A HISTORY OF THE WASATCH-CACHE NATIONAL FOREST

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FORWORD AND ACKNOWLEDGEMENTS

In writing this history of the Wasatch-Cache National Forest we have followed the suggested Forest Service history outline in spirit and general context. As the outline suggests, we have tried to put the Forest in its broader perspective, both as it relates to developments within the Forest Service generally and local background. At the same time we have looked closely at the actual function of the Forest during its various stages.

Interpretively we have proceeded from the point of view that the Wasatch-Cache National Forest spreads over a substantial geographic area and that a playoff between interests that are essentially urban on the one hand and rural on the other, has made for considerable diversity in the programs of the Forest. Conflict between conservationists and non-conservationists has not been keen in the area of the Wasatch-Cache National Forest. Indeed, cooperation has been a more dominant theme.

The history of the Forest falls into two major periods. The first, or what might be called the formative years, lasted from 1903 until perhaps the mid 1930s although the cutoff date is not precise. Grazing, watershed and timber, probably in that order, dominated the Forest's programs during this period. Although some remarkable scientific achievements may be noted, this was clearly the era of the practical horseback ranger whose great strength lay in what may be called "grass-roots wisdom and homespun diplomacy." The second period was launched with a great upsurge as weather conditions, the national mood and the economy brought new programs in the New Deal years. With urbanism, affluence and a growing consciousness of environmental problems to fuel them, the programs of the Wasatch-Cache National Forest have generally maintained their momentum in the years since. Recreation and enviromental themes have, in considerable measure, replaced the earlier emphasis upon grazing and timber.

During the process of the study, many people have contributed; all of them graciously and with a real interest in seeing the project through. Forest Supervisor Chandler St. John has given us the benefit of his views on the Forest's history and has supported our research generally. Three Contracting Officer Representatives have worked with us. G. F. Horton, Theodore Navritil and Franklin H. Grover. Each has been helpful in many ways. Frank Grover, who has seen us through the bulk of the project, has been especially attentive and quick to make suggestion, including constructive criticism. Rangers and personnel on each of the Ranger Districts have also made their historical files available and have conferred with us as need has arisen. Because they were at hand, Ranger M. J. Roberts and his staff at the Logan Ranger District were called on again and again for help. At the Regional Office, Robert L. Safran and Don Hooper were of special help, but various others also contributed. Taking a special interest in the entire project were several former Forest Service officers who spent many hours in conversation. Warm thanks then to Kenneth O. Maughn, James Jacobs, Owen DeSpain, Bryson Cook, Julian Thomas, Deloy Hansen and L. J. Colton. The Merrill Library and the Department of History and Geography, as well as the general administration at Utah State University were supportive of the undertaking and contributed in various ways. In addition to the two authors, Wesley Hardin, a graduate student at Utah State University, did early research and wrote the first draft of what became Chapter II.

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NATIONAL DEVELOPMENTS AND THE WASATCH-CACHE NATIONAL FOREST

The story of the Wasatch-Cache National Forest must begin with the national story of the Forest Service. It is impossible to understand how the Wasatch and Cache were established, grew and developed without being aware of their national setting. As units of the national forest system, they were created at a unique time in American history and were formed against the broad sweep of national events, patterns and attitudes.

In many ways the story of the Forest Service is an unusual and colorful account. Established in 1881, the Forestry Division in the Department of Agriculture was a small, understaffed federal agency, primarily charged with compiling and disseminating information about the forested lands of the United States. At first the division lacked the authority to either regulate or promote the conservation of the nation's forests.

In fact, the Forestry Division (the bureaucratic embryo from which the Forest Service sprang) was created at a time when the thrust of American history was frankly hostile or indifferent to the conservation or preservation of the nation's resources. In many ways the basic achievement of the organization lay in its very creation and in its regional growth. In less than twenty-five years a small federal division survived bitter infighting between the Department of Agriculture and the Department of Interior, increased its administrative power, achieved permanent, bureaucratic status and attained jurisdiction over a variety of forested areas such as the Wasatch-Cache.

For the first time in the nation's history, a federal agency was charged with the duty of conserving a valuable natural resource. That ideal ran counter to America's traditional "first come, first serve"

attitude toward the nation's natural resources, its watersheds, minerals and timber supplies. As the agency grew administratively under the able direction of such men as Gifford Pinchot, it publicized the conservation movement and fostered the idea that "wise use" made better sense than rampant exploitation.

The Forest Service eventually wielded jurisdiction over a large number of very different types of national forests. It oversaw timberland that ranged from the oak stands along the eastern coast, to the lodgepole pines of Utah, to the stately redwoods of California.

In his history of the Forest Service, Harold K. Steen notes that forest officials, both at the local forests and the national levels, were bound by attitudes and a corpus of federal land laws that preceeded their creation.[1] The story of the Wasatch-Cache must, therefore, begin with an understanding of how the federal agency emerged in the midst of prevailing nineteenth century attitudes and laws concerning resource use.

The Pioneer and the Public Domain

In 1893 historian Frederick Jackson Turner, concluded that after four centuries of exploration, settlement, and development the American frontier had closed. Cities, towns, outlying farms, ranching and mining communities dotted the American landscape as settlement spread from the Atlantic seaboard, across the Great Plains and reached the western Pacific coastline. Such rapid, almost frantic settlement has caused historians to label the nineteenth century as the era of Manifest Destiny; a time when most Americans believed that it was their God-given right and duty to exploit the land, tame the wilderness and establish homes and farms from "sea to shining sea."

