management and improvement were, in his view, insignificant in comparison with the prior right. He argued, further, that it was the intention of some "fanatics" to transform the grazing lands into wilderness areas and eliminate grazing.

Although he admitted that the Forest Service gave lipservice to multiple use, Clark implied that the Service really favored an exclusively wilderness and recreational approach as embodied in a bill sponsored by Senator Hubert Humphrey of Minnesota, which he misinterpreted as applying to all Federal grazing lands. Agreeing that some problems of overgrazing had existed in the past, he argued that these were the result of long-term moisture patterns that were currently shifting toward greater annual precipitation. For him, as for most stockmen, the measure of condition of the land was the condition of the animals leaving it.

He seems to have been unfamiliar with current Forest Service appeals procedure, because he proposed a system essentially similar to the one in use except that the initial decision on each allotment would have been made jointly by the ranger and two permittees, rather than by the ranger in consultation with the permittees. In any case, appeal could be taken by either the ranger or the permittees to the supervisor and higher officials as in the Service's system.

Clarke's address was prompted, in part, by his association with the Utah Cattlemens' Association and by the announcement of proposed reductions on the Grantsville allotment. $^{108}\,$ A permittee on the division, Clark opposed the reductions, even though range allotment analysis showed the range seriously overstocked. Ranger Mike Wright laid out the proposed reductions, which the association, represented by attorney Art Woolley, a relative of Clark's, appealed to Forest Supervisor Felix C. Koziol, Regional Forester Floyd Iverson, and Chief Richard E. McArdle. In line with Clark's views, Woolley argued that grazing was a right, not a privilege; that the reductions were not based on a realistic assessment of range condition; that any problems resulted from Forest Service management, not overgrazing; that deer, not cattle, were responsible for any range damage; and that the range could be improved without livestock reductions. After the permittees

received adverse decisions at every stage of the appeal, they decided not to appeal to the Secretary of Agriculture.¹⁰⁹

In dealing with the problems caused by such a prominent leader opposing its action, the Forest Service and Agriculture Department worked very carefully. President Clark traveled to Washington to meet with Secretary Benson to try to enlist his support. William D. Hurst, assistant regional forester for range management, and James L. Jacobs, assistant regional forester for information and education, met with Clark to try to explain the Forest Service policy.¹¹⁰ In addition, the two assisted Secretary Benson in drafting a letter to Clark outlining the necessity for multiple-use management of the public lands and questioning the concept of their use by graziers as a right rather than a privilege. The letter emphasized that the lands belonged to all the people of the United States and that the Service ought to manage them in the public interest. [11] Clark and Benson exchanged similar views, in talks before the April 1958 Latter-day Saints' general welfare meeting, 112

In spite of Clark's insistence on the doctrine of preemptive occupation, in view of Dean A. Gardner, general counsel for Region 4, the Grantsville case was hardly precedent setting. There was, he said, obviously "nothing legally at stake." Clark cited no legal precedents, but merely gave his own opinions, and Woolley's briefs showed no legal grounds for the permittees' views. Gardner thought that the Service's proper course of action was merely "to show that the Forest Service was the professional manager of this land" rather than to deal with the legal issues.¹¹³ At the time, Gardner issued a legal opinion on the question of rights of the permittees in which he cited precedent showing that the permittees had no "rights" to the land, and that contrary to what J. Reuben Clark had insisted, both statutory and constitutional law supported the Service's position.¹¹⁴



Figure 73--Rangers compare ungrazed check plot with moderately grazed area outside fence, Benmore Experimental Range, Utah.

After the case had been settled, the Service began to reduce livestock numbers and improve the land. Supervisor Koziol indicated that positive results had begun to show up by 1965.¹¹⁵

During these negotiations, the regional office worked with the media and the stockmen to try to disarm criticisms. In December 1957, Regional Forester Iverson, assistant regional forester Jacobs, and Howard Foulger from the division of range management, met with officers of the Utah Cattlemen's Association and reporters for the <u>Deseret News</u> and <u>Salt Lake Tribune</u>. They had a frank exchange of views, and the meeting was quite peaceful; nevertheless, opinions remained unchanged.¹¹⁶ Throughout the period, the presses fairly hummed with blast and counterblast on the question, but while the stories provided details of the dispute, little in the way of new interpretations appeared.¹¹⁷

Meanwhile, the stockmen tried to apply political pressure to get the grazing reductions rescinded. In mid-December 1957, Utah Senator Arthur V. Watkins called for a moratorium on all reductions.¹¹⁸ The stockmen also pressed Governor George D. Clyde to back them. Clyde, however, who was an irrigation engineer by profession, agreed with Secretary Benson and supported the Forest Service.¹¹⁹ While the <u>Deseret News</u> tended to favor conciliation, the <u>Salt Lake Tribune</u> editors, to the consternation of the stockmen, made it clear that in their view, "Watershed Stability Is Still [the] Main Issue."¹²⁰

Although the Grantsville case engendered a great deal of controversy and raised again the question of the rights of the permittees and the Forest Service to the degree that Gardner felt it necessary to issue a legal opinion, it settled no new questions of law. The Hobble Creek Cattle Allotment case on the Uinta National Forest settled basic questions on Forest Service procedures. Instead of basing their appeal on dubious legal theories, the permittees raised a direct legal challenge to the adequacy of the Forest Service's grazing allotment analysis procedures and to the ways in which the concept of multiple use was interpreted. In addition, the permittees mounted a persuasive campaign emphasizing the adverse impact of the reductions on the local economy.¹²¹

The case followed a long train of events in which cooperative efforts eventually reached an impasse. When James Jacobs came to the Uinta as forest supervisor in 1950, many cattle allotments were nominally 6 months long, though the cattle actually entered the range when joint inspections determined they were ready. Since problems with overgrazing persisted, the Forest Service cut a month from the season to begin with.¹²² Between 1955 and 1958, allotments with common use were divided, and some permittees took reductions of more than 20 percent.123 The Forest Service had tried to work with the Springville Cattlemen's Association to rehabilitate the Hobble Creek allotment, but in 1955 the permittees refused to divide the allotment and refrain from use during range reseeding, and the Service refused to put any more money into what it perceived as a futile effort. 124

By 1958 allotment analysis showed the need for drastic reductions. An analysis of the data led Merrill Nielson, ranger on the Spanish Fork District, to prescribe a stocking reduction of 84 percent--from 12,475 to 2,000 cow-months--by 20-percent increments over 4 years beginning in 1960, coupled with a \$200,000 rehabilitation program.¹²⁵ By 1957, Clarence Thornock had replaced Jacobs as supervisor, so the job of implementing the prescription fell to him and Nielson. The permittees refused to accept Nielson's decision and appealed to Thornock who sustained it.¹²⁶

Members of the association appealed immediately to Regional Forester Iverson. In a news release, Arthur W. Finley, president of the Springville Cattlemen's Association, charged that the Service had discounted the effectiveness of the rehabilitation work the cattlemen had done after the Service withdrew its assistance. Finley said that the transects misrepresented the condition of the range, arguing "that dropping the hoop a foot in either direction would completely change the picture."¹²⁷

Unlike Woolley in the Grantsville appeal, Clair M. Aldrich from Provo, attorney for the Hobble Creek permittees, presented his appeals very effectively.¹²⁸ The regional hearing, conducted by Dean Gardner, was held in July 1959, but at the request of the permittees, Iverson did not render his decision until November 10. In making their appeal, the permittees called a number of experts in range management including John F. Valentine of the Extension Service, C. Wayne Cook, research professor in range management at Utah State, and L.A. Stoddard, head of the department of range management at Utah State, in addition to local officials from Springville.¹²⁹

Ever. though the appeal was well drafted, the permittees stood little chance of overturning Forest Service range management criteria. For the Service, "suitable range is defined by the Intermountain Region's livestockgame Range Allotment Analysis Instructions as forageproducing land which can be grazed on a sustained-yield basis under an attainable management system without damage to the basic soil resource of the area itself, or of adjacent areas." Under this definition, cattle could not graze on steep slopes like those on portions of the Hobble Creek allotment, because, unlike sheep, cattle tended to drift into the bottoms instead of remaining on the hillsides. Successive studies had shown significant increases in bare ground and soil disturbance. Iverson addressed the problem of the economic impact by pointing out that half the permittees were "only partially dependent upon the national forest grazing permits for their annual income," and that other economic values, including recreation and watershed destruction, had to be considered as well.

Permittees offered the animal weight improvement argument. In response, Iverson cited research of Lincoln Ellison that demonstrated that range could produce improving animals and still decline, because the animals would shift from preferred species to less palatable plants and even browse on twigs and branches to remain healthy. Under those conditions, however, soil erosion would occur. Ellison concluded that condition of the land rather than of the animals must be taken as the measure of proper stocking.

Following Iverson's adverse decision, the permittees appealed to Chief McArdle who rendered his decision in 1962. The appeal focused basically on two points: (1) the adequacy of range allotment analysis as a means of determining suitable stocking, and (2) the adverse economic impact of the reductions. In reviewing the chief's decision, it is clear that while the permittees' expert witnesses raised a number of questions about the analysis procedures, they could not demonstrate to his satisfaction that the methods used by the Service were unsound or that alternative criteria for measuring suitability of the range were superior. In the Forest Service's view, based on research by the Intermountain Station, about two-thirds of the vegetation should remain after grazing in order to protect the watershed from excessive erosion. In simple terms, the analysis in the Hobble Creek case showed that sufficient vegetation did not remain and that erosion had occurred at an excessive rate.130

By 1962, when the appeal went from McArdle to the Secretary of Agriculture, John F. Kennedy had replaced Dwight D. Eisenhower as President and Orville Freeman had supplanted Ezra Taft Benson as Secretary of Agriculture. In sustaining McArdle's decision, Freeman rejected the permittees "sacrifice area" doctrine (that some low-lying areas had to be overgrazed in order to provide adequate use of all range within the allotment) and their allegation that the forest officers had been arbitrary and capricious in their application of allotment procedures.^[3]

In retrospect, it seems clear that the policies and practices of the Forest Service contributed to the difficulties on Wasatch Front allotments.¹³² For some time after the inauguration of range management under the General Land Office then under the Forest Service, the optimistic attitudes of range managers and permittees led both to believe that prescribed reductions and range rehabilitation would improve the grazing allotments to an acceptable level.

Some improvement in animal forage production did occur, and weights of animals improved. However, in cattle allotments particularly, the livestock would tend to move into the improving range in the bottoms, and improvement would then be noted on the higher slopes. Cattlemen would cite the unused forage on the steep hillsides as evidence that the ranges were underutilized.

The level of improvement that produced such weight gains, however, did not restore the land to a satisfactory condition. In practice, forage could remain on the slopes, and excessive erosion still occur in the bottoms. Research at the Intermountain Station and the introduction of more precise measures of condition and trend through the Parker three-step method provided the data the Service needed to inaugurate the tougher corrective measures required. Ranger Merrill Nielson, for instance, found that only 13 percent of the forage on the steep Hobble Creek allotment could be utilized without excessive erosion.

These management prescriptions violated the expectations of the permittees, and they resisted. In most cases, the Service was able to work out accommodations and get the permittees to accept, however reluctantly, the prescribed reductions and range rehabilitation. Why specifically, then, did the allotments in northern Utah serve as the focus for permittee intransigence? To say that the permittees were independent is no answer as stockmen throughout the region shared that sense of independence. That they were predominantly Mormons does not explain the situation either; the majority of the other permittees in Utah and southeastern Idaho were Mormons as well. In addition, the permittees throughout the region shared the same attitudes about the allotments. In all portions of the region the Forest Service found both permittees who were cooperative and those who were not.

Two reasons seem most important for understanding the exceptionally high rate of appeals from northern Utah. First was the fact that the reductions on the northern Utah forests were announced ahead of many of the others in the region. In William Hurst's view, had substantial reductions on other forests of the region been announced ahead of those in northern Utah, the appeals would have come from the other areas instead. In fact, in Idaho, there was concerted, if less extensive, resistance on the Mann Creek allotment on the Payette and the Sixteen-to-One Allotment on the Boise.

A second factor was the rapidly changing conditions under which the northern Utah stockmen lived. They were predominantly residents of towns and cities, and although the same was true of permittees on the Manti-LaSal, Dixie, and Fishlake, northern Utah was different. Permittees in northern Utah lived not only in the oldest settlements in the region, but also in the most rapidly urbanizing area. They were keenly aware that the way of life they had known was under attack. These had been their allotments. Now recreationists, hunters, wilderness enthusiasts, and other townspeople who feared watershed deterioration more than loss of grazing land seemed to threaten not only the control of lands the stockmen perceived to be theirs, but their livelihood and their way of life. What besides this sort of fear would lead distinguished men like J. Reuben Clark, former solicitor of the State Department and legal advisor to national and international bodies, and Henry D. Moyle, with law degrees from Chicago and Harvard, to assert that land that was clearly the property of the entire United States belonged to and ought to be managed as a matter of right solely by the permittees who used it?

In retrospect, then, it may be most useful to see these northern Utah appeals as the last gasp of a dying way of life as well as the efforts of a group of powerful community leaders to promote their interests. However, the appellants lacked political support. The only major Utah political leader who backed them was Senator Arthur V. Watkins, and significantly, he came from a Wasatch Front city not far from Springville where most of the Hobble Creek permittees lived. Even Governor George D. Clyde, with family connections in Springville, failed to provide support. Secretary of Agriculture and Utah native Ezra Taft Benson insisted on the priority of Forest Service stewardship and multiple-use management (Table 16).

Research

It would be difficult to overestimate the impact of research at the Intermountain Station on the development of range allotment analysis and grazing management prescriptions. Perhaps as part of the movement for consolidation, in 1953, the Forest Service extended

Table 16--Animal-months of livestock grazed in Region 4, 1950-69

	Cattle and horses (animal-months)		Sheep and goats (animal-montha)		
	Estimated grazing	Actually	Estimated grazing	Actually	Total paid
Year	capacity	grazed	capacity	grazed	permits
1950	1,211,167	1,179,479	4,031,758	3,532,673	6,699
1951	1,150,171	1,179,354	3,873,626	3,575,926	6,988
1952	1,066,890	1,195,362	3,453,885	3,623,847	6,875
1953	994,050	1,172,096	3,276,773	3,552,984	6,790
1954	956,497	1,180,363	3,142,834	3,559,608	6,702
1955	942,282	1,134,049	2,998,781	3,475,762	6,478
1956	920, 378	1,125,869	2,891,510	3,321,323	6,343
1957	895,469	1,068,768	2,791,643	3,070,904	6,254
1958	877,218	1,052,445	2,762,189	3,166,354	5,979
1959	842,101	1,031,748	2,588,958	3,123,409	5,861
1960	827,265	1,062,109	2,549,886	3,135,498	5,691
1961	821,458	1,053,653	2,402,144	2,978,412	5,545
1962	817,618	1,050,326	2,348,085	2,881,073	5,468
1963	816,375	1,048,873	2,336,711	2,757,643	5,490
1964	813,568	1,046,325	2,327,704	2,613,286	5,276
1965	827,341	1,034,706	2,364,056	2,503,143	5,030
1966	828,774	1,037,546	2,340,597	2,555,806	4,637
1967	830,529	1,024,545	2,338,764	2,378,129	4,637
1968	858,170	1,039,467	2.352.802	2.387.361	4,636
1969	898,459	1,074,680	2,361,647	2,372,081	4,512

Source: USDA Forest Service, Annual Grazing Statistical Report, Region 4, Summary (Furnished by Philip B. Johnson, Interpretive Services and History, Regional Office.)

jurisdiction over what had been the Northern Rocky Mountain Station in Region 1. At the same time, the Eisenhower administration created the Agricultural Research Service in the Department of Agriculture.¹³³

Of particular importance was research on range revegetation. Lincoln Ellison, who joined the staff of the Intermountain Station in 1938, led the station in important studies of range ecology and influenced the discipline long after his untimely death in an avalanche near Snow Basin in 1958.¹³⁴ Work at the Davis County Experimental Watershed particularly aided in the management of ranges and watersheds throughout the region. Research at the Desert Experimental Range, which had been established near Milford in 1933, showed that proper management could improve forage production and double net income from sheep grazing on salt desert shrub ranges.¹³⁵

Research on timber management centered particularly at the Boise Basin Experimental Forest established in 1933 near Idaho City. Particularly concerned with the regeneration and management of ponderosa pine, its scientists also worked at other locations in the Boise, Payette, and Salmon National Forests.¹³⁶ The Town Creek Plantation on the Boise, for instance, was a pilot project in planting ponderosa pine.¹³⁷ Other studies published by the Intermountain Station included methods of managing lodgepole pine.¹³⁸

In addition, the region cooperated with the California research station in studies on ponderosa pine. In 1955, Chet Olsen instructed supervisors at various Idaho and Utah forests where ponderosa pine grew to cooperate in collecting seeds for a genetic study to determine conditions under which the seed from various locations would generate and $\text{grow}_{\star}^{139}$

Besides authorizing funds for range rehabilitation, the Anderson-Mansfield and Granger-Thye Acts authorized expenditures for tree seed, nursery stock, and forest rehabilitation.¹⁴⁰ In the 1950's, all tree seedlings for southwestern Idaho and western Nevada were furnished from outside the region.¹⁴¹ In 1959, the region established the Lucky Peak Nursery on 296 acres near Lucky Peak Reservoir about 15 miles east of Boise. In 1960, Lucky Peak began receiving seeds for 10 tree species from throughout the region and producing seedlings that were returned to the place of origin for transplanting. By 1965 the nursery had become the chief supplier of seedlings for the region.¹⁴²

Timber Operations

In managing timber operations in Region 4 during the 1950's, there were several conflicting pressures. First



Figure 74--Ranger with crested wheatgrass on Meadow Creek Project, 1950's.

was the need to provide timber to maintain economic stability in the lumbering towns of southwestern Idaho. Second was the problem of erosion and ecological destruction from the construction of timber roads. Third was the need to rehabilitate and replant cutover areas.

The scope of the first problem was quite apparent in a meeting in July 1950 between Regional Forester Olsen and W.L. Robb, assistant regional forester for timber management, and the supervisors and timber staffs of the Boise and Payette.¹⁴³ Seventy-six mills then operated adjacent to the two forests. The annual sustained yield cut for both national forests and the nearby private and state land stood at 60 million board feet. The capacity of those mills was far in excess of that volume. Robb thought they ought to "strive for fewer mills," and to place fewer, but relatively "larger units of national forest stumpage on the market periodically, rather than attempt to split available cut into a larger number of small offerings for the possible benefit of a greater number of mills."

Though the report of the meeting does not indicate this, it is apparent that such a policy would place great economic pressure (to bid on national forest timber sales) on smaller marginal operators who could not find timber on private or State land. Olsen hoped to reduce the pressure by encouraging companies to take species other than ponderosa pine, Douglas-fir, white fir, and Engelmann spruce. In addition, the regional administration urged the national forests to reoffer unpurchased offerings of stands of timber on a competitive basis instead of negotiating private sales. This would, it was thought, give all companies an equal opportunity. Regional officers suggested that the forests use oral bidding where possible.

Some foresters thought that community stabilization might result from the creation of Federal sustained-yield units at Idaho City, Cascade, and McCall. After study, the only unit actually proposed in Region 4 was at Idaho City. The proposal was killed, largely because of opposition from outside the Idaho City area.¹⁴⁴

Between 1950 and 1954, Forest Service policy began to shift as the Washington Office pressed for the cutting of a substantially increased volume of timber on the national forests.¹⁴⁵ (For the impact of this pressure on Region 4, see tables 17 and 18.) In 1950 Ira J. Mason, chief of the division of timber management in the Washington Office, made a detailed inspection of the Boise and Payette National Forests. Mason concluded that the two forests were considerably more important for timber production than had been previously acknowledged and that their "sustained yield capabilities appeared much greater than other ponderosa pine areas such as the Black Hills or Coconino Plateau, which had received a great deal more attention."146 Mason recommended a timber management planning analysis covering the two forests and adjacent areas in the ponderosa pine belt. Also in 1952, Chief McArdle inaugurated a general timber resources review of all national forests.¹⁴⁷

In 1950, on the basis of Mason's recommendation, assistant regional forester Robb assigned Joel L. Frykman, of the Boise National Forest timber staff, to head a study team and Mark M. Johannsen, an assistant ranger, to help. Several personnel changes took place

Year	Quota (MMFBM) (Before 1951, estimated allowable cut)	Actual cut (MMFBM)		
1949	169.2	134.4		
1951	169.4	150.3		
1952	160.0	138.5		
1953	160.0	182.3		
1954	239.2	NA		
1955	225.0	NA		
1967	457.0	434.6		
1969	460.0	NA		

Table 17--Comparison of quota and actual timber cut in Region 4, selected years 1949-69

Source: Regional Office Records, RG 95, Denver FRC

over the 4 years of the study, and Johannsen eventually ended up heading the team and writing the report. The State of Idaho and the Boise-Payette Lumber Company cooperated on the study. The result of the analysis was to increase the estimated allowable cut on the forests of southwestern Idaho by "nearly three times."¹⁴⁸

Even before completion of the study, pressure mounted to increase timber production there. This was evident in a meeting held between the regional office and personnel from the Boise and Payette forests in April 1953. The meeting was to consider "ways and means to expand the timber sale business on the Boise, Payette, and that part of the Sawtooth within the Boise River drainage." 149

Several factors seem to have been important in the region's decision to increase the cut substantially. Most important perhaps were (1) the need of the region to follow policy set by the Washington Office and (2) extended



Figure 75--Aspen-log excelsior-bolt-cutting operation near Beaver, Utah, 1950's.

	Cut		Sold	
FY	MFBM	Value (\$)	MFBM	Value (\$)
1950	111,651	440,252	117,118	775,163
1951	147,075	860,243	175,822	1,033,571
1952	128,666	959,750	145,547	881,727
1953	141,737	922,117	113,952	788,341
1954	174,117	1,202,999	171,193	1,309,496
1955	251,638	1,699,572	272,585	2,155,613
1956	293,791	2,709,917	391,570	4,289,865
1957	324,819	3,210,105	289,324	2,258,957
1958	260.259	1.822.732	227.334	1,392,587
1959	314,108	2,116,219	503,968	3,914,795
1960	358,454	3,835,770	319,606	2,335,799
1961	326.659	2,602,931	613,691	4,499,735
1962	337.915	2,555,929	368,136	2.020.875
1963	372.442	2,924,433	421.369	1,816,089
1964	367.694	2,362,685	436.057	1,942,532
1965	393,020	2,202,797	477.311	2,065,217
1966	444,960	2,206,634	444,665	1.781.836
1967	434 555	2,200,004	499 224	2,526,421
1968	459 799	2 941 272	491,069	2,534,855
1969	469,203	5,247,407	355,076	10,359,692

Table 18--Commercial transactions of convertible forest products in Region 4, 1950-69

Source: Philip B. Johnson, Interpretive Services and History, Intermountain Regional Office. Note: These figures are not entirely comparable with those in Table 17; they include only commercial convertible products and do not include posts and poles, Christmas trees, and other products not measured in board feet.

pressure on the Forest Service to offer additional timber for sale.¹⁵⁰ In implementing its policy, Washington used a carrot-and-stick approach by offering the regions additional funding on the basis of the projected timber sales and by setting timber sale quotas.¹⁵¹

Sharp differences of opinion appeared on the region's ability to sustain this vastly increased timber harvest. These differences led to some personnel changes in 1953 as Lester Moncrief replaced W.L. Robb as assistant regional forester for timber management.¹⁵²

In general, the increased funding went for additional staff to supervise the sales and for timber access road construction. In 1953, the Boise and Payette forests financed 13 assistant ranger positions from appropriations for increased timber sales.

Both the region and the Washington Office recognized that timber access road construction would use the bulk of the money.¹⁵³ The regional office estimated, for instance, that it would need to construct more than 200 miles of additional roads in 1954 alone on the Boise, Payette, and northwestern Sawtooth to meet its timber quota.¹⁵⁴

The Washington Office called upon the region to help in lobbying for the appropriations. In 1954, for instance, Ira Mason urged Region 4 to help get money for the road program from the Department and Congress by providing information on the role increased lumbering could play in saving from economic strangulation such single-industry towns as Horseshoe Bend and Emmett. Saving such communities, he said, would sell the road construction program.¹⁵⁵

This was not, of course, simply propaganda. As George Lafferty put it, most foresters took "a commercial view of 'greatest good." Most had grown up in communities where the economy was totally dependent upon the use of national forests. Moreover, they had "grown up during a serious depression" and their "decisions were probably tempered by that experience." Most professional foresters coming into the Service at the time were "imbued with the idea that we would increase the productivity of the nation's forests and make the Nation a better place in which to live."¹⁵⁶

Although the general public in most of the singleindustry towns strongly shared such views, some of the communities greeted the prospect of new roads and additional logging with apprehension. In 1953, the Washington County, Idaho, Farm Bureau passed a resolution opposing increased timber sales because "large-scale operation" would necessitate "extensive road improvements." These farmers thought that while the Service would realize little actual money from sales, since the cost of the roads would have to come out of timber sales receipts, such operations "would injure our watershed and cause accelerated erosion on the area."¹⁵⁷ Moreover, several professional foresters began to question the pressure for additional logging, which they attributed to the "uncritical, almost slavish following of European patterns." In an article in the <u>Journal of</u> <u>Forestry</u> in 1951, Raphael Zon argued that German forestry theory which influenced the American pattern had emphasized monetary returns from lumber and hunting, "neglecting the indirect benefits of the forests such as amelioration of the climate, prevention of erosion, and effect upon agriculture."¹⁵⁸

Clearly, at least at first, few foresters paid much attention to people with misgivings like the farmers or Zon, and lumbering on the Boise and Payette increased considerably during the 1950's. At the beginning of the decade, the national forests were still heavily immersed in the land-for-timber exchanges with the Boise-Payette Lumber Company.¹⁵⁹ The lumber company, wanting only the best timber in trade, engaged in selective cutting. Later, however, as economies of scale in timber cutting became more important, companies on the Payette began logging in strips, and there was a tendency "to skid right down the draw bottoms in a lot of the cases." This caused "a lot of silt." Still, on the Payette, loggers were not permitted to clearcut. As Dick Leicht reported, "it was all selective cutting."160 The strip cutting, however, continued to produce erosion damage even though forest officers got good cooperation from the companies and gypos (contract logging companies).161

Large companies practicing economies of scale benefited most from these changes. In 1953, the Boise-Payette Lumber Company, after purchasing the Hallack and Howard mills at Cascade, changed its name to Boise Cascade Corporation.162 (It has survived under that name as the largest lumber company headquartered in the Intermountain Region.)

To meet the demand for increased cuts, economies of scale, ease of slash disposal, and ease of replanting the area, the Boise began to alter its cutting prescriptions, eventually approving clearcutting in ponderosa pine and cutting spruce that could not be managed properly. 163 Johannsen's study had recommended a sustained-yield cut of 131 million board feet. The timber staff on the Boise recommended that the allowable cut be held to approximately 85 million as the basis of the requirements in the multiple-use management plan. In 1956, a timber management plan was drafted for the Boise Working Circle (which included the entire forest), increasing the allowable cut to 129.9 million, a 240-percent increase from the 38 million in 1952.164 The supervisor, however, did not accept the staff recommendation and succeeded in getting the allowable cut revised again, exceeding even Johannsen's recommended level and eventually reaching 185 million, 165

To achieve this allowable cut on the Boise, in 1955 the Forest Service implemented what was called "unit area control." This allowed the operator to take all trees on a given plot, i.e., to clearcut. The maximum size of the plots was restricted at first to 5 acres; but, as Ed Noble put it, "like Topsy, it grew." The loggers had to have roads; the contractors had to skid and load the logs. It was generally more economical to clearcut larger areas. In addition, there was a belief that ponderosa pine would



Figure 76--Idaho jammer in operation on Sawtooth National Forest.

regenerate itself properly on the clearcut areas. Initially, companies did most skidding with tractors, but, in the steeper country on the Salmon River, they used cables.¹⁶⁶ In the 1950's, loggers also introduced the Idaho jammer on the Boise. Such logging systems required a dense pattern of roads.¹⁶⁷

These and other technological changes allowed considerably more cutting by fewer men in less time. Most important, perhaps, was the perfection of the chain saw, which had been adopted extensively by the 1950's. ¹⁶⁸ The use of skid loaders, cranes, and other mechanical devices increased logging efficiency on the Targhee and facilitated the introduction of pulpwood operations in mistletoe-infested overmature lodgepole pine stands on that forest. ¹⁶⁹

The increased tempo of logging necessitated changes in the method of marking trees for cutting. Andy Finn on the Payette remembered that, as a young boy, he had helped his father blaze trees. They had marked every tree with the "U.S." brand and a keel mark. At the time, he was only 4-1/2 feet tall so he marked the trees at nose height rather than at breast height. 170

Pressure for increased cutting during the 1950's made this method of marking too costly and time consuming. On the Payette, foresters adopted "sample" marking--generally measuring only every fifth tree.¹⁷¹ Working 12 months of the year and walking on snowshoes during the winter, they marked almost full time. Dick Leicht remembered a practice that was common on all the forests. During the spring and summer, he left the office between six and seven in the morning and returned between six and seven at night. The Service paid nothing for overtime work. Since the Payette timber staff did not have its own transportation, marking crews would generally have to ride the buses transporting the company's saw crews.¹⁷² In 1954, the Targhee and Ashley National Forests conducted a successful experiment using paint guns for marking lodgepole pine. This method became standard practice.¹⁷³
In meeting the increased demand for timber harvest, the Service introduced new methods of scaling. Traditionally, scalers determined the values removed by measuring the cut logs in the woods or in decks at the landings. In 1958, under agreements with Boise Cascade and the Sawtooth Lumber Company of Mountain Home, the region agreed to provide 100 percent scaling at the company's mills, at company expense. With the success of this experiment, the region opened such scaling services at seven major mills. The companies undoubtedly saved money by using this service, since logs could be removed at their discretion rather than having to wait for the scaler in the woods.¹⁷⁴

The increase in cut was not limited to southwestern Idaho. On the Toiyabe, for instance, the annual cut increased substantially. Refore the forest surveys of the mid-1950's, the cut had been at 5 to 8 million board feet per year; afterward it was between 16 and 20 million. Forest Supervisor Ivan Sack felt that volume was too high.¹⁷⁵ On the Ashley, the allowable cut increased substantially as larger operations began replacing small family-owned mills.¹⁷⁶ Pulpwood logging operations on the Targhee increased the cut materially during the early 1950's as the logs were removed by railroad to a Wisconsin pulp mill.¹⁷⁷

The increased annual allowable cut had less significant impact on the national forests of northern Utah and eastern Nevada. There, much of the timber went for mine props and in cost sales to small users for fences and poles.¹⁷⁸ The annual allowable cut on the Cache, for instance, remained at about 4.5 million board feet, which was less than during the 1940's.¹⁷⁹ On the Uinta most of the 4 million board feet of conifer timber was cut annually on the Heber District, in Strawberry Valley, and on the headwaters of the Provo River. The Uinta also cut about 3 million board feet of aspen annually, which was used for excelsior and moldings.¹⁸⁰

Watershed Problems

By the late 1950's, it was guite evident that in some areas the rapidly increased volume of logging had produced disastrous effects on watersheds. In building roads rapidly, engineers had paid too little attention to road location and design. This neglect resulted in sluffing, landslides, and unstable roadbeds, with much material being washed into stream channels. On some forests, the dense pattern of roads, particularly those associated with the use of the Idaho jammer, produced excessive undergrowth destruction and consequently accelerated erosion.¹⁸¹ In a number of cases, inadequate cleanup of the slash and poor selection of skid trail locations took place. This created a visual image that many forest visitors found difficult to accept in addition to the damaging erosion.¹⁸² In addition, the relatively dry microclimatic conditions in southwestern Idaho were not conducive to proper regeneration after clearcutting except in shaded areas.¹⁸³ Moreover, the region found successful replanting of certain species, especially spruce, particularly difficult.¹⁸⁴

By 1956, some forests, such as the Boise, had become greatly concerned with watershed damage and excessive erosion. Previously, the supervisor had pressed for an



Figure 77--Making an undercut with power saw, Yale Creek drainage sale, 1951.

extensive road system in the belief that roads were necessary for proper forest management.¹⁸⁵ In 1956, however, Supervisor K.D. Flock commissioned a report by Edward L. Noble on methods of dealing with the serious problems that had appeared. Citing such problems, Noble recommended that each forest officer develop criteria for erosion control and that the forest administration place immediate responsibility for such control with the timber sale administrator. To accomplish erosion control, Noble also recommended particular measures such as prohibiting skidding in draws and improving road location and design.¹⁸⁶

It would be far too easy to place all the blame for adverse road developments on the regional and national forest engineering staffs. These employees came under constant pressure to get the most roads for the dollar and to construct as many roads as possible for what was then perceived as proper forest management. A report in 1954, for instance, weighed various methods of road construction to prevent economic and social dislocations in southwestern Idaho communities dependent on the logging and lumber industries.¹⁸⁷ A 1956 hearing held by the Idaho State Highway Department, the Bureau of Public Roads, and the Forest Service considered the disposition of FY 1958 forest highway funds. At least half of the 1-day meeting "was devoted to hearing presentations by delegations from various parts of the state advance reasons for construction or improvement of Forest Highway Projects in which they were particularly concerned."¹⁸⁸ Congressional leaders lobbied for roads in their States. A 1959 study by Norman Nybroten and Wade Andrews indicated that more than a fifth of all public roads in Idaho were forest development roads or forest highways. These roads were important to the people of the State.¹⁸⁹

Behind these developments is the inescapable conclusion that despite both the Forest Service and the public talking about multiple-use management, a considerable reorientation was required for many, inside and outside the Service, to actually think consistently in such terms. A careful reading of Mark Johannsen's report on timber management in southwestern Idaho, for instance, shows virtually no concern for values other than removing mature timber. Frykman and Johannsen seemed unconcerned with the geologic instability of the land or the fragility of the watersheds on which many of the trees grew.¹⁹⁰ Frykman produced a report in 1955 on a proposed boundary extension for the Hoover Wild Area in the Toiyabe National Forest. Although he commented on the nature of the area's geologic formation, he did so only from the standpoint of its influence on the cost of constructing roads and getting logs out, not in terms of potential erosion.¹⁹¹

The effort to get forest officers to think in true multiple-use management terms required a basic reorientation to emphasize interdisciplinary rather than single-disciplinary values. Noble indicated that on the Boise, he and others concerned with watershed destruction had a difficult time "trying to convince the engineers and the timber people to control the water from the roads so that . . . [they] didn't get a lot of erosion . . after construction." Eventually, particularly after the disastrous effects of road construction on the South Fork of the Salmon River, Noble said that engineers "came to appreciate the need" for higher road standards. Their initial concern had been cost, in part at least because of outside pressure. In time they came to realize that the least expensive road might not be the least costly.¹⁹²

In this context, it would be difficult to overestimate the leadership Floyd Iverson gave to the reorientation to multiple-use management. In the words of William Hurst, "Truly, he turned the region around in many respects and started on a course of workable multipleuse management... Under Regional Forester Floyd Iverson's leadership, the application of multiple-use became a systematic procedure with a system for application placed in the hands of every forest officer. This thrust did more than anything else to achieve a uniformity of purpose in the management of the national forests in Region Four."¹⁹³

By the mid-1950's, technological and policy changes in engineering management allowed better road design at lower cost. In 1954 and 1955, when I worked as an engineering aide on a number of national forests in Idaho and Utah, virtually all design was done by Forest Service employees using field data collected on the ground. By 1956, technological improvements such as photogrammetry and stereo planigraphy allowed the location of roads and the design of cuts and fills from aerial photographs.¹⁹⁴ In addition, a shortage of engineers in the Federal Government required considerable contracting for professional engineering services. This sometimes had the added advantage of saving money.¹⁹⁵

In spite of early difficulties, once the engineers became convinced of the erosion problem, they worked closely with other Service employees to devise solutions. In 1954, for instance, engineers and foresters cooperated in gauging discharges and sediment yields from watersheds with different plant cover on the granitic soils of southwestern Idaho.¹⁹⁶

In 1955, Forest Service officials, contractors' representatives, State highway officials from the 11 Western States, Park Service employees, and Bureau of Public Roads representatives met at Jackson Lake Lodge in Wyoming to discuss problems of road construction. Davis C. Toothman represented the Boise National Forest. His notes on the meeting emphasized particularly contractor-engineer relations, the effects of highway construction on fish survival, and the location and design of Forest Service roads by photogrammetric methods.¹⁹⁷

By 1956, the region's engineers had begun distributing bulletins dealing with such topics as methods of erosion reduction on roads in timber sale areas and protection of trout streams during construction.¹⁹⁸ Paul E. Packer of the Intermountain Station, for instance, produced some particularly valuable recommendations for road construction on granitic soils. These recommendations were published and given broad distribution to Region 4 foresters and engineers who put them to use on the ground.¹⁹⁹

As the Service came under continued pressure to construct roads and the necessarily higher standard roads cost more, it was necessary for Forest Service representatives to explain to public officials and community leaders the need for care in road construction. In October 1957, Regional Forester Floyd Iverson and Regional Engineer Arval L. Anderson took Idaho Senator Henry C. Dworshak and Roscoe C. Rich, Chairman of the Board of Directors of the Idaho State Highway Department, on a show-me trip through the Payette and Boise National Forests. The regional officers emphasized particularly "problems incident to road construction along streams and rivers." Anderson pointed out, for instance, that the South Fork of the Payette River was "a particularly striking example of how highly erosive soil can contribute to sedimentation of a stream."²⁰⁰

In addition, engineering personnel continued to work with other employees on watershed rehabilitation projects. Congress helped the Service to deal with watershed problems, through the passage of the Flood Control Act of 1950 and the Hope-Aiken Small Watershed Act of 1954.²⁰¹ Support from the Eisenhower administration and especially from Secretary Benson facilitated such work in Region 4.²⁰² Watershed rehabilitation projects were inaugurated throughout the region.²⁰³ The Uinta constructed contour trenches in Santaquin Canyon, and undertook rehabilitation of the watersheds on Provo Peak.²⁰⁴ Fishlake employees worked on watersheds in various places, including the headwaters of the Glenwood drainage.²⁰⁵ Restoration work was undertaken on the

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North Fork of Swift Creek on the Bridger.²⁰⁶ The people of San Juan County cooperated with the Manti-LaSal in rehabilitating the watershed above Blanding.²⁰⁷ The Caribou and Targhee cooperated with the Bureau of Reclamation and the Corps of Engineers in planning for watershed protection near Palisades Reservoir.²⁰⁸ Reseeding was undertaken near Arrowrock Reservoir on the Boise.²⁰⁹ The Toiyabe restored the Galena Creek watershed on through trenching and reseeding.²¹⁰

Insect Control

In spite of problems with road construction and watershed damage, the Forest Service was still committed to logging the optimum volume of timber. In order to do this, however, it was important to continue to control both insects and fire. While the region continued the attack on insect infestations, perhaps the most important development was the recognition of the limitations of tree-by-tree treatment. In some cases, it was just too expensive or ecologically damaging to try to save every tree from insect destruction. In retrospect, it may be most useful to see this conclusion as consistent with the realization that not every area should be logged because the destructive consequences of road building made the cost too high.