The federal government recognized the land hunger of its citizens, and throughout the nineteenth century followed an accelerating policy of transferring land from federal control to private ownership that peaked in the years before the Forest Service was created. Congress passed a variety of public land laws that promoted both agricultural development and internal improvements. For almost a century, millions of federally owned acres came under private control with little or no concern about

the conservation or preservation of natural resources. The land policy of the federal government from 1785 to 1891 was based on the principle of exploitation; opening land to farms, mines, sawmills, railroads. As the land was taken up, untold damage was inflicted on the nation's resources.[2]

Federal Land Law

The initial pattern for an orderly system of federal land sale and settlement was established in the early days of the Republic. The North-West Ordinance of 1785 contained two basic principles: (1) federal land could not be given away as a gift, but was to be purchased and (2) land on the public domain should be surveyed prior to the actual sale.[3] Basically this arrangement tended to favor large speculators over individuals without access to ready cash. After the initial survey, 640 acre sections were to be sold at public auction for not less than $1.00 an acre. The prospective buyer had to have at least $640 in ready cash, and small farmers or landless pioneers simply could not obtain that much money.[4]

By 1862, however, Congress permitted those of pioneer spirit (but without much cash) to acquire federally owned lands. The Homestead Act of 1862 gave restless individuals the chance to move west and claim 160 acres for the moderate price of a filing fee and the difficult task of living on the tract for five years. Congress hoped that the residency requirement would discourage speculation and ensure that homesteaders would actually settle on the tract and establish farms.[5]

Federal interest in promoting rapid agricultural development of the public domain also led to the passage of the Morrill Act the same year the Homestead Act became law. The Morrill Act provided federal aid for the promotion of agricultural education and productivity. By its terms each state received 30,000 acres of public land for each of its congressional representatives. The proceeds from the donation were then used for establishing land grant colleges to prepare specialists for agriculture (and eventually forestry). In all, sixty-nine land grant colleges came into existence under the Morrill Act, among them Utah State University at Logan, Utah.[6]

The Homestead and Morrill acts were passed in response to western needs, and as farmers pushed westward, Congress began to pass laws designed to meet particular farming needs of that region. When farmers and settlers confronted the arid reaches of the West, they gradually learned that the Homestead Act and its various requirements were not realistic in farming communities where rainfall was so woefully inadequate. As early as 1869 Utahns petitioned for federal land grants in support of irrigation development.[7] In 1875 President Grant visited the intermountain region, and western settlers persuaded him that land laws originally made for the middle west did not work for their region. In his message to Congress, Grant summarized the western position: "Land must be held in larger quantities (more than the 160 acres under the Homestead Act) to justify the expense of conducting water upon it to make it fruitful or to justify using it as pasturage."[8] In response Congress passed the Desert Land Act in 1877. The law allowed pioneers in eleven states and territories (Utah among them) to claim 640 acres of the public domain in return for $1.25 an acre and irrigating the land within a three year period. From 1877 to 1904 slightly more than a quarter of a million acres of land were claimed in Utah under this act.[9]

Although Congress (and the nation) favored the eventual agricultural development of the public domain, a variety of federal laws authorized land withdrawal for other uses as well. During the 1850s and 1860s, for example, Congress embarked on a policy of railroad grants to spur transportation development and link eastern and western markets and producers. Ultimately this generous federal subsidy of railroads proved remarkably effective in developing transportation facilities. In 1869 the Central Pacific and the Union Pacific railroad lines linked together at Promontory Utah, and the nation had its first transcontinental railroad and much land that would later fall within the boundaries of the Wasatch and Cache National Forests passed from federal ownership.[10]

Congress aided western economic development by various other land laws. In 1873 the Timber Culture Act allowed pioneers to claim part of the public domain under provisions similar to the Homestead Act, except that planting and cultivating trees could be substituted for part of the original residency requirement. The Timber and Stone Act of 1878,

for the first time in the nation's history, allowed settlers to directly purchase and use federal timberland. Harold K. Steen has pointed out, however, that neither law was prompted by a desire to conserve forest resources. Indeed, the laws promoted the rapid use and utilization of timber. Lumber companies often controlled individual claims and stripped the forests to meet western needs for building materials. Millions of trees were carelessly cut to provide materials for railroad ties, houses, barns, fences and mine props.[11]

Mining companies and frontier settlers exploited federal land. Congress sanctioned this process in the General Mining Acts of 1866 and 1877. Basically, the laws dealt with lands containing gold, silver, cinnabar and copper. Many acres were claimed under these acts, among them areas within the boundaries of what later became the Wasatch National Forest.[12]

Despite the mining, timber and railroad grants, both the federal government and the nation favored farming as the best use of the public domain. Between 1850 and 1900 nearly 550 million acres of the public domain were claimed for agricultural operations, and the number of farms increased phenomenally from 1.5 million to 5.75 million farms. The majority of these new agricultural operations had been acquired under federal land laws such as the Homestead and Deseret Land acts.[13]

Resource Depletion

The pioneer hunger for land, and the emphasis on development and "progress" led most settlers and government agencies to ignore the conservation of natural resources. In many cases what citizens of a later age have regarded as vital resources, were seen only as impediments to settlement. This attitude was especially apparent in the treatment of the forested lands of the United States. To farmers intent on clearing land, planting a crop and building a home, vast tracts of forests represented obstacles to be removed by hours of backbreaking labor.[14]

Once the trees were felled, and the stumps pulled from the ground, the lumber provided valuable building material. Only rarely did western settlers sense the need for preserving forest resources. Shortly after their arrival in the Salt Lake Valley, for example, the Mormon leaders

told their followers: ". . . we also wish the green timber and young trees to remain as they are, particularly the sugar maple, many of which are big enough to yield you sap . . . from which we will hereinafter receive an abundant harvest of sweet."[15] Such farsighted restrictions on destruction of forest resources were rare, however, and as agricultural communities spread westward, millions of trees were uprooted, cut and lost forever in order to satisfy western growth and expansion.