At first, however, this change in perception came slowly, and it took the form of searching for less costly means to contain insect epidemics. On the Wasatch National Forest, for instance, Dick Anderson argued that timber remaining after the beetles got through with it was practically worthless. He proposed that, rather than trying to harvest the timber, a crew should knock it down, pile it in windrows, and burn it. This practice would, it was hoped, kill most of the remaining insects and militate against further epidemic destruction.²¹¹

In addition, the Service began more carefully to control the use of insecticides. Particular care was taken to minimize damage to fish and wildlife habitat by working closely with the U.S. Fish and Wildlife Service and State fish and game agencies.²¹² Although the Service continued to use powerful insecticides, it also paid more attention to the work of natural enemies such as woodpeckers and parasitic insects.²¹³

Firefighting

While fire was used to eradicate pinyon-juniper and sagebrush in some areas, there was no tendency to allow wildfires to run unchecked. The major changes in firefighting in the 1950's were improvements in fire control technology. A major concern was to monitor expenses, as it cost three times as much to hire fire crews in 1951 as in 1940.²¹⁴ To determine the areas where fire control forces might be needed, the Service developed fire prediction indexes based on the degree of curing of cheatgrass and the relationship between temperature and humidity.²¹⁵ To provide faster response, the Service began using helicopters and airtankers in addition to the time-honored smokejumpers. At first the tankers dropped a slurry of sodium calcium borate that clung to vegetation and helped to cool the fire so ground crews could gain control of it.²¹⁶ In 1960, bentonite replaced borate, after it was discovered that the borate sterilized the soil.²¹⁷ Helicopters sped firefighters and equipment to the fire. The region made more extensive use of bulldozers, trenchers, tractors with plows, power brush cutters, and portable radios.²¹⁸ Monetary savings came also from the increased use of Mexican nationals and Native Americans on large project fires. Bringing these large crews from distant areas sometimes created considerable logistical problems. The Payette, for instance, worked out a system of feeding as many as 500 people at a time on a 24-hour basis.²¹⁹ In 1955 the Boise, together with eight forests in other regions, began to experiment with what was called the Increased Manning Experiment. The national forest hired special firefighting crews that worked on various projects around the national forests when not engaged in firefighting.²²⁰ These experiments helped in cutting both costs and burned acreage.221

After each fire, fire control officers filed a report analyzing the reasons for success and failure and suggesting improvements for future reference. A report on the Wallace Canyon fire on the Toiyabe in July and August 1959 provides an example. On the negative side, the report revealed that the fire had burned unchecked for 6 hours before anyone reported it, and coordination of the fire crews had been unsatisfactory. On the other hand, coordination with agencies outside the Forest Service was excellent, particularly with the Air Force and the Clark County Sheriff's office. The critique session included personnel from all ranger districts on the forest.²²²

Recreation

In spite of the disdain in which some stockmen held recreationists, forest recreation had become a major component of multiple-use management by the 1950's. In a sense, stockmen had to learn the same lesson that timber management personnel and engineers did-multiple use had come to stay and <u>all</u> appropriate uses had to be considered in management prescriptions. In 1957, the Service reorganized its staff system in the forest supervisors' offices by authorizing needed branch chief positions, and those forests with large recreation loads appointed a recreation and lands branch chief.²²³ In 1957, also, the region published a recreation handbook that provided instructions on resource plans, types of recreation areas, and various other matters.²²⁴

The explosion of recreation in the 1950's was nothing less than phenomenal. In the Forest Service as a whole, recreation visits increased by 213 percent, from 26 million in 1949 to 81.5 million in 1959,²²⁵ In order to meet the need for recreation services, the Washington Office inaugurated its Operation Outdoors program in 1957. Patterned after the National Park Service's Mission 66, this 10-year program was designed to improve existing recreation facilities and to construct new ones to meet expanding needs.²²⁶

In June 1958, Congress established the Outdoor Recreation Resources Review Commission, charged with reporting on future outdoor recreation and suggesting policies and programs to meet needs.²²⁷ Although



Figure 78--Fire crew on the Corn Creek fireline.

Region 4 did not play a central role in the work of the commission, it did help facilitate a change in attitude about the role of recreation on the national forests.²²⁸ Many of the influential members of the commission had serious doubts about the role of the Forest Service in outdoor recreation. Many thought that the Service had neither the interest nor ability to properly manage recreation.

All meetings of the commission were held in Washington except one that Chairman Lawrence Rockefeller planned for Jackson Lake Lodge. The Park Service and Forest Service had the duty of organizing and conducting four field trips in connection with the Jackson meeting. Three of those trips were organized by Region 4 officers--commission and Washington Office officials were taken to the Targhee, to Palisades Reservoir on the Caribou, and to what would soon become the Bridger Wilderness. The precise role of Region 4 in convincing dubious commission members that the Service could provide excellent recreation management is not known; nevertheless, the commission's final report praised Forest Service recreational management, and few have seriously questioned the Service's role in recreation since that time.

Winter sports use, particularly downhill skiing, soared in the 1950's. On the Wasatch, Supervisor Koziol participated in a variety of organizations including the 1952 Olympic Ski Committee and the National Ski Association.²²⁹ In the winter of 1949-50, the Wasatch held its first avalanche forecasting and control training school at Alta.²³⁰ The Toiyabe approved development of the Slide Mountain winter sports area.²³¹ At Jackson Hole on the Teton, developers had started with a rope tow shortly after World War II; by 1965, an elaborate tramway was under construction.²³² The Beaver Mountain area opened on the Cache in 1951.²³³ Snow Basin continued to be of particular importance on the Cache.²³⁴ Developments continued at the Bald Mountain Ski Area

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Figure 79--Esther and Hank Holverson with fire finder on Twin Peaks Lookout.

at Sun Valley, which affected the Sawtooth National Forest. $^{\rm 235}$

Other types of recreation grew in importance. On the Cache, camping and water sports facilities were developed around Pineview Reservoir.²³⁶ Camping expanded in the Jarbidge Mountains on the Humboldt, and campsites had to be improved.²³⁷ Increased hiking on Mount Timpanogos on the Uinta, and especially the annual Timp Hike in which more than 1,500 people participated, necessitated the construction of a shelter at Emerald Lake and constant vigilance because of trail damage and pollution problems.²³⁸ Of extreme importance to the Toiyabe was the development of recreation facilities at Nevada Beach.²³⁹ The Targhee and Caribou developed and operated major picnicking, camping, and water sports facilities at Palisades Reservoir, using funds furnished by the Bureau of Reclamation.²⁴⁰

In connection with Operation Outdoors, each forest recommended various recreation, construction, and rehabilitation projects. In FY 1958, the second year in the cycle, the region allocated \$925,035 to the various forests in amounts ranging from \$4,747 for the Humboldt to \$106,715 for the Toiyabe.²⁴¹

In cooperating with the Outdoor Recreation Resources Review Commission, the region developed a means of providing needed statistics on recreation use. William O. Deshler, then on the Bridger, and Vern Kupfer of the Dixie designed a statistical system to convert the number of cars and camps into visitor-days for reporting purposes.²⁴²

Important also to recreation was the increased public interest in wilderness areas. It should be understood that substantial portions of these areas were not pristine. As Dick Leicht put it in discussing the High Uintas Primitive Area, "you could see man's hands all the way through it." One night, with his pack animals and saddle horse, he came to Five Points Lake. He expected to see sheep grazing in the area, but instead found 56 head of horses. Drawing closer, he came upon a troop of Boy Scouts. This, he said, was a good example of one of the wilderness area's major problems--grazing around lakes, not only by cattle or sheep, but also by recreation animals.²⁴³ While Bill Hurst was supervisor on the Ashley, forest officers made a concerted effort to keep motorized vehicles out of the High Uintas Primitive Area. They had major problems with irrigation companies that wanted to use motorized vehicles in main-taining reservoirs constructed prior to the designation of the primitive area. In general, the forest officers were successful in getting the irrigators to use horse-drawn equipment for maintenance, arguing that the dams had been constructed without motorized vehicles.²⁴⁴

In some areas, a major control problem existed with packers or outfitter guides. As late as 1951, Idaho had no licensing for such services, and the special use permits issued by the Forest Service for a base camp did not adequately cover the cleanup of side camps. Neither did the permits ensure adequate quality for the services provided.²⁴⁵

By 1954, Idaho had inaugurated licensing, and the Idaho State Outfitters and Guides Association lobbied to secure the passage of national legislation to protect the interests of its members. Such a law would have allowed district rangers to "allot certain exclusive territory to each qualified outfitter or packer." The association also lobbied, with the Idaho legislature, to require that any license be issued only if approved by three licensed outfitters who resided within the same district as the applicant.²⁴⁶

Wildlife

Closely allied with other forms of recreation, hunting and associated wildlife management continued to be extremely important in Region 4. In recognition of this importance, Region 4, along with most other regions, added a full-time wildlife specialist to the staff in 1958, complementing the increased status given to recreation on the forests the year before.²⁴⁷

Perhaps the most important development in wildlife management was the establishment of close cooperation between Federal and State agencies in Idaho, Wyoming, and Nevada to help create the relatively amicable relationships already established through the Board of Big Game Control in Utah.²⁴⁸ Cooperation in eastern Wyoming had existed since 1945, but was not extended to the western portion of the State until 1948. Interagency meetings were held on a trial basis in Idaho beginning in 1953 and made permanent in 1954. In 1955, Nevada became the last State in Region 4 to adopt interagency cooperation.²⁴⁹

Another important development was the extension of range allotment analysis to wildlife management. The forests set up three-step transects, along with browse utilization study plots and game enclosures, all of which were used to study the feeding habits of big game. 250 Studies undertaken cooperatively by the Forest Service, the Fish and Wildlife Service, the Utah State Fish and Game department, and Utah State Agriculture College tried to determine the competition between cattle and deer on common summer range. They found that areas heavily grazed by cattle were also heavily used by deer.



Figure 80---Construction of ski lift on Bald Mountain, Union Pacific special-use permit, 1957.

The only exceptions were on steep slopes and in oak and sagebrush types where the cattle preferred not to graze. Still, the results indicated a serious management problem on overgrazed ranges.²⁵¹

Because of rapidly disappearing winter range for big game, the region undertook a number of reseeding projects. On the Payette, for instance, a heavy starvation of deer in 1949 led to a cooperative project between the Idaho Fish and Game Department and the Intermountain Station to study the feasibility of planting browse species to restore the winter range. The study found that bitterbrush met the requirements needed for such feed, and experimental plantings were undertaken. The researchers found, however, that the still excessive game population made continued revegetation difficult.²⁵² Continued studies in Utah indicated that with adequate protection of young plants, range managers could successfully replant with fourwing saltbush, cliffrose, big sagebrush, rabbitbrush, and curlleaf mountain mahogany as well.253

In spite of the cooperation between the Forest Service and other State and Federal agencies, populations of certain big game animals continued to increase in some areas during the 1950's. William O. Deshler indicated that elk competed to an even greater extent with cattle on the Bridger.²⁵⁴ In the four States covered by Region 4, the number of deer increased 16 percent from 556,000 in 1955 to 647,000 in 1958. Utah reinstituted an eithersex hunt in 1952, and Wyoming allowed a bag limit of two deer. In spite of these extremely serious problems, some hunters still opposed the efforts to reduce the number of deer.²⁵⁵

Range managers continued to experience serious problems with predators considered undesirable by various groups. Sheep herders insisted that the Fish and Wildlife Service continue to try to eradicate coyotes on national forest lands using poison formula 1080.²⁵⁶ Because 1080 also kills other animals that eat the poisoned meat used as bait for the coyotes, numerous complaints were voiced on the use of the poison, but sheepmen considered these complaints unfounded. Hence, 1080 continued to be used through the 1950's.²⁵⁷

The other major area of concern was the large number of unclaimed mules, burros, and horses roaming the





Figure 81--Artist painting view of Stanley Lake and McGowan Peak.

rangelands in portions of the region, particularly in Nevada. These animals competed with permitted livestock for range and in some areas damaged ranges and watersheds. Opinion was divided on the disposition of these animals. Ranchers and forest officers generally favored their roundup and removal. Some other people saw these "wild" animals as legitimate occupants of the public lands. On some ranges, roundup and removal proved to be unfeasible. In 1950, at Forest Service urging, Agriculture Secretary Charles Brannan issued a closure order from June through December for portions of Nye, Eureka, and Lander counties in the Toiyabe. The order authorized forest officers to shoot trespassing horses. Rangers killed approximately 400 horses under the order. Similar actions to remove lesser numbers of horses were undertaken on other national forests, including the Ashley and the Challis, during the early 1950's. Some difficulties occurred, such as one case where a ranger killed several horses belonging to a rancher from Austin that were grazing legitimately.258

Special uses continued to increase in Region 4. In Logan Canyon on the Cache, for instance, nine new homes were constructed in 1952—the largest number ever erected in a year. Seven other homes were erected between 1952 and 1962 when a moratorium was placed on home permits.²⁵⁹ When the Charleston Mountain area was transferred to the Toiyabe, Supervisor Ivan Sack wondered about the number of summer homes in Kyle and Lee canyons that were located on sites highly desirable for public recreation.²⁶⁰ Other uses, including microwave and television relays, became increasingly important.²⁶¹ Major new power transmission lines were constructed through the national forests especially in connection with the various Bureau of Reclamation dams.²⁶²

Mining

With the increasing complexity of multiple-use management for watershed, range, timber, wildlife, special uses, and recreation came also an added responsibility for mining. Increased prospecting for minerals, particularly petroleum and uranium, was coupled with additional Forest Service responsibilities under the Multiple Use Mining Act of 1955. Under the act, unless some question existed as to the validity of a claim located prior to 1955, the claimant was free to mine just as before. On claims located after July 1955, the claimant's right to locate and mine minerals, except certain common materials like sand, gravel, and pumice, was not impaired. The act, however, required the Forest Service to manage the surface values until the claim went to patent, at which time the private rights of the owner were obtained.²⁶³

The principal conflicts in administration of surface lands on mining claims came when other surface uses conflicted with mining uses or when the claims had been fraudulently filed in order to gain control of the surface rights. Usually, fraudulent filing occurred when people tried to get title to or use of the timber or of a summer home or hunting cabin site.²⁶⁴ Forest officers undertook an active program to investigate related surface uses in order to gain the necessary information needed to substantiate the legitimacy of the claim and for management of surface areas.²⁶⁵

Uranium mining affected the Manti-LaSal more than any other forest. By August 1955, the development of mining claims in that national forest had gone forward at a rapid pace. Four-fifths of the commercial stands of timber in southeastern Utah, or roughly 50 to 60 million board feet, were covered by uranium claims. In general, however, the forest had little difficulty in securing cooperation of the miners in removing any timber that hampered mining operations.²⁶⁶

During the late 1950's, a number of forests were "plastered" with oil and gas leases. Inspections and paper work in such cases added additional burdens to forest officers. On the Uinta, most oil exploration took place in the Strawberry Valley, Duchesne, and Currant Creek areas.²⁶⁷ Oil prospecting accompanied by considerable seismic geologic work also was common on the Ashley.²⁶⁸

The region's other principal leasable mineral claims were on the Caribou, and to a lesser extent on the Targhee. In these areas, extensive phosphate deposits played a major role in determining management as the forest set standards for permits allowing phosphate exploration and mining, with provisions to prevent needless damage and to provide for rehabilitation of watershed, range, and other values.²⁶⁹

Summary

By 1960, Region 4 had advanced fully into multiple-use management, but with a diverse pattern of movement. Although the region had been moving toward multipleuse management of grazing, recreation, watershed, minerals, wildlife, and most other activities since the earliest years, multiple-use principles lagged behind in timber management.

The major problem in most areas, particularly range management, wildlife management, mining, and watershed management, was in arriving at a complete understanding of all such multiple-use values on the part of forest users and their political allies. Forest officers already were convinced of the need for multiple-use management relating to such values.

In timber management, however, many foresters, especially those in the Washington Office, as well as timber users and politicians, had yet to accept the need to temper their desire to get the timber cut with recognition of the need for protection of the land's other values. Quite a number of forest officers, especially those in line positions such as William Hurst and Floyd Iverson, shared Ed Noble's concerns and recognized the problems involved in excessively ambitious timber production goals; many, however, did not. Hurst, who was serving as supervisor on the Ashley National Forest in 1954, admitted that instructions from the assistant regional forester for timber management disturbed him so much that he "deliberately failed" to distribute them to his rangers.²⁷⁰

For those who failed to follow the examples set by Noble, Hurst, and Iverson, three factors seem to have been most important. First was the desire to try to preserve single-industry lumber towns from the boom and bust development that had occurred in other timber areas. Second was the heavy pressure from the Washington Office to increase the region's sustainedyield cut quite substantially. Third, although perhaps less important by the 1950's, was the education of many foresters, including some in influential supervisory positions, in the German forestry model, which posited that harvesting overaged timber took priority over the need to recognize other values.

The lack of attention to geologic and climatic conditions in road construction and timber harvesting had particularly serious consequences for watershed, scenic, and wildlife values. Overcoming this problem required regionwide recognition that a truly interdisciplinary approach is essential in multiple-use management. The degree of success Floyd Iverson and the foresters of Region 4 had in achieving this goal will become apparent in Chapter 9.

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- 83. Jack Wilcox interview by Gary Schaffran, June 1984, p. 3, Historical Files, Humboldt.
- 84. John F. Hooper, Lee A. Bennett, Walter W. "Pete" Pierson, Rodman N. Barker, Frank Youngblood, James W. Camp, Earl F. Dodds, Kenneth D. Weyers, and Ralph A. "Andy" Finn interview by Thomas G. Alexander, April 1984, pp. 10-12, Historical Files, Regional Office (hereinafter cited as Weyers interview); Foyer Olsen interview by Thomas Alexander, March 1984, pp. 6-8, Historical Files, Regional Office.
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- 110. Jacobs interview, pp. 68-69.
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- 122. Jacobs interview, p. 41.
- 123. Victor K. Isbell, <u>Historical Development of the Spanish Fork Ranger District ([Spanish Fork, Utah]: Spanish Fork Ranger District, 1972), p. 67. For a detailed description of the changes see Merrill Nielson, "My Forest Service Career," MS, July 26, 1960, especially pp. 13-16, Historical Files, Uinta.</u>
- 124. Richard E. McArdle, "Decision on the Appeal of the Permittees of the Hobble Creek Cattle Allotment, Uinta National Forest, to the Chief, Forest Service, from a Decision of the Regional Forester, Ogden, Utah, F. S. Docket No. 22," February 28, 1962, Hobble Creek File, in possession of James Jacobs, Ogden, UT. (Hereinafter cited as Hobble Creek File.)
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- 126. C. S. Thornock to Permittees, February 11, 1959, File: Hobble Creek Cattle Allotment Grazing Appeal Case, 1959-1962, Hobble Creek File.
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- 135. Forest Service Report, 1953, p. 47.
- 136. The Boise Basin Experimental Forest: For Better Forest Management (Ogden, UT: Intermountain Forest and Range Experiment Station, 1956).
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- 142. Smith, Boise, pp. 66-67.
- 143. The following discussion is based on W. L. Robb, Memorandum for Files, July 6, 1950, File: S-Supervision, General, 1950, Regional Office Records, RG 95, Denver FRC.
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- 146. The following is based on: Mark M. Johannsen, "The Southwest Idaho Timber Management Study, 1950-1954," File 1680, History, Timber Management (2400), Historical Files, Regional Office.
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- 149. W. L. Robb, Memorandum for Files, May 12, 1953, File: S- Sales, General, 1953, Regional Office Records, RG 95, Denver FRC.
- 150. Forest Service Report, 1950, p. 38.
- Howard Hopkins to Regional Forester, April 28, 1952, File: S- Sales, 1952, Regional Office Records, RG 95, Denver FRC.
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- 155. Ira J. Mason to Region 4, April 14, 1954, File: S-Sales- General, Regional Office Records, RG 95, Denver FRC.

- 156. George Lafferty interview by Thomas G. Alexander, April 1984, pp. 7-8, Historical Files, Regional Office.
- 157. K. D. Flock to Regional Forester, December 7, 1953, File: S- Sales, General, 1953, Regional Office Records, RG 95, Denver FRC.
- 158. Raphael Zon, "Forestry Mistakes and What They Have Taught Us," <u>Journal of Forestry</u> 49 (1951): 180.
- 159. Weyers interview, pp. 15-21.
- 160. Leicht interview, pp. 14-15.
- 161. Leicht interview, pp. 4-5.
- 162. Smith, <u>Boise</u>, p. 88.
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- 172. Leicht interview, pp. 12-14.
- 173. H. L. Ketchie to Forest Supervisor, November 16, 1954, with attachments, File: S- Sales- General, Regional Office Records, RG 95, Denver FRC. This discussion has been modified on the basis of comments by William Hurst and Gordon Watts.
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Chapter 9 An Era of Intensive Multiple-Use Management: 1960 to 1969

By the late 1950's, the Forest Service, led by Chief Richard E. McArdle, wanted a congressional mandate authorizing its de facto policy of multiple use and sustained yield. Resistance to such legislation came from the two ends of the spectrum--those who favored use for commodities like timber and range and those who favored preservation of forests for recreational activities and wilderness. As Congress began considering the Multiple Use-Sustained Yield Act, both the Sierra Club and the National Lumber Manufacturers Association expressed opposition. Sierra Club members believed the act placed wilderness in jeopardy; the lumbermen thought timber production and protection of water flows as authorized in the 1897 Organic Act should be given top priority.¹

Some rural communities agreed with the lumber manufacturers. In a talk to a group of people in Vernal, Supervisor William D. Hurst said that the Forest Service was required to manage the national forests not just for timber, but also for watershed, grazing, recreation, and wildlife. "My audience," he said, "frowned on this. They thought the Forest Service was created to maintain a constant timber supply and maintain water yield."²

To diffuse opposition, the Forest Service undertook a successful lobbying campaign, and Congress passed the act on June 12, 1960. As passed, the act confirmed existing policy by authorizing the Service "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."³

With the passage of the act, officers in Region 4 could cite a congressional mandate for their policy of multiple-use management. Where, in the past, the Service had recognized various uses by regulation, the law specifically authorized the activities. Most important, it acknowledged recreation, wilderness, and wildlife as legitimate forest values, on par with the production of commercial commodities. This recognition dealt a lethal blow to the futile efforts of stockmen and lumbermen to have their interests acknowledged as preemptive. Most important, perhaps, the law recognized that the Service did not have to press for maximum commodity production, but rather could strive for the best combination of the diverse functions.⁴

Concerns over activities other than range and timber management emerged as major new challenges in the region. This expansion was particularly critical as the demand for recreational uses increased. Recreation emphasis intensified with the passage of the Wilderness Act in 1964, the Wild and Scenic Rivers Act in 1968, and the National Environmental Policy Act in 1970, all of which placed additional burdens on the Service's resource management capabilities. Wildlife received increased emphasis with the passage of the Endangered Species Preservation Act of 1966.

Implementing Multiple-Use Planning

The increase in forest use intensified a primary concern for the fragile lands of Region 4.⁵ As Regional Forester Floyd Iverson put it in a statement on longrange objectives in 1961, the "major water resources, the bulk of the timber, a significant amount of summer forage for domestic livestock, much of the big game habitat and a large majority of the outdoor recreation attractions in the Intermountain area are situated within the boundaries of the national forests." Overgrazing and improperly planned logging roads had already revealed the need for multiple-use management. Increased recreational use made this need even more imperative.

Planning for multiple-use management did not proceed in a vacuum, since with 55 years of experience the Forest Service recognized the conflicting demands on national forest resources. As Neal M. Rahm of the Washington Office put it at a regional foresters and directors meeting in November 1960, forest officers began, like urban planners, with a recognition that conflicting demands would exist, but instead of zoning to prevent conflict, they tried where possible to design "coordinating requirements for different kinds of uses or services within a particular area, unit, or zone." The Service "adopted [exclusive use] only when multiple use is impossible or impractical." Nevertheless, while striving for properly balanced use, the Service recognized that particular values might dictate dominant use in certain areas.⁶ As Richard McArdle emphasized in a speech before the Fifth World Forestry Congress in Seattle in 1960, in planning for multiple-use, Forest Service officials were concerned particularly with limitations placed in planning for the proper use of resources by the diversion of national forest lands from potential multiple-use to nonforest purposes such as superhighways, transmission lines, and dams?

Basic to all such multiple-use management considerations was concern for the land and thus for watershed management. In recognition of watershed condition as the limiting factor in all land use planning, the Service realigned its divisions, creating a Division of Watershed and Multiple-Use Management in each region and the Washington Office in 1960 to ensure watershed protection and coordinate multiple-use management. Initially headed by Leon R. Thomas, Region 4's division was directed by Gordon L. Watts in the mid-1960's.⁸ In 1969, the region assigned P. Max Ross as Regional Planner-Coordinator, to facilitate cooperative efforts between line officers and study teams assigned to plan for activities in complex situations where potentially conflicting uses and interests might appear.⁹

Though the writing of multiple-use management plans had begun in the late 1950's, Region 4, with the largest national forest land area and greatest geographic diversity outside of Alaska, moved somewhat less rapidly than some other regions in completing its subregional multiple-use management guides.¹⁰ These seven subregional guides were completed in 1960 and put into effect for planning in 1961.¹¹ Subsequently, the region's district rangers began writing multiple-use plans for their districts.¹² In 1965, the subregional guides were consolidated into a regional multiple-use management guide.¹³

In the early 1960's, when it became evident that planning and execution errors were being made, Regional Forester Iverson began to have rangers prepare multipleuse surveys whenever they intended to undertake an activity that might adversely affect the national forest. These were the forerunners of the Environmental Impact Statements required by the National Environmental



Figure 82--Ranger Robert Hoag and Deputy Supervisor William Deshler in planning session at Bridgeport Ranger Station, 1962.

Policy Act, but they were implemented voluntarily in accordance with a belief that such surveys would facilitate better management. Meeting resistance at first because of the additional paperwork required, they produced worthwhile results by reducing costly errors.¹⁴

By the late 1960's, after more than a decade of multiple-use planning in one form or another, the regional officers recognized that the numerous competing interests and the relative complexity of writing plans for critical environmental areas created considerable difficulty in the efforts to implement the ranger district multiple-use management plans.¹⁵ A major problem came in dealing with the public--both commodity interests and preservationists--who tended to interpret the term "multiple use" as synonymous with development. Trying to explain that the Service intended to manage the lands both for optimum resource development or use and for other nondevelopmental activities on a sustainedyield basis was difficult, particularly when the users did not understand that if the Service gave needed protection to certain critical watersheds they could not develop all such areas. This was especially true when Congress failed to provide sufficient funding to rehabilitate fully areas like those previously logged, or when the region had to deal with critical environments like the Tahoe Basin, the South Fork of the Salmon River, or the west slope of the Teton Range.

Because they were trained as generalists, many of the rangers who wrote the district multiple-use plans lacked "adequate knowledge of ecologic systems and their interaction." At first, the region tried to remedy this situation by hiring specialists such as landscape architects, soil scientists, archeologists, wildlife biologists, and hydrologists. Engineering staffs were assigned to the smaller forests in the region as they had to the larger forests in the 1950's.¹⁶ Beginning with the Boise, forest level specialists in personnel management and contracting were added to the staffs.¹⁷ Such specialization extended to the purchase of computer equipment for data processing. $^{18} \ensuremath{$

H.H. "Rip" Van Winkle remembered returning from a staff position in the regional office to the Teton as forest supervisor. It "had changed a whole lot," he said. "We were developing into specialists all along the line.... There were game biologists, engineers, and range experts.... So that the staff was becoming specialized instead of centralized the way it had before. When I first started out in the Service you did pretty near everything yourself the best you knew how without knowing very much about it."¹⁹ By 1963, the Teton had a staff of about 60 permanent employees.²⁰

Specialization became most evident at the regional level. Numerous specialists were brought into the various regional office divisions to meet growing needs. For instance, Robert Safran came to the regional office in 1962 as special use expert to develop the necessary contract provisions to manage the increasing number of permits.²¹ In 1963, a reorganization at the regional office led to the assignment of Don Braegger as Regional Construction Contracting Officer, and subsequent studies by the Washington Office indicated considerable savings through the use of contracts rather than force accounts.²²

The increasing complexity of Forest Service operations required considerable additional training for existing employees. Led by Assistant Regional Forester Lester Moncrief, the region carried on a great array of expanding and diverse training programs. Subjects included decentralized contracting; workshops for wageboard wage determination; and how to write better letters, clearer directives, and more readable manuals and handbooks. Such traditional training as range reseeding, watershed management, and timber management continued as well.²³

By the late 1960's, the increasingly frequent use of interdisciplinary teams created problems, since specialists often pushed for the interests represented by their disciplines without adequately recognizing the needs of other interests. In reviewing this problem, Floyd Iverson recognized that someone on each team had to represent the general interest, and after considering the options, he assigned line officers--rangers and supervisors--to these teams to help "assure understanding and adequate coverage of multiple-use coordination." In other words, the regional administration expected the line officers to provide the general knowledge that would serve as a balance to unduly single-minded interests of specialists.

Budgetary limitations, along with the need for efficient and effective work, necessitated the continued measurement of productivity with a view to cost reduction.²⁴ The Washington Office mandated continued workload analysis of regional offices, forest supervisor offices, and district ranger offices, which was completed in 1969.²⁵ Under Washington Office direction, the region continued studies under the supervision of Assistant Regional Forester Tom Van Meter, to identify the optimum size for ranger districts. The studies gave particular consideration to the possible consolidation of districts with headquarters in the same community, with seasonal headquarters, and with small workloads.²⁶

In 1969, the American Institute of Industrial Engineers published research by two Washington Office employees,



Ernst S. Valfer and Gideon Schwarzbart, who summarized the criteria for district consolidation. Based on questionnaires sent to each forest supervisor, the study took various responsibilities into consideration. After reviewing the responses, the researchers concluded that three factors seemed most important in determining optimum size: budget, base workload, and acreage. Devising a formula for computing optimum size, the researchers cautioned that "an effective organization must be more than purely an efficient one in that it must satisfy both its economic requirements and the sociotechnical demands of the organization's sponsors, its own members, and its clients (customers) or the public."²⁷ Foresters recognized the importance of taking all factors into consideration. If units were too small, the Service could not make effective use of the ranger's time. When the units were too large, however, relationships with forest users suffered because the rangers were unable to meet the users and to deal personally with critical problems.

In spite of the demand for economy, the regional office and some of the national forests were forced to seek new quarters, largely because of the increased size of staffs and complexity of the work. In the summer of 1965, the regional office moved from the Forest Service building on 25th Street and Adams Avenue to share a newly completed Federal building on 25th Street between Kiesel and Grant Avenues. Various divisional headquarters, which by that time had occupied offices in several buildings around the downtown area, were consolidated in the new building. The Intermountain Station headquarters remained in the old building until 1985.

Excellent new offices for the Challis, Targhee, and Teton National Forests were opened in Challis, St. Anthony, and Jackson.²⁸ In Boise, the old Assay Building office became so crowded that the Boise National Forest Supervisor and most of his staff moved to the Belcher Building. The engineering staff, the soils specialist, and the staff for one of the ranger districts occupied the Assay Building.²⁹

The increase in staffs and the added paperwork necessitated by interdisciplinary functions created changes within the system. The job of the ranger became much more complex.³⁰ Forest rangers who had previously functioned as "kings of their own domain" became members of interdisciplinary teams and often spent more time in the office preparing reports than on the ground making management decisions. As conditions changed, Carl Haycock, by then retired, expressed the view of quite a few oldtimers when he said he would not like to be a forest ranger anymore. "The Forest Ranger," he said, "is no longer an administrator; he's a pencil pusher . . . So much preparation of reports and related paper work is demanded of him that he doesn't have the time to get out and really manage the resources on his Ranger District."³¹

These complexities created additional difficulty for the region as the legal adoption of the concept of multiple use coincided with a change in the nature of the public with which the Service had to work. In practice, this change required careful application of techniques for working with the conflicting interest groups. In the past, the region had used advisory councils, ad hoc committees, town hall meetings, and formal hearings principally "in formalized consideration of areas where the Forest Service ... [had] established its position well ahead of time." Forest advisory councils particularly were used "most frequently" as a "means of communicating . . [the Forest Service] viewpoints and positions to others."³² Show-me tours and press releases were used to achieve the same purposes.³³

Ranger Jack Wilcox put it succinctly. "Around the early sixties the public finally got interested in what was happening to Federal lands.... They didn't like what they saw, and they started to get legislation to correct what they thought was wrong. I think that is good that they took an interest.... We were getting complacent."³⁴

By at least the late 1960's, the use of an advisory board as a ratifying council seemed out of date. The many groups and individuals interested in Forest Service decisions were simply too diverse and their interests often too conflicting. Under the circumstances, the Service had to find ways "to solicit and listen to the ideas of others, so these ideas . . . [could] be utilized in planning and management decisions." As part of the 1969 Assistant Regional Forester-Forest Supervisor meeting, the region's managers resolved to move as rapidly as possible to develop skills and techniques "before decisions are reached . . . [to] involve a greater cross section of the general public in planning and decision-guiding [procedures]."

During the 1960's, the region began a program of annual field trips for educators. Although this proved an excellent means of developing closer relationships with university faculties and administrations, by the end of the decade, the Service had not devised a means of solving the problem of reconciling the interests of competing constituencies. In fact, the problem was not solved with any degree of satisfaction until after the passage of the National Forest Management Act in 1976. In many ways, it has not been solved yet, though the 1985 decisions on wilderness areas seem to indicate that it might be solved through some sort of conflictresolution procedure emphasizing compromises. The major problem with this example, however, is that the resolution required congressional action, which is far too unwieldy and time consuming a solution for all but the most serious problems.

Inspections

After his appointment as Chief in 1962, Edward P. Cliff raised some questions about the existing inspection system. In response to Cliff's suggestions at the Regional Foresters and Directors meeting in 1964, several proposals were made for modifying procedures.³⁵

Cliff asked for staff input, and the region referred the question to the forest supervisors. Boise supervisor Howard E. Ahlskog replied that, while the inspections were important, he objected to the imposition on the forest staffs when inspectors evaluating similar functions came within a few weeks of each other. On the Boise, for instance, the General Accounting Office, Fiscal, and Operations General Functional Inspections and an Internal Audit all had come in one year. Servicing these inspections had required about 5 labor-weeks from the operations division. Ahlskog suggested combining future inspections of similar functions.³⁶ This had been done to some degree during FY 1964, and he



Figure 83--Job Corps conservation project, Clear Creek Job Corps Center.

believed similar combinations could be used more extensively in the future. $^{\ensuremath{\mathsf{37}}}$

Region 4 as Agent of Social Change

The roles played by the Forest Service became even more complex with the measures taken to relieve unemployment in the Kennedy administration and in the Johnson administration's War on Poverty. Programs such as the Accelerated Public Works Program, the Youth Conservation Corps, the Young Adult Conservation Corps, the Work Study program, and the Older Americans program contributed to the development of forest facilities, but also required considerable time and money to administer.³⁸

In 1961, Kennedy sent to Congress a plan entitled "Development Program for the National Forests." Designed as a blueprint for action in meeting public needs, it was expected to provide the basis for Forest Service public works from 1962 to 1972.³⁹

To implement this program, the Federal Government began an Accelerated Public Works program in 1963. Although the program was to have lasted 10 years, it was terminated in 1964 (though construction of forest facilities continued under the Operation Outdoors program).⁴⁰ Projects covered the full range of Forest Service activities and were undertaken on all forests. These projects included a warehouse on the Uinta, water improvements on the Fishlake, campground facilities on the Wasatch, riprapping and check dams on the Dixie, road construction on the Uinta, footbridges on the Bridger, and trail construction on the Payette.⁴¹

A good example of the region's role in the War on Poverty was its operation of the Clear Creek Job Corps Center south of Carson, NV, on the Toiyabe. The establishment of this camp created somewhat more local opposition than had the CCC camps of the 1930's.⁴² A public hearing in Carson revealed that a considerable minority of the community opposed the center based on the low educational level of the trainees and the fear that boys at the camp might become involved with local girls. Those favoring the center thought it would help in educating deserving young people and preventing longrange welfare and criminal problems.⁴³

Started in September 1965, the Clear Creek center had a number of advantages. These included its lovely forested location and the general support of local political leaders. Not the least of the advantages was the selection of Charles J. "Chuck" Hendricks as the first director. An engineer by profession, he was extremely capable and well liked by all.⁴⁴

After arriving at the center, each enrollee was tested and assigned to classwork suited to his educational level. Training emphasized skills needed in jobs then available in the community. At the center, the trainees were expected to work 8 hours a day 5 days a week. Each spent part of the time in classwork and part in public service. 45

The center achieved some degree of success between 1965 and its termination in May 1969. The average job corpsman was a school dropout. A 1968 study showed that the average enrollee entered with third-grade reading skills and second-grade math skills. On the average, a corpsman stayed in the program 5-1/2 months and during that time advanced an average of 2-1/3 grades. Although only 30 percent of those who entered the pro-



Figure 84---Three enrollees welding at Clear Creek Job Corps Center.

gram completed their training, 93 percent of those who finished either entered the labor force, joined the armed forces, or returned to school. Although some corpsmen did have run-ins with the law, the crime rate at Clear Creek was lower than for others in the same age group throughout the Nation. In view of the disadvantaged background and low educational status of the trainees, this low crime rate in itself says much about the program. By the end of 1967, the corpsmen at Clear Creek had constructed for the Forest Service \$497,000 worth of capital equipment that would probably not have been built without their labor.⁴⁶

The Rural Area Development Program also affected the region. This program, designed to improve the wellbeing of rural communities, required the cooperation of the regional office's State and Private Forestry Division, under H.S. "Hal" Coons, with other agencies of the Agriculture Department and the State foresters of the various States in the region. The program provided Forest Service technical assistance to rural communities seeking to improve employment opportunities for their citizens.⁴⁷

The Civil Rights Act of 1964 also increased the responsibilities of the Forest Service. Executive orders required Service employees to work actively in hiring people from minority groups and in seeking contracts with minority businesses for various goods and services. Subsequent Service studies indicated general compliance, though integrating minority representatives into an organization dominated by white males was not always easy.⁴⁸

Foyer Olsen, then a ranger on the Dixie National Forest, remembered an effort he had to make in this regard. He found it necessary to train his employees to help a youth hired from a poor neighborhood in Ogden understand how to fit into the working world. The effort proved successful for all concerned.⁴⁹

Recreation

Perhaps no field in Region 4 increased in complexity as much as did recreation management, headed by Assistant Regional Forester John M. Herbert during the 1960's. Gone were the days when picnic tables, garbage cans, water faucets, privies, and access roads were the extent of developed recreational facilities. While the region continued to construct such things, it also expanded in a number of other areas, including cultural resource management.

The region undertook a program of determining which so-called "Near-Natural" areas required special treatment because of their unusual interest. These included virgin, scenic, geologic, archeological, and historical sites. The regional office sent instructions to the forests giving criteria for inventorying and designating such areas.⁵⁰

Some of these areas were among the most beautiful and interesting in the Intermountain Region. In 1959, for instance, the Service designated the Wheeler Peak Scenic Area, consisting of 28,000 acres within the Snake Range in the Humboldt National Forest. The home of the bristlecone pine, the area contained 13,000-foot Wheeler Peak, gorgeous alpine lakes, and magnificent



vistas. The scenic area also contained a number of examples of Indian petroglyphs that the Humboldt tried to protect.⁵¹ The Service undertook an extensive construction program to provide campgrounds and roads for visitors. Managed under the multiple-use philosophy, the area provided for grazing, watershed protection, wildlife, and mining in addition to recreation.⁵²

The Humboldt also contained the Ruby Mountain Scenic Area designated in 1964.⁵³ It too has magnificent scenic and recreation values, and includes a number of other uses.

Another example of the diversity of cultural resources is Minnetonka Cave on the Caribou National Forest.⁵⁴ It is one of only two caves (the other is Blanchard Caverns in Arkansas) currently operated by the Forest Service. During the 1930's, public works programs provided some capital improvements. The ranger district tried to operate the cave for public enjoyment for some time with little success; in the late 1950's the ranger got the St. Charles, Idaho, Lions Club to take it over under a special use permit.

After running the cave for about 14 years, until 1963, the Lions found the project too burdensome to handle. They lobbied the Idaho congressional delegation, particularly Senator Frank Church and Congressman Ralph Harding, to get the Service to take over operation of the cave and to get the Federal Government to construct needed improvements. The Federal Government improved the road up St. Charles Canyon to the cave, and the Forest Service secured a surplus generator and installed new lights. The Service keeps the cave open, with tour guides, from early June until Labor Day each year. Operation of the cave has become a regular budget item for the Caribou.

Much of the work of cultural resource management has been done in cooperation with outside parties—often with university professors. Examples are numerous: research on and recommendations for management of the Lander Trail, an important nineteenth-centry transporta-



Figure 85-Bristlecone pine, Wheeler Peak Scenic Area, 1968. These trees are the oldest living things in the world.



Figure 86--Senator Frank E. Moss and Lady Bird Johnson at dedication of Flaming Gorge National Recreation Area, August 1963.

tion route in the Bridger and Caribou National Forests, by Peter T. Harstad, historian from Idaho State University;⁵⁵ a cooperative dendrochronological study of bristlecone pines--the world's oldest living things--on the Humboldt National Forest by W.C. Ferguson and J.O. Klemmedson of the University of Arizona;⁵⁶ and archeological excavation at the Redfish Lake Creek Indian Shelter on the Sawtooth National Forest by Earl Swanson, an archeologist from Idaho State University.⁵⁷

The Forest Service undertook numerous cooperative projects with other Federal agencies. Perhaps the most complex example involved the Forest Service, Bureau of Reclamation, and National Park Service, in the establishment of the Flaming Gorge National Recreation Area. Since the Green River and a number of its tributaries flow through the Ashley National Forest, activities of the Bureau of Reclamation on the massive Colorado River Project designed to control the flow of the river at large dams also affected the Forest Service.

As the Bureau of Reclamation constructed the Flaming Gorge Dam near the Utah-Wyoming-Colorado borders in eastern Utah, both the Forest Service and Park Service proceeded with plans for recreation facilities in the area. Between October 1958 and March 1959, the two agencies carried on discussions and exchanged correspondence about administering the facilities at the lake that would be under both agencies. Proposing the creation of a national recreation area within the area of its jurisdiction, the Park Service wanted to control the lake and a 300-foot strip of shoreline around its perimeter. Under this concept, the Forest Service would have administered only the national forest land outside that perimeter. After discussions between regional officials from both the Park Service and Forest Service, the Park Service compromised, suggesting that it control facilities to the water line and that the Forest Service operate those on the shore.58

Emphasizing the problem of fragmented and overlapping jurisdictions, Floyd Iverson, in consultation with the Washington Office, proposed a different division. He pointed out that the Park Service plan would create a national recreation area administered by the Park Service within the boundaries of a national forest, which would produce inefficient administration and result in public confusion. He proposed instead that the Forest Service administer those facilities within the Ashley National Forest and that the Park Service supervise those outside. At the same time he offered to cooperate with the Park Service and the States of Utah and Wyoming in the adoption of uniform boating regulations. A 1963 agreement essentially confirmed Iverson's plan for joint administration of the national recreation area.

In its lobbying, the Forest Service had an advantage. Under its multiple-use management philosophy, it had already begun planning and constructing recreation facilities in the area whereas Park Service plans were still on the drawing board.

As the Forest Service began construction of its recreational facilities in 1960, Park Service activities remained in the planning stage. Although it kept the Bureau of Reclamation and Park Service officials



Figure 87-Aerial view of Flaming Gorge Reservoir and National Recreation Area.

apprised of its progress and shared its plans with them, the Forest Service resisted efforts by the Park Service to slow down the construction of the facilities and to fit Forest Service operations within the Park Service master plan. Three reasons seem to have been uppermost. First, the Forest Service resented dictation by the Park Service on the type and location of facilities because its installations were part of a larger multiple-use management plan for the Ashley. Second, the Forest Service could not afford to build the expensive and elaborate facilities contemplated by the Park Service. Third, the rapidity of Forest Service construction gave the agency greater recognition from Congress and the general public.⁵⁹

By 1968, joint administration of Flaming Gorge seemed unwieldy, and both the Agriculture and Interior Departments concluded that sole administration by the Forest Service would be preferable. In this connection, it seems probable that the perception of the general public and elected officials that the Forest Service would manage the area under multiple-use rather than single-use principles helped rally support for Forest Service management.⁶⁰ Both the Senate and House reports on Flaming Gorge emphasized the permission granted for hunting and mining. The Senate Report also specifically mentioned the continuation of grazing. Although recreation was to be the primary activity in the national recreation area, the 1968 act allowed multiple-use management to continue. In addition, the Federal Government expected to save money on operation costs by using the Ashley's administrative structure and by having only one agency involved.61

In Idaho, the Forest Service cooperated with the Park Service in the investigation of the Sawtooth Mountain area, a scenic and recreational jewel on the Sawtooth, Boise, and Challis National Forests. The Forest Service begin multiple-use studies in the Sawtooth Mountain region in December 1959. Since the area had long operated within the multiple-use management philosophy of the Forest Service, it included the Sawtooth Primitive Area and such diverse activities as logging, grazing, and mining. Recreation played an increasingly important role as visits to the area increased from about 65,000 in 1956 to 252,000 in 1960.⁶²

Given the importance of the area and the interest in its recognition as a national park or a national recreation area, further study seemed warranted.⁶³ Under a January 1963 agreement between the Secretaries of Agriculture and the Interior, the Forest Service and Park Service undertook a joint study of the Sawtooth area.⁶⁴ The study involved Assistant Regional Foresters John M. Herbert and John A. Mattoon, Sawtooth Supervisor P. Max Rees, and many others in the Regional Office and the three national forests. The investigation included a joint historical report by Victor O. Goodwin, a forester assigned to the Humboldt River Basin Survey, and John A. Hussey, regional historian for the Western Region of the National Park Service.⁶⁵

As the interagency study continued, Chief Cliff wrote Senator Church enclosing a draft bill which became the model for the future Sawtooth National Recreation Area.⁶⁶ Church introduced the Forest Service bill in April 1966, with the cosponsorship of his colleague, Senator Len Jordan. Reintroduced in subsequent congresses



by Church and other members of the Idaho delegation, the Sawtooth National Recreation Area Act finally passed in modified form in 1972.⁶⁷

The Forest Service was involved in the development of a number of other important recreation sites, some in collaboration with other agencies and others on its own. After the designation of City of Rocks as a national monument under Park Service jurisdiction in 1966, recreation visits to the adjacent portions of the Sawtooth increased.⁶⁸ Historic charcoal kilns south of Leadore on the Targhee drew 3,000 visitor-days of use during 1968.⁶⁹ The Challis withdrew the old mining town of Custer in 1966 for preservation as a historic site.⁷⁰ The Forest Service undertook the restoration of Tony Grove Ranger Station on the Cache to provide an example of the operation of a station during the 1930's--early in his career, Chief Cliff had been assigned to Tony Grove.⁷¹

Not surprisingly, demands for increasing recreation use conflicted with pressure to maintain relatively stable ecological conditions in the national forests. An example with long-range implications was the battle between the Forest Service and its allies in the environmental community on the one hand and the Utah State Highway Commission on the other over plans to reconstruct Highway 89 within the Cache National Forest in Logan Canyon. Initial construction, begun in 1959, destroyed considerable fish habitat and, in the opinion of many, lessened the esthetic quality of the canyon. Concerns about safety and speed motivated the highway department, but not everyone agreed with its priorities.⁷² As planning for the road continued during the 1960's, Floyd Iverson spearheaded the region's insistence that the Bureau of Public Roads take values other than highways into consideration. Chief Cliff backed the region to the hilt. A considerable body of public opinion supported the region as well, which seems to have been decisive in forcing the Bureau of Public Roads to raise its standards.

Conflicts developed over the use of off-road vehicles. General policy of the Service was to prohibit crosscountry or off-road vehicles such as jeeps, trail bikes, and motor scooters where they might "cause erosion, damage young timber and forage, impair recreation values, and adversely affect fish and wildlife resources."⁷³ Under these restrictions, such vehicles were not allowed in wilderness or primitive areas. Certain critical areas such as Alaska Basin on the Targhee and a number of trails on the Toiyabe were closed. In general, however, the Service believed that the forests had places for the backpacker, the horseman, and the off-road vehicle operator, to the extent that significant damage did not occur.⁷⁴

Motorized vehicle restrictions were not universally popular, and some groups challenged the regulations by entering the Idaho Primitive Area with motorized vehicles. Arrested and fined \$100, they appealed the conviction, arguing that existing laws did not authorize the Forest Service to do anything on the national forests except protect timber and secure favorable conditions for water flow. In upholding the regulations, the Ninth Circuit Court of Appeals held that, while recreational considerations alone would not support the establishment of national forests, recreation activities were appropriate subjects for regulation therein. Citing the legislative history of the Multiple Use-Sustained Yield Act, the court ruled that Congress had recognized this interpretation by authorizing recreation and wildlife resources as legitimate purposes for forest management.⁷⁵

Another recreation problem resulted from the disturbances and damage caused in campgrounds by motorcycle riders. Most forests had regulations limiting such use, but some cyclists roared through the campgrounds disturbing people and chewing up the ground cover. Since Forest Service officers visited the camps infrequently, the offended campers had little recourse except discussions with the bikers, which were often fruitless, and the problem was never completely resolved.⁷⁶

Off-road vehicles were not the only offenders in damaging fragile watersheds. In some cases, horses used by outfitters and guides grazed too heavily on critical areas. The Service tried to solve the problem on the Boise by bringing the outfitters into the grazing permit system, but some of them resisted.⁷⁷ On the Toiyabe in the mid-1960's, excessive garbage left by outfitters and their parties was a problem.⁷⁸ At least one outfitter on the Challis, in complaints similar to those voiced by the stockmen a decade earlier, charged that the ultimate aim of the Service was to drive them out of business. In response, the Forest Service emphasized the need to protect the land from excessive deterioration and damage.

The Idaho outfitters succeeded in securing the passage in 1965 of State legislation dividing national forest territory among various companies. Some national forest officers regarded this legislation as not binding on the Forest Service as it sought to dictate management policy without considering the other needs of multipleuse management. The forest officers did consult with State officials to try to work out satisfactory outfitter arrangements.⁷⁹

It should not be thought that the forests conducted recreation management through ad hoc measures. In the early 1960's, each forest prepared a recreation management plan projecting expected short- and long-range recreational development needs through the year 2000.⁸⁰ In addition, the Federal Government provided general evaluation of recreation facilities through the activities of the Outdoor Recreation Resources Review Commission, which continued its activities into the 1960's.⁸¹ On heavy recreation forests such as the Wasatch and Targhee, for instance, the position of recreation and lands staff officer was created to provide general supervision and coordination of these functions.⁸²

At recreation sites with a large demand, the region provided visitor information services. These included interpretive trails, demonstration areas, vista overlooks, wayside exhibits, guided walks, campfire programs, and contacts by forest officers. By 1964, with leadership from Assistant Regional Forester Alex Smith (I & E) and Supervisors Jay Sevy and Max Rees (Sawtooth) and A.R. McConkie (Ashley), the region had a visitor center in operation at Redfish Lake on the Sawtooth, joint visitor information services (in cooperation with Bureau of Reclamation) at Flaming Gorge, and another visitor center under construction in the Flaming Gorge National Recreation Area, at Red Canyon on the Ashley.⁸³

Congress moved in 1964 to try to alleviate the pressure for needed recreation funds through the passage of the Land and Water Conservation Fund Act. The fund derived from three main sources: a recreation user fee for designated areas, dedication of a 4-cent-per-gallon tax on pleasure boat fuel, and receipts from the sale of certain Federal and other property. Money from the fund was to be used to provide additional Federal recreational facilities as well as grants-in-aid to the States on a matching basis for recreational purposes.⁸⁴

In 1965, the region, along with other Forest Service units, began to designate areas at which the recreation user fee would be collected. In the first year, the fee applied to a total of 430 sites in Region 4, including 58 percent of all campsites, and 84 percent of the family units. The region set the initial fee at 25 cents per adult per day. In addition, the region set group fees for larger areas and special charges for boat-launching ramps.⁸⁵ In lieu of the daily payments, patrons could purchase \$7 Federal recreation stickers or Golden Eagle Passports that allowed unlimited entry to the fee areas for one year.⁸⁶ Congress allowed the authorization for the Golden Eagle to expire in 1970.⁸⁷

The region noted some problems in operating the fee system. During the first year, on heavy recreation forests like the Toiyabe rangers noted some deterioration in campground maintenance because recreation officers had to spend additional time selling stickers and tickets. The large number of different tickets confused some patrons. Some dissatisfaction developed because officers visited camps only three times per week, allowing some patrons to use facilities without paying.⁸⁸ In several southern Utah communities, citizens resented paying the fees to use local Forest Service picnic areas that had been developed in large part by volunteers and local service clubs from the communities.⁸⁹

While camping and hiking continued to increase, the forests noted a particularly large jump in water-related recreation and in skiing. As a result, new boating and camping facilities were constructed at high-demand areas like Pineview Reservoir on the Cache, Island Park and Palisades Reservoirs on the Targhee and Caribou, and Nevada Beach on the Toiyabe.⁹⁰ Grand Targhee near Driggs, ID, and Teton Village in Jackson Hole, WY, became the sites of new ski resorts under special use permits, and many existing areas increased their lift capacities.⁹¹ Avalanche studies continued at Alta.⁹²



Figure 88-Skiing at Slide Mountain, December 1968.

Special Use Permits

Perhaps the most controversial change in the administration of special use permits was in the development of national forest summer home areas. In 1961, the Caribou and Targhee advertised the availability of a limited number of summer home sites near Palisades reservoir.⁹³ In about 1962, the Intermountain Region published a booklet promoting summer home development and providing information on obtaining permits for lots and on the standards required for construction.⁹⁴

By the late 1960's, the increasing demand for public recreational facilities such as picnic areas and campgrounds prompted the Forest Service to do an about-face on the promotion of summer home areas. Because of the public demand for recreational facilities, in 1969 the Service prohibited the opening of new summer home areas.⁹⁵

Though such a blanket policy was a new departure, as early as 1934 the Service had begun to have homes moved from a few critically needed public recreation areas such as Fish Lake. Permittees who had to move were allowed to construct a new home away from the lake shore. The Fishlake National Forest gave current permittees life tenure with the understanding that, if they sold their homes or died, the new owner had to move the home from the lake shore. By 1984, only 7 of the original 60 homes remained.⁹⁶ Similar requirements were initiated for the Big Springs summer home area on the Targhee in 1959. Permittee appeals through channels reached the Chief, who sustained the forest supervisors' decision. Complaints are still being raised, however, through the Idaho congressional delegation.⁹⁷

In 1964, under its multiple-use policy, the Forest Service began to raise fees for special use permits for recreational uses, on the ground that if alternative uses existed for such lands, permittees should pay fees reflecting the current market value of the property. This policy raised considerable opposition from summer home permittees, many of whom had occupied their lots for years and had come to consider them their own. Appeals resulted; permittees applied considerable pressure to the Service to rescind increases. In general, although fees were raised, they were not increased to the fair market value of the lots.⁹⁸

While summer home permittees seem to have been most vocal in their opposition to fee increases, the policy also impacted group camps such as those for Boy Scouts, Campfire Girls, 4-H organizations, and church groups. The policy was not applied across the board, however; ski areas paid on a graduated rate system based on the income from the operations, rather than on the value of the land they occupied.⁹⁹

Most significant, perhaps, as population grew and development in the Intermountain West became increasingly complex, the diversity of special use permits broadened. Groups, companies, and individuals secured permits for a great variety of uses including boat marinas, transmission lines, farming, beehives, radio transmitters, and even radar sites.¹⁰⁰

Public Relations and Wilderness Areas

These various developments, particularly opening virgin timber stands for logging and use of rangewatershed lands for livestock grazing, did not enjoy universal popularity. As the variety of groups interested in national forest use multiplied, the Service came under fire, especially from preservationists opposed to development on national forest lands. At the Fifth World Forestry Congress in Seattle in 1960, the Sierra Club distributed literature attacking the Forest Service. From the point of view of Sierra Club president David Brower and his successor J. Michael McCloskey, the concepts of multiple-use and sustained yield evoked images of unrestrained high-yield commodity production and use.¹⁰¹ The Sierra Club officers were particularly concerned that the Forest Service, despite holding public hearings before designating new wilderness areas, based the designation of new timber sale areas on internally generated multiple-use management plans. In addition, in the Pacific Northwest--though not in Region 4--the Service at that time opposed study of some lands considered as potential national parks.¹⁰² Some of the attacks may have been generated by internal dissent within the Sierra Club itself; the more militant wing under Brower eventually split off to form Friends of the Earth.¹⁰³

Region 4 was able to work out many of these problems.¹⁰⁴ When Floyd Iverson became regional forester in 1957 he entered with a backlog of good will, which he generally maintained. Both the <u>Salt Lake Tribune</u> and the <u>Deseret News</u>, Utah's two major dailies, supported the Forest Service. Moreover, publishers John F. Fitzpatrick and John Gallivan and environmental editor Ernest Linford of the <u>Tribune</u>, together with editor William Smart of the <u>News</u>, were strong supporters.

In some cases, conflict resolution took place through informal meetings. For example, a conflict developed in 1968 between the Sierra Club and stockmen over use of the Bridger Wilderness. Regional officials solved the problem by bringing Ed Wayburn of the Sierra Club and Leonard Hay of the Wyoming Woolgrowers together for a pack trip in the wilderness. After meeting together and gaining mutual understanding, the two developed a liking for one another and were able to work out the disagreement.

In the early 1960's, Congress had under consideration a series of bills proposing the statutory establishment of wilderness areas. Written by Howard Zahniser, executive secretary of the Wilderness Society, and originally introduced by Hubert Humphrey and John Saylor in 1956, one of these bills finally passed as the Wilderness Act in September 1964.¹⁰⁵ The Forest Service opposed the proposed wilderness bill at first as an infringement upon the concept of multiple use. After the Multiple Use-Sustained Yield Act in 1960 gave specific recognition to wilderness as a multiple use, the Service provided strong support for the wilderness bill. After all, the bill basically confirmed existing administrative policy.

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Figure 89--Bridger Wilderness near South Fork of Boulder Creek Guard Station, 1966.

Opposition to the bill centered in a group of western senators who objected on essentially two grounds. First, they considered it elitist legislation of benefit only to that minute proportion of the population with the strength and inclination to backpack or money to hire pack animals. Second, they feared that provisions of the act would retard growth by locking up resources needed for western development. 106

After the passage of the Wilderness Act, the Service had little trouble accommodating itself to its provisions. The act provided that all national forest wilderness areas would remain under Forest Service jurisdiction. It converted to statutory wilderness all wilderness, wild, or canoe areas previously designated under Forest Service regulations.¹⁰⁷ It required the Agriculture Department to review all designated primitive areas within 10 years for possible inclusion in the wilderness system.

The major change inaugurated by the Wilderness Act was to give Congress the sole power to designate new

wilderness areas. Under the law, the president might, however, add up to 1,280 acres to a primitive area at the time of his recommendation to Congress, provided it was part of an area of not more than 5,000 acres recommended for designation as wilderness. While the law required the Interior Department to review roadless areas within its jurisdiction for possible inclusion in the wilderness system, the same provision did not apply to the Agriculture Department. In effect, then, these provisions made it more difficult for the Forest Service to create wilderness areas within the national forests since their designation by administrative regulation as had been done as recently as the establishment of the Jarbidge during the 1950's and the reclassification of the Bridger, Hoover, and Sawtooth to wilderness in the early 1960's was no longer possible.¹⁰⁸

This tightening may have come about because of opposition from a number of western legislators to such administrative discretion. During 1962 and 1963, the



Figure 90—Utah Congressman Howard Nielson and Fishlake National Forest Supervisor Kent Taylor at Utah Wilderness dedication, Mirror Lake, August 1965.

region had considered a number of de facto wilderness tracts for possible formal designation under administrative rulings.¹⁰⁹ In 1963, as Region 4 considered reclassification of the Sawtooth and Idaho primitive areas, the Idaho Legislature expressed to Congress its opposition to the creation of further wilderness areas in the State.¹¹⁰

In addition, some features of the Wilderness Act have either been misunderstood or misrepresented in parts of the West. Although the act generally prohibited motorized vehicles in wilderness areas, it specifically authorized certain exceptions that might be perceived as nonconforming. Motorized vehicles could be used to control "fire, insects, and disease," grazing and hunting could continue, prospectors could still continue to hunt for minerals until 1984, and citizens might develop water resources and works including roads, reservoirs, and transmission lines, as "needed in the public interest."

Under provisions of the Wilderness Act, the Forest Service began a review of its primitive areas for possible inclusion in the wilderness system. A number, like the Idaho Primitive Area, were included, but the High Uintas Primitive area was excluded because of Utah officials' fear that it might inhibit the development of reservoirs or water transmission lines, despite specific provisions of the act that allowed such facilities.¹¹¹

Wild and Scenic Rivers and National Trails System

In 1968, following the passage of the Wilderness Act, Congress passed the Wild and Scenic Rivers Act¹¹² and the National Trails System Act.¹¹³ The Wild and Scenic Rivers Act designated 8 rivers, including the Middle Fork of the Salmon River, as part of the system and 27 rivers, including the Bruneau River and Main Salmon River below North Fork in Idaho, for study. The National Trail system designated four trails in Region 4 including the Continental Divide, Lewis and Clark, Oregon, and Mormon trails for study.

Wildlife

Much recreation in Region 4 both inside and outside the wilderness areas included big-game hunting. Three developments of importance in big game management during the 1960's are particularly worthy of note. First, the Forest Service and the State wildlife authorities finally reduced the deer herds to manageable size.¹¹⁴ Second, the various forests began extensive programs of wildlife habitat improvement.¹¹⁵ Third, close cooperation between the Forest Service and the State game authorities became a standard feature of wildlife management.¹¹⁶

Most notable, perhaps, were the habitat improvement projects, many of which were completed in cooperation with State game authorities.¹¹⁷ A number of forests undertook successful experiments in eradicating and trimming mountain mahogany and aspen to eliminate the overgrazed and high-lined old growth and give the smaller plants a chance to establish themselves.¹¹⁸

Some of the techniques for habitat improvement resulted from research conducted under the auspices of the Intermountain Station. Observations of 225 species of shrubs and forbs over a 4-year period showed at least 30 to be useful for improving the quality of wildlife forage. Most promising seemed to be a natural hybrid of bitterbrush and cliffrose that retained the adaptability of bitterbrush and the evergreen habit of cliffrose.¹¹⁹



Figure 91--Running the Middle Fork of the Salmon River on a rubber raft.