While the majority of farmers regarded the forest as either an obstacle to be conquered or as a never ending source of building materials, additional timber depredations were caused by stockmen. Cattlemen drove their herds throughout the West, and as the cattle grazed, they destroyed countless forest seedlings. Sheepmen, with their large herds of grazing sheep devoured young seedlings and destroyed the soil mantle. As forest resources were plundered by farmers, sheepmen and cattlemen, the nation's soil suffered serious erosion. Summer rains swept away the rich topsoil on denuded slopes; without adequate vegetation to halt the disastrous runoff, millions of acres of fertile topsoil were lost.[16]

Thus, the nineteenth century saw the rapid settlement of the West at the cost of resource exploitation and destruction. Unfortunately, the federal government not only contributed to this resource damage by promoting the agricultural and economic development of the West, but also by failing to effectively meet its minimal responsibilities. The General Land Office, in the Department of the Interior, administered the disposal and regulated the use of federal land throughout most of the nineteenth century. Many historians, among them Roy Robbins and John Ise, have charged that agency with gross abuse and incompetence in executing its duties.[17] Plagued by the evils of the spoils system, the General Land Office had many officials who owed their positions to corporate influence; and these men often turned a blind eye as livestock associations, railroads and irrigation companies grabbed more land than the law allowed. Local agents of the General Land Office occasionally permitted fraudulent entries either due to cupidity or ignorance of statutory provisions.

The Desert Land Act proved especially subject to abuse under the administration of the General Land Office. Fraudulent claims on the public domain were entered without individuals complying with the act's

requirements, and many of these people received many more acres than the law allowed. Utah historian, A. J. Simmonds has noted that fraudulent entries under this act were very common in Trenton, Utah, an area adjacent to what later became the Cache National Forest.[18]

While graft, corruption and outright abuse, often fostered by western monopolies, marred the record of the General Land Office, the overall resource damage of the United States during the nineteenth century cannot be blamed on one agency. The rapid settlement of the West, the land hunger of most Americans and the federal government's wish to foster economic development all contributed to the thoughtless utilization of the nation's resources.

The Conservation Movement and Forestry

Within this larger context of land abuse and exploitation a few perceptive individuals began to notice the depletion of the nation's resources and express concern. Secretaries of the Interior such as Columbus Delano and Carl Schurz warned that continued timber trespass and depredation on the public domain (whether due to ignorance or greed) threatened timber values and an important resource. But their warnings were ignored by Congress, and their efforts to enforce trespass laws evoked opposition in the West. It should also be noted, however, that some westerners, particularly in places like Oregon and Colorado were starting to question the wisdom of unregulated use, although in the 1870s and 1880s those that did so wanted state rather than federal laws to resolve the problems.[19]

Given this slowly emerging awareness on the part of some government officials and westerners, the real beginnings of what later became the conservation movement was sparked by individuals from the eastern scientific establishment who argued for the efficient, scientific management of the nation's forests. These men, through such organizations as the American Association for the Advancement of Science and the American Forestry Association, began to publicize the damage a century of government supported exploitation had caused. Through their lobbying efforts they succeeded in slowing a one hundred year trend, and finally won a measure of federal support for conservation with the creation and establishment

of a Division of Forestry within the Department of Agriculture.

In 1873 Franklin B. Hough, a medical doctor, statistician, naturalist and historian, presented a paper at the annual meeting of the American Association for the Advancement of Science. In a paper entitled, "On the Duty of Government in the Preservation of Forests," he analyzed census data to illustrate how timber supplies were being exhausted, and convinced the convention that the federal government should take effective measures to halt this serious resource damage and unnecessary waste. The convention passed a resolution supporting Hough's argument, and appointed a committee to persuade Congress of the serious need to support conservation of the national timber supply.[20]

Initially then, the conservation movement was led by men interested in forestry. Overall, the forestry movement and the conservation movement of the late nineteenth century were inextricably intertwined, and it was foresters who provided the direction and leadership of the conservation movement for almost fifty years.

The growing interest in both the scientific management of the nation's forests and the conservation of dwindling timber supplies led to the organization of the American Forestry Association in 1875. Men such as Hough used the organization to put political pressure on Congress. And eventually the American Forestry Association persuaded that agency that scientific techniques could halt the damage caused by a century of constant growth and exploitation. On August 15, 1876, Congress authorized the appointment of a federal forestry agent. Franklin Hough assumed this position, and within six years became chief of the newly established Division of Forestry in the Department of Agriculture.[21]

Era of the Reserves

Both the American Forestry Association, and the American Association for the Advancement of Science continued their efforts to convince the government that its approach to the public domain was reckless and short-sighted. In 1889 the AFA met with President Harrison and urged the adoption of a national forest policy. That same year a joint delegation from the AFA and the American Association for the Advancement of Science also met with the secretary of the interior.[22]