On the Boise and Sawtooth, browse utilization transects were established on a number of districts, and other techniques were used for the analysis of forage utilization and mouse damage. 120

Another area of significant change came in the attitude toward certain types of wildlife that had previously been thought of as predators or had been given only minimal consideration in making decisions about wildlife management policy. In practice, these species had been subjected to near-eradication or habitat destruction. During the 1960's, Assistant Regional Forester D.M. "Mike" Gaufin was particularly concerned about bald eagle habitat, and the region together with national forests, particularly the Boise, cooperated with the National Audubon Society in studying the bird's habits. Part of the concern came from accumulations of pesticides, especially DDT, detected in the carcasses of dead eagles and in their eggs, which, it was believed, might have contributed to the decline in the population of these raptors.^[2] Regional officers also were concerned about the endangered trumpeter swans that wintered in a number of places in the Intermountain Region, including Island Park, ID, in the Targhee and Jackson Hole, WY, in the Bridger-Teton. 122

Though the Forest Service continued to cooperate with the Interior Department's Bureau of Sport Fisheries and Wildlife in the eradication of damaging predators including coyotes, bears, and cougars, some people became concerned that these programs had become too widespread and too indiscriminate.¹²³ To study the problem, Interior Secretary Stewart Udall appointed a committee headed by A. Starker Leopold of the University of California. The Leopold report, issued in 1964 and widely circulated in Region 4, focused particularly on coyote control, and especially the use of compound 1080 (sodium fluoroacetate) bait stations. The report indicated that, under proper management control, the 1080 stations had proved effective in coyote control. It cautioned, however, that the use of 1080 was entirely unjustified in programs of rodent control, because the carcasses of these animals were often eaten by birds and other animals including endangered species such as condors and grizzly bears. $^{124}\,$ Acceptance of the report by Secretary Udall led to the abolition of the Division of Predator and Rodent Control and its replacement with the Division of Wildlife Services headed by Jack H. Berryman, formerly a professor at Utah State University.¹²⁵ In conformity with the Leopold report, Region 4 prohibited its crews from using bait treated with 1080 for rodent control. 126

Earlier, some Region 4 officers had had difficulty in controlling the indiscriminate use of 1080. In the early 1960's, for instance, Richard Leicht, opposed the establishment of 1080 stations on his ranger district on the Salmon National Forest. No sheep grazed on this district, and it bordered a wilderness area. Leicht said that Interior's Division of Predator and Rodent Control "fought us tooth and toenail" to keep the 1080 stations. "We had some real big rows with them," he said. "They even threatened to try to get me fired." Leicht finessed the threat by offering to give them the Chief's phone number and by working behind the scenes through a local wildlife club to secure public support. The predator division had the support of sheepmen on the eastern side of the Salmon in the Baker, Tendoy, and Leadore areas. Nevertheless, Leicht and his supporters succeeded in getting rid of the 1080 stations on two ranger districts. 127

Moreover, forest officers came increasingly to realize that indiscriminate predator control could work at cross purposes with the desire to control the size of deer herds. Foyer Olsen indicated that personnel on the Dixie became particularly concerned about the decline in coyote and cougar populations, since research had shown that these two species helped keep the deer population in check.¹²⁸

It was not long before it was decided that something had to be done to protect those species most in danger of destruction. The solution proposed came in the passage of the Endangered Species Preservation Act of 1966. This act confirmed Forest Service policy for the preservation of certain species such as bald eagles and trumpeter swans, and it also gave statutory protection to other listed animals, birds, reptiles, and fish threatened with extinction.¹²⁹

Considerable concern also existed over destruction of anadromous fish habitat, especially on the Salmon River and its tributaries. The Salmon River was particularly critical, as it was estimated that nearly 30 percent of the salmon and steelhead entering the Columbia River originated in Idaho.¹³⁰ Moreover, studies had shown that dams constructed on the Columbia and its tributaries inhibited the movement of anadromous fish from the ocean to their spawning beds.¹³¹ During the winter of 1964-65, a saturated soil mantle contributed to landslides, particularly on the South Fork of the Salmon River, Secesh River, Cow Creek, and Maverick Creek. These slides caused considerable damage to salmon spawning beds. As a result of the damage, Region 4 and the Idaho Department of Fish and Game undertook a cooperative study of the South Fork.¹³²

These studies and others together with general concern about fish habitat led to stream improvement projects on the Salmon River and its tributaries and on a number of other rivers and streams in Region 4. Projects included spawn bed improvement and stream barrier removal and redesign.¹³³ Other projects to stabilize streambanks and make pools in the streams for the fish included the installation of structures such as gabions, deflectors, and anchor chains.¹³⁴ In some cases, the Service cooperated in poisoning trash fish to improve the habitat for trout and other favored game species.¹³⁵

Watershed Management

Closely associated with stream damage and improvement was the broad concern over watershed management. Legislation culminating in the Water Quality Act of 1965 significantly impacted national forest administration in Region 4. Forest officers included hydrologic surveys and analysis, watershed surveys, and other measurement techniques in their multiple-use surveys. A number of the projects were carried out under special acts of Congress, particularly the Flood Control Act of 1944, the Pilot Watersheds Project Act of 1954, and the Small Watershed Program under Public Law 83-566 (often referred to as PL 566 or Small Watershed projects).¹³⁶

In many of its watershed management activities, the Service coordinated its efforts with the Bureau of Reclamation.¹³⁷ Perhaps the best example of such coordination was on the central Utah Project, which affected



the Ashley, Uinta, and Wasatch National Forests. The Central Utah Project involved impoundment of streams flowing into the Colorado River drainage and its transmontane diversion via Diamond Fork and Provo River and into the Great Basin, for use in the urban area of the Wasatch Front and for central Utah agriculture. Since the flows of streams and conditions of watersheds within the boundaries of national forests were vitally affected, close coordination was necessary.¹³⁸

As planning on the project had begun, the Forest Service prepared a preliminary report in 1951 analyzing anticipated impacts on the national forests. Though the Bureau of Reclamation began the project without first consulting the Forest Service, beginning in 1962 the Service worked closely with the Bureau, the Utah Department of Fish and Game, the Central Utah Water Conservancy District, and other agencies on planning and development of the project. Since the Central Utah Project office was located in Provo, after consultation with Uinta forest supervisor Clarence Thornock, the regional office transferred Elmer Boyle from the Sawtooth where he had headed the Sawtooth National Recreation Area to Provo to provide liaison between the Forest Service and Bureau of Reclamation.

In connection with the hydrologic and watershed surveys, soil surveys provided valuable information for future planning.¹³⁹ In 1964, the Service assigned a granitic soils study team made up of representatives of the Washington Office, Regions 4 and 1, and the Intermountain Station to investigate soil conditions of the Idaho batholith.¹⁴⁰ From this and other surveys, the Payette, Boise, and Sawtooth National Forests applied information to a wide variety of resource use and activity plans.¹⁴¹

Hydrologic surveys followed well-established forms. Based on the same principles as the timber reconnaissance or range allotment analysis, hydrologists surveyed a given area, estimating the amount of bare ground, litter, and vegetation. Using these surveys and weather records and basing prescriptions on the assumption of a hundred-year flood occurrence (flooding likely to be the worst in 100 years), they then estimated the potential runoff from particular areas based on soil types, slope, and other factors.¹⁴²

As the soil and hydrologic surveys continued, regional officers factored results into planning. In 1965, Deputy Regional Forester William D. Hurst instructed personnel to revise subregional multiple-use management and other guides to include information from the surveys, to issue instructions on procedures for work on "proposed potential soil-disturbing projects," to call upon hydrologists or soil scientists where necessary, and to train personnel to deal with soil and watershed problems.¹⁴³

In connection with watershed problems, the region provided technical assistance for various types of studies. In June 1963, for instance, James Jacobs and Robert Rowen accompanied Toiyabe forest personnel over critical parts of watersheds in the Reese River area, helping to formulate recommendations for watershed rehabilitation.¹⁴⁴ Salmon National Forest engineer A.R. Bevan produced a reconnaissance report on Dump Creek, which posed a particularly severe erosion hazard to the Salmon River.¹⁴⁵ Crews initiated stabilization projects like the one on the East Carson Road on the Toiyabe.¹⁴⁶ Specialists provided functional assistance, as in the work on various portions of the White Pine Ranger District of the Humboldt in 1969.¹⁴⁷ Crews worked on rehabilitating burns in the Truckee River Basin on the Toiyabe and on the Boise Front.¹⁴⁸ Erosion control projects were undertaken on a number of sites including the old Bridger sheep driveway on the Bridger and the Ferron Watershed and Joes Valley on the Manti.¹⁴⁹ Forest Service officers continued to work with the Weber County Protective Corporation and the Wellsville Mountain group in watershed rehabilitation on the Wasatch Front in Weber, Box Elder, and Cache counties in Utah.¹⁵⁰

In 1960, the Service and other USDA agencies began river basin investigations.¹⁵¹ One study team worked on the Humboldt River drainage in central Nevada.¹⁵² A second team studied, on the Boise River, drainage of the Boise and Sawtooth forests above Arrowrock Dam in Idaho.¹⁵³ Another team, including representatives from four forests and the Soil Conservation Service, investigated the Sevier River in southern and central Utah.

Unfortunately, on the Sevier project, after a time it appeared to some of the Forest Service officers that Soil Conservation Service personnel were delaying the final report. Carl Haycock, who had headed the Forest Service group within the study team, retired rather than continue to face what he perceived as SCS intransigence.¹⁵⁴

Many of the watershed rehabilitation projects produced positive results. Residents of Turnerville, WY, reported a large reduction of sediment in their culinary water after rehabilitation of Willow Creek on the Bridger.¹⁵⁵ Work on the West Fork of Elk Creek on the Targhee in Idaho reduced sediment in Palisades Reservoir.¹⁵⁶ Most important, perhaps, the Davis County Experimental Watershed where Intermountain Station scientists had developed techniques for watershed rehabilitation and improvement, had proved its value in greatly reducing flood damage in Wasatch Front communities north of Salt Lake City.¹⁵⁷

Nevertheless, watershed problems continued. Forest Service officials have indicated that while they "did an awful lot of watershed rehabilitation," they "made mistakes," largely because of a "lack of knowledge."¹⁵⁸ In southern Utah, they found that they could not contour trench the Mancos shales because they "would just slide away with you." The techniques developed on the Davis County Experimental Watershed did not work well in controlling wet-mantle or frozen-mantle floods. Under those conditions, the soil was already saturated or impervious so contour trenches and increased vegetation often would not prevent landslides or control runoff. 159 Shallow soils on top of bedrock did not respond well to treatment. 160 Fortunately, the techniques worked where they were most needed, in the relatively deep but overgrazed soils of the Wasatch Front and the granitic soils of the Idaho Batholith.

Timber Management and Watershed Damage

During the early 1960's, the Washington Office placed almost unbearable pressure on the region to meet the annual sustained yield allowable cut. Between 1956 and 1963 Forest Service researchers completed a comprehensive timber survey. The findings, published in 1965, indicated that the timber supply in the United States was probably adequate to meet public needs at least through the early 1990's.¹⁶¹ By the early 1960's, the United States was actually growing 17 percent more timber than loggers were cutting.¹⁶² As a result of supply exceeding demand, the actual cut on all national forest lands never reached the sustained yield allowable cut until a major push in 1966.¹⁶³ In Region 4 demand was so low that great expanses of timber--especially the lodgepole pine type--continued to deteriorate.

In certain particularly vulnerable watershed areas, however, Region 4 experienced serious difficulty in controlling logging damage to the land and vegetation. The silting on the South Fork of the Salmon mentioned earlier had largely resulted from logging road construction as large trucks, each hauling 10,000 board feet of 34-foot logs, pounded the roads. In 1963, in response to Regional Forester Floyd Iverson's request, Chief Cliff appointed a team of Division Chiefs from Washington to look at severe problems on the Payette and Boise. Vern Hamre, later Regional Forester in Region 4, represented the Washington Office Division of Watershed Management on the team. After the report showed the almost unbelievably bad damage that Iverson had expected, he pressed for an immediate reduction in the allowable cut, but the Washington Office refused to grant permission. Instead, it issued "a minor cautionary report."

In the absence of Washington Office direction, under the circumstances, Region 4 moved ahead by appointing a team headed by soil scientist John F. Arnold to work out hazard classification, identify suitable locations for logging roads, indicate places where roads could not be built without unacceptable damage, and designate locations that "had to have specialized logging or no logging." 164

Arnold, following the lead of Regional Engineer James Usher, indicated that cost-benefit relationships had to be considered in all road construction. Going beyond Usher, however, he argued that if the engineers could not assure the needed road stability under existing conditions, the project ought to be postponed until safe methods such as helicopter logging became economically feasible. Most particularly, engineers ought to locate and design any road for stability under the particular geologic conditions.¹⁶⁵

In order to correct existing damage, engineers on the Boise and Payette, with regional office support, undertook a major road reconstruction project. To accomplish this they took out and improved drainage systems, put in silt filter traps on the downside of the roads, installed small debris basins and other structures to stabilize the still-eroding soil and to keep it from silting the river, and reseeded the fills with brome, orchardgrass, wheatgrasses, and timothy.¹⁶⁶

As indicated previously, similar problems had developed on the Teton.¹⁶⁷ When Bob Safran returned to the Teton as supervisor in 1963, he found that the Service had increased the annual allowable cut from 5 million to 54 million board feet. Over the period between 1957 and 1960, the actual cut had averaged 3.7 MMFBM. In 1963, the cut was actually 12.8 MMFBM.¹⁶⁸ Both these figures were considerably below the allowable annual cut, but the 1963 cut was nearly 3-1/2 times the previous average.

Although ostensibly prepared according to multipleuse management principles, the allowances seemed to Safran to have been determined without reference to watershed, wildlife, range, and recreation values. Landslides and erosion had become serious problems, and outside consultants who were brought in to study the situation presented their findings on inadequacies to the Washington Office. Instead of offering to reduce the cut, however, Washington Office personnel thought both the consultants and Safran had overreacted to public sentiment.

Safran himself began to take action to resolve the problems, but ran into conflict with representatives from the regional timber management, particularly Assistant Regional Forester Joel L. Frykman. Recognizing the seriousness of the situation, Safran succeeded in going over Frykman's head to Floyd Iverson in his effort to reduce the allowable cut to protect other national forest values.¹⁶⁹

Some have argued that Safran, Iverson, and others overemphasized these problems. Large areas of Region 4 continued to consist of overaged and deteriorating stands and patterns in timber management in Region 4 were not unlike those in other regions. As George A. Roether, currently staff director of timber management in Region 4 pointed out, cutting practices in Region 4 during the 1960's were "just about in step with the whole history of the country," in increased mill capacity, allowable cut, and other matters. "Clearcutting, for example, peaked in Region 4 in the 1960's, just like it did nationally." The changes, he believed, "can best be explained by the concerns that arose in the mid to late 1960's over the amount of clearcutting that the Forest Service was doing."¹⁷⁰

While some might agree, the efforts on the part of Floyd Iverson and others to reduce the allowable cut in Region 4 generated internal displeasure and considerable conflict with representatives of the Washington Office.¹⁷¹ In the Regional Office itself, Assistant Regional Forester Joel L. Frykman thought that the regional administration paid too much attention to watershed management. Somewhat dissatisfied, Frykman retired in the late 1960's to enter private practice as a consulting forester, and Marlin C. Galbraith, who replaced him, did not share Frykman's views.

By the late 1960's, conditions began to change. Fortunately for Floyd Iverson, many national and local conservation leaders strongly support the region's early attempts to put the brakes on timber harvest if other values stood in jeopardy. The timber industry was somewhat unhappy at the region's efforts to reduce the allowable cut, but they did not have the political clout of former years, perhaps because of the increased power of conservation organizations like the Sierra Club. Still, some public relations problems developed because of the inability of companies like Boise Cascade and Intermountain Lumber Company to get all the timber they wanted on the Boise and Salmon National Forests.¹⁷²

Improving Technology and Timber Management

Given the revelations about unsatisfactory watershed conditions, it was almost inevitable that the Forest Service and the timber industry should attempt to help



in reducing damage to the land by improving yarding technology. As early as 1959, the Sawtooth Lumber Company tried skyline yarding on the Boise.¹⁷³ By 1963, the Service reported that experiments in other regions had shown that helicopters could reach and remove otherwise inaccessible timber while at the same time substantially reducing damage to watershed and scenic values. Balloon logging in other regions permitted longer yarding distances and reduction of skidding damage and facilitated the protection of soil on steep and rough terrains.¹⁷⁴ Probably because of excessive cost, helicopter and balloon logging were not introduced on the Boise until the 1970's.¹⁷⁵

As in the past, large areas of unlogged, overaged, and deteriorating stands remained in Region 4, especially lodgepole pine. Regional and forest officers wanted to step up logging in these areas and pushed for companies to buy such stands of timber. In 1962, the Idaho Stud Mill Company opened a million-dollar plant in St. Anthony to take advantage of Targhee lodgepole pine. Headed by Frances M. Gibbons of Salt Lake City and managed by William Semmler of St. Anthony, the company began logging operations with a 300 million board foot multiyear sale on the Moose Creek Plateau. The mill manufactured 2 by 4 studs and produced chips for shipment to a paper mill. The company achieved a high degree of efficiency in the woods by adopting



Figure 92--Balloon logging on the Boise National Forest, late 1960's.

various mechanized techniques.¹⁷⁶ By 1969, the company had begun to use a Beloit tree shear which debranched, topped, and sheared off a tree in under 30 seconds.¹⁷⁷

Installation of the Idaho Stud Mill was one phase of a larger effort on the part of the regional administration and the forests to utilize overaged and deteriorating stands. Although the region was concerned over the abuse of areas like the South Fork of the Salmon River and the certain areas of the Teton National Forest, it was nevertheless committed to logging "safe" areas containing mature timber. Efforts to accomplish this goal included continued studies of aspen stands, publicity over the use of mountain mahogany in Nevada for charcoal, and consideration of the establishment of a pulp mill on the Green River in Wyoming.

Still, by the late 1960's, increasing lumber production for export led some leaders in the West to become concerned over what they perceived as a significant decline in the volume of available sawlogs, particularly from western national forests. In 1967, Idaho Governor Don Samuelson wrote Secretary of Agriculture Orville Freeman inquiring about the possible need for overcoming a log shortage in Idaho. In response, Freeman indicated that the volume of exports from some coastal areas had risen too fast to correct immediately, but that the Federal Government had already inaugurated talks with the Japanese. On the other hand, Freeman doubted that the problem would affect the Mountain West since large volumes of lodgepole pine and other species remained unharvested and deteriorating in southeastern Idaho and north Utah. 178

Timber Regeneration and Timber Pests

As the demand for favored species like ponderosa pine and Douglas-fir accelerated, reforestation activities seemed increasingly essential. Reforestation activities in Region 4 centered in the Lucky Peak nursery on the Boise, which by 1965 had the capability of producing 11 million seedlings, with the potential of expanding to 30 million on adjacent land.

The secret of successful reforestation was to return seedlings to the general areas from which the seed had been collected.¹⁷⁹ Some species, especially Douglasfir, had a very narrow window of adaptability; planting 500 feet too high or low in elevation could cause difficulties in its regeneration.¹⁸⁰ In the 1960's, experiments with reforestation showed that, under such controlled conditions satisfactory regeneration of some species was possible.¹⁸¹ Regeneration was generally quite good with ponderosa pine but poor with Engelmann spruce.¹⁸²

Unfortunately, the continuing problem with forest pests, particularly bark beetles, posed a threat both to generally valuable timber and to the deteriorating stands of lodgepole pine. In many cases, regional officers found themselves in an extremely difficult situation. If they did not control the outbreak of a beetle infestation, they were blamed for allowing the loss of useful products and economic values. If they undertook massive programs to try to eradicate beetle infestations by offering buginfested stands at distress-sale prices, they were accused of destroying esthetic values for the sake of timber production. $^{183} \ensuremath{$

During the early 1960's, the Service generally felt that control of the beetles was essential. The national forests tried to sell the infested timber or, failing that, sprayed the trees generally with ethelenedibromide (EDB), or felled and burned them. 184

Often, the results of attempted distress sales could be quite disappointing. In at least one case, the large Idaho Stud Mill operators refused to bid on such a sale because they did not believe "the Targhee National Forest [had] available the amount of merchantable sawlog lodgepole pine in <u>economic stands</u> to sustain the proposed accelerated cut," and because such a purchase would have necessitated their investment in an additional sawlog manufacturing facility.¹⁸⁵

Mountain pine beetles on the North Slope of the Uinta Mountains posed the worst problem of the decade. During 1960-61, the region undertook extraordinary measures to deal with the epidemic. Because of the extent of the damage, the region inaugurated "Operation Pushover" on the Wasatch, as a more economical alternative to spraying. This operation consisted of knocking down the timber, piling it in windrows, and burning it to prevent the spread of infestation. A 150-foot heavy anchor chain tethered and pulled between two large tractors leveled the trees. Bulldozers then pushed the trees into windrows where crews burned them. It was estimated that this method cost less than one-fifth as much as spraying. Since the beetles had killed most of the timber already, leaving a stand of old gray snags, forest officers believed that the actual esthetic damage from pushing over everything was minimal.¹⁸⁶

Nevertheless, the region recognized the potential for negative public reaction to "Operation Pushover." The Division of Timber Management and Division of Information and Education together produced a booklet outlining the reasons for the radical treatment of the particular North Slope area.¹⁸⁷ Regional officers mounted a massive public relations effort with political and civic leaders to minimize the negative impact of the windrowing and burning. The project lasted only 2 years, because foresters and ecologists feared the unpredictable longrange consequences of continuing the operation.¹⁸⁸ Nevertheless, after the completion of the project in 1961, the region still considered the solution of this timber problem on the North Slope to be its number one priority.¹⁸⁹

The Washington Office rated Utah and Wyoming as America's two worst areas for pine beetle infestation. During 1961 alone, the Service spent \$1.2 million on insect control in the two States, most of it using conventional methods.¹⁹⁰

While the situation on the Wasatch was unusually bad, perhaps conditions on the Teton during the 1960's were about average for the other northern Utah, western Wyoming, and eastern Idaho forests affected by the pine beetle infestation.¹⁹¹ On the Teton, as on the other forests, the infestations had run in cycles. A 1958 beetle epidemic started an upswing that continued until about 1965. Though the Teton tried, it was unsuccessful in selling any infested timber until 1962, and thereafter only in small amounts. The problems on the Teton were compounded because the adjacent Grand Teton National Park also was infested and the park had insufficient funds to undertake extensive treatment. Moreover, the Regional Office and the forest recognized the inviolability of the Teton Wilderness, and a 1965 regional policy statement placed the wilderness out of bounds for treatment. In the 11 years between 1958 and 1968, the Teton expended \$3.3 million to treat nearly a million trees, at an average cost of \$3.46 per tree.

By the early 1960's, regional officers were beginning to question the advisability of continuing such expensive treatment.¹⁹² In a 1962 GII of the Teton, John Herbert and Lewis Clark of the regional office raised three points for consideration. First, they pointed out that the timber on which the forest had expended so much had little current economic value and would probably have little for years to come. Second, the impact of the dead trees on the scenery was temporary, and it seemed possible that the untreated stands would regenerate satisfactorily. Third, much of the timber grew on steep slopes and would not be under management in the foreseeable future.

As a result of the questions, the Division of Forest Economics and Recreation Research was asked to undertake an economic study of the control efforts on the Teton. The absence of a market for lodgepole pine presented the immediate problem for the forest. Though the allowable cut stood at 53 million board feet, 24 million of that had been withdrawn because of problems with spruce regeneration and the absence of markets had reduced the actual cut in 1963 to 13.7 million. More timber had been offered for sale, but it remained unpurchased.

The opening of additional markets for overaged trees seemed unlikely, and the report suggested that the forest plan for future needs. This called for an emphasis on managing young stands rather than on protecting old timber. In 1963, however, the Teton spent only \$502 on regeneration and young stand management while it put out \$401,300 on beetle control projects. The priorities seemed skewed, and the report suggested that the Teton



Figure 93-DDT monitoring conducted as part of Spruce Budworm Project, Hughes Creek, July 1964.

consider less expensive alternatives similar to Operation Pushover, especially as that program had enhanced the ability of the forest to regenerate itself.

The report went on to make what seems in retrospect to be obvious but was at the time a novel conclusion. Any pest control program ought to be related to multiple-use management objectives. Thus, "any insect control program on the Teton National Forest not specifically related to the timber management objectives is in danger of being less effective than desirable if not completely ineffective." Therefore, the Teton administration needed to identify those highly operable and highly productive timber areas. Other values, particularly recreation, needed to be considered--especially on the Teton. In any case, before a complete economic study of the forest could be made, "entomologists must describe more completely than has been done what the physical results of different control alternative actions might be."

In considering other values, the regional administration had to consider the potential ecological damage of the pesticides themselves. The public perceived this problem as particularly serious in the early 1960's in part because of the publication of Rachel Carson's <u>Silent Spring</u> in 1963 and because of the expressed concerns of conservationists such as Ira N. Gabrielsen, President of the Wildlife Management Institute, and Clarence Cottam, director of the Welder Wildlife Foundation, both of whom had previously held high positions in the Fish and Wildlife Service. Such concerns eventually led to the passage of the National Environmental Policy Act in 1970.¹⁹³

In response to these concerns, the region undertook a pesticide surveillance program in cooperation with the Fish and Wildlife Service. In general, the region received high marks for its careful use of pesticides. This was especially the case with EDB, a pesticide generally used in bark beetle control programs because it was relatively nontoxic to fish. Much more care had to be used in spruce budworm control, because it relied on DDT, which was highly toxic and persistent in the ecosystem.¹⁹⁴ In order to try to make these budworm control projects safer, the region experimented with other chemicals such as Sevin and Malathion.¹⁹⁵

Fire Control

During the 1960's, the second thoughts that had arisen concerning the control of insect pests did not generally occur in fire control. On the contrary, fire suppression achieved an even more central role in defining the Forest Service mission and esprit de corps. Many forest officers perceived firefighting as their number one activity. For some it had become the "moral equivalent of war in the Forest Service." Firefighters constituted a "fire fraternity." Along with the continuing concentration on suppression techniques, an even greater emphasis on training and organization appeared.¹⁹⁶

In part, the heavy emphasis on training and organization resulted from the Donner Ridge Fire experience of 1960. Originating in Region 5, the fire spread to the Toiyabe. It had broken out while Toiyabe crews were fighting another blaze at Scott's Lake. At the same time, crews in Region 5's Tahoe National Forest were fighting two other serious fires. Most important, the Donner Ridge Fire received great public attention since it affected the Carson City-Reno area by blackening the skies and knocking out electrical power for 25 hours.¹⁹⁷

Since the crews on both national forests were already tied up and the lines of cooperation had not been well defined, the Toiyabe had a difficult time finding enough trained firefighters. After the fire, the Region 4 office told the fire control officers that the region "needed to get our training and organization together." Toiyabe Supervisor Ivan Sack secured funding for scholarships in forestry, and the regional office "made a tremendous change" in its training program.¹⁹⁸ The changes in organization included new standards. By 1964, crews of smokejumpers were expected to be on a fire 15 minutes after it was reported.¹⁹⁹

Most important was the movement toward greater coordination. This movement led to the establishment of the Boise Interagency Fire Control Center (BIFCC) in 1967 and the dedication of BIFCC facilities at the Boise airport in 1969. Established under joint management of the Forest Service, the Bureau of Land Management, and the Weather Bureau, BIFCC provided backup forces and equipment for all Federal fire protection agencies in the West. Later joined by the Bureau of Indian Affairs and the National Park Service, the BIFCC complex near the Boise airport included an administration building, smokejumper loft, warehouse, barracks, and training facility.²⁰⁰ More extensive use was made of American Indian crews than before, and interagency cooperation became the watchword.²⁰¹

The region introduced increasingly greater mechanization to transport fighters, material, and equipment rapidly to fires.²⁰² As early as 1956, the region began using helicopters in conjunction with smokejumpers to move personnel rapidly from one point to another.²⁰³ The regional office negotiated tanker contracts for all forests, and by the mid-1960's, it had tanker bases at Boise, McCall, Salmon, Challis, Twin Falls, and Hailey in Idaho, Salt Lake City and Cedar City in Utah, and Minden in Nevada. Individual units rather than the regional office contracted for helicopter services, and any unit that could afford a helicopter and had need for one "could usually have their services provided."204 In 1959 on the Boise, helicopters were assigned to the Garden Valley and Cascade ranger districts during periods of intense lightning activity. By 1968, the region inaugurated airplane fire spotters with infrared scanners that could record heat images; detailed pictures were in the hands of firefighters within 3 hours. 205

Of course, traditional techniques were still used. Forests with high fire risk such as the Payette still had a great many lookouts; firefighters still got to a majority of the fires on foot.²⁰⁶ The region continued to rely upon the smokejumpers at McCall and Idaho City.²⁰⁷ Some forests without smokejumpers such as the Toiyabe wanted such crews, but funds were insufficient.²⁰⁸

Most important, the measures taken proved effective in reducing the extent of fires. In the decade 1910-19 the average fire on the Boise National Forest burned 231 acres. The average fire size for the 1960-69 decade was only 14 acres.²⁰⁹ Significantly, in the West, the average fire was caused by natural forces, not by people.²¹⁰ Between 1956 and 1960 the region experienced an annual



Figure 94--Kitchen at Swamp Creek Camp, Corn Creek Fire, August 1961.

average of 895 fires. Of these fewer than one-third were human-caused, while nearly two-thirds resulted from lightning.²¹¹

Urban areas experienced the major problems with human-caused fires. On the Wasatch above Davis County communities, for instance, children playing with matches caused a number of serious fires. The district ranger, Gordon Van Buren, gave interviews to the local papers and visited schools to distribute Smokey Bear kits, encouraging participation in the junior ranger program. Van Buren, with the help of Julian Thomas, conducted field practice sessions. Still, fires adjacent to urban areas continued to cause problems. At a fire in the foothills in 1963, for instance, Davis County officials described the fire line as an obstacle course-people would come as far as 3 miles to see the fire.²¹²

To promote public awareness of the need for forest fire prevention, the Forest Service inaugurated its Smokey Bear awards. Several of these awards went to private citizens and organizations in Region 4, including Henry Norton of Reno, the Salt Lake City Junior League, the Idaho Junior Chamber of Commerce, Ernest Linford of the <u>Salt Lake Tribune</u>, Roger Pusey of the <u>Deseret</u> <u>News</u>, and Bernell Calderwood, a Salt Lake City television personality.²¹³

The Service also placed an increased emphasis on cooperation with non-Federal agencies. In the United States by 1967, the 480 million acres of State and privately owned forest lands had protection through cooperative agreements with the Forest Service.²¹⁴ The Service also took the responsibility for leadership in the Rural Fire Defense program, which covered all rural lands throughout the United States.²¹⁵ Unfortunately, the amount of money the States in the Intermountain Region received for cooperative fire prevention under the Clarke-McNary Act was much less than some other areas received, Region 5, for instance.²¹⁶

The regional officers cooperated in forest fire research. The Boise, Salmon, and Challis National Forests, for instance, worked with the Intermountain



Figure 95--Con Peters and crew at communications post, Swamp Creek Camp, Corn Creek Fire.

Station on Project Skyfire, research designed to try to learn about the electrical and physical characteristics of mountain thunderstorms.²¹⁷

Firefighting had grown very expensive, a point well understood by the regional administration. In 1963, Regional Forester Floyd Iverson pointed out that the costs of fire suppression had "skyrocketed." In dealing with the problem, he called upon forest supervisors to pay particular attention to the optimum use of traditional means of suppression and to avoid "excess and improper use of costly retardant operations and related air activities."²¹⁸

Under the circumstances, however, as those on the Toiyabe learned from the Donner Ridge Fire, the incentives generally went against economy. During a fire, a supervisor could be blamed for what he did not do, whereas he was generally not faulted for what he did do to get the fire extinguished.

Engineering

Essential in the work on fire control and timber, watershed, and recreation management was the Engineering Division under Regional Engineer James M. Usher. Because of the heavy emphasis on timber production during the 1960's, most road money went for logging road or fire control construction. The regional forester, however, had considerable discretion in the use of road funds, at least until the late 1960's, when the Washington Office began to earmark funds for timber management. With that discretion, the region constructed roads in the Wheeler Peak area on the Humboldt and in the Flaming Gorge National Recreation Area. In some cases, however, employees on the national forests felt it necessary to emphasize the utility of a road for timber management or fire control, when, in fact, they intended it to be used principally for recreation.²¹⁹

Many observers have been critical of the overemphasis of timber access construction. Occasionally however,

timber management may have been a convenient ruse for the construction of a recreation or grazing road. Don Braegger, for instance, remembered a road on the Ashley constructed ostensibly for a timber sale. In retrospect, however, Braegger said that he had been "on the road many times and I have yet to see a logging truck use the road."²²⁰

Engineering also emphasized the need for safety in various operations on national forest lands. In January 1961, for instance, at a meeting in Ogden, the Service adopted the American Standard Safety Code for Aerial Passenger Tramways of the American Standards Association. The code incorporated the experience of the Forest Service, tramway materials manufacturers, and ski lift operators in the design and operation of facilities on national forest winter sports areas.²²¹

Increasingly, the Service placed emphasis on construction through contracts rather than force account. This change of emphasis led the Engineering Division to become involved to a greater degree in awarding and supervising contracts rather than in providing extensive services on the ground. In general, these contract relations were quite satisfactory. Such minor disputes as might arise were worked out through consultation. In rare cases, however, disputes ended up in appeals through the Forest Service administrative system or the Federal courts.²²²

The Engineering Division ordinarily followed a standard procedure in managing contracts. The procedure followed on the Middle Fork Trail on the Challis National Forest, was quite typical.²²³ A forest engineer and crew located, staked out, and designed the trail. In some cases, necessary engineering design work was done by a private firm; however, in this case, it was done by the Forest Service staff.²²⁴ After the contract was let following competitive bidding, Challis contracting officer Claude M. Bruce and members of the forest engineering staff held a prework conference with representatives of the contractor, Gray Landscaping, to discuss contract administration. One of the Forest Service engineers was designated as project inspector. Only he, the forest engineer, or the contracting officer was authorized to make any changes in the contract. Terms of payment were laid out, and other matters relating to cooperation were discussed. The contractor was required to secure a performance bond. After completion of the job and final inspection to ensure that the contract terms had been met, the contract was closed and final payment made.

There is little question that the push for an increase in logging during the 1960's placed considerable strain on the engineering staffs, particularly on the large timber forests. Supervisor Howard Ahlskog, for instance, reported in 1962 that the Boise needed either a larger engineering staff or more money to contract for engineering work.²²⁵ At the same time, the regional office found the engineering staff of its blueprint and photo laboratory services considerably strained to complete all the orders coming from the forests.²²⁶

The pressure on the Regional Office and the national forests intensified in the early 1960's as the Washington Office issued revised Service wide standards for signs. During 1961, each forest inventoried its sign needs to provide an estimate of the cost of meeting the demand. In 1962, Region 4 established a sign shop to manufacture



Figure 96--Plane dropping bentonite fire retardant, 1963.

all major signs. Individual forests were instructed to have large signs constructed at this shop. Smaller signs could be constructed locally.²²⁷

Range Management

The range management activities of the 1960's essentially continued those of the previous decade. Two trends seem most apparent. First was the effort to get stockmen to pay the fair market value of the resources they used. Second was the continued effort to protect the land by limiting livestock to manageable numbers and seasons and conducting range improvement projects.