These lobbying efforts culminated in a radical change in federal land policy. In 1891 Congress passed the General Land Law Revision Act which contained an important rider. Section 24 (now commonly referred to as the Forest Reserve Act) authorized the president to reserve forests on the public domain from entry. Within a few weeks of the passage of the Forest Reserve Act, President Harrison used his new power to issue a proclamation creating the Yellowstone Forest Reserve in Wyoming. During the next two years Harrison created fourteen more reserves throughout the West.[23]

His successor, Grover Cleveland, was initially hesitant about creating new reserves because the 1891 act did not specify how the reserves would be protected or administered. In the absence of these stipulations the secretary of the interior prohibited any type of use, and Cleveland, after establishing two reserves decided to wait. According to historian Lawrence Rakestraw many westerners, concerned about the conditions of their community watersheds, supported the creation of the initial reserves.[24]

Although foresters such as Hough and the eastern organizations (AFA and AAAS) had made important beginnings, the overall battle for conservation was far from won. Foresters and scientists had gained federal recognition of forestry with the creation of the Forestry Division in the Department of Agriculture and had also successfully lobbied for forest reservation. Yet the actual administration or protection of reserves had not been defined. It was the Department of the Interior rather than the Forestry Division which oversaw the nation's first forest reserves. Within a few years presidential reservation and the concept of federal conservation faced intense western hostility because of Interior's decision that the reserves could not be used.

The subsequent battle with the West over the forest reserves, and the growing rivalry between Interior and the Forestry Division in the Department of Agriculture over the administration of those western forests are complicated, intertwined issues. While the story is difficult to discuss in an abreviated form, the most important themes can be seen through the experiences of one of the first foresters in the United States, Gifford Pinchot.

Pinchot had a profound and lasting impact on public land policy. He established the Forest Service as the foremost conservation agency in

the federal government, and made sure the organization followed certain basic principles he believed were important. More than any other individual, his name became synonymous with both forestry and conservation.

Gifford Pinchot and Wise Use

As a member of the American Forestry Association, Pinchot had argued that a special commission should be formed to tour and study the forest reserves. By 1896 Cleveland's administration, worried about the need for protection and management, formally requested that National Academy of Sciences to appoint a commission to study the problem and make recommendations. The 1896 Forest Commission included professors from Harvard and Yale, a botanist, engineer, geologist and one forester--Gifford Pinchot. After visiting the western reserves and studying timberland on the public domain, the commission recommended that additional reserves be established. Pinchot had urged that definite plans for management should also be forwarded to the Academy and the administration, but he had been unable to convince the chairman of the commission, Charles Sargent to do so. On February 22, 1897 President Cleveland withdrew over 21,000,000 acrew from public entry and created thirteen new reserves, including Utah's first reserve--the Uinta. Westerners were stunned by by the sheer numbers of the acres withdrawn. The fact that it was done a week before Cleveland left office and that their congressional representatives had played no role also caused consternation. An acrimonious and strident protest errupted, and Lawrence Rakestraw believes that organized western opposition to the reserves dates to this event.[25]

In his autobiography, Breaking New Ground, Pinchot notes that the highly vocal western hostility to these "Washington Birthday Reserves" was in a large measure justified.

> The creation of thirteen new Reserves in seven states came like a thunderclap. And since under existing interpretations of law no use whatever could be made of the resources of the old Reserves, or of the new, since even to set foot upon them was illegal, the only possible conclusion was that this vast area was to be locked up, settlers were to be kept out, and all developments premanently prevented. No wonder the West rose up.[26]

The uproar initiated complex manuevering and administrative battles but it also led to an amendment to the Sundry Civil Appropriations Bill which was to form the basis of forest management for over sixty years. Known as the Organic Act of 1897 it finally specified the purposes for which reserves could be created: "to improve and protect the forest within the reservation for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber . . . ." The secretary of the interior was also given the power to make rules for the protection and administration of the reserves which were now opened to public use.[27]

Pinchot's experiences with the Forest Commission of 1896 and the legislative manueverings culminating in the Organic Act provided valuable lessons that helped him later as chief forester, and reinforced many of his philosophies. He knew that western sentiment must be recognized, that advance groundwork must be laid in shaping a favorable response and, above all, that use of the forests must be permitted. Unlike John Muir and the Sierra Club, Pinchot did not favor the simple preservation of resources. Instead he supported regulated resource utilization that would result in the "greatest good for the greatest number" over the longest period. This concept of wise use led him to pay attention to western sentiment, to devise a practical, workable system of forest administration and to wrest control of the reserves from what he regarded as the Department of Interior's inefficient, incompetent and often corrupt management.[28]

Although Pinchot was named chief of the Division of Forestry in 1898, it was only with the ascendance of Theodore Roosevelt to the presidency in 1901 that he was able to achieve his long term goals. Pinchot convinced Roosevelt of the benefits of supporting conservation. In the years that followed, the close friendship of these two men had profound consequences for the development and growth of federal forest policy.[29]

In 1903 President Roosevelt concerned, like Pinchot, about the conservation issue and western response, appointed the forester to a three-man public lands commission. Pinchot, along with W. A. Richards, Commissioner of the General Land Office, and F. H. Newell, Director of

the Reclamation Service, were to determine where the West stood on grazing issues and to analyze the "condition, operation and effect of present land laws." With Pinchot's urging, the Public Lands Commission of 1903 made a concerted effort to determine western needs and attitudes about resource utilization. The commission sent out questionnaries to 1,400 stockmen, and held public hearings in distant western communities. In 1904, for example, the commission met in Salt Lake City to determine Utah's needs and attitudes about the use of federal lands.[30]

The commission's report, based on various hearings and studies, was frankly critical of the Department of the Interior, particularly the General Land Office, and urged that existing land laws be reformed, especially those dealing with western forests. The Public Lands Commission strongly recommended the repeal of the Timber and Stone Acts of 1878. Despite that act's intent of aiding individual pioneers, it had been abused by lumber companies and monopolists who had raided forest resources. The commission also urged the President and Congress to implement specific plans for range control. Their grazing recommendations were based, in part, on Albert F. Potter's 1902 survey of the Wasatch Range. Potter's survey was also used to establish the initial boundaries of the Logan, Wasatch and Grantsville reserves in Utah, areas that eventually came under the jurisdiction of the Wasatch-Cache National Forest.[31]

Pinchot used the Public Lands Commission report to underscore his point that the Department of Interior was incompetent and that the reserves should be transferred to the Department of Agriculture. Possibly Pinchot's antipathy to the Department of the Interior influenced the negative report of the Public Lands Commission. In any case, he himself admits his bias in his autobiography when he notes: ". . . I hoped the investigations would prove the need for transferring the Forest Reserves from the Department of the Interior, where they were thoroughly mishandled, to the Department of Agriculture, where I was confident we could do a good job."[32]

In less than a year after the commission made its first report, President Roosevelt signed the Transfer Act, and the Bureau of Forestry in the Department of Agriculture now administered 86,000,000 acres of public forest reserves. With Roosevelt's support and assistance, the

period of 1905-1908 saw other gains for Pinchot's vision of a national forest policy. In 1905 the Bureau of Forestry became the Forest Service with access to far more money and manpower than the fledgling Forestry Division had had in 1881. In 1907 Roosevelt created twenty-one new reserves (and stirred a new outburst of western grievances) and the federal forests were renamed national forests. The following year Pinchot recognized the validity of western charges that the forests were run by Washington men with little understanding of western needs, and he established six district offices. Important policy decisions were now made at such district headquarters as Ogden, Utah, for the individual forests. (The name district was changed to region in 1930.) The emphasis on a decentralized federal agency remained one of Pinchot's most enduring legacies.[33]

When Roosevelt failed to run for a third term, Pinchot's long series of victories came to an end. His official position within the Service was abruptly brought to a close with the Ballinger-Pinchot controversy of 1910, a battle triggered by the continuing rivalry between the Departments of Interior and Agriculture. President Taft fired Pinchot in 1910, and one phase of the forestry and conservation movement came to an end.[34]

Pinchot, however, was not crushed by the event. His autobiography contains almost a complacent note about the entire episode. The Ballinger-Pinchot controversy gave wide publicity to what he considered the Department of the Interior's corruption and the inefficiency of its attitude towards resource utilization. In many ways, despite Pinchot's dismissal, the high morale of the Forest Service, its concept of wise use and its attempt to listen to regional needs all appeared in sharp and welcome relief to Interior's earlier activities. Pinchot may have been fired by Taft, but overall, both he and the Forest Service received massive public support. Even the West, once strongly opposed and still frequently resistant to the concept of conservation, praised Pinchot's contributions to forestry and conservation and condemned Taft's action.[35]

Summary

In a remarkably brief time, Gifford Pinchot, building on the early

achievements of Franklin B. Hough and others, had accomplished significant gains for the development and conservation of the nation's forests and had spearheaded the national conservation movement. Faced with widespread indifference and hostility, Pinchot, with presidential support and approval, had defined the concept of conservation and gained a wide measure of public acceptance for that cause. As chief forester he articulated the concept of wise use and firmly established a federal agency dedicated to that concept.

Pinchot strongly believed that the Forest Service should be cognizant of particular regional needs and realities. The actual administration and development of each local forest depended on a variety of factors. He realized that the attitudes and expectations of the surrounding local population, and the region's particular economic and climatic setting would dictate the overall success or failure of the local forest personnel in achieving the national goal of "wise use."

The success or failure of the Forest Service, therefore, must be noted in its regional context. The operation and administration of the Wasatch-Cache National Forest can be understood only by noting both the national setting and its peculiarly local background within the overall context of Utah's settlement. In many ways, attitudes that the Forest Service faced on a national level would prove equally important in shaping the character of the Wasatch-Cache National Forest. But while the overall issue of resource utilization was important on both the national and local level, it differed in important particulars as applied in Utah and surrounding states. Utah's Mormon settlers, the pioneer experience with irrigation and the region's climatic and economic setting all contributed to attitudes about and experiences with resource utilization that were to prove critical in the creation and administration of the Wasatch-Cache National Forest.

CHAPTER I

NOTES

[1]Harold K. Steen, The U.S. Forest Service: A History (Seattle, Washington: 1976), p. 4.

[2]Marion Clawson and Burnell Held, The Federal Lands: Their Use and Management (Lincoln, Nebraska: 1957), pp. 22-25; Paul Gates, History of Public Land Law (Washington, D.C.: 1968). An excellent account of early federal land policies is contained in Malcolm Rohbrough, The Land Office Business: The Settlement and Administration of American Public Lands, 1780-1837 (New York: 1968).

[3]Steen, Forest Service, p. 4.