The move to adjust the basis for grazing fees began in 1959 with a Bureau of the Budget order directing that Federal agencies obtain the fair market value for all services and resources they provided the public. In 1962, USDA's Economic Research Service completed an evaluation of ranch operations using public rangelands. The results showed that grazing fees constituted only a small portion of each stockman's operating expenses.²²⁸ In 1965, the Forest Service and the Departments of the Interior and Defense undertook a grazing fee study. A cooperative study at Utah State University began at the same time to determine the grazing values and appropriate fee levels for the national forests in Utah. The Forest Service planned to use the Utah study as a pilot program to develop procedures and computer models for evaluating grazing fees in the other western national forests.²²⁹ Over the same period, the Bureau of the Budget undertook a study of charges for the use of all federally owned natural resources.²³⁰ These studies were followed by a survey for the Forest Service and Bureau of Land Management begun in May 1967 by the Statistical Reporting Service.²³¹

In 1967 the Federal agencies shared the findings of all these studies with the livestock industry. On November 14, 1968, the Secretaries of Agriculture and the Interior announced proposed policy changes in the method of determining grazing fees. In December 1969, the Department of Agriculture issued draft regulations under the new policy. Under the new system, fair market value of the land rather than the livestock values, as in the fee system in effect since 1931, became the basis for fee determination.²³² Land values in 1966 determined from a comparison of public and private lease charges became the baseline. The Forest Service planned to phase in the fee increases over a 10-year period and thereafter to recompute permit charges annually using the Economic Research Service index of forage values off the preceding year, which was based on average lease rates for private land grazing in the 11 Western States.²³³

Significantly, although national livestock association representatives approved the method, some western grazing groups and their allies were strongly opposed. The Department of Agriculture received petitions from various groups, especially from Nevada, including the Humboldt County Commissioners;²³⁴ the Ruby Soil Conservation District;²³⁵ and representatives of the Nevada State Farm Bureau, the Nevada State Cattle Association, and the Nevada Woolgrowers Association.²³⁶ Some people applied pressure through congressional delegations, in an unsuccessful attempt to block the increase.²³⁷

In its program of adjusting the number of animals and their seasons of use to the grazing capacity of the land, the region continued in the 1960's much as it had before. As before, the Service had to justify its program to the public and to Congress. A statement made before Senator Frank Moss's Subcommittee on Public Lands in 1960 outlined the allotment analysis procedures, the purposes of the analysis, and the appeals procedure.²³⁸ The same year, representatives of the various land management agencies, including the Forest Service, met to explain their procedures to the National Woolgrowers Association in Salt Lake City.²³⁹ As late as 1961, the Utah Farmers' Union passed a resolution asking for a moratorium on permit reductions. The Department rejected the moratorium as unacceptable in meeting its responsibility for land management.²⁴⁰

As indicated earlier, most reductions in the 1950's and 1960's did not go to appeal. Both the Service and the stockmen generally believed it to be in their interest to settle their differences amicably if possible. Differences were generally settled through negotiation.²⁴¹ Woolgrowers complained about the system of allotment analysis, but by the early 1960's, they generally recognized its validity.²⁴² By 1962, when William Hurst left the position as Assistant Regional Forester for Range and Wildlife Resources to become Deputy Regional Forester, the region "had established a strong position," and "reductions in numbers as well as range development programs were being worked out in the field rather than through the appeal process."²⁴³

Some former officers in Region 4 believe that after the early 1960's it became somewhat more difficult to achieve necessary range reductions. In the opinion of some, the Washington Office seemed less inclined to support the forest officers and discouraged them from allowing proposed reductions to go to appeal.²⁴⁴ In some cases, as in an allotment in the Boise Valley, the region lost an appeal to the Chief.²⁴⁵

Still, the attempts to continue reductions continued. J. Kent Taylor, now Fishlake National Forest Supervisor, for instance, spent the years 1965-67 in the regional office working with Attorney-in-Charge Dean Gardner on appeals, including the Chalk Creek Allotment on the Fishlake and the Canaan Mountain allotment on the Dixie.²⁴⁶

At the same time, relationships with stockmen improved. An outstanding example occurred on the Spanish Fork District of the Uinta.²⁴⁷ In 1960 Reed Christensen replaced Merrill Nielson as district ranger. Nielson had experienced so much abuse from the Hobble Creek permittees that he refused to attend their meetings.

Shortly after arriving on the district, Christensen sat at breakfast in a local cafe. Several of the Hobble Creek and Diamond Fork permittees were there at the same time. Apparently not recognizing Christensen, they talked about the range and its management. One permittee said he did not "know if the Forest Service knew too much about range and how it should be managed and what was suitable." Art Finley, the Hobble Creek association president, replied that, "if you have about \$10,000 and 2 weeks they will tell you everything they do know."

About 2 weeks before the first annual meeting of the permittees after Christensen arrived, Finley asked him to come over for a little talk. Christensen had told him that he thought it was nonproductive to fight and that the appeals process would decide whatever "would be decided and, until it was, we ought to try to get along." Finley said he agreed.

On that basis, Christensen went to the permittees meeting. When he arrived, he found Finley and five association board members. First, Christensen said, they spent 20 minutes "telling me what a miserable cuss the Forest Supervisor was." After that, he said, "they put about the next 20 minutes on the District Ranger that preceded me." Then, he said, "they started on me." At that point, Christensen gathered up his briefcase and started for the door. Finley asked, "Where are you going?" "Well," Christensen replied, "I can't do much about your feelings toward [Supervisor Clarence] Thornock or Merrill [Nielson] but I either have got to fight with you or leave--and this time I am going to leave." Finley tried to talk him into staying, but Christensen refused, saying, "No, you set up another meeting in my office and we will talk business the way it should be done, but I am not going to sit here and take personal abuse."

The next day, Finley called and set up a meeting. The two of them met and discussed the matter and got along well from that point on. Several times at association meetings some of the permittees wanted to get into "an argumentative mode." Finley would always stop the permittees and make sure they understood that they were there to conduct business.

Some trespass continued, though it was generally minimal compared with previous years. Chief Ed Cliff said that since newborn calves were not counted against the permitted numbers, on one central Utah allotment some ranchers tried to bring their weanlings on the public land as twins of the unweaned calves.²⁴⁸

In an effort to be certain that range conservationists completed the allotment analysis as professionally as possible, the Service continued regular inspections. In most cases, the technicians had conducted the analysis
following proper procedures. When it appeared that irregularities might have occurred, as on the Boise in the early 1960's, a thorough review of the procedure was undertaken.²⁴⁹

Various techniques were used to improve the range allotments. On some of the allotments, rest-rotation systems based on those devised by August L. "Gus" Hormay were introduced.²⁵⁰ In a number of cases, Hormay conducted training sessions on his system for national forest personnel. Treatment to improve the range usually involved eradication of sagebrush, pinyon-juniper, and other undesirable plants by spraying, chaining, disking, or plowing, and replacement with more palatable species, generally grasses.²⁵¹ In some cases, helicopters were used for weed spraying.²⁵² Ranchers often took non-use during the improvement operations.²⁵³

In general the ranges improved under this careful management program. As increased carrying capacity resulted, rangers invited stockmen to put on more stock. Some stockmen found that the weights of remaining stock improved substantially.²⁵⁴ Louise Marvel in northern Nevada reported increased animal size. Charles Redd in southeastern Utah reported that by the late 1960's his cattle weighed 200 to 250 pounds more than in the 1916 to 1920 period.²⁵⁵ In 1963, in a guest editorial in the Salt Lake Tribune, C. Wayne Cook, Research Professor of Range Management at Utah State University, who had served as an expert witness for the permittees in the Hobble Creek appeal, admitted that ranges had often deteriorated. Nevertheless, he said, while "many ranges still show the effects of this misuse," and "some of our range areas are still being misused, but it should be pointed out," he said, "that each year more scientific information becomes available and the management of our range resource improves."256

Mining

As in timber and range management the major problem on the national forests in managing mining claims was needless damage to the land. Often the first action of someone who located a mineral claim was to build a road to the site. In the period before strict environmental regulations, mining operators ordinarily located and built roads without consulting the Forest Service, and the standards were very low.²⁵⁷ With the Multiple-Use Mining Act and environmental protection legislation, location and construction of such roads was regulated to protect the environment. In addition, after the passage of the Wilderness Act, although claimants could patent both the surface and mineral estate on ordinary national forest lands, they could not patent the surface within a wilderness area.²⁵⁸

In general, the designation of fraudulent mining locations that were actually used for the establishment of summer homes was not as great a problem in Region 4 as on Forest Service land in California, Washington, and Oregon and on Bureau of Land Management land in Nevada. The Intermountain Region had its principal problems in the Boise Basin. The Forest Service experienced additional fraudulent locations on the Salmon River, in the Sierras, and in the Ruby Mountains.

A fraudulent locator would ordinarily establish a mining claim along a drainage that he thought home seekers would find attractive. He would offer to do the required assessment work to keep the claim in good standing for \$100 per year. Ordinarily, the Service was able to deal with the problem by contacting purchasers of the claims and informing them that they could use unpatented land only for mining. Usually, such claims did not go to patent. In some cases, using the mining law, the locator would slap another claim on top of an invalid one. In those cases, the Forest Service would sometimes secure an injunction against the individual or file a document in the county court house indicating that legal action was pending against the claim. The county clerk then usually warned the prospective buyers that they were risking a lawsuit if they bought the claim. Ordinarily, the losers in these deals were those who purchased claims believing that they were buying a summer home on a nice site, when in fact they were investing in land and a house they would eventually lose.²⁵⁹

By the late 1960's with the increased concern about the condition of the watersheds in particular and the environment in general, the Service had become much more careful about requirements for surface use of legitimate mining claims. Forests issued regulations for the construction of roads and other improvements needed to reach the claims. Under regulations issued in 1963, claimants were required to secure special use permits before constructing such roads.²⁶⁰ In 1967, the Forest Service and some 15 other agencies participated in a study of strip and surface mining operations, with a view to determining the needs for surface reclamation.²⁶¹

It should be understood that these efforts were not designed to restrict the activities of legitimate mining operations, either for locatable minerals under the 1872 Mining Act or leasable minerals under the 1920 act. Contrary to some misinformation, prospectors needed no permits to try to find minerals on national forest lands except those withdrawn for purposes such as campgrounds or administrative sites.²⁶² The Service was, however, conscious of public scrutiny of its operations and anxious that the activities of bona fide miners not needlessly mar other values such as scenery, wildlife, or recreation in the areas under its jurisdiction.²⁶³

Summary

While contradictory pressures obviously existed, limiting adverse impacts on the land was the central consideration in all Region 4 planning by the end of the 1960's. The range management problems continuing from previous decades and the experience with watershed damage from timber management had shown that such considerations were imperative. Experiences with recreation, wildlife management, minerals, and other activities further underlined concern for the land.

Increasingly, considerations for activities other than range and timber management became primary within the region. Pressures for wilderness designation, concerns over endangered species, and varied demands for recreation all became important factors. Congress underlined such priorities, by the creation of wildernesses and by mandating various activities, such as preservation of endangered species, studies of historic trails, and employment and poverty programs.

Behind all of these requirements was the urgent need for sound multiple-use management planning. The increasing number and complexity of management tasks in the 1960's necessitated the hiring of varied specialists for work on interdisciplinary teams and other activities. No longer were the national forests the sole domain of the forestry school graduates who had replaced the horseback rangers only a couple of decades before. The need for specialists placed additional demands on tight budgets and required additional office space and equipment. More often than not, the forest ranger became a "desk jockey," a condition many of the old timers deplored. Even the gospel of protection at any cost and the philosophy of timber shortage came into question, especially in fighting insect pests.

The principal continuity was in fire protection. Here, during the 1960's, the old traditions flourished. Everyone was subject to call for major fires, and involved employees continued to glory in the esprit de corps that firefighting brought to the outfit.

Complexity ruled in public pressures on the Forest Service. Advisory councils, town meetings, and other time-honored public relations activities no longer seemed adequate as conservationist groups, commodity interests, cities and towns, and other special interests placed conflicting demands upon the region's lands and resources. This diverse public pressure was to become increasingly pronounced into the 1970's, as we shall see in Chapter 10.

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- 197. Sack interview, pp. 132-37; Bird interview, pp. 13-14.
- 198. Sack interview (Alexander), pp. 30-31; Bird interview, pp. 13-14.
- 199. Koziol interview, p. 16. While Koziol indicated that this was the new standard, Gordon Watts in reviewing a draft of this manuscript considered this an impossible standard and wondered whether it was really possible of achievement. He suggested that in practice the standard may have been interpreted as "on the way to" rather than "on" the fire.
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- 201. Bird interview, pp. 15-17. A.R. McConkie to Prospective Users of the Ute Indian Fire Crew, July 1, 1963, File: 5120, Presuppression, FY 65, Toiyabe National Forest Records, RG 95, San Bruno FRC.
- 202. Forest Service Report, 1961, pp. 18-19.
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- 204. Braegger interview, pp. 25-30. "Region 4, Annual Narrative Fire Report, C.Y. 1961," File: 1380 (5100) Fire Control, 61-62, Boise National Forest Records, RG 95, Seattle FRC. See also "Changes in Methods of Fire Suppression," Undated MS, File: 1650, Contacts and other, 1, Historical Data, Salmon.
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- 220. Braegger interview, p. 24. In a review of the manuscript, William Hurst suggested that the roads Braegger had in mind really were used for timber management over a long period of time.
- 221. Forest Service Report, 1961, p. 20.
- 222. Braegger interview, pp. 33-36.
- 223. See File: Contract No. 50-223, Bid No. R-4-66-6, Middle Fork Trail, Challis National Forest, Gray Landscaping, Inc., Regional Office Records, RG 95, Denver FRC.
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- 225. Don D. Seaman to J.M. Usher, April 13, 1962, File: 1380, Reports, 5600, Engineering, Roads, Monthly Construction Reports, Roads and Bridges, Boise National Forest Records, RG 95, Seattle FRC.
- 226. James M. Usher to All Division Chiefs and Forest Supervisors, March 5, 1962, File: 5660, Cartography, 1962, Boise National Forest Records, RG 95, Seattle FRC.
- 227. William D. Hurst to Forest Supervisors, October 25, 1963, File: 5630, Signs, FY 64, Toiyabe National Forest Records, RG 95, San Bruno FRC; and Floyd Iverson to Forest Supervisors, May 25, 1965, ibid.
- 228. Forest Service Report, 1962, p. 14.
- 229. Forest Service Report, 1965, p. 11.
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- 242. Wilburn G. Pickett, "Inexperience Rapped in Grazing Decision," clipping, ca. May 1961, File: Targhee NF History, File 33, Targhee.
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Chapter 10 Forest Planning and Management Under Pressure: 1970 to 1986

During the period from 1970 to the present, both the Forest Service in general and Region 4 in particular have survived extremely difficult times. Following the passage of the Multiple Use-Sustained Yield Act in 1960 the Service was involved in increasingly more complex planning in the attempt to manage the public resources under its jurisdiction so as to satisfy the public demand for commodities and services while protecting the land and resources for future generations.

Legislation passed during the 1970's radically changed the Service's relationship to the resources it manages. The laws passed between the enactment of the Organic Act of 1897 and the Multiple Use-Sustained Yield Act in 1960 were essentially permissive. Generally, these acts provided statutory authorization to do what the Service wanted to do or was already doing. Legislation like the Wilderness Act of 1964, the National Environmental Policy Act of 1970, the Forest and Rangeland Renewable Resources Planning Act of 1974, and the National Forest Management Act of 1976, together with a number of court decisions, subjected the Service to a series of prescriptions that reduced its discretion in making resource management decisions. Such legislation, in addition, forced the Service to spend considerable time and energy in doing things it probably would not otherwise have done and doing them in ways that were inordinately disruptive of normal management practices.

These demands placed Forest Service employees in extremely difficult situations. As Reid Jackson, supervisor of the Bridger-Teton National Forest, said, it "is not as much fun as it used to be and I guess you can say that of about almost any Federal Agency position. I really think the Federal Agencies are becoming or have become 'whipping boys' for the politicians and for the environmentalists... Still, there is a lot of pride in the outfit, ... the outfit is pretty highly thought of. That is worth a lot to me and ... to the others who work for the outfit."¹

Administrative Problems and Budgetary Shortfalls

While the Service was subjected to increasingly disruptive demands, the pressure to carry on normal functions related to range, watershed, timber, minerals, recreation, wildlife, special uses, and wilderness intensified. This pressure led both line and staff officers--but most particularly line officers--to practice what Manti-LaSal Supervisor Reed Christensen called "selective neglect." That is, since they could not do everything to an equally high standard, they "tried to put [our] licks where they bought [us] the most."²

This meant that rangers would spend increasingly less time in the field and in contact with forest patrons and increasingly more time in the office. As Foyer Olsen put it in 1984, "the district ranger's job had changed to the point where he is primarily an administrative officer . . . I've heard a lot of [people] . . . comment, 'We never see a ranger any more."³ A recent study by the Forest Service's National Communications Task Force found a perception among commodity groups, environmentalists, and the general public that line officers should be involved more in "informal day-to-day contacts."⁴ In order to try to deal with cost-effective management, in 1984 Chief Forester R. Max Peterson appointed the National Business Management Study team. Caribou Forest Supervisor Charles Hendricks, a member of the team, said that the buildup necessitated by the increasing demands on forest officers' time had created substantial unnecessary costs. Consequently, the Service had to figure ways of doing "business cheaper than we have in the past," which would "probably" mean "some sacrifice of quality," and "taking a few risks that we have said we aren't willing to take," especially in internal management programs such as writing manuals and coordinating personnel relations.⁵

The Forest Service used other strategies to try to deal with the problems of increasing demands. One was through the use of the budgetary process to control the types of activities carried on. Each forest was given a foundation-level budget, which was not enough to operate on. Each forest then bid on additional funding for projects it wanted to do. The regional office and Washington Office made decisions on allocating increments of funding for various projects, to the degree congressional legislation gave them the discretion.⁶ Contrary to previous Forest Service tradition, decisionmaking authority was considerably more centralized. Unfortunately, Congress was generally quite willing to provide funding for projects with tangible results, such as timber and grazing, but reluctant to fund adequately the intangibles such as recreation and watershed protection.

In addition, the region faced periodic budgetary reductions that resulted in staff shortages. The two most serious reductions were in the early 1970's during the latter part of the Nixon administration and in the period after the inauguration of the Reagan administration in 1981. During both periods, the crunch was accompanied by personnel reductions.⁷

The Reagan cutbacks had essentially three results. First, Forest Service officers were forced to learn "to do things a lot more efficiently."⁸ Second, as one



Figure 97--Targhee National Forest management team studies ways of improving efficiency.

respondent indicated, "When you start playing with people's lives and money and livelihood, it does cause morale problems." For example, managers, reluctant to force employees with critical family responsibilities out of the Service, often applied subtle pressure on older employees to take early retirement.⁹

Third, forest users were forced to accept lower levels of service or provide their own services. Between 1979 and 1984, for instance, the Fishlake National Forest's budget was reduced by 60 percent. This resulted in a 20-percent reduction in employees, and more significantly, on a forest with a large range work load like the Fishlake, the permittees were forced increasingly to pay a larger part of range improvement costs through cooperative projects.¹⁰ Similar reductions took place on other forests, for example, the Targhee.¹¹ In the regional office, various functions were reduced as well. Sterling J. Wilcox, engineering staff director, indicated that the major problem was the reluctance to fund "programs that have long range returns," in preference to those with immediately visible outcomes.¹²

One response of the region to this budgetary pressure was to create zone positions and shared services.¹³ The Uinta, Manti-LaSal, and Fishlake, for instance, shared a specialist to install the Data General MV/Series computer system that was designed to tie the forests and the regional office together in a computer network.¹⁴ The Dixie, Manti-LaSal, and Fishlake shared contracting services.¹⁵ The Uinta had several zone offices that provided service to other forests on such functions as watershed, timber inventory, and threatened and endangered plants.¹⁶

Another tactic for reducing costs was the even more extensive use of contracts rather than force account labor. Although the region tried to avoid contracting for jobs involving direct dealings with the public, it often did so for services for internal operations. Thus, since a district ranger had to represent the Forest Service and to interact with the public, the forests did not ordinarily contract for those responsibilities.¹⁷ Instead, the forest would contract for construction, food services, reforestation, electrical work, and aircraft.¹⁸

Under these conditions, the region reemphasized the need both for training and for cooperative interaction to help personnel understand how to do their jobs more effectively and efficiently. In November 1979, Regional Forester Vern Hamre inaugurated a "Management Effectiveness for the 80's" (ME 80's) program designed to train rangers in such things as handling conflicts, using computers, and dealing with environmental pressures. "Based on the concept that changing the culture of an organization rather than concentrating on technological or structural change is the best way to encourage efficiency and effectiveness," ME 80's began at a workshop held for district rangers at Snowbird, UT, and continued with two other regional workshops.¹⁹

When the region introduced new or particularly sensitive technology such as prescribed burning or the Data General system it mandated extensive training and certification of personnel.²⁰ The pressure for change also brought about the introduction of a management-byobjectives program that coordinated individuals' work and performance with the region's goals and objectives.²¹ One of the most creative methods of coping with change was the introduction in the early 1980's of the Delta Team. The term "Delta" derived from the three sides of the Greek letter Delta and represented: Anticipate, Excellence, and Action. Under the system, the region established special ad hoc teams consisting of regional office and national forest personnel to analyze and propose solutions to problems such as information management, education, civil rights, budgetary reduction, and future direction. A report by Deputy Regional Forester Tom Roederer in March 1986 indicated the effectiveness of the teams in dealing with change.²²

Unit Consolidation

The budgetary pressure accelerated the consolidation of forests and ranger districts into units of optimum size that had begun during the 1960's. In Region 4, this ordinarily meant larger sizes. After his appointment as regional forester in 1970, Vern Hamre continued the studies of ranger district and national forest size and made changes both in number and boundaries of ranger districts in the various forests and in the number and boundaries of forests in the region.²³

Though ranger district consolidations continued into the 1980's, most of the consolidations were undertaken between 1970 and 1973. Some ranger districts were combined as in the Dubois and Spencer and the Ashton and Porcupine on the Targhee.²⁴ In some cases, as in the Vernon unit on the Wasatch, portions of ranger districts were administratively reassigned to other national forests.²⁵ The number of ranger districts in the region was reduced from 120 in 1971 to 94 in 1973 and to 77 by 1983.²⁶ At the 1986 Ranger's Conference Regional Forester J.S. "Stan" Tixier announced that the region had been "advised we have gone as far as we should go in Ranger District consolidation."²⁷

Most significant, perhaps, were the forest consolidations, also undertaken because of budgetary constraints and in the interest of efficiency. Following a study of conditions, the regional office consolidated the Cache and Wasatch National Forests early in 1973, assigning the former Cache districts north of the Idaho-Utah border to the Caribou. Headquarters for the Wasatch-Cache were located at Salt Lake City, and the former Cache headquarters at Logan became a ranger district office. At the same time the region assigned the Palisades Reservoir portion of the Caribou to the Targhee, perhaps to compensate for the expanded responsibilities at Pocatello.²⁸

The region studied the possible consolidations of the Toiyabe and Humboldt and of the Bridger and Teton.²⁹ The first was not undertaken. In 1973, however, the Bridger and Teton were combined, with the supervisor's office at Jackson. The Kemmerer headquarters of the Bridger became a ranger district office.³⁰ Consolidation of the Bridger and Teton created a 3.4 million acre national forest--by far the largest in the lower 48 States, exceeded only by the Tongass and Chugach in Alaska. Although its budget of \$6 million in 1983 exceeded that of the nearby Grand Teton National Park, some Forest Service officers believed that the demands created by its much larger size and more diverse resources left it shortchanged.³¹

Portions of some forests not affected by such consolidations were transferred for administrative purposes to adjacent forests or regions. In central Idaho, for instance, creation of the Sawtooth National Recreation Area placed parts of three national forests under Sawtooth administration. The Middle Fork of the Salmon River, because of its unified recreational program, was transferred for administrative purposes to the Challis. The Region 4 portions of the Hells Canyon National Recreation Area and the Tahoe Basin were administered respectively by Regions 6 and 5.³²

Proposed Regional Changes

A number of proposals surfaced after 1970 that would have altered significantly the configuration of Region 4 or abolished it entirely. In 1972 the Nixon administration's Office of Management and Budget proposed a concept that would have abolished the regional office in Ogden, transferring Nevada to the San Francisco region, Idaho to Portland, and Utah and Wyoming to Denver. In addition, contrary to Forest Service tradition, the administrator in each standard region would have been a political appointee rather than a career professional. The proposal would have reduced services to forest users in the region by cutting down the number of employees. Although he could not officially oppose the transfer, Regional Forester Vern Hamre worked with the Utah congressional delegation, especially Congressman Gunn McKay and Senator Frank Moss. Former Regional Forester Floyd Iverson took an active role in opposing the change and was sent to Washington to work against the proposal. McKay and Moss together with Senators Mike Mansfield and Lee Metcalf of Montana and Joseph Montoya of New Mexico succeeded in attaching an amendment to an appropriation bill prohibiting the use of any Federal money to close the regional offices in Ogden, Missoula, and Albuquerque.33

The most recent proposal to try to save money by consolidating land management services involved a nationwide interchange of various national forest and Bureau of Land Management lands. Revealed first on January 30, 1985, and elaborated in public meetings during the summer, the interchange proposal would have left virtually the same number of acres in Region 4 in Utah, increased Forest Service acreage by about 2 million in Idaho, decreased the acreage by about 175,000 acres in Wyoming, and completely eliminated Region 4 from Nevada.³⁴ Lobbying by the Nevada congressional delegation and others succeeded in modifying the proposal to keep the Forest Service in the Silver State.

In its present form the interchange proposal would actually add more land to the national forests in Region 4. Advantages touted for the proposal include the transfer of control of the mineral estate under national forest lands to Forest Service administration and the transfer to the Forest Service of the heavily timbered Oregon and California Railroad Lands that reverted to the Federal Government after the railroad failed to fulfill its land grant agreement. The main selling point, however, was the approximately \$12 million to \$15 million savings expected, largely by reduction in personnel and other administrative costs. The interchange proposal received administrative approval and was transmitted to Congress for consideration early in 1986.³⁵

If the 1985 hearings in Salt Lake City are any indication the proposal will undoubtedly have rough sledding in Congress. Utah Congressman James V. Hansen's office manager testified that the congressman had reservations about the proposal. Representatives of the Utah Farm Bureau Federation took a somewhat equivocal stand. Virtually everyone else in Utah opposed the proposal, including those from the environmental community, commodity interests, and former Forest Service officers. Provo interests expressed considerable opposition because the Uinta National Forest headquarters would be closed and the lands consolidated with the Wasatch, Manti-LaSal, and Ashley.³⁶

A 1985 study conducted by Region 5 showed considerable opposition throughout the Intermountain Region and elsewhere in the West. In Idaho, opposition had grown to the transfer of portions of the Caribou and Sawtooth to the Bureau of Land Management; Nevada respondents indicated heavy opposition to transfer of Forest Service land. Former Nevada Governor Mike O'Callaghan writing in the <u>Las Vegas Sun</u> charged Chief Peterson with "selling out his agency and every outdoors lover" to BLM Director Robert Burford. In Utah, considerable opposition arose over the proposed transfer of Pine Valley to the Bureau of Land Management and the proposed closing of the Dixie supervisor's office. In Wyoming, opposition surfaced to the proposed transfer of parts of the Bridger.³⁷

Another controversial proposal closely tied to the interchange was the creation of a department of natural resources, reminiscent of Harold Ickes's abortive proposal for a conservation department in the 1930's. The Forest Service and its constituents opposed the concept, which surfaced anew during the Carter administration and as an option in the Grace Commission Report. In general, the opposition came because of a fear that the philosophy of the new department might mirror the more centralized operation of the Department of the Interior rather than the decentralization of the Forest Service as supported by the Department of Agriculture.³⁸ In part, Chief Peterson's support for the interchange proposal came because of his concern that such a reorganization might be forthcoming if interchange failed, as a result of the administration's heavy pressure to save money.³⁹

Organizational Changes

One major organizational change took place in 1973 that significantly altered the makeup of the regional office staff. For many years, the regional forester had functioned with a single deputy sharing his responsibilities, along with a number of assistant regional foresters carrying both line and staff responsibility. The new organization better differentiated between line and staff. Under the new setup, the regional forester appointed three deputy regional foresters. One had line responsibility for administration, one for resources, and one for State and private forestry. Each had concurrent staff responsibilities to the regional forester.⁴⁰ Under the deputies' jurisdictions, directors headed the various staffs such as timber, range management, and personnel.⁴¹ Vern Hamre indicated that this change facilitated a great deal more cooperation in the allocation of resources than the previous assistant regional forester system.⁴² Some former regional foresters, for example, William Hurst, disagreed. Hurst believed that the assistant regional forester system was more efficient and cost-effective because it had fewer officers between the regional forester and the principal staffs.⁴³

Employment Patterns and Regional Administration

Major organizational changes in recent years continued to refine the use of the interdisciplinary team. After 1980, members of the teams tended to work together to produce compromises much more effectively than before. After a decision was made, specialists became more prone than in the past to say, in effect, "I do not like the decision but my job is to do the best I can to help them implement it." Under these conditions, specialists tended to recognize themselves as team members working within a multiple-use management system rather than diehard devotees of a particular professional interest.⁴⁴ Some specialists, however, have resigned in protest over decisions with which they did not agree.⁴⁵

During the period after 1970, the emphasis on employee rights increased. In 1970, the Washington Office appointed a civil rights coordinator to oversee efforts to improve programs for minority groups, conduct civil rights compliance reviews, and promote the awarding of contracts to minority businesses.⁴⁶ Forests wrote and implemented affirmative action plans.⁴⁷ In his monthly message in August 1984, Regional Forester Tixier emphasized his commitment to civil rights and urged an emphasis on representing all the people and making services available "to the entire population."⁴⁸

The region also has expended considerable effort in hiring and training women employees. In 1979, for instance, the Sawtooth National Forest set its goal to hire females as 33 percent of its seasonal workforce, a 7-percent increase over 1978.⁴⁹ By 1984, most women were in clerical, secretarial, intermediate, and specialist positions. In 1984, a visitor to the forest supervisor's and ranger district offices would most likely find women who were not in secretarial or clerical appointments either in specialist or support services positions rather than staff director or line officer positions.⁵⁰

It is clear, however, that the region's commitment to equal employment opportunities for women and minorities continued under Tixier. At the district rangers' conference in Boise in March 1986, one of the sessions focused on women and minorities in the Forest Service. The panel was made up of women who were currently serving as district rangers in other regions. At the same conference, the moderator for one of the sessions was Carol Lyle, Region 4's sole woman ranger.⁵¹

A major factor militating against the employment of women and minority employees has been the reduction in budgets after 1980. This reduction has meant that few new jobs have opened and the region has been hard pressed to replace existing employees who retire or resign.⁵² During the Carter administration from 1977 through 1980, the region could retain employees and plan for new hires. Under the Reagan administration, however, the size of the staffs has decreased.⁵³ Between 1980 and 1982, the number of employees in the region declined from 2,467 to 2,307. As the average age of employees increased, the average GS grade rose from 8.17 to $8.46.^{54}$

The result was a void of younger employees with new skills.⁵⁵ This created a particularly serious problem in engineering.⁵⁶ By 1984, the region had very few engineers in GS grades 7 and 8--those in their late 20's and early 30's. The average age of engineers in Region 4 was 40 to 45 years. After the 1970's, the need to recruit specialists such as hydrologists, archeologists, and wildlife biologists placed most of the younger employees in those categories, not in the ranks of the engineers. Increasingly, also, the engineering staff experienced difficulty in finding desirable people. Generally the engineering division sought the broadly trained student who liked the outdoors and could integrate information from a large number of specialties in designing roads and structures to meet the demands of resource protection, rather than the narrowly trained graduate who might have a particular research specialty.

Another problem was finding employees willing to meet the demands for mobility the Forest Service expected of those who planned to advance. Continued emphasis on multiregion and Washington Office experience for promotions within the Service placed a burden on families and on budgets. In some cases, for instance, engineering was unable to hire desired employees because of the region's inability to pay enough to get the potential employee to make a move. As a result, in some cases, they hired engineers with promise, but with less training than preferred.⁵⁷

Some employees still believed the frequent moves to be an advantage rather than a drawback to a family. David Blackner, director of the regional personnel management staff, said that the system of reimbursement for moving expenses and subsistence while relocating has helped. In addition, he argued that moving around could be an advantage to children, broadening their experiences. Some employees disagree, believing it is important for their children to experience continuity in their schooling and peer relations.⁵⁸

In a presentation to rangers in March 1986, Blackner announced that a program to be implemented in midsummer 1986 would allow General Services Administration to purchase the homes of transferred employees. This program was not expected to be a panacea, however, as the housing market had been depressed in recent years in some areas and the homes are to be purchased at fair market value. Since employees might have purchased the homes when prices were high, they may not recover their outlay in the sale.

With increased emphasis on fairness in employment, the Forest Service adopted a new vacancy filling and promotion system in the mid-1970's.⁵⁹ Before that time, vacancies were filled and promotions given based on evaluations and recommendations by supervisors rather than on employee initiative. On the basis of such recommendations, a review committee recommended to the line officer the nominee they thought best qualified. This system left a great deal of administrative discretion in the promotion process.

The new system differed by advertising vacant positions to all employees. All interested employees were encouraged to apply, though they had to submit an evaluation from their immediate supervisors. All applicants were then screened and evaluated by a committee in the regional personnel office, and, from that screening, the person was hired who seemed best qualified for the job. A superior could direct an employee to apply if it appeared the person needed the job for development or was qualified for it.

Although fairer, since it allowed employees to select themselves for consideration for vacancies and promotions rather than forcing them to wait for a manager to choose them, the system had some drawbacks for supervisors. Some employees, particularly those with scarce skills such as hydrologists, "job-hopped" from region to region and forest to forest. Some employees moved from one position to another without the forest supervisor even knowing they had applied for a transfer. These quick changes created problems as the consequently vacant positions often had to be filled on short notice.