[4]Richard N. Current, ed., The Essentials of American History, 2d ed. (New York: 1976), p. 51. Hereafter cited as Essentials.

[5]Benjamin Horace Hibbard, A History of the Public Land Policies (Madison, Wisconsin: 1965, originally published in 1924), p. 385.

[6]Essentials, pp. 150, 200.

[7]Hibbard, History of Public Land Policies, p. 424.

[8]Cong. Record, 44 Cong., 2 Session, p. 32.

[9]Hibbard, History of Public Land Policies, pp. 427-28; Gates, History of Public Land Law, p. 493.

[10]Robert G. Athearn, Union Pacific Country (Lincoln, Nebraska: 1971); Gates, History of Public Land Law, Chapter XIV.

[11]Steen, Forest Service, p. 8.

[12]Hibbard, History of Public Land Policies, pp. 516-17; Clawson and Held, Federal Lands, p. 25. Western coal lands were not subject to withdrawal under these acts.

[13]Steen, Forest Service, p. 5.

[14]Hibbard, History of Public Land Policies, pp. 372, 457.

[15]Quoted in Philip A. Barker, "Canyon Maple: A Colorful Mountaineer," American Forests (December 1977).

[16]Charles S. Peterson, "Small Holding Land Patterns in Utah and the Problem of Forest Watershed Management," Forest History 17 (1973):5-13.

[17]Roy Robbins, Our Landed Heritage: The Public Domain, 1776-1936 (Lincoln, Nebraska: 1942); John Ise, The United States Forest Policy (New Haven, Connecticut: 1920).

[18]A. J. Simmonds, "Water for the Big Range," Utah Historical Quarterly 39 (1971):226.

[19]Steen, Forest Service, p. 7; Lawrence Rakestraw, "Uncle Sam's Forest Reserves," Pacific Northwest Quarterly 44 (1953):145; Rakestraw, "A History of Forest Conservation in the Pacific Northwest, 1891-1913" (Ph.D. dissertation, University of Washington, 1955), pp. 5-15; Dennis Roth, "The Public Domain, State's Rights, and the National Forests," mimeographed, Washington, D.C.: 1980. We are grateful to Mr. Roth for sending us his paper and for commenting on an earlier version of this chapter.

[20]Samuel Trask Dana, Forest and Range Policy: Its Development in the United States (New York: 1956), p. 80.

[21]Ibid., pp. 81-82; Steen, Forest Service, pp. 9-20.

[22]Dana, Forest and Range Policy, p. 100.

[23]Ibid., p. 102; Steen, Forest Service, p. 26.

[24]Rakestraw, "Uncle Sam's Forest Reserves," p. 146; Roth, "Public Domain, States' Rights and National Forests," p. 13.

[25]Steen, Forest Service, pp. 30-34; Gifford Pinchot, Breaking New Ground (New York: 1947), pp. 86-102; Roth, "Public Domain, States' Rights and National Forests," pp. 13, 16-17; also see Rakestraw, "Uncle Sam's Forest Reserves," and "A History of Forest Conservation." Western response to conservation varied in each state and among different interest groups. Two good discussions that indicate differing reactions in Colorado and Utah respectively are contained in G. Michael McCarthy, Hour of Trial: The Conservation Conflict in Colorado and the West, 1891-1907 (Norman, Oklahoma: 1977) and Charles S. Peterson, Look to the Mountains (Provo, Utah: 1975), pp. 109-116.

[26]Pinchot, Breaking New Ground, p. 109.

[27]Steen, Forest Service, pp. 34-37; Roth, "Public Domain, States' Rights and National Forests," pp. 17-18.

[28]Ibid., pp. 105-22.

[29]Ibid., pp. 188, 229-30.

[30]Ibid., pp. 243-50; McCarthy, Hour of Trial, p. 118; Hibbard, History of Public Land Policies, p. 432.

[31]Pinchot, Breaking New Ground, pp. 108, 252; Steen, Forest Service, p. 163; Charles S. Peterson, "Albert F. Potter's Wasatch Survey, 1902: A Beginning For Public Management of Natural Resources in Utah," Utah Historical Quarterly 39 (1971):238-53.

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[33]Steen, Forest Service, pp. 69-102.

[34]For a detailed account see James Penick, Jr., Progressive Politics and Conservation: The Ballinger-Pinchot Affair (Chicago: 1968).

[35]Pinchot, Breaking New Ground, pp. 391-510.

CHAPTER II

UTAH BACKGROUND AND THE EMERGENCE OF RESOURCE UTILIZATION AS AN ISSUE

The Wasatch-Cache National Forest lies primarily in Utah, a state remarkable for the difference of its early history. Its setting too, is also diverse although perhaps not uniquely so. Contained within its boundaries are the remnants of a great inland sea; the remains of volcanoes and glaciers; the fossilized skeletons of dinosaurs; the rugged Wasatch and Uinta ranges; and the curious splendors of its canyons, arches and towers. A record of the earth's development and changes has been deposited and then laid bare providing evidence of geological epochs out of mind. More recently, it has been peopled by native Americans and people from the world over with a westering instinct. In the pages that follow, the development of the state will be traced as it moved toward the point in time when the national conservation movement had a practical effect upon it.

Prehistoric Utah

It seems ironic that most of Utah's scenic wonders--the Great Salt Lake, the salt flats, the arches, Monument Valley, the fossil beds near Vernal--are all associated with barren, desert conditions when the area was, for most of its earth life, covered with water. In earliest times a shallow seaway covered most of western North America. This ancient body of water laid down sediment, preserved fossils, and slowly sculpted the land as the seaway's depth and shoreline changed. Molten material from deep in the earth formed the granite and other igneous rocks that would later be lifted up as part of the Rocky Mountains.[1] Later

the seaway retreated leaving most of eastern Utah covered with rivers and swamplands. It was at this time that Utah experienced its dinosaur era. Vast numbers of animals and plants flourished and died, leaving their remains in the mud and sand. Near the end of the dinosaur period, massive flooding occurred again. The Rocky Mountains were gradually lifted up, and as the sediments from the newly uplifted mountains washed away, the rocky crags were left exposed. The last major change in Utah's landform came during the Ice Age. Although the continental ice cap did not reach as far south as Utah, the extreme cold formed glaciers in the Wasatch and Uinta Mountains which later carved the land as they moved down the mountains into the valleys. The runoff from the melting ice helped create a gigantic inland sea, Lake Bonneville, which covered most of western and central Utah, and stretched into Idaho and Nevada.[2] The lake washed against the shores forming broad terraces that are still apparent along Utah's mountains. Eventually the waters broke through at the northern end of what is now Cache Valley, at Red Rock Pass, lowering the lake level considerably as the onrushing waters poured into the Columbia River Basin. As the lake's water level fell, its saline content increased. The Great Salt Lake, however, is the only remnant of the original Lake Bonneville in Utah today that has a high saline content.[3]

Native Americans in Utah

The first people to live in the area that later became the Wasatch-Cache National Forest were Indians. The various cultures that inhabited the region differed widely in lifestyle and origin. The first group, the Desert Culture, appeared about 10,000 years ago and were a primitive, nomadic people who relied on whatever plants and animals they could find for food and clothing. They were followed by the Anasazi--"the ancient ones." During the early Anasazi period (about the time of Christ), the Basket Maker culture appeared. Basket Makers eventually came to depend on agriculture and hunting, made pottery and by 500-700 A.D., built permanent houses. During the later Anasazi period (about 700-1300 A.D.) the Pueblo culture developed. House construction became very refined and communities were built in cliff caves, on mesa tops and in canyons.

By the thirteenth century, however, the Anasazi had abandoned their communities in Utah and Colorado and were not heard of again.[4]

Around 400 A.D. the Fremont Culture developed with the Anasazi. The Fremont differed from the Desert Culture in that corn, beans and squash were grown and by 900 A.D. the people lived in simple, yet permanent dwellings. Fremont people made baskets and some pottery and began using leather products and buffalo hides after coming in contact with the Plains Indians. By 1300 A.D. the Fremont had retreated just as the Anasazi did, and were assimilated into other cultures. The Northern Shoshoni, for example, were located in northern Utah, southern Idaho and Wyoming, and developed many of the traits of the Plains Indians. The Shoshoni were nomadic, hunting and trading for a livelihood. The Gosiutes, found in northwestern Utah and northeastern Nevada were called Diggers by early whites because of their meager life style. The Southern Paiutes also lived on desert lands. They built small huts, and many bands kept small gardens to help provide food. The Paiutes used basket making as an art form, and the bow and arrow for hunting. Like the Paiutes, the Navajo also relied on agriculture. This group probably migrated from western Canada to northern New Mexico about the same time the Spanish arrived in America. They kept livestock, mostly small bands of sheep, but competition for the land from other nomadic tribes forced them to move westward.[5]

While the Navajos and Paiutes were semi-agricultural and tended to remain in relatively restricted areas, the Utes ranged over large tracts of land. The Western Utes, for example, inhabited the eastern two-thirds of present day Utah and tended to congregate around Utah Lake. Some of them also adopted the horse to hunt and trade over much of present day Utah, Colorado and Arizona.

Spanish Influences

Utah was a borderland to the Spaniards, a few of whom penetrated its desert barriers briefly and had a fleeting impact upon it. During the sixteenth century, explorers and settlers from New Spain (now Mexico) journeyed northward into Pueblo Indian country. Exploring on north a few of them came into contact with the Utes as early as the 1620s. In

the 1700s the Spanish began capturing Utes and trading them as slaves thoughout New Spain. In time, the Utes responded by becoming slave traders themselves, raiding Southern Paiute camps and selling the captives to the Spanish. Similar attacks caused the Navajo to leave their homes and seek protection from the Spaniards. Spanish padres in the area asked Indians about the lands and peoples that lay to the north. Indians reported what they knew and, in many cases, made up stories to satisfy the Spaniard's demand for information.[6]

The first extensive exploration of the region now know as Utah began in 1776. On July 29, Francisco Anatanasio Dominguez and Silverster Veley de Escalante set out from Santa Fe on a journey to contact the natives and locate a route between New Mexico and California. Dominguez led the party while Escalante kept a detailed journal. Don Bernardo Miera y Pachico drew maps of the country the expedition traversed, which later explorers consulted.

The Spanish padres traveled north after entering present Colorado from New Mexico. They turned west into the Uinta Basin, continuing until they reached Utah Valley in late September. Frustrated by the late season in their effort to reach California they passed through southwestern Utah before returning to Santa Fe by way of the Crossing of the Fathers, now under Lake Powell. Although the explorers had evidently heard about the Great Salt Lake, they did not see it. Their trail provided the basic route for later Spanish traders and was eventually refined and extended to become the Old Spanish trail.[7]

The Fur Trade

Meantime, other Europeans were extending westward in quest of furs and Indian trade. By the time the fur trade approached Utah, there were four kinds of trappers in the West: Indians who sold their pelts to white traders; independent white trappers who operated alone or in small groups; trappers who worked for the fur companies; and company men. Aside from the brief boost that they may have given to the beaver pelt industry, trappers and fur traders made their most lasting contribution in exploration and in establishing America's interest in the country.

In the 1820s a three-pronged assault converged on the fur country where Utah, Idaho and Wyoming now meet. The British sent expeditions from the northwest; Taos trappers worked out from New Mexico; and various American companies sent expeditions from St. Louis. For a time the region of the Wasatch-Cache National Forest was in hot dispute.[8]

The Americans and the British had been sparring over control of the western fur trade since 1808. Competition between the British owned Hudson Bay Company and various American groups finally culminated in the creation of a "fur desert." Peter Skeen Ogden, the main agent for the British in this process, drove deep into the disputed territory with the intention of killing every fur-bearing animal. Ogden made one such expedition in 1825 with 131 men, trapping his way southward through Idaho to the Bear River, near present Franklin. There he learned that a large group of Americans had wintered in the locality. He then travelled on through Cache Valley into Weber Canyon. Everywhere Ogden found that American trappers had preceded him. They also enticed twenty-three of his men to desert, taking 700 beaver pelts with them. Ogden's brigade still managed to severly decimate the beaver population in the area. But it had little effect on keeping Americans out. By 1830, northern Utah came under substantial American influence, and in 1846 a treaty with Great Britian formally secured the Oregon area for the United States.

The rising American prominence in the Great Salt Lake Region began in 1822 when William Ashley and Andrew Henry joined forces to ascend the Missouri River.[9] With Ashley and Henry came other famous mountain men. Jim Bridger followed the Bear River out of Cache Valley in 1824 and is believed to have been the first white man to set eyes on the Great Salt Lake. He later established Fort Bridger along the Oregon Trail in present Wyoming. Jedediah Smith explored the country adjacent to the Wasatch Mountain range and made several trips between 1826 and 1829 into southern Utah and California. Ashley, himself, is credited with developing the rendezvous, a sort of wilderness fair designed to take trade goods to trappers. The first rendezvous was held north of the Uinta Mountains, probably on Henrys Fork of the Green River, in 1825. In 1826 they met in Cache Valley and in 1827 and 1828 at Bear Lake.[10]

The third group of trappers that converged on the Uinta and Wasatch mountains were the Taos trappers from New Mexico, among them, Canadian born Etienne Provost. Entering Utah by approximately the same route used by Dominguez and Escalante, Provost and his trapping brigade may have seen the Great Salt Lake before Jim Bridger. In 1825 he was among those who encountered Peter Skene Ogden and later led Ashley's party via the Provo and Weber rivers to the rendezvous on Henrys Fork on the Green River.[11]

Following 1830 the fur trade moved to the Northern Rockies, and by 1840 had ceased to be an important factor in the region of the Wasatch-Cache National Forest. Nevertheless, in the late 1830s and the 1840s many mountain men continued to follow the traplines and a few established forts in the Wasatch-Uinta area. Antoine Robidoux, for example, built a trading post in the Uinta Basin, perhaps as early as 1832, that was eventually abandoned or destroyed by Indians. Uncle Jack Robertson (often mispelled "Robinson") came to the Green River country on the north side of the Uinta Mountains with Robidoux. He is said to have build a cabin on Blacks Fork, about two miles from present Mountain View, perhaps the first white habitation in the area of the Wasatch-Cache National Forest. Robertson, is also said to have convinced his friend, Jim Bridger, to build a trading post a few miles from his cabin.[12]

In the years that followed, Fort Bridger became a major landmark on the Oregon Trail. For a time after 1847 Bridger got along well with the Mormons, but by 1852 the relationship had disintegrated and Bridger was forced to leave.[13] Fort Supply, founded in 1853 by the Mormons near the site of Robertson, served to pacify the Indians, decrease the influence of the mountain men and establish a Mormon population on this important approach to Utah. It is ironic that both Fort Bridger and Fort Supply were burned to the ground by the Mormons during the Utah War to prevent their occupation by advancing federal troops.[14]

Miles Goodyear, a contemporary of Bridger and Robertson, became convinced in the 1840s that a "halfway house" for immigrants was a sound idea. To effect this plan he established Fort Buenaventura at the confluence of the Weber and Ogden rivers. His ranch there was taken over by the Mormons in the years immediately after they arrived.[15]

The Fremont Expeditions

Growing from the Dominguez-Escalante expedition and the maps that it produced were many misconceptions about the geography of the Great Basin. The Great Salt Lake was thought by some to contain sea monsters, whirlpools and islands covered with exotic vegetation. Furthermore, no one had yet understood the geological characteristics of this inland sea or the Great Basin in which it was located. Foremost among those who set the record straight on this count was Captain John C. Fremont, who made five expeditions to the Rocky Mountains. In 1843 Fremont and thirty-eight men left St. Louis and headed for Oregon. Midway, he left the main body at Soda Springs in present Idaho, continuing through Cache Valley to the Great Salt Lake. After exploring the lake, he turned northward to Fort Hall and then went via the Snake and Columbia Rivers to Fort Vancouver. His return trip also brought him through much of the Wasatch-Cache country as he passed from southern Utah, to Utah Lake and on out of Utah via the Uinta Basin