Law Enforcement

Along with those problems, the region was faced with increasingly complex circumstances. Largely because of urban development in the areas adjacent to many of the forests in the region and the increased recreational interest in all forests, law enforcement problems intensified. Forest Service law enforcement officers linked their communications into local and State law enforcement nets. On an urban forest such as the Uinta, forest officers discovered marijuana plantations, faced cult practices, and dealt with motorcycle gangs. 60 A theft ring operated to cut and sell Christmas trees from the Fishlake National Forest.⁶¹ Increasingly, the region sent employees who had to deal with such problems to the National Law Enforcement Training Center at Glynco Beach, GA, for a 9-week course used to train Border Patrol and Drug Enforcement agents.⁶² By 1984, the region had six special agents with the full range of authority held by officers such as FBI agents except that the Forest Service agents helped to enforce the Secretary's regulations dealing with such matters as timber theft, arson, and illegal occupancy.63

The Problem of Conflict Resolution

After 1970, Congress forced the national forests to draw further away from some formal contacts with forest users. Even though (as indicated before) advisory committees had generally been used to support decisions already made by the Forest Service, such committees also had served to coordinate the interests of the Service with local communities. In December 1972, however, Congress passed the Federal Advisory Committee Act, which restricted the use of such advisory committees. Following the act's passage, an executive order required the abolition of the forest advisory committees.⁶⁴

In practice, the abolition of these advisory committees had some disadvantages. The older constituencies of the Forest Service--city, county, and State officials; community, business, and professional leaders; and commodity interests--no longer represented even a sizable minority of forest users.⁶⁵ The growth of the environmental movement and the tendency for the environmentalists to represent constituencies at a considerable distance from the forests as well as nearby recreationists left a gap in conflict resolution procedures that a somewhat modified advisory committee structure might have filled.⁶⁶

As a case in point, the National Task Force on Public Communications/Awareness (often called the Tixier Committee) headed by Regional Forester Tixier, identified a significant division in the attitudes of environmental and commodity interests. In general, noncommodity interests believed that the Service had placed a "growing emphasis on timber and other commodity resource production without a commensurate emphasis on noncommodity resources," and that this imbalance in emphasis was an extremely serious problem. Commodity interests did not agree. The noncommodity interests placed little emphasis on the philosophy of multiple use and sustained yield, whereas the commodity interests tended to think these concepts were important.⁶⁷ Some commodity interests and their allies tended to use the phrase "multiple use" as a code word for opposition to wilderness areas, arguing unfairly that environmentalists sought to eliminate everything but wilderness from national forests.⁶⁸

Unfortunately, an erroneous perception of many environmentalists that Forest Service officials principally favor commodity production resulted in a number of confrontations between the environmental community and the Service. A good indication of this type of confrontation was an exchange in 1984 between Ed Marsden, editor of the High Country News, and Vern Hamre, former regional forester. In March, Marsden published an editorial entitled "Can the Forest Service Be Reformed?" arguing that the Forest Service refused to listen to environmentalists, that it had increased its office staff at the expense of field staff who really managed the land, and that it had accomplished very little of consequence.⁶⁹ Hamre's reply outlined a number of the Service's significant accomplishments, pointed out that the increase in the Service's bureaucracy had come largely because of the time demanded for responses to appeals, and asked for help from environmentalists rather than confrontation. Marsden had written that he would "reserve space for [discussion of these charges] . . . in the next couple of issues." He did so, but not until October 1984, some 7 months after the editorial.70

In 1984, James Lyons, resource policy director of the Society of American Foresters, expressed considerable opposition to what he perceived to be the Reagan administration's overemphasis on commodity management and production at the expense of recreation, wildlife, and watershed conservation values.⁷¹

Attitudes like those of Marsden and Lyons caused deep divisions within the Service and between the Service and

its constituencies. This dissatisfaction both among constituents and within the Service created some anxiety for Regional Forester Tixier. He indicated particular frustration with the expressed perception of some environmentalists that coming in to talk with Forest Service officials "would be futile."⁷²

This concern led in part to Tixier's appointment as chairman of the National Communications/Awareness Task Force, designed to determine the public perception of the Forest Service and to propose means of dealing with problems of negative perception. Regional foresters and directors discussed the Tixier Committee report at their annual meeting in Fort Collins, CO, in August 1985. The Service took the unprecedented step of holding a conference to discuss the same issues with forest supervisors from throughout the Nation at Utah's Snowbird resort in November 1985. The result of these deliberations was a decision to prepare a "vision statement" redefining the purposes of the Forest Service.⁷³

Most significant, it was believed that the recommendations of the Tixier Committee could help in solving both problems of internal dissatisfaction and public opposition. Among the recommendations that seemed most critical were those calling for reduced paper work and increased time in the field for district rangers to get them back in touch with the public. Another suggestion that seemed likely to produce significant results consisted of enlisting "the service of a neutral third party conservation organization," such as the American Forestry Association or Resources for the Future, "to focus debate on the 'balanced program' issue" with a goal of "involving commodity and noncommodity interests, as well as other interested publics, in a meaningful dialog aimed at consensus." In addition, the Tixier Committee recommended strengthening "working relationships with conservation organizations, interpretive associations, and other public service oriented groups who have an interest in National Forest programs."74

Information Office

The abolition of advisory committees, the deep divisions within the region's constituencies, and the inability of line officers to spend adequate time in contact with the public placed a great deal more pressure on the regional information office than ever before. In 1972, in recognition of the increasing importance of the function, the information offices at both the regional and Washington levels were assigned directly to the regional foresters and the Chief.⁷⁵

The information office had a number of functions, of which four seem most significant. First, it dealt with the news media in channeling information to the public. Second, it conducted an environmental education program in which it worked with educators on the community and State levels to encourage them to include environmental programs in their classes. Third, it coordinated with legislatures in the region on both State and Federal matters. Fourth, the office conducted an extensive interpretive services program, servicing visitor centers and providing displays and audiovisual information.⁷⁶

In view of the legislative mandate to involve the public in decisionmaking, the region and the forests developed an "Inform and Involve" (I and I) program in the early 1970's. Under this program, information officers functioned at the regional level and either an information officer or an I and I coordinator operated on each forest. The Wasatch, Toiyabe, Boise, and Bridger-Teton forests each had a public information officer.⁷⁷

The approach to the dissemination of information changed considerably during the early 1980's. In the early 1970's, the information office worked principally with key community leaders--congressmen, governors, and business and industrial leaders. By the late 1970's, because of the changing nature of the publics with which the Service had to deal and because of the emergence of groups that did not respond to the traditional political structure, it became necessary to open the information office to a larger public.⁷⁸ The HOST program initiated by the information office tried to involve all Service employees in public awareness.⁷⁹

Legislative Mandates and Planning

Confrontations resulted, in part, from the application of various pieces of congressional legislation. In practice, such legislation required the Service to meet certain minimum procedural standards before it could undertake any substantial activity. Since its beginning, the Forest Service had written plans for its various operations, and even before the passage of the Multiple Use-Sustained Yield Act, forest officers had been producing multiple-use surveys and management plans. By the early 1970's, the forests were writing unit plans, under regional guidelines, that divided planning units into blocks extending downward from the ranger district.⁸⁰ The National Environmental Policy Act (NEPA) imposed a further procedural requirement on the Service. After 1970, the Service was obliged to write environmental impact statements on all projects that required serious changes in the environment or might be controversial. On less controversial or minor projects, the line manager had to document the basis of the decision.⁸¹

Over time, the way in which the Service used the environmental assessment changed. According to Richard K. "Mike" Griswold, former director of the regional planning staff, the Service changed slowly, like a crew trying to turn a battleship with a canoe paddle. In his view, it took 3 or 4 years to "get around to the point" where forest officers complied with the NEPA process. The basic reason for the timelag was the extensive decentralization within the Service.

After the forest officers learned the NEPA system, until about 1980, the process seemed to work quite well. Then, around 1980, the Service found it had come to let NEPA dominate planning to such a degree that, when various interests challenged procedures, the courts ceased to recognize Forest Service employees as expert witnesses. The courts insisted, instead, that representatives of the Council on Environmental Quality (CEQ) or the Environmental Protection Agency (EPA) appear as experts.

In order to achieve more control in such situations, the Service separated its NEPA environmental assessment (which documented the thought process) from its management plans (which indicated intended actions). Under those conditions, CEQ or EPA representatives might be the expert witnesses in court on the environmental assessment--the analysis that led to a decision--but Forest Service personnel were the expert witnesses on the management plans.⁸²

Nevertheless, by 1984, the region had not done well in defending itself against appeals under NEPA. In general, the reason was that the region had not followed carefully the steps outlined by the act. In one case, the region decided to build a timber access road on one of the forests. In preparing the environmental assessment, the Service officers considered only the impact of the roadbed itself, not the effect of the road and timber harvest on the entire basin. It was, said Griswold, not malicious or preconceived, but "just a process goof." Fortunately that case did not go to court, a procedure the Service disliked because it was very expensive and could result in a decision extending far beyond the point at issue. The region would then be stuck with "new [judge-made] law," that could tie its hands.⁸³

In practice, while forest officers griped about the NEPA, they generally supported it. The process often added additional costs because of the care with which plans had to be made, but resulted in a better product.⁸⁴ It was nevertheless extremely frustrating for Forest Service officers to face frequent challenges to their plans. Many believed that "for a twenty-cent stamp, [critics]... could stop just about anything." The level of frustration often rose because the various interests did not agree with one another and what pleased one side might well generate an appeal from an opposing faction.⁸⁵

In 1974, Congress followed the NEPA with the passage of the National Resources Planning Act. This act required a nationwide assessment of all forest and range land each 10 years and development of a Forest Service management program each 5 years. As of early 1985, the region had been through two assessment and two program cycles. It made assessments in 1975 and 1980, since it wanted to put the assessments on decade anniversaries. In practice, Griswold argued the procedure was good for the Forest Service. In his view the unit plans were too fragmented, because they were based on ranger districts.⁸⁶

This legislative action took place against the background of national appeals concerning forest management in West Virginia and Montana in the Monongahela and Bitterroot National Forests. Both cases involved timber management policy and especially clearcutting. The decision in the Monongahela case particularly invalidated the prevailing interpretation of harvesting provisions of the Organic Act of 1897. This decision forced Congress both to redefine the Forest Service's mandate and to require more detailed planning. The Bitterroot case raised serious questions about harvesting practices.⁸⁷ The resulting National Forest Management Act (NFMA) of 1976 placed major emphasis on the development of land management plans for each national forest detailing alternatives and proposals for the management of each type of resource under multiple-use management principles. It also provided for a committee of scientists to provide policy direction. In addition, the NFMA specifically overturned the Monongahela decision by allowing carefully controlled clearcutting.⁸⁸

The process under the NFMA presented two basic problems to the Service, one concrete and one potential. On the concrete level, NFMA planning "really put pressure on the forest" since employees had to expend considerable time, labor, and resources in writing plans. Consequently, forest officers also found it considerably more difficult "to do a quality job of our routine work out on the ground."⁸⁹ Ed Marsden's complaint that employees were pulled from the field into the office was exactly right. A major reason for this shift was the demand for planning and for meeting procedural requirements in carrying out mandated activities.

The potential problem was that associated with any planning. Since the planners had to project from what they knew about the current situation, none could anticipate every contingency. "The law says that when you have an approved forest plan, all licenses, permits, practices, and activities that occur on that national forest henceforth will be in accordance with that plan."⁹⁰ Some specialists in environmental policy such as Sally Fairfax of the University of California at Berkeley reportedly said that no land management agency could possibly accomplish what the law demanded of the Forest Service.⁹¹ Though the Service wanted to prove her wrong, part of the possibility of doing that was in fact out of its hands, since virtually anyone could demonstrate legal standing in order to file an appeal.

The entire planning process was strewn with roadblocks. A major obstacle appeared during the second review of roadless areas (RARE II). In the case of California vs. Block, the U.S. Ninth Circuit Court of Appeals ruled that the RARE II final environmental assessment was insufficient to base a decision for nonwilderness designation of roadless areas. As a result, the roadless area review was incorporated into the land management planning process and the forests were forced to go back to the drawing boards.92 By then, the Targhee and Uinta had circulated draft forest plans to the public. The Caribou had sent its plan to the Washington Office for review and had been given approval to circulate the plan to the public. Under the circumstances, the three forests did not have to junk everything they had done, but they were forced to redo much of the previous work.⁹³ The Toiyabe estimated that the cost of including the reassessment of roadless areas in the land management plan added an additional \$150,000 to \$200,000 to the already staggering cost.⁹⁴

Though it allowed discretion in management within multiple-use principles, the NFMA created what former regional forester Vern Hamre called "a real nightmare." By late 1984, although the region's forests had completed the drafting of a number of plans, none had been approved. Hamre believed that it would be "almost impossible to complete a forest management plan on a forest which has any significant environmental controversies."⁹⁵ The region drafted a plan--later called a "regional guide"-designed as a directive to the forests in the planning process.⁹⁶

As might be expected, the supervisors most sanguine about planning were those who had completed or nearly completed their plans. Don Nebeker, supervisor of the Uinta National Forest, spoke with some justifiable pride about the fact that his forest was the first in the region to complete its plan.⁹⁷ The regional office placed the Fishlake National Forest's plan on a fast track, but it faced considerable difficulty because of reductions in staff between 1981 and 1984. Nevertheless Supervisor Kent Taylor expected to complete his plan on schedule.98 Supervisor Jack Lavin on the Boise believed that his planner would make few drastic recommendations from the previously completed unit plans and RARE II proposals, but by early 1984 he thought it was still too soon to tell for sure.⁹⁹ Supervisor Art Carroll of the Wasatch-Cache recognized that the public might find his anyone might qualify for the administrative appeal process. 100 plan controversial and expressed concern that virtually

Diversity within the region created both problems and advantages for planning. Few forests in the system are as heavily used for recreation as those along the Wasatch Front; the region has mineral and range management loads second to none; concerns about scenic attractions and wildlife are particularly sensitive in western Wyoming and eastern Idaho.¹⁰¹ But because the forests of the Intermountain Region are not as heavily timbered as those in Region 1 or Region 6, the region did not have as much money for planning.¹⁰²

Because of the larger recreation load, however, the environmental interests have been easier to work with. Utah's wilderness bill, for instance, was the first in Region 4 to pass Congress. In addition, the region's national forests were very careful to involve the public in the decision process by holding public meetings with various groups and private meetings with particular interested parties.¹⁰³

In spite of the obvious technical aspects, planning became in the final analysis a political process. The administration in Washington set policy for the Service, and changes in political philosophy made changes in planning and implementation of plans both imperative and disruptive. In the view of John Burns, the Reagan administration turned "almost a hundred and eighty degrees" from the direction of the Carter years. The situation was complicated since political pressure cut in a number of directions. Congress decided how much money the forests got for the various activities. Decisions on the amount of wilderness and timber harvesting were by their very nature political, as various interest groups inevitably wanted different mixes of these activities.¹⁰⁴ Hence, Forest Service officers were not free to implement all the proposals they might have preferred.

Basically, the forests tried to respond to the political realities through the four phases of each plan. Phase 1 consisted of issue identification, phase 2 was an analysis of the management situation, phase 3 involved the development and assessment of alternatives, and in phase 4 the forest officers selected the final plan. Extensive opportunities were provided in each phase for input through public meetings and comment.¹⁰⁵ In connection with the planning, the forests wrote draft environmental impact statements indicating the potential consequences of the various planning alternatives together with the preferred choices.¹⁰⁶ The final product was a draft forest plan that reviewed the various mixes of resource uses and proposed the preferred alternative.¹⁰⁷

The public response to the plans has varied from support to virtually no comment to adverse comment. Joseph Bauman, <u>Deseret News</u> environmental specialist, commenting on the 11-pound Wasatch-Cache National Forest plan that emphasized recreation, reviewed the proposed alternative favorably. He pointed out, however, that "all the plan's activities will be controlled by budgetary considerations. If budgets are cut, some projects may be rescheduled."¹⁰⁸ Idaho Governor John Evans, however, in responding to the Challis National Forest plan, urged that the forest emphasize recreation rather than commodity use to a greater degree.¹⁰⁹

By March 1986, the region had reason to be more optimistic than Vern Hamre was in 1984. Four of its plans were in final form, and ten had been issued in draft. Of seven appeals, four had been resolved. Both the Uinta and Wasatch-Cache plans had been cleared. In commenting on the land management planning process, Chief Peterson said that he would give the region an A+ for effort, a D for speed, and a B for overall quality.¹¹⁰

Recreation

After 1970, recreation within the entire national forest system took on greater importance. Traditionally, the national forests have experienced far more recreation visitor-days than the national parks. In 1970, recreation stood third behind timber and grazing as a principal revenue producer in Region 4. By 1983 it had moved into first place, eclipsing all other functions, a position it retained through 1985.¹¹¹ (See table 19.)

It would be difficult to overestimate the importance of recreation to the forests of Region 4. Recreation encompassed a great range of activities including water sports, camping, picnicking, sightseeing, hiking, skiing, hunting, fishing, rockhounding, and snowmobiling. Management of cultural resources also fell under recreation's domain. In 1984, the region had 783 campgrounds and picnic sites capable of accommodating 79,000 people at a time. The region supported 8.6 million to 9 million visitor-days per year during the early 1980's.¹¹²

The Wasatch Front in Utah and the Sierra Front in Nevada and California experienced the greatest recreation pressure. Pressure on the Wasatch was much the more intense because of the larger population in the Logan-Provo corridor than the Reno-Carson City area.¹¹³ Until the early 1980's, the Wasatch National Forest was the number one recreation forest (based on visitor-days) in the entire system. By 1984, it had dropped to fourth or fifth behind several forests in California.¹¹⁴ Some forests such as the Uinta were essentially backyard resorts for people living nearby.¹¹⁵

Outside the Wasatch Front area, recreationists tended to come from greater distances. On the Fishlake, for

FY	Adjusted timber	Land use	Recreation (undesignated and designated areas)	Power	Minerals	Grazing	Total
			Thou	sands of do	llars		
1960	3,476	34	86	3	4	1,014	4,619
1961	2,065	25	100	3	17	872	3,082
1963	1,728	26	118	3	18	901	2,795
1964	1,585	26	139	3	13	844	2,611
1965	1,455	25	148	4	14	806	2,451
1966	1,283	28	190	4	17	888	2,411
1967	1,693	32	231	4	14	953	2,927
1968	1,701	33	285	5	16	904	944
1969	3,785	36	324	5	16	1,013	÷.179
1970	3,349	44	390	6	24	965	4,780
1971	2,832	50	458	10	29	1,244	4,624
1972	5,176	56	549	10	35	1,258	7,083
1973	8,373	61	729	11	16	1,377	10,567
1974	13,180	58	676	11	35	1,686	15,646
1975	6,523	70	945	12	35	1,638	9,223
1976	7,869	82	1,000	14	70	2,236	11,271
1977	18,346	87	1,182	19	151	2,324	25,848
1978	15,298	104	1,302	16	222	2,336	25,076
1979	9,173	107	1,502	17	168	2,919	13,887
1980	11,451	200	1,758	22	254	3,593	17,278
1981	2,750	160	2,023	29	305	3,438	8,704
1982	1,293	123	2,616	41	387	2,749	9,988
1983	1,275	190	2,690	51	2.52	2,063	8,704
1984	2,396	169	2,967	57	238	1,967	7,793
1985	2,079	191	3,255	74	142	1,930	7,671

Table 19--Collections for goods and services for the National Forest Fund in Region 4, 1960-85

Source: Region 4 Annual Collection Statement. Note: Totals may vary because of rounding. In this table the National Forest Fund Classes 4 (recreation undesignated areas) and 7 (admission and user fee designated areas) are combined.

instance, approximately 50 percent of the visitors came from Nevada and California,¹¹⁶ In spite of an accelerated timber harvest caused by an extensive pine beetle infestation, the Ashley considered recreation its biggest single responsibility, in large part because of the Flaming Gorge National Recreation Area.¹¹⁷ In Teton County, WY, 80 percent of the economy was geared to tourism, and local citizens demanded that the Teton and Targhee maintain those values attractive to tourists.¹¹⁸

A major problem in meeting the public demand for recreation was caused by the unwillingness of the administration and Congress to provide needed funding. During the 1970's, even the creation of the Sawtooth and Flaming Gorge National Recreation Areas provided little additional money. The region took funds from other forests and relied, to a limited extent, on private funding sources. Congressman Gunn McKay of Utah did succeed in getting some campground development money.¹¹⁹ Supervisor Lavin of the Boise indicated that the main problem was to keep the campgrounds and picnic areas in good shape with increased use and declining funding.¹²⁰ Supervisor Richard Hauff of the Salmon said that budgetary shortages created a major problem for recreation on his forest, as well.¹²¹

Moreover, Congress was unwilling to approve funding for recreation improvements and administration through the collection of additional fees for recreational activities. It was suggested that Congress impose recreation user fees beyond the funds going to the Land and Water Conservation Fund, but Congress refused to authorize such charges.¹²² The demand for a forest camping experience was so great that some forests had to limit stays to 16 days, though none used advance scheduling except for group areas.¹²³ Demand on some national forests became so great for group camping experiences that Uinta Supervisor Don Nebeker wondered whether they would be able to provide for the apparent demand.¹²⁴

Under these conditions, some Forest Service officials rethought the purpose of forest camping facilities. Most



Figure 98--Checking the tape at Avalanche Forecast Center, Old Salt Lake Airport, 1981.

wilderness advocates and forest officers favored solitude in camping facilities, and the Service built most campgrounds in an attempt to provide it. Many people with urban backgrounds, however, seemed to prefer their sylvan experience at closer quarters. During hunting season, the national forests sites filled with "camper cities," containing as many as 50 recreational vehicles parked close together.¹²⁵

While camping was important, two types of experiences--dispersed recreation and skiing--increased most rapidly after 1970. The dispersed recreation, particularly by off-road vehicles, caused some difficulty because of the tendency of people to perceive the public lands as their own and to believe that they could do anything they wanted on the forests. 126 In an attempt to deal with problems caused by excessive noise and indiscriminate killing of wildlife, the forests wrote off-road vehicle travel plans for the use of motorcycles, trail bikes, snowmobiles, and similar vehicles. The Boise, for instance, completed its off-road travel plan in 1976 which restricted such vehicles to roads and trails on 70 percent of the forest. $^{127}\,$ In 1979, the region conducted a sample off-road vehicle management review on the Uinta and Fishlake in order to gauge the impact on an urban and a rural forest. The data were used in planning off-road vehicle management for the region.¹²⁸ The Wasatch found it necessary to ban off-road vehicles in the canyons east of Salt Lake City. The Humboldt banned such vehicles in the Ruby Mountain Scenic Area.¹²⁹

As urban forests, the Toiyabe and Uinta put considerable effort into trail and road maintenance. Uinta supervisor Don Nebeker indicated that one reason for this effort was that dispersed recreation (hiking and driving) was less costly. In addition, since the Uinta was so close to an urban area, he recognized that the forest approached the condition where people will "saturate almost every opportunity that we've got to put facilities in without destroying the environment itself."¹³⁰

As with other functions, there was little extra money for construction of new facilities on the forests.¹³¹ Even rural forests like the Salmon emphasized dispersed recreation in part because of budgetary problems and also because many visitors "do not require conventional Forest Service campgrounds," with picnic tables, since they come in recreational vehicles.¹³²

Region 4 retained its position as "the leader in winter sports management in the Forest Service."¹³³ By 1984, 26 ski areas operated with permits on the region's national forests. The most active areas tended to be concentrated along the Wasatch Front, near Jackson Hole, and at Sun Valley. Other ski resorts were located in areas ranging in geographical dispersion from Charleston Mountain near Las Vegas on the southern end of the region to Heavenly Valley near South Lake Tahoe in the Sierra on the west, and to Brundage Mountain near McCall on the northwest.

During the early years, the Forest Service and volunteers provided many of the safety services for ski areas. By the early 1980's, the Service had turned much of the responsibility over to the ski area operators. The operators then provided most of the workers for avalanche control. This change was facilitated by gas-charged tubes called avalaunchers replacing the more dangerous 105 mm howitzers in many areas. In some cases, to meet technical requirements, ski area personnel received temporary appointments in the Forest Service.¹³⁴ Professional ski patrol personnel tended to replace volunteers. Responsibility for lift inspection was turned over to many of the ski areas. This was possible particularly in States like Utah which provided Passenger Tramway Safety Board certification of private engineers to do the inspections. In many areas where qualified private inspectors were not available, the Forest Service continued to provide inspectors.¹³⁵ In perhaps no



Figure 99--Loading a 75-mm pack howitzer used to control avalanches, Little Cottonwood Canyon.



activity more than skiing was cooperation with other Federal and State agencies and with private industry so important.

The Service participated in land exchanges with some ski areas.¹³⁶ A proposal for the interconnection of ski areas on both sides of the Wasatch Mountains, between Big and Little Cottonwood Canyons and the Park City area, involved the Forest Service in considerable discussion with local governments, the State of Utah, and private industry.¹³⁷

In the early 1980's public involvement in controversies over proposed ski area expansions and new developments became particularly significant. The ongoing development of the Snowbird ski area in Little Cottonwood Canyon on the Wasatch raised considerable public controversy. Conservationists opposed its proposed expansion into the White Pine drainage adjacent to its present runs.¹³⁸ The proposed Heritage Mountain Resort east of Provo generated considerable opposition because of the potential use of Forest Service land, the impact on the local community, and problems of financing.¹³⁹ By April 1986, it appeared that the special use permit for the resort would be canceled because of its inability to secure financing.¹⁴⁰

River-running generated steadily increasing interest. Until a new program was instituted in 1984, the Forest Service received very little revenue for managing river operations. On the Middle Fork and Main Salmon River, for instance, outfitters generally charged between \$100 and \$200 per day for their services on a trip lasting 3 days, from which the Service got a modest \$1.25. In 1984, however, the Forest Service and Bureau of Land Management instituted a new fee schedule that was designed to reach 3 percent of the customer charges after 3 years. In Salmon Supervisor Richard Hauff's view, the "new permit fees should produce a fair return and help us to manage that use."¹⁴¹

The Salmon allowed both unguided float trips and professionally guided groups on a fifty-fifty basis. The outfitter permits for such trips, even after 1984, were closely held monopolies.¹⁴² In about 1982, potential outfitters who had no access to float the rivers secured approval from the Service for a program that would have advertised and granted these permits on a competitive basis. Established outfitters complained to their congressmen who applied pressure on the Chief to change the policy. The revised policy continued essentially the status quo. Thus, if outfitters holding a current permit perform satisfactorily they can continue to renew the permit annually.¹⁴³

The South Fork of the Snake River in the Bridger-Teton also was particularly popular for float trips. In fact, the Snake experienced more day use than the Salmon, perhaps because of its relatively easy accessibility to major highways and to visitors to Grand Teton and Yellowstone National Parks. In 1979, the Bridger-Teton proposed designation of 50 miles of the upper Snake as a wild and scenic river. Considerable opposition emerged from private landowners in Jackson Hole to the designation of the upper 25 miles. The Bridger-Teton continued to press for the lower 25 miles, which is entirely within the forest. By 1984, the proposal rested in limbo because of opposition from the Office of Management and Budget, which feared that the Bridger-Teton would ask for funds to manage the river if the special status were approved. In 1984, Supervisor Reid Jackson of the Bridger-Teton said the Service would settle for designation of the lower 13 miles as a scenic river, to protect it from potential hydroelectric development.¹⁴⁴

After the creation of the Sawtooth National Recreation Area in 1972, the region experienced some difficulty in its management. Under the enabling act, the Sawtooth was to maintain a western outdoors atmosphere with continued rural community life, ranching and grazing, and limited logging and mining. Sawtooth officials proceeded to purchase scenic easements on private lands, sharply regulating future use.¹⁴⁵ If an owner refused to sell the easement, the Service could acquire it under condemnation proceedings. The attempt to condemn such easements led to a suit that the Supreme Court decided in favor of the Forest Service in 1977. 146 In some cases where developers proposed subdivisions containing incompatible uses like A-frame houses and trailer courts within the recreation area, the Forest Service purchased the land. Regulations allowed some mining as long as it did not substantially impair the scenic beauty or damage fisheries and if the claim had been located prior to August 22, 1982.147

The Service encountered some difficulty in eliminating nonconforming uses. Some landowners, backed by Senator James McClure, wanted the Service to interpret the legislation as requiring an exchange for property within the Sawtooth at the option of the landowner. Regional Forester Vern Hamre disagreed, since he thought the legislative history did not support that view. He invited McClure to obtain a declaration from the Interior Committee chairman, Senator Henry Jackson of Washington, or to secure language in an appropriation bill, supporting his view. McClure could secure neither, and the region went ahead as before.¹⁴⁸

Problems at the Flaming Gorge National Recreation Area were less severe but similar to those at the Sawtooth. Owners of private land within the Flaming Gorge proposed to subdivide into one-tenth of an acre lots suitable for trailers. County commission chairman Albert Neff, who favored the subdivisions, became quite indignant when the Service suggested the county regulate such incompatible use through zoning. Neff carried enough political clout to get a congressional hearing on the matter. Vern Hamre went fishing with Senators Frank Moss and Alan Bible, who told him that they would stay out of the dispute. Later the commission denied the subdivision proposal, and the Forest Service purchased the land.¹⁴⁹

In commenting on the proposed management plan for the Flaming Gorge, Joel Frykman, formerly assistant regional forester for timber management, thought the forest had been unduly strict in dealing with timber values and might have exceeded its authority in regulating private and State lands, but that it was insufficiently strict in wildlife management. Such views did not receive broad public support.¹⁵⁰

Like the Sawtooth, the Flaming Gorge's management plan emphasized recreation and scenic values. The road layout conformed with these values. The Ashley recommended the designation of a section of the Green River as a wild and scenic river. The proposal was not acted upon. To enhance wildlife values, the Ashley transplanted a number of bighorn sheep to the Flaming Gorge. In cooperation with private developers, the forest encouraged conforming private development, including that of major resorts. The Flaming Gorge had two visitor information centers staffed full time by Ashley employees during the summer.¹⁵¹

In 1984, the Uinta National Forest accepted responsibility for recreation management at Strawberry Reservoir. Constructed by the Bureau of Reclamation, the reservoir is part of the Central Utah Project. On June 1, 1984, regional and forest officials joined State and Bureau of Reclamation representatives in dedicating a recreation complex at the site. Camping, boating, and fishing are the main activities at the reservoir.¹⁵²

Forest Service management of archeological, historical, and geological functions--especially archeological-expanded considerably in Region 4 after the early 1970's.¹⁵³ As a result of a number of executive orders, all Federal Government agencies were required to conduct inventories of any land-disturbing activities to determine archeological values involved. If such values existed, the Service and region were committed to protecting them or taking mitigating action such as excavating and documenting the findings. The program was quite expensive, since each national forest had to have access to an archeologist and the sites were often quite isolated.

The region experienced a major problem when, as soon as the archeologists began work, the sites became public knowledge and often attracted opportunists who tried to profit from finding and selling artifacts, amateur collectors who disturbed the sites, and vandals who destroyed ancient artifacts. Robert Safran indicated that sites at Joes Valley on the Manti-LaSal and Wheeler Peak on the Humboldt were particularly difficult to manage because of such vandalism.

In some cases, the forests conducted cultural management programs themselves or secured the help of interested local historical associations. The Challis National Forest, for instance, managed a dredge and museum on the Yankee Fork at Custer. Through creative thinking, the forest succeeded in getting considerable private involvement by organizing a dredge society. The Sawtooth Interpretive Association, a private group organized in 1972, cooperated with the Sawtooth NRA in providing interpretive services at the Redfish Lake Visitor Center and at the Stanley Ranger Station.¹⁵⁴ At Johnny Sacks Cabin in Island Park, the Targhee succeeded in making an arrangement for the local historical society to manage the site. The Bridger-Teton operated a display cabin adjacent to their headquarters showing an early ranger station and its furnishings.

One important program was the development of archeological studies along Clear Creek on the Fishlake. Mitigation became necessary owing to archeological damage resulting from the construction of Interstate 70 through the area. The Fishlake cooperated with the State of Utah, Brigham Young University, and the Federal Highway Administration in conducting digs at the site. By early 1986, mitigation had proceeded well, and the State of Utah had planned a visitor center to explain the prehistoric Fremont culture.¹⁵⁵

Wilderness

The Wilderness Act directed the Forest Service to consider the suitability of primitive areas for wilderness designation. In addition, in August 1971 the Service undertook the evaluation (called RARE I for the first Roadless Area Review and Evaluation) of all undeveloped areas of more than 5,000 acres. Completed by June 1972, findings were announced in January 1973. For the entire National Forest System, the report recommended 12.3 million acres for wilderness protection from the 56 million studied. In response to the review, the Sierra Club and other conservation organizations filed a suit in Federal court to force the Service to protect the entire 56 million acres. In August 1973, Federal Judge Samuel Contigranted a preliminary injunction supporting the appellants. The injunction led to a promise that the Service would prepare an environmental impact statement consistent with NEPA and reconsider wilderness preservation, before authorizing any development. 156

As far as Region 4 was concerned, the Sierra Club suit seemed unnecessary. The Washington Office directive had forced the region to conduct the review in an impossibly short 11 months. Recognizing that development did not threaten most of the roadless area, the region passed over those tracts low in mineral and timber values. In the process, they disregarded a number of locations because they were not threatened. These included Wellsville Mountain, Mt. Olympus, Mt. Nebo, and Lone Peak on the Wasatch Front and Mt. Borah in Idaho.¹⁵⁷ In addition, some forest officers believed that the designation of wilderness had the effect of calling attention to an area and that the impact might be less with no designation.¹⁵⁸

Some Region 4 officers such as Oliver Cliff resented the implication that any areas without roads ought to be designated as wilderness. For them, certain qualities of solitude and beauty were necessary to wilderness, and the absence of roads did not automatically invest an area with a wilderness character.¹⁵⁹

In spite of the problems with RARE I, the Nixon and Ford administrations were reluctant to undertake a second review of roadless areas. With the inauguration of President Jimmy Carter in 1977 and particularly with the appointment of M. Rupert Cutler as Assistant Secretary of Agriculture, the climate changed. Between 1977 and 1979, the Service undertook the study called "RARE II" in which it evaluated 67 million acres of roadless tracts. The Forest Service expected that any lands not recommended for wilderness under RARE II would be released for multiple-use management at the same time Congress designated the new wildernesses. Under RARE II, 36 million acres nationally were to have been opened for multiple-use management, 15.4 million were recommended for wilderness, and 10.6 million acres were reserved for future action.¹⁶⁰ The whole process ground to a halt, however, with the California v. Block ruling in 1979 that the Service had failed to comply with the Environmental Impact Statement (EIS) requirements of NEPA. This ruling prevented the release of roadless areas for multiple-use management and threw them into consideration with the forest plans. Under the Wilderness Act the ruling tossed them into the lap of Congress, since the Service no longer had the authority to designate wilderness by presidential proclamation.

In general, Region 4 officers believed that RARE II was quite well done. Vern Hamre pointed out that a number of areas were included that had not been included in RARE I.¹⁶¹ Pat Sheehan of the regional information office argued that the public interaction generated by RARE II was "one of the most intensive public involvement efforts that ... [Region 4] has undertaken." The RARE II recommendations of 1979 formed the basis for the wilderness bills considered from 1984 through 1986.

Until 1984, however, the only tangible result was the Central Idaho Wilderness Act that redesignated the Idaho Wilderness Area as the River of No Return Wilderness and had come about because of Idaho sentiment and the close cooperation between the Service and Senators McClure and Church.¹⁶²

Some former employees were bitter about the results of the process. George Lafferty, for instance, said that while he "generally supported a Wilderness System throughout" his career, he was concerned to see "the Forest Service being hamstrung" in its attempt to manage national forest lands. He thought the court rulings had brought the Service "to a point where" it could not properly "manage the study area lands--and they are extensive." 164

After the California ruling sidetracked RARE II, the Service began working with Congress in drafting wilderness legislation on a State-by-State basis. Working with political leaders, environmentalists, commodity interests, and the general public, the Service tried to shape each bill to fit the wilderness needs of each State. The bills under consideration for states in Region 4 were based essentially on the RARE II evaluations, but initially some of them contained either redundant or offensive features. The Utah bill, for instance, emphasized a right to graze on the forests. Regional Forester Tixier was concerned about this provision because he wanted to maintain the traditional status of grazing as a privilege as confirmed in the Wilderness Act rather than as a vested right. The original bill also contained what was called "hard release" language-essentially redundant, but potentially contentious provisions--ordering the Service not to reconsider the released areas for wilderness until the year 2000.164

Consideration of the wilderness bills for each of the States in Region 4 was extremely difficult and at times acrimonious. A compromise between House Public Lands Committee Chairman John Siberling and Senate Energy and Natural Resources Committee Chairman James McClure revised the "hard release" language in the Idaho bill to allow consideration of released areas during development of the next forest plan, or roughly in 10 years.¹⁶⁵ Similar language was included in the Utah bill, passed in September 1984--the first from Region 4. The IJtah bill, also the result of compromise, set aside 750,000 acres as wilderness, some parts without controversy, others after considerable, and at times heated, discussion.¹⁶⁶ By spring 1986, the Utah and Wyoming bills had passed, Congress was not actively considering the Idaho bill, and differences among members of the Nevada delegation, particularly over the potential Great Basin National Park in what is now the Wheeler Peak Scenic Area, had stalled that bill.¹⁶⁷

Wildlife and Feral Animals

Several considerations dominated the disputes over wildlife and feral animals after 1970. These considerations included protection of threatened and endangered species; what to do with wild horses and burros, perceived by many as a nuisance but with fondness by others: the reintroduction of game species into areas they had formerly occupied; and the impact of change and development on wildlife habitat.

The management of wildlife habitat continued much as before, with stream improvement for various kinds of fish, prescribed burning, and planting of various browse species for larger wildlife.¹⁶⁸ Wildlife considerations assumed considerable importance, because, as Regional Forester Tixier put it, "hunting is almost a religion" in Utah, Idaho, and Wyoming and the fishing in the region is among the best in the United States.¹⁶⁹ Although a considerable misperception existed, because of the occasional shooting of elk in hayfields and refuges, the Teton Wilderness was one of the best places to hunt in the world.¹⁷⁰.

The best example of the region's problem with threatened and endangered species is undoubtedly the grizzly bear, which is on the threatened list. Within Region 4, the focus of this problem was the greater Yellowstone Park ecosystem, which included the Bridger-Teton and Targhee National Forests, forests in two other regions, and two national parks.¹⁷¹ Representatives of the forests and parks together with the U.S. Fish and Wildlife Service and the State fish and game departments of Wyoming, Idaho, and Montana formed an Interagency Grizzly Bear Committee (IGBC) and several subcommittees to investigate and recommend action for dealing with problems caused by the bears' threatened status. The committee received research support from the Fish and Wildlife Service.

After reviewing conditions, the IGBC designated Management Situation Zones specifying grizzly treatment for various areas.¹⁷² Situation 1 zone was primary grizzly habitat where the bears were given priority over other uses in the area, though commodity production was still allowed. In Situation 2 habitat, the bear was not perceived as the primary inhabitant and other use prevailed where conflicts occurred. Situation 3 included developed and inhabited areas with high human use. Bears were generally removed from those areas. Situation 4 zones were areas suitable for bears in which they did not live and in which they could be established. Situation 5 zones were habitats in which grizzly bears did not live and which were generally unsuitable for them. The major difficulty in dealing with the grizzly was not the resolve of the Forest Service and other agencies to solve the problem, but rather the unwillingness of some in the public to support the regulations. In one case where an outfitter shot a bear in the Teton Wilderness, the Fish and Wildlife Service secured a grand jury indictment. During the trial, however, the judge allowed the offender to plead guilty to cruelty to animals, which allowed him to retain his outfitter's license. Then the judge suspended both the fine and the jail sentence.

In another case, however, Forest Service personnel, especially Supervisor John Burns of the Targhee, resolved a potentially explosive situation. In 1983 a grizzly sow designated number 38 moved with her cubs from the Gallatin National Forest to Two Top Mountain on the Targhee. Two Top had been designated as Situation I habitat, and under the guidelines sheep grazing had been allowed. Since bear had primary consideration in the area, after it started attacking the sheep, the rancher had to move them from the grazing allotment to private land. The bear followed the sheep, however, and began spending the day on the forest and the nights marauding in the herds on private land. After a week of consideration, the committee agreed to trap the bear and the cubs and relocate them in a remote area of Yellowstone Park.

Because of its location and resources, the Bridger-Teton was a particularly critical area in wildlife management. Wildlife values played a part in virtually everything that was done. When the forest conducted timber sales, for instance, officials coordinated their actions with the Wyoming Game and Fish Department, the U.S. Fish and Wildlife Service, the National Park Service, and various preservation groups. Twenty-six thousand head of elk summered on the forest in addition to large herds of mule deer, moose, and bighorn sheep. Endangered species such as the bald eagle and the trumpeter swan also inhabited the forest.¹⁷³ On a number of other forests as well, roads were often closed after a timber sale so that easy access did not threaten the elk population with excessive hunting pressure.¹⁷⁴

It took considerable time for the region to come to the position where wildlife considerations were generally recognized as being as important as commodity production. That change came about largely through reeducation of employees to convince them to understand how to consider wildlife in their decisions. As Mike Gaufin indicated, wildlife biologists helped with the reeducation by explaining how such measures as leaving a little litter after a timber harvest benefited the wildlife. Gaufin told of a discussion with one of the region's engineers, just before both retired, who said to him, "'Mike, I used to hate to see you come in my door because I knew every time you came in, you were going to be standing in the way of progress, but thank God you did it."¹⁷⁵

After careful studies, the region authorized State fish and game departments to reintroduce wildlife in certain suitable areas. Examples included mountain goats in the Lone Peak Wilderness area and bighorn sheep in the Mount Nebo area.¹⁷⁶

During the period, as changes overtook the region, other difficulties arose for various types of wildlife, in addition to those with anadromous fisheries already discussed. During the late 1960's and early 1970's deer populations dropped off considerably. No one knows why the mule deer populations in Utah, Nevada, and Idaho declined so drastically, but several explanations have been given. Because the region had been so successful in reducing forest fires, aspen habitat for large browsing animals like deer was replaced by less palatable conifers.¹⁷⁷ As urban expansion pushed farther and farther into the foothills and canyons, winter range for deer was lost. As a result, in the winter it was not unusual to see deer feeding in some residential areas.¹⁷⁸

Minerals

The diversity of conditions in Region 4 was nowhere more evident than in minerals. During the 1970's and early 1980's, a combination of the Arabian oil embargo and subsequent rise in oil prices, the increase in the price of precious metals, and the exploitation of large phosphate deposits catapulted Region 4 into first place in the National Forest System with regard to both locatable and leasable minerals (table 19). According to William Johnson, former director of the regional minerals staff, within a 300-mile radius of Salt Lake City there "were probably more major ore discoveries made . . . than . . . any [other] area in the world." The resulting pressure led Region 4 to create the first mineral area staff group in the Forest Service system in 1975,179

Since the Department of the Interior had the major responsibility for both leasable and locatable minerals, the Forest Service acted as an agent in making recommendations to the Bureau of Land Management. On national forest lands acquired by purchase, the Forest Service had sole responsibility.

As part of its management responsibility, the region required mining operators to restore the surface of the land through adequate reclamation procedures. In order to protect other resource values, in 1972, the region



Figure 100---Tenneco Oil Company pumping operation.



began to require miners to secure permits to build access roads across national forest lands. Here again, Region 4 was the first in the system to require compliance. The Washington Office followed in 1974 with regulations requiring miners to submit an operating plan spelling out how they expected to search for or develop the deposits and how they planned to restore the surface to a natural looking state. 180

Most of Region 4's mineral problems were concerned with leasable minerals. The Manti-LaSal held approximately two-thirds of the coal available for lease in the region. The oil-rich Overthrust Belt runs through eastern Idaho, western Wyoming, and eastern Utah, and the interest in gas and oil there was extremely heavy.¹⁸¹ By 1984, the entire Caribou National Forest, for instance, was blanketed by oil and gas leases, even though at the time there were no producing wells on the forest. Beginning in 1984, however, with the slackening of the oil crisis and the increase in lease fees, miners began to allow leases on obviously marginal land to lapse.¹⁸² In the spring of 1986, oil prices began to decline rapidly, a situation that will probably promote a further drop in interest in leases.

Leasing had an enormous impact on the Caribou in other ways. J.R. Simplot; Monsanto; Food, Machinery, and Chemical; International Minerals and Chemicals; Stauffer; and Agricultural Products Companies held leases on various parts of a large body of phosphate deposits near Soda Springs, ID. In 1984 these deposits produced 35 percent of the Nation's phosphate supply. Not the least of the problems for the Caribou was the development of techniques for managing the rehabilitation of the surface following open-pit mining. One large waste dump reportedly contained more than enough material to fill the Panama Canal. The Intermountain Station worked with the forest particularly in finding and developing plants suitable for restoration of such areas.¹⁸³

Because of the conflicting interests of commodity and environmental groups, it is not at all surprising that this increased mining activity generated considerable controversy. Much of the mining centered in areas adjacent to wilderness and scenic areas. Examples included the Phillips Petroleum leases on the North Slope of the Uinta, the abortive Utah Power and Light coal leases on the Kaparowits Plateau in southeastern Utah, American Smelting and Refining Company's molybdenum deposits at the foot of Castle Peak in the Sawtooth, and Getty Oil leases on the Bridger-Teton.¹⁸⁴ Complaints of environmentalists included destruction or threat to wilderness values, national parks, or threatened and endangered species. This sort of conflict seems quite likely to continue.¹⁸⁵

Similar conflict plagued one of two major steamproducing geothermal fields in the region. After strong objections were raised to such developments, the Forest Service placed a moratorium on geothermal leases in the Island Park Geothermal Area west and south of Yellowstone Park. Under the final environmental impact statement issued in 1980, leasing was recommended in part of the area, but would be prohibited in a strip ranging from 1 to 5 miles wide bordering Yellowstone Park and in other sensitive areas. In addition, the Secretaries of Agriculture and the Interior would need to agree that the leasing would not harm the geysers and other geothermal features in Yellowstone before development could take place.¹⁸⁶

The other major geothermal area was on the Fishlake near Cove Fort. In October 1983, Mother Earth Industries tapped what appeared to be a major steam field. The company negotiated an agreement to supply electrical power to Provo City. Reports have indicated that delivery should start in 1986.¹⁸⁷ Environmentalists did not object to this development, but the city encountered some difficulty in securing agreements to transmit the power from Cove Fort to Provo over Utah Power and Light Company lines.

Timber Management

Primarily because of the conflict between commodity and recreational values, timber management proceeded on two fronts in Region 4 in the 1970's and early 1980's. On one side regional and forest officials promoted technological and managerial changes in an effort to sell mature and overaged timber. On the other side, environmental interests outside the regional administration and members of interdisciplinary teams within the region opposed timber sales that would damage esthetic values or cost the Forest Service money. This opposition existed even when bark beetle damage and deterioration threatened other values.

Numerous changes in timber sales took place.¹⁸⁸ During the late 1960's, the region began using computer programs to compile stand tables. During the early 1970's, the region began a system called "stand examination" to develop prescriptions for the treatment of particular forest areas. Stand examination was used in connection with a forestwide inventory, which the region tried to conduct every 10 years on heavy timber forests such as the Boise and Payette and every 15 to 20 years on timber-deficient forests such as the Humboldt. Between 1972 and 1979, in conjunction with the stand examination and the forest inventory, the timber management staff under the leadership of George Roether developed a computer-assisted database called "Timber Management Information System" (TMIS) that timber management officials used as the source for an ongoing program of management prescriptions. Using linear program models, TMIS provided much more sophisticated data than the acreage and volume-per-acre estimates associated with former timber management prescriptions. Timber management used TMIS to simulate models designed to optimize volume, present net worth, or consider other variables the staff thought important for a particular species under particular conditions. The Intermountain Station provided much of the expertise in understanding characteristics of differing species, which helped the region accomplish its timber stewardship.

The work of the Intermountain Station was just one aspect of the increasingly interdisciplinary nature of planning timber management prescriptions. Landscape architects, wildlife specialists, and others worked with timber management to factor in values other than the production of a specific volume of timber. Wildlife, recreation, watershed, and esthetics were all considered in designing management prescriptions.¹⁸⁹

In part because of esthetic and watershed considerations, the region no longer relied on natural regeneration. Most prescriptions required revegetation within 5 years. Because some species like spruce required up to 20 years for regeneration, managers had to either seed or plant cutover areas. By selecting seed by elevation and type, development of the snow cache, and use of vermiculite slurry, the augur, and other techniques in planting, the region was enormously successful in its regeneration efforts. By 1984 an 88-percent survival rate placed it in the first rank of regions nationally.¹⁹⁰ In part, these successes came about because of work at the Intermountain Station and the Rocky Mountain Station at Fort Collins, CO. This work helped reinforce the recognition that total cleanup of an area did not produce optimum conditions for regeneration. Thus, felling techniques, design of the cutting areas, and other considerations all contributed to the prescriptions.¹⁹¹

In this interdisciplinary effort, the region's State and Private Forestry staff played an important part. They did this particularly by working with industry in designing improved lumber recovery methods through a sawmill improvement program, in conducting research and training on improved harvesting, and in evaluating and improving methods of felling and bucking timber.¹⁹²

Beyond the introduction of interdisciplinary timber management, perhaps the most important change was the decentralization of responsibility for preparing management prescriptions. After 1970, while the regional office's staff of silvicultural specialists remained constant at three people, the budget increased 10 to 12 times. Instead of keeping the money in Ogden, however, the region sent it to the national forests. Consequently, by 1984, the forests boasted 60 trained and certified silviculturalists who provided quality control for cutting practices, reforestation, and timber stand improvement. In the process, an emphasis on "biologically sound alternatives that will work within the silvics of the species to maximize other outputs . . . [prepared through an] Interdisciplinary Team," replaced the 1960's emphasis on clearcutting and maximum timber production at theoretical sustained yield levels.

A major achievement in timber management was the development of effective yarding techniques to get the timber out with minimum damage to the land. In the words of George Roether, Region 4 "skipped a step in the evolution of logging systems." While loggers on the West Coast moved from the Idaho jammer to long-span ground-skidded or skyline cable systems, Region 4 jumped from the Idaho jammer to helicopter logging. Eventually, the region found insufficient regeneration with helicopter logging so in 1984 prescriptions began moving back to cable systems. Some areas in the region still used horse skidding, crawler tractor yarding, and rubber-tired skidders. On the Boise, for instance, yarding was done by tractor, skyline, or helicopter, depending upon the particular conditions.¹⁹³

Under the constraints of multiple-use management, the regional timber staff wanted to achieve timber management on a sustained yield basis. In practice, this was quite impossible because of unsatisfactory market conditions and unavailable operators. Although the Boise and Payette "bumped up" against the maximum amount they were allowed to sell on an average annual basis--the allowable cut--most other forests came nowhere near that level.

After a superficial analysis, one might assume that the failure to achieve the allowable cut facilitated other considerations such as wildlife, watershed management, grazing, and wilderness. In practice that was not the case. Cutting old growth timber, for instance, sometimes actually improved elk and deer habitat and even water production, within certain tolerances for erosion. A professionally designed harvest added in some cases to the visual interest of an area by creating a greater variety within a specific vista.

All of this took place in a climate of severe outside criticism and internal examination. Partly in response to complaints from environmental organizations and Senator Gale McGee of Wyoming and partly because of the concerns of Floyd Iverson and others within the Service, in the late 1960's, Regions 4 and 2 appointed a study team to consider forest management, especially in lodgepole pine stands on four forests: Bighorn, Shoshone, Teton, and Bridger.¹⁹⁴ The team consisted of six specialists representing Region 4, three forest and range experiment stations, and Region 1. Carl M. Berntsen of the Rocky Mountain Forest and Range Experiment Station headed the team.¹⁹⁵

In general, the forest management study team's 1971 "Wyoming Report" revealed many problems in the management of forests of northern and western Wyoming. Clearcuts had often been too large, roads poorly designed, and attention to wildlife and esthetic values insufficient. The team recommended more attention to interdisciplinary and multiple-use values in the planning of timber management prescriptions.

Between the appointment of the team and the presentation of the report, Vern Hamre had replaced Floyd Iverson as regional forester. A forestry graduate of the University of Montana, Hamre had worked in Region I, in the Washington Office in the Division of Watershed Management as General Inspector, as director of the WO Division of Manpower and Youth Programs in the Johnson administration, and as Deputy Regional Forester in Region 6, before moving to Ogden as regional forester in April 1970.¹⁹⁶

After the team reported, the two regional foresters met in Denver, along with the supervisors of the four Wyoming forests and those from the Ashley and Targhee. At the meeting, the forest officers agreed upon measures to address the problems. In Hamre's view, though Region 4 had its problems, conditions were better than in Region 2. This had resulted, in part, from the work of supervisors like Bob Safran and the environmental concerns of Floyd Iverson and others during the 1960's.¹⁹⁷ Nevertheless, forests in Region 4 had many problems to correct. The measures mentioned earlier, in connection with timber management, were in part a response to these concerns.

Moreover, Hamre, his staffs, and the supervisors tried to devise solutions to problems mentioned in connection with the Wyoming report throughout the entire region.



Figure 101--Vern Hamre, Regional Forester, 1970-80.

Projects promising potential environmental damage, such as a proposed pulp mill at Green River, WY, were abandoned. Allowable cuts were reduced to take multiple use and esthetic factors into consideration.¹⁹⁸ The region scheduled meetings and Forest Service officers traveled over the forests with large timber operators like Boise-Cascade to explain the reductions in allowable cut.¹⁹⁹ Clearcuts were reduced in size, and a moratorium was placed on cutting on the South Fork of the Salmon River.²⁰⁰ (See table 20.)

Other factors helped the region meet its goal of reducing timber cuts to protect other values. Declines in the timber market during the recession of the early 1980's aided some forests like the Salmon.²⁰¹ On some forests, such as the Uinta and Fishlake, timber production was not particularly important. There, the allowable cut was not a major factor, though some of the timber produced, especially Engelman spruce, was quite valuable.²⁰² Some forests, for example the Wasatch, concentrated on small products like posts, poles, and firewood. Others, despite a rather large timber sale load, still carried on a considerable firewood business.²⁰³

Vern Hamre retired in 1980, and Jeff Sirmon, who had been deputy regional forester, served as regional

FY	Volume sold (million bd. ft.)	Volume cut (million bd. ft.)
		·
1965	477.3	393.0
1966	444.7	445.0
1967	499.2	434.6
1968	491.1	459.8
1969	355.1	469.2
1970	813.6	449.5
1971	484.1	385.7
Average (1965-1971)	509.3	426.2
1972	454.4	485.6
1973	322.0	473.8
1974	373.1	453.0
1975	430.9	332.1
1976	367.1	396.6
1977	402.4	450.1
1978	381.6	385.9
1979	334.3	433.7
1980	363.8	306.2
1981	NA	NA
1982	348.0	261.6
1983	370.4	361.8
1984	396.1	390.0
1985	379.7	433.6
Average (1972-1985)	378.8	397.2

Table 20--Commercial timber transactions in Region 4, 1965-85 (convertible products only)

Source: Annual Commercial Transactions Report, Region 4.

forester until 1982. In 1982, before Sirmon moved to Portland as regional forester, Governor Ed Herschler of Wyoming asked the two regional foresters--Sirmon and Craig Rupp of Region 2--to review the progress under the Wyoming report. The original study team appointees agreed to conduct the review in cooperation with three new members representing the State of Wyoming.²⁰⁴

Before the team issued its report, J.S. "Stan" Tixier had replaced Sirmon as regional forester. A native of Albuquerque, Tixier developed an interest in range management at an early age. He studied range management at the University of Arizona, then joined the Forest Service as a range conservationist. After service in Region 3, he moved to the Washington Office where he worked on the range staff. He transferred to Milwaukee as deputy regional forester and in June 1982 moved to Ogden as regional forester.²⁰⁵

On the whole, the report that Tixier received in 1983 indicated that all of the forests had made some progress but that forests in both regions needed improvement.²⁰⁶ The regional officers produced a response to the report in which they concurred basically in the recommendations and resolved to continue with improvements. Some recommendations, such as the reestablishment of citizen advisory committees and the writing of a memorandum of agreement between the regions and the governor's office, either could not be implemented under current Federal regulations or were considered unnecessary. Other recommendations, such as the suggestion that wildlife specialists be maintained on every forest, were already in effect. The response pointed out that such specialists might be needed







Figure 103--J.S. "Stan" Tixier, Regional Forester since 1982.

Figure 102--Jeff Sirmon, Regional Forester, 1980-82.

elsewhere temporarily since they were often used on interdisciplinary teams.²⁰⁷

Besides the controversy over clearcutting, a major dispute continued over salvage sales.²⁰⁸ In various areas of the region, these sales resulted from fire and windthrow, but most particularly from bark beetle, mistletoe, and other infestations. Often the two issues were combined, because clearcutting was often used, especially in lodgepole pine, to salvage dead or dying trees before they deteriorated in value.

The Bridger-Teton and especially the Targhee were the sites of large salvage sales. In 1984, the Bridger-Teton, for instance, cut about 30 million board feet of timber, of which 5 million was salvage.²⁰⁹ Outfitters and guides were particularly vigorous in their opposition to these sales. State Senator John Turner, an outfitter, was one of the leaders in this opposition. These businessmen earned their living from providing quality service to hunters. In their view, a timber access road was a direct threat to the amount of big game in an area and to their businesses, since it opened the area to general hunting.

On the Targhee the situation was even more serious. By the late 1970's, beetles had killed 60 to 80 percent of the lodgepole pine in the forest. The Targhee faced the prospect of salvage operations on all the timber, because of the problem of windthrow in the remaining stands. Public opposition surfaced, in part because of the clearcuts and in part because of forest plans for logging roads in the vicinity of Yellowstone National Park. The forest conducted a major and relatively successful public relations effort in an attempt to secure support for these efforts.²¹⁰ Similar problems existed on other forests like the Ashley and the Wasatch.²¹¹ In some cases, as in a cut planned on the North Slope of the Uinta, wildlife habitat was at issue.

Opponents of the salvage operations generally discounted and often questioned the sincerity of the Forest Service argument that cutting these infested stands, even at a loss, was a necessary component of proper



timber stand management. Discounting the time needed to regenerate the timber and explaining away the potential damage to nearby timber by arguing that "the insect problem is actually worsened because of forest debris left after cutting and damage to trees that are not taken out," Joseph M. Bauman, environmental specialist for the <u>Deseret News</u>, for instance, pointed out that "forests will simply regenerate themselves after this natural attack, as they always have."²¹²

In November 1985, the Idaho Natural Resources Legal Defense Foundation tried to stop a salvage sale of firedamaged timber on the Payette National Forest. Here, the arguments against the sale were potential damage to the adjacent Carey Creek Roadless Area and the closure to public use of a forest road used by tourists. From the point of view of Edwin Stockly, representing the foundation, the potential damages outweighed the potential advantages. From his perspective, the Payette's arguments lacked balance.²¹³

In addition to these arguments, a third side of the dispute, that of the timber companies, was often apparent. In the late 1960's, Regional Forester Floyd Iverson

ruled against the use of DDT spraying in certain areas, such as the Salmon National Forest, except under severely restricted conditions, because of potential damage to fish and birds.²¹⁴ This restriction was extended to other forests, and the region was subjected to contradictory lawsuits. On the one hand, environmentalists in Idaho sued to stop the limited spraying for spruce budworm. On the other, Boise-Cascade entered a suit asking for a judgment requiring the Service to spray in order to protect its adjacent private lands.²¹⁵

The region also faced problems because of the policy of the Washington Office that allocated more money for production of timber than for other multiple-use values. In May 1975, William J. Bryan, responding for the timber management staff, argued against a proposed system of allocating dollars to the region based on favoring timber outputs over other values. The result, Bryan argued, would be "ever poorer management in such areas [with low timber values]." He expressed concern about the criticism that such policy would generate in local communities and among other groups, presumably those interested in other multiple-use concerns.²¹⁶



Figure 104--Firewood give-away program for handicapped and senior citizens, 1979.

Range Management

After 1970, range management tended to generate less controversy than timber management. The battles over reductions in numbers so characteristic of the 1950's and early 1960's had virtually ended. Relations between the Forest Service and the ranchers tended generally to be quite good. Most allotments throughout the region had been placed under good management. Range managers recognized the limitations of range improvement projects, because of the problems of environmental deterioration and difficulties in making permanent alterations in the character of plant communities. Some range conservationists raised questions about current methods of allotment analysis as a means of determining trend in range conditions. On several forests some problems of overgrazing continued, but these were much less severe than previously. In a replay of previous developments, stockmen continued to resist efforts by the Federal Government to change the basis for grazing fees. Some conflict persisted between demand for grazing on the one hand and the desire for recreational and wildlife use on the other.

When Vern Hamre came on as regional forester in 1970, he found range conditions relatively good. Range problems had been largely solved on the Cache, Wasatch, and Uinta and on the forests of eastern and central Idaho, northwestern Wyoming, and Nevada. Some rather serious problems continued to persist on the Manti-LaSal, Fishlake, and Dixie in Utah and on the Boise and Payette in Idaho, and a few local problems continued on the Bridger-Teton in Wyoming. Hamre moved to address the continuing difficulties, in part, by encouraging each State to form a range improvement committee made up of representatives of the livestock community, wildlife experts, and others interested in the range program. The committees in Utah and Idaho performed very well. The Wyoming committee "was never guite as successful." The Nevada Secretary of Agriculture was quite uncooperative, because of the developing sentiment that led to the Sagebrush Rebellion.

Beyond this, the region continued to work with the grazing advisory committees to help the permittees understand and address problems. By 1984, Supervisor Don Nebeker of the Uinta could say with confidence that "Hobble Creek is one of our most productive allotments, [and] . . . it is probably one of the more cooperative groups."²¹⁷

In general, by building on the work of the Iverson administration, Hamre and his associates succeeded in getting most ranges into satisfactory condition sometime between 1972 and 1974.²¹⁸ As late as 1984, however, some problems continued to persist, especially on the Manti-LaSal and Fishlake. On those two forests, problems existed principally because of difficulties in the cooperative management of forest system lands and adjacent and enclosed private lands.²¹⁹ The forest supervisors and rangers, however, were determined to address the problems by working with the permittees to bring about necessary reductions and range improvements.²²⁰

In the 1970's and 1980's depressed economic conditions reduced the pressure on many sheep allotments. By 1984, New Zealand and Australian imports had cut into the domestic market. A number of sheep allotments were vacant. In 1984, the Targhee could find no stockmen willing to use 19 sheep allotments.²²¹ The Wasatch ranges could probably have taken 90,000 to 92,000 animal-unit-months (AUM) without damage compared to the 77,000 or 78,000 used in 1984.²²² Farms and ranches adjacent to the Uinta passed into urban uses and Supervisor Nebeker wondered where they would get the animals to graze the ranges.²²³ Former Wasatch Supervisor Chandler St. John pointed out that, with the depressed market, stockmen found it difficult to get skilled herders to work for them at the wages they could afford to pay.²²⁴

Nevertheless, range management continued to constitute a substantial work load in the region. By 1984, Region 4 still grazed the largest number of sheep of any region within the Forest Service system.²²⁵ On the Fishlake, for instance, Supervisor Kent Taylor said that "grazing is still our number one resource problem, . . . even though we have reduced [numbers of] livestock." Even there, because of the pressure for better management, by 1984 sheep were down to about 20,000 AUM's compared with 75,000 AUM's during Warld War II.²²⁶ Supervisor Chuck Hendricks said that the Caribou's range management program was particularly important. He and his staff were especially proud of the demonstration work being done on the Curlew National Grasslands.²²⁷ The Humboldt in Nevada and the Bridger-Teton in Wyoming also carried very large range loads.²²⁸

Some of the forests had a very light grazing load. The Salmon, for instance, grazed only about 55,000 AUM's in 1984, mostly cattle.²²⁹ Former Boise Supervisor Ed Maw counted the grazing load there as not very heavy.²³⁰ The Ashley grazed only about 75,000 AUM's, which was not very heavy compared with its wildlife, energy, and recreation loads.²³¹

Perhaps the major changes that took place in range management in the early 1980's resulted from a recognition by both livestock operators and forest officers that grazing could not be permitted on all national forest lands. Much of the land would not stand the impact of livestock use without experiencing unacceptable damage. Once both groups understood this concept, it was much easier to adjust livestock numbers to the capacity of the range.²³²

A second change of importance was the recognition of the limitations on range improvement projects. Range managers learned that although they could convert sagebrush and pinyon-juniper cover to grass temporarily, these large and deep-rooted plants tended to reinvade the arid lands within 12 to 20 years. Those areas most susceptible to such invasion were in the Great Basin--the Vernon unit of the Uinta and the Curlew National Grasslands, for example.²³³

In the early 1980's, the Forest Service experimented with a herbicide called "Grasslan" that could be broadcast from fixed-wing airplanes. Grasslan did not damage desirable grasses and forbs, but took out sagebrush. However, a Service-wide ban on the use of herbicides, generated in part by accidental damage to desirable species caused by spraying with other herbicides, made Grasslan unavailable. In the meantime, plowing and seeding in sagebrush and chaining in pinyon-juniper provided some relief if there were sufficient money and environmental conditions allowed the region to treat the land.²³⁴ In this connection, potential damage to archeological sites, especially in southeastern Utah, and possible environmental damage throughout the region made the EPA less willing to approve such projects.²³⁵

During the Carter administration, money for range improvement was much easier to come by than recently. In 1978, under the Range Betterment Fund, the region got \$1.7 million for range improvement.²³⁶ Beginning in the early 1980's, however, money for range improvement became scarce. With the Reagan administration's budgetary philosophy, neither the supervisors nor regional staff officers saw much hope for improvement. In 1984, Don Hooper of the regional office expected that under current appropriation levels, they would "lose ground." In 1984, the region got only \$1.6 million for range improvement, which was \$100,000 less than in 1978, in spite of the rapid rate of inflation in the intervening 6 years.²³⁷ Hallie Cox, formerly head of range management, indicated that budgetary considerations forced the reduction in the size of range staffs after 1981 as well.²³⁸

Stockmen also were concerned about the real or potential conflict between livestock and wildlife. On the Tonopa Ranger District of the Toiyabe and on some portions of the Fishlake, stockmen were particularly critical because of the increase in elk herds.²³⁹ Supervisor Kent Taylor indicated in 1984 that Forest Service studies had never shown any problem attributable to elk grazing on the Fishlake, but the stockmen were unconvinced.²⁴⁰ On the other hand, the Bridger-Teton removed livestock from the foothills east of the Jackson Hole Elk Refuge to protect it for wildlife.²⁴¹ Other conflicts developed because of depredations in hayfields caused by elk moving back into populated areas and finding alfalfa more to their liking than browse, forbs, and mountain grasses.²⁴²

In recent years, because of problems in the use of the Parker three-step transects, the region introduced other means of measuring trend and use.²⁴³ In the late 1960's Kenneth R. Genz served on a team under Jack Reppert at the Rocky Mountain Experiment Station at Fort Collins that considered the problem. The major difficulty was in the "tremendous amount of human error in its application." In many cases, they found that the transects had not been put in representative plant communities or the range conservationists had tried to cover two communities with one transect cluster.

After Genz moved to the Toiyabe, he learned of work being done on plant frequency measurement by Paul Tueller at the University of Nevada. In 1972 or 1973, Genz began experimenting with similar frequency measures. After releasing his work for comment, he submitted his proposal to the regional office in April 1981. It was accepted and incorporated in the range analysis handbook.

With the ranges under generally good management, the region could experiment with programs that turned more responsibility to users. The Challis, for instance, undertook an experimental stewardship program. Working with a committee of representatives of the Idaho State Fish and Game Department and other interested groups, the permittees wrote management plans that they then implemented.²⁴⁴ The Uinta inaugurated a similar program called "grazing agreements," which shifted a substantial portion of responsibility and control to the permittees. Under both these programs, range managers evaluated results rather than monitoring the livestock operation on the ranges.²⁴⁵

The perennial issue of grazing fees arose again in 1985. In 1978, Congress set grazing fees at \$1.23 per AUM, based on a 1966 study. From that base, the Forest Service used the Economic Research Service's beef price index to determine the new fees. In 1985, the fee, which had declined with the drop in beef prices, was set at $$1.35.^{246}$

In 1978, Congress also mandated a new appraisal study, by which it intended to base the fee on comparative land value rather than beef prices. By 1984, researchers had collected preliminary data on private lands, and the Forest Service released a proposed new fee schedule early in 1985. The study report, which went to Congress for approval in June 1985, proposed fees as high as \$4.92 per AUM for the best grazing land.247 Ranchers greeted the proposed fee hike with derision and sought political help to quash it, pointing to the non-fee costs they had to pay for using Federal lands. Senators Jake Garn and Orrin Hatch and Governor Norman H. Bangerter of Utah supported the ranchers' position. By the end of 1985 Congress had failed to act on a compromise. The Office of Management and Budget pressured for an increase while stockmen pressed the Reagan administration to keep the fees lower.248

The Sagebrush Rebellion

Like the conflict over grazing fees, the question of Federal versus State or private ownership of the public lands arose at various times since the Service's organization. The most recent revival of the problem occurred during the late 1970's and early 1980's under the title "Sagebrush Rebellion." In part, at least, the passage of the Federal Land Policy and Management Act of 1976 announcing the Federal Government's intention to stop disposing of public lands sparked this latest protest. In addition, the movement represented "the culmination of a growing sense of dissatisfaction with what many feel to be 'over-regulation' by the Federal Government," especially the restrictive provisions of the Federal acts discussed earlier.²⁴⁹

In response to this sentiment, all States in Region 4 considered legislation to assert State authority over the Federal lands. The State of Nevada passed a law in February 1979 claiming State ownership of 53 million acres of Bureau of Land Management lands. Senator Orrin Hatch of Utah introduced a bill to transfer most Federal lands, including national forests, to State ownership. The bill never passed. The Nevada law soon became a dead letter, but its sentiments persisted into the early 1980's.

Under the direction of Regional Forester Vern Hamre, with the support of the information office, the region undertook a number of measures to counter the State claims. Hamre spoke with the governors of Idaho and Utah. He pointed out in talks that the cost to the States of managing the lands at the same level as Federal





Figure 105-Western Forest Service regions, 1985. Note Intermountain Region in center of map.

management would mean a substantial increase in State taxes, since the Federal Government subsidized land management in all the States.²⁵⁰

Summary

Perhaps the most useful way to view developments between 1970 and 1985 is to see them as an effort on the part of both Region 4 and the people it served to interpret the meaning of multiple-use management in the context of legislation designed to protect the environment and noncommodity uses of the national forest lands. This attempt at balance was difficult for both the public and the forest officers. Long inured to dealing with politicians and commodities groups together with local officials interested in the protection of watersheds above major urban and agricultural areas, the region was forced to enlarge its concept of what constituted the public to include various environmental and preservationist interests. Moreover, it was forced to do this while facing both declining budgets and increased demands caused by a greater volume and diversity of uses and by the extraordinary expenditure of time and money required in drafting forest plans. The result was a decrease in public contacts and in services at a time the public demanded more of the Forest Service.

Although the region experienced some successes, the many pressures resulted in increased public dissatisfaction. Among the greatest successes was the completion of the forest plans, the generally good management of range lands, and the successful passage of some of the State wilderness bills. The Tixier committee, however, uncovered considerable misunderstanding and dissatisfaction that the Service must address to continue successful management of public resources. Most stress in the future will probably still be caused by the conflicting demands for use of national forest resources, especially the conflict between environmental protection and commodity production.

Reference Notes

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- 3. Foyer Olsen interview by Thomas G. Alexander, March 1984, pp. 20-21, Historical Files, Regional Office.
- 4. Stan Tixier, Roy Feuchter, Don Girton, and George Leonard, <u>Communications/Awareness</u> <u>Discussions: Important, Nationally Significant</u> <u>Information from Persons Interested in the Forest</u> <u>Service</u>, Report prepared for the Regional Foresters and Directors Meeting, Fort Collins, CO, August 1985 (n.p.: 1985), p. 15. (Hereinafter cited as Tixier Committee Report.)
- 5. Charles J. Hendricks interview by Thomas G. Alexander, May 1984, pp. 28-31, 34, 39, Historical Files, Regional Office.
- 6. The information on budgetary matters is based on Richard K. Griswold interview by Thomas G. Alexander, February 1984, Historical Files, Regional Office.
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- John F. Hooper, Lee A. Bennett, Water W. "Pete" Pierson, Rodman N. Barker, Frank Youngblood, James W. Camp, Earl F. Dodds, Kenneth W. Weyers, and Ralph A. "Andy" Finn interview by Thomas G. Alexander, April 1984, pp. 44-48, Historical Files, Regional Office. (Hereinafter cited as Weyers interview.)

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- 11. John E. Burns interview by Thomas G. Alexander, April 1984, Historical Files, Regional Office.
- Sterling J. Wilcox, Jack Arrowsmith, Lou Jean Findlay, Russ Rogler, Ron Hayden interview by Thomas G. Alexander, February 1984, pp. 13, 18, Historical Files, Regional Office. (Hereinafter cited as Sterling Wilcox interview.)
- See: U.S. Department of Agriculture--Forest Service, Intermountain Region, Organization Study, Zone Positions, January 1976, File: 1680, History, Improvements (1340), Historical Files, Regional Office.
- 14. Note: The region has gone extensively to the use of computers. The first systems, introduced in about 1957, were rather crude and required the payroll information to be run through the computer six times in order to get needed information. William H. McCrum interview by Thomas G. Alexander, February 1984, p. 5, Historical Files, Regional Office. Initially, the designation Forest Level Information and Planning System (FLIPS) was used for the computer network, but the system is usually referred to simply as Data General today. See Jack Arthur, "Distributed Processing Implementation Systems -FY 1986/1987," in Proceedings of the 1986 District Rangers Conference, pagination irregular, copy in author's possession. (Hereinafter cited as: 1986 Rangers Conference Proceedings).
- Hubbard interview, pp. 4-10, Jack Wilcox interview by Gary Schaffran, June 1984, p. 30, Historical Files, Humboldt.
- Don J. Nebeker interview by Thomas G. Alexander, March 1984, pp. 30-31, Historical Files, Regional Office.
- 17. Hendricks interview, pp. 31-32.
- See file 6320, Contracting CY 78, D89, Sawtooth National Forest Records, RG 95, Seattle FRC; File 6320, Contracting Bids, Catering Service Bids BIFC, ibid.; File 6320, Contracting, D 89, Helicopter Services, Sawtooth Helicopters, Inc., ibid.
- Vern O. Hamre interview by Thomas G. Alexander, July 1984, pp. 35-37, Historical Files, Regional Office. See also Jim Lawrence, "Management Effectiveness for the 80's," in 1986 District Rangers Conference Proceedings.
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- 22. Tom Roederer, "Delta Team Report," March 18, 1986, in 1986 District Rangers Conference Proceedings.



- 23. Hamre interview, p. 15. See particularly File: 1240, Standard Size of District Study, Cache-Caribou Consolidation, Historical Files, Caribou.
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- Vern Hamre to Forest Supervisors, December 6, 1973, File: 1658, Historical Data, 4, Early Administration, Uinta.
- 26. <u>Daily Herald</u> (Provo), January 4, 1973, File: 1658, Historical Data, 4, Early Administration, Uinta; Intermountain Region, Forest Service Organizational Directory, May 1983 (Ogden, UT: Intermountain Region, 1983); Hamre interview, pp. 26-28.
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- 29. "Forest Service Study Planned," <u>Humboldt</u> <u>Hummer</u>, February 1973, File: Information and Education, Historical Files, Humboldt.
- "Foresters to Review Need to Shut Office," <u>Salt</u> <u>Lake Tribune</u>, January 5, 1973, File 1658, <u>Historical Data</u>, 4, Early Administration, Historical Files, Uinta; "Forest to Close Bridger Offices," clipping n.d., File: Newspaper Clippings, 1973, Boise.
- 31. Jackson interview, pp. 21-23. Its FY 1985 Budget was \$8.1 million. Some question exists as to the equitability of this distribution since the B-T is considerably larger and its functions more varied than Grand Teton.
- Lavin interview, pp. 24-25; Robert L. Safran interview by Thomas G. Alexander, February 1984, p. 26, Historical Files, Regional Office; Nebeker interview, p. 19.
- Hamre interview, pp. 28-30; Robert S. McBride interview by Thomas G. Alexander, February 1984, pp. 37-38, Historical Files, Regional Office; Pat Sheehan, Bonnie Eldredge, and Vern Fridley interview by Thomas G. Alexander, pp. 15-16, Historical Files, Regional Office. (Hereinafter cited as Sheehan interview.)
- 34. "Forest Service/Bureau of Land Management Interchange: History in the Making . . . If Congress Approves," <u>Intermountain Reporter</u> (Special Edition), May 1985; News release, February 20, 1985, material furnished by Philip B. Johnson of the Regional Office.
- 35. R. Max Peterson, "The Ranger--Past, Present, and Future," in 1986 District Rangers Conference Proceedings.
- 36. "Land Swap Draws Fire: Mineral Proposal Hailed," <u>Deseret News</u>, June 21, 1985. Notes taken at the meeting by the author.
- 37. John Chaffin, "BLM/FS Interchange: Summary of Public Response and Analysis," MS, n.p., n.d., in the author's possession.

- 38. Sheehan interview, pp. 13-15.
- This is based on my notes of comments made by R. Max Peterson at the 1986 District Rangers Conference, Roise, ID, March 18, 1986.
- 40. Hamre interview, pp. 30-31. See also McCrum interview, p. 1, and Sheehan interview, pp. 16-18.
- 41. "R-4, Organizational Structure Proposal Revealed," <u>Humboldt Hummer</u>, November 1973, p. 2, File: Information and Education, Historical Files, Humboldt.
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- 43. William D. Hurst in a comment on a version of the manuscript.
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- 45. Rusty Munn to Jimmy Carter, July 1, 1977, and James Nielson to Rusty Munn, August 5, 1977, File: 2400, Timber, FY 77, D-83, Salmon National Forest Records, RG 95, Seattle FRC.
- 46. Forest Service Report, 1970-71, p. 34.
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- J.S. Tixier, "Regional Forester's Message," <u>Intermountain Reporter</u> (August 1984), p. 8.
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- 51. District Rangers Conference Proceedings, 1986.
- 52. Blackner interview, pp. 13-14.
- 53. Hamre interview, pp. 34-35; Taylor interview, p. 27.
- 54. Blackner interview, pp. 14-15.
- 55. Ibid., pp. 4-5.
- 56. The following is based on Sterling Wilcox interview, pp. 53-61.
- 57. Ibid., pp. 60-61.
- Blackner interview, pp. 6-9; informal discussion with Payette National Forest staff; notes by the author of David Blackner's presentation to the 1986 District Rangers Conference in Boise, ID, March 18, 1986.
- 59. The following material on promotion procedures is based on Hamre interview, pp. 40-42.
- 60. Nebeker interview, pp. 37-38. On some less urban forests, offenses still range from the more traditional cutting timber illegally and livestock trespass to taking off-road vehicles into prohibited areas. Beitia interview, pp. 15-16. Ray H. Morrison interview by Thomas G. Alexander, March 1984, pp. 14-15, Historical Files, Regional Office.
- 61. Hubbard interview, pp. 12-14.
- 62. Ibid., pp. 11-12.
- 63. McCrum interview, pp. 2-3.
- 64. J.L. Emerson to Bob Banks, September 26, 1973, File: 1680, History, General Collection, Historical Atlas, Historical Files, Salmon; J.S. "Stan" Tixier



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- 66. St. John interview, passim. Griswold interview, pp. 3-7.
- 67. Tixier Committee Report, pp. 3, 5.
- Tom Robinson, "Guest Opinion: Forest Management Act: Wilderness Society Response," Mountain Express, May 17, 1984.
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- 70. As might be expected, confrontation has characterized the relationship between the Service and the environmental community. On the national level by the mid-1970's, at least two dozen lawsuits were pending, most of which had been entered by the environmental community. Harold K. Steen, The U.S. Forest Service: A History (Seattle: University of Washington Press, 1976), p. 311; Lawrence W. Rakestraw, A History of the United States Forest Service, et al., 1981), p. 153.
- 71. "Foresters Deplore Forest Service Trends," <u>High</u> <u>Country News</u>, May 28, 1984.
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- 73. See <u>Tixier Committee Report and The Friday</u> <u>Newsletter</u> (Washington Office), November 22, 1985.
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- 75. Sheehan interview, p. 2.
- 76. Ibid., pp. 1-2.
- 77. Ibid., pp. 52-53.
- 78. Ibid., p. 57.
- 79. See: HOST: Intermountain Region Host Program, 1980-81 Action Plan, File: 1680, History, Host Program (1520), Historical Files, Regional Office. See for instance, Robert L. Safran to Forest Supervisors, December 2, 1977, File: 2330, Development Sites in Public Sector, FY 78, Sawtooth National Forest Records, RG 95, Seattle FRC.
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- 82. Griswold interview, pp. 3-7.

- 83. Ibid., pp. 8-10.
- 84. Ibid., pp. 10-11.
- 85. Weyers interview, pp. 33-38.
- 86. Griswold interview, pp. 11-14. For a general discussion of the background and impact of the act from the FS point of view see <u>Forest Service Report</u>, 1974, p. 1: 1975, p. 1.
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- 204. The discussion is based on <u>New Directions in</u> <u>Management on the Bighorn, Shoshone, &</u> <u>Bridger-Teton National Forests</u> (n.p. Intermountain Region and Rocky Mountain Region, 1983). See also Sheehan interview, pp. 30-33 for background.
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Chapter 11 The Intermountain Region in Retrospect

The years from the creation of the first forest reserves in the Intermountain Region in 1891 to the delivery of the forest plans in 1985 have seen an enormous change in emphasis. Initially custodians primarily concerned about protecting what were perceived as deteriorating timber stands and watersheds, the forest officers gradually became stewards managing a broad array of lands and resources for which they had increasingly to adjudicate conflicting interests. Once horseback rangers, Forest Service employees now constitute a complex and sophisticated group of line officers and specialists who must work together to balance clashing demands.

It is important to recognize that the present-day employees of Region 4 face current problems with a background of some substantial successes by their predecessors in the management of public resources. From the beginning, the regional officers recognized the control of livestock ranges, the protection of watersheds, and the effective management of forests as their principal responsibilities and problems. In the 40 years since World War II, the region has largely solved the first of these three problems and has achieved considerable success in dealing with the second. Under current conditions, however, the third problem, despite progress, seems beyond solution even for a "can-do" outfit like the Intermountain Region.

With a few relatively minor exceptions, Region 4 generally has achieved successful management of its range lands. Some problems persist on the Manti-LaSal and the Fishlake, but, given the magnitude of the grazing problems the region faced from the very beginning, by any measure the relatively effective management of the ranges today must be seen as a major success. From the 1890's through the early 1960's, range management was the most serious problem the region faced. The combination of effective researchers led by J.R. "Joe" Pechanec of the Intermountain Station along with a host of dedicated Region 4 land managers brought most ranges under good management by the early 1970's.

The same combination of research and management has provided relatively effective protection for the region's watersheds. No longer do we hear of extensive devastation of areas of Region 4 by summer mud-rock floods, for instance. The work by Reed Bailey, A.R. "Bus" Croft, and their associates at the Davis County Experimental Watershed and elsewhere must receive a great deal of the credit. The land managers of the region and the national forests must be credited for their ability to take the research findings and recommendations and implement them through such measures as watershed acquisitions, contour trenching, and revegetation. The major remaining unsolved aspect of the watershed problem is the wet-mantle and frozen-mantle floods that so devastated some parts of the region during the past few winters.

Although Region 4 has made some significant inroads on forest management in particular areas, the third problem is nowhere near solution. Except on portions of the national forests of western Idaho, the region is a long way from achieving the ideal of sustained-yield forestry. Nevertheless, the region has made some substantial headway in timber management. Regional employees have cooperated with the timber industry in inaugurating successful methods of timber harvesting that can be carried on without inordinate watershed damage. The region's problems of planting and growing healthy timber essentially have been solved. The continuing inadequate demand for old-growth timber, however, in many parts of the region, means that large blocks of deteriorating and insect-killed timber will remain a problem for the foreseeable future. At the same time, the region faces the challenge of balancing the demands to harvest such dead or deteriorating stands with the increasing criticism of below-cost salvage sales and the strong opposition from those who want such stands left alone.

However, the Intermountain Region's most serious and persistent problem for the future appears to be none of the three perceived initially as difficult, yet it is related to all of them and to others. This overriding difficulty derives from an increasingly large number of conflicting perceptions--both public and internal--as to what the Forest Service ought to do with the lands and resources under its stewardship. This has been made abundantly evident in the Tixier Committee report, in the many news stories dealing with the forest plans, and in numerous popular articles and books on the operation of the national forests. The basic problem is that, as the Forest Service has committed itself to planning and practicing multiple-use management, it must satisfy a potpourri of publics made up of thousands of people with many outlooks and interests who cannot agree on the dimensions or proper mixture of the management elements.

This inherent conflict in multiple-use management is often cast in terms of commodity versus noncommodity interests or developmentalists versus preservationists/ environmentalists. The struggle is, however, much more complex than that. In spite of charges to the contrary, it seems unlikely that most stockmen and loggers would prefer to return to the days of overgrazed ranges, eroded slopes, and silted spawning grounds. On the other hand, most environmentalists do not want to rid the national forests completely of livestock, and most recognize that logging is acceptable in some places and situations. Forest Service research has shown that a timber sale may actually improve wildlife habitat by releasing critical browse and other forage for use by large animals like deer and elk. Other Forest Service research, confirmed by considerable work by other researchers in the United States and abroad, has shown that judicious grazing of some arid lands actually can improve their condition.¹

Unfortunately, some critics fail to recognize the improvement that has taken place on forest ranges since the 1950's. These critics often appear unaware of the great difference between the generally overgrazed Bureau of Land Management ranges and the generally well-managed national forest ranges of Region 4. Recent articles by environmentalists such as Gary Macfarlane and Edward Abbey, and even scientists such as Kimball Harper, for instance, group the two agencies together, cite the defects of BLM ranges, and conclude that Region 4's ranges suffer from the same mismanagement.² Similar misperceptions are shared by supporters of the livestock industry, which is as badly served when its defenders argue that range may actually be better if it is in fair or poor rather than in excellent condition.3

Stockmen also damage their case when they resist the imposition of grazing fees that more nearly approximate the fair market value of the resource their animals eat. For the 1986 grazing season, for instance, if left under the current beef-market formula, national forest grazing fees will drop to \$1.02 per AUM, which is the lowest level since the current system was inaugurated. Stockmen would pay \$3 to \$7 charges for the use of comparable private land.⁴ Even allowing for different costs and values on public and private range, the inadequacy of the national forest fees ought to be obvious. The economic costs of multiple-use management on public lands could be estimated and factored into the grazing fee.

In fairness to the livestock and other commodity interests, it should be pointed out that recreational interests on the national forests hardly pay their way either. Certainly the campground fees currently charged on the national forests are not commensurate with those at private campgrounds that provide a comparable recreational experience. Wilderness enthusiasts pay the public treasury nothing except taxes for their adventures. The Forest Service charges no entrance fees at the national recreation areas to assist in road, visitor center, and habitat maintenance. Whereas State fish and game departments charge for the privilege of hunting and fishing, the Forest Service receives no fees for managing or improving wildlife habitat. Owners of summer homes pay special-use fees, but political pressure has kept these fees well below the market value of the national forest lands occupied.

On the other hand, unlike livestock, some commodity interests do pay something approaching market value for the use of public resources. National forest timber is sold at auction to the highest bidder. Mining interests pay royalties to the Federal Government, and ski area operators and summer resorts pay a percentage of their income to the Service in return for the privilege of operating on the national forests.

Such fee inequities illustrate the basic problem in public resource management--its political nature. This reference to politics is not meant to be disparaging, as, in a free society, the public through its elected representatives ought to determine public land and resource policy, including the relative repayments for values and allocation costs to taxes and user payments. It is, however, difficult to think of anything that has created more difficulties for Region 4 in particular and the Forest Service in general over the years than political conflict. The center of a maelstrom during Pinchot's administration, the Service became the subject of repeated attempts to wrest control of the public lands from the Federal Government and transfer them either to the States or private interests.

Since at least the 1960's, however, political problems have become, if anything, even more complex. The public lands have become a battleground in which numerous groups with conflicting conceptions of the good society and proper land management have fought to achieve management on their terms. This conflict has been particularly difficult for Region 4. The congressional delegations, particularly the senators from Idaho, Nevada, Wyoming, and Utah, have tended to side with commodity interests and Nevada was the home of the Sagebrush Rebellion. At the same time, powerful partisans of the environmental interests who generally reside outside the region--Congressmen John Seiberling of Ohio and Morris Udall of Arizona, for example--tend to dominate House committees considering public resource matters.

In the closing hours of the 1985 congressional session, for instance, Senator James McClure of Idaho succeeded in attaching a rider to a continuing resolution that transferred predator control from the Department of the Interior Fish and Wildlife Service to the Department of Agriculture Animal and Plant Health Inspection Service. Reportedly, McClure's parliamentary move was an attempt to reverse a 1972 ban, already modified by the Reagan administration, on the use of compound 1080 in coyote control. Approving the McClure rider, Agriculture Secretary John R. Block said he hoped to see a more industry-responsive program for predator control under his administration. In response, Seiberling and Udall have threatened to kill the whole predator control program, as an economy measure under the recently enacted Gramm-Rudman-Hollings budget-balancing legislation. One commentator has suggested that this move may open predator control to the livestock interests without any regulation.⁵

Such conflicting views of the management of public lands have expressed themselves, in part, during the writing of the forest plans.⁶ Some recreationists, wilderness enthusiasts, wildlife groups, and outfitter interests would like to see the Intermountain Region's timber harvest program sharply curtailed. Craig Gherke of the Wilderness Society's Boise office argues for regional specialization, pointing out that the Southern States have no caribou or grizzly bears but they "can grow trees twice as fast there." In this view, the South should specialize in growing timber; the Intermountain Region in wildlife and wilderness. Industry representatives and some rural political leaders fear, however, that an underfunded timber management program, coupled with environmental pressures, may hasten the closing of a number of sawmills and bring about the demise of some small one-industry towns. Environmentalists counter that recreation can replace timber as the mainstay of rural towns, as it did in McCall, which was transformed from a mill town to a recreation haven in less than 5 years. Unfortunately, few mill towns have an outstanding scenic and recreational feature like Payette Lake in their front yards.

Past experience has shown that the Intermountain Region can marshal its resources and employees to address complex problems if it has strong public support. Examples include accepting the philosophy of multipleuse management in spite of internal resistance by a number of staff and line officers, rehabilitating spawning grounds for anadromous fish, restoring damaged watersheds caused by overgrazing or excessively ambitious timber harvesting, and bucking political pressure in order to manage grazing lands properly. But gaining strong public support will be extremely difficult today and likely even more difficult in the future--largely because of the varied and often conflicting public perceptions of both the nature of the problems and the legitimate scope of the solutions.

Given the way in which the forest advisory committees had been used, there seemed a decreasing need to continue them in the early 1970's, when their abolition was mandated. At present, however, as the Tixier Committee observed, there is a great need for some effective mechanism to involve key people from outside the Service in an ongoing dialog. Certainly the work of the information office has helped, but programs such as "Inform and Involve," hearings on the forest plans, and the addition of information officers located in State capitals have not succeeded in convincing the various publics that the Service is managing the national forests in the public interest.

It is clear that some more effective mechanism must be developed to address this problem. The exact form it takes is not important. But an effective approach must adequately involve leaders of the commodity groups, the environmental interests, the general public, the State and local officials, and the regional and national forest officers in a dialog that seeks--and finds--generally acceptable answers to the hard questions of resource management. Creating this dialog cannot be left to the information office or to other token forest representatives. It is clear that planned hearings like those designed to elicit public comment on the forest plans are no substitute for frequent interaction with the various interests. Show-me tours cannot serve this purpose either. In spite of their enormous management responsibilities and pressures, rangers and forest supervisors must somehow find ways to spend more time in public relations programs that involve getting acquainted personally and having direct discussions with the various key representatives of the publics with which they have to deal.

Such interaction must also provide more time for the opposing interests to get to know one another as human beings, rather than merely as adversaries. Such gettogethers might be modeled after the pack trips, fishing expeditions, and informal visits that Chet Olsen, Floyd Iverson, Vern Hamre, and other forest officers arranged with selected key individuals. It should be understood, however, that this sort of interaction can work only if those involved join the enterprise with good will. In practice, the process may be something like that involving various specialists in planning with the interdisciplinary teams. As with the interdisciplinary teams, participants must learn to free themselves from intractable positions, or the process cannot succeed.

One area in which Region 4 has succeeded very well in its relations with the larger public has been in cultural resource management. The development of national recreation areas such as the Sawtooth and Flaming Gorge and emphasis on special historical and archeological values, for example, the mining dredge at Yankee Fork and the aboriginal Fremont culture at Clear Creek, have involved considerable and extraordinarily successful interaction with the general public, universities, and Federal, State, and local agencies. At present, it appears clear that management of cultural resources will be an increasingly important part of Region 4's activity in the future.

It should be understood that in managing cultural and other resources, procedural reform and prohibitions cannot guarantee particular outcomes. All they can do is regulate the means of achieving such outcomes. Experience has shown that such attempts at reform may have unintended results that damage the agency and its relationship with the public. Two examples come to mind.

One is the drafting of national forest multiple-use management plans. The process forced the national forests to reexamine their priorities and after much consideration to make their various alternatives public in formal hearings. In the process, the region paid certain costs. The forests drafted these plans and held meetings, at the cost of informal interaction with the public. The process was an enormous financial drain. One Forest Service economist estimated in the early 1980's that 30 percent of the budget went into "planning-like functions."⁷

A basic problem is that the scientists who wrote the regulations for drafting the plans seem to have failed to reckon adequately with the costs. In retrospect, the process may have been worthwhile, but in the future those who mandate such activities should understand and anticipate all of the costs. Most importantly, they must recognize that such activities can be carried out only at the expense of other functions.

In some ways the possible methods of planning resource management are analogous to the different ways of trying to get an orphan calf to drink from a pan of milk. You can starve a calf so long that it is forced to drink in desperation. You can force its nose and mouth into the milk until it begins sucking. Or you can get a pan of milk and stick your fingers in the milk and then into the calf's mouth. The first two methods may be effective, but at a considerable cost to yourself or the calf. The third, equally effective, method creates much less pain both for you and for the calf.

Similarly, planning can be accomplished by forcing the Forest Service to pay the cost by jumping through numerous procedural hoops, neglecting other activities, isolating itself from informal interaction with the public, and tying itself up in red tape. Alternatively, Congress might consider devising a more pleasant method to negotiate the mix of various uses of the national forests.

A second example is the effect of the absolute prohibition of certain activities. The region can undoubtedly tolerate some general limitations such as those of the size of clearcuts, since such limits provide for better management of watershed and wildlife values while still permitting reasonable timber utilization. Absolute prohibitions, however, such as the one forbidding the use of all herbicides, will not stop the region from improving its rangelands, something its managers must do under multiple-use management principles; such bans can, however, make the improvement process much slower and far more expensive.

If the experimental results of the use of Grasslan, for example, are any indication, using that herbicide would be a more economical and less environmentally harmful means of eradicating selected patches of sagebrush than plowing and replanting. Preliminary findings of this sort probably warrant at least some carefully controlled trials in a few actual field situations. Like the acceptance of the forest plans, finding a way to get public acceptance of such field trials is a political problem. Until experience breeds enough trust to convince environmental interests that the Service will assume needed precautions in the trial use of such herbicides, they will undoubtedly exercise their considerable influence to prevent such trials.

Changes in the Forest Service and in Region 4 during the 1960's and 1970's have had enormous impact on grassroots administration. In 1981, Christopher K. Leman sought to reexamine and update Herbert Kaufman's pioneering study of the forest ranger.⁸ In the intervening years, Leman pointed out, many changes have taken place that affect the life of the ranger. These changes have gone unrecognized by the general public and even by specialists writing about the Forest Service. The requirement that rangers keep daily diaries of their official activities ended in the early 1960's. The inspection system was severely curtailed in the 1970's, and the term "inspection" is no longer used to designate the methods of control and evaluation of the rangers' work. Most important, the ranger has become more of a line officer, managing a staff of specialists who do the jobs on-the-ground, rather than the lone representative of the Forest Service, doing most of the fieldwork himself.

There is also a tendency, mentioned earlier, for observers to miss the substantial management differences between the Bureau of Land Management and the Forest Service. As Leman pointed out, the Forest Service is still one of the most decentralized bureaucracies in the world. Nevertheless, the Service has changed. Professional standards, rather than an elaborate inspection system, promote conformity within the organization. The pride, esprit de corps, and decentralization are still there, but management and operations are infinitely more complex.

Leman found that both the general public and the professional literature have failed to recognize the enormously complex mix of responsibilities associated with management of such resources and activities as watersheds, timber, recreation, wildlife, range management, special uses, law enforcement, and mining. He found also a general public failure to understand the changes in methods of firefighting away from the use of lookouts toward aerial spotting and helicopter systems, the precautions taken to protect the environment in logging operations through skyline, balloon, or helicopter logging, and the increasingly complex technology adopted in other operations. Those, for instance, who still see range or timber management as the principal activities of Region 4 miss completely the complex mix of its various operations. Like certain forest officers during the 1960's, the general public must learn to understand the meaning of the term "multiple-use management."

Leman pointed out also that the size of the Forest Service organization and budget and the complexity and diversity of its staff and line officers are particularly misunderstood. By 1980, the Service was "easily the largest [bureau] in the Department of Agriculture," employing more people than the cabinet-level Departments of Commerce, Housing and Urban Development, Education, Labor, and State.⁹ Its public welfare programs such as Senior Community Service Employment, Young Adult Conservation Corps, and various volunteer programs involve it in a wide range of valuable public service activities. Most important, perhaps, the number, variety, and complexity of the jobs done by managers like rangers and forest supervisors have increased significantly because of the substantially larger size and greater diversity within ranger districts and national forests. The public and the professional observers also tend to misunderstand the role of and the need for specialists in the Forest Service and in Region 4 and underestimate the size of the organizations that rangers and forest supervisors must direct.

In one area, however, Leman seems to be mistaken. He argued that the emphasis on transfers within the Forest Service is not as great today as it was in the past. It is true that under management policy adopted in the early 1970's, Forest Service employees no longer need to transfer to retain their positions, except during a reductionin-force. If, however, they expect to achieve posts at the key forest supervisor, regional staff director, deputy regional forester, or regional forester levels, they must be willing to accept multiregion and Washington Office transfers for broadening experiences.

Region 4 has been in existence now for some 80 years. The problems it faced in the past undoubtedly seemed as difficult to its managers then as those it faces now seem to the present administrators. The problems may never before have been so complex, but solutions were always hard to achieve. The leadership of the region recognizes its current challenges and has set about trying to respond to them. Perhaps because Regional Forester Tixier has been a leader in the current movement to try to address the Service's crucial political and public relations problems, Chief Peterson appointed him to chair the committee set up to define the problems and propose solutions to them. In that role, Tixier follows in a line of regional foresters such as C.N. Woods, Ben Rice, Chet Olsen, Floyd Iverson, and Vern Hamre and their many capable and dedicated associates who devoted their professional careers to solving problems of public resource management in the Intermountain Region.

Reference Notes

- 1. Allan Savory, "Saving the Brittle Lands: Holism and the Health of the Commons," <u>Northern</u> Lights, 1 (July-August 1985): 16, 18.
- See for instance, Susan Schauer, "Report: Utah Range in Poor Condition," <u>Daily Herald</u>, January 5, 1986; Gary Macfarlane, "Livestock Grazing Must Not Dominate Public Lands," <u>Salt Lake Tribune</u>, February 10, 1985; Edward Abbey, "The Ungulate Jungle," <u>Northern Lights</u>, 1 (July-August 1985): 10, 12-14.
- Ed Gomer, "Environmentalists Deceive the Public on Grazing Issue," <u>Salt Lake Tribune</u>, March 10, 1985.
- Schauer, "Report," <u>Daily Herald</u>, January 5, 1986.
 Gordon Eliot White, "Ranchers May Get More
- Gordon Eliot White, "Ranchers May Get More Help Against Varmints," <u>Deseret News</u>, January 5, 1986.

- The following is extrapolated in part from Rocky Barker, "Differing Views at the Root of Forest Planning Problems," <u>Deseret News</u>, December 28, 6. 1985.
- Christopher K. Leman, "The Forest Ranger Revisited: Administrative Behavior in the U.S. Forest Service in the 1980's," p. 7, paper 7.

presented at the 1981 annual meeting of the American Political Science Association, New York City, September 3-6, 1981, copy in the possession of Carl Pence, Bridger-Teton. The following is based on Leman, "The Forest Ranger Revisited." Leman, p. 9.

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Manuscript Sources

Noncurrent records for each of the 16 national forests and the regional office are located in various places. Each national forest maintains a collection of historical records in the supervisor's office. They are ordinarily under the custody of the national forest history coordinator. In addition, other noncurrent records are housed in the Federal Records Centers in Record Group 95.

The records for the various units are under the jurisdiction of those units and permission for the use of the records must be secured from the forest supervisor (for the national forest records) and from the regional forester (for regional records). Records for the forests in Idaho (Boise, Caribou, Challis, Payette, Salmon, Sawtooth, and Targhee) are kept at the Seattle Federal Records Center. Records for the forests in Utah and Wyoning (Ashley, Bridger-Teton, Dixie, Fishlake, Manti-LaSal, Uinta, and Wasatch) are at the Denver Federal Records Center and those for the Nevada forests (Humboldt and Toiyabe) are at the San Bruno, California, Federal Records Center.

The records housed at the various national forests are of varying quantity and quality. Any researcher planning to use them should first contact the history coordinator at the particular forest for an assessment. In addition, because of the disposal period, most of the forests had sets of grazing records returned to them from the records centers in the early 1980's. Grazing records I found most useful were the records on the Humboldt and Payette. The records of dealings with stockmen's associations at the Seattle Federal Records Center for the Caribou National Forest provided excellent sources. Timber records in Seattle for the Payette and Boise were also quite good. The oldest records were those located at the Manti-LaSal National Forest headquarters; some date from the General Land Office Forestry Division period.

The regional office records at the Denver Federal Records Center are of varying quality. Those for the earliest period tend to be somewhat sparse. Since the 1930's, however, the records are quite good. The records dealing with the construction of the Forest Service building on 25th and Adams in Ogden are quite complete. Records for the period since World War II are voluminous.

I also found records at the National Archives in the Interior Department Records (Record Group 48) dealing with the activities of the General Land Office Forestry Division in what became Region 4 to be very helpful.

A number of relevant papers are also in private hands. Those I found most useful were James L. Jacobs's records dealing with grazing and the controversies during the 1950's and 60's and William D. Hurst's on the Kaibab Deer Controversy during the 1920's. Some papers of Arnold R. Standing are in the possession of his son G. Robert Standing.



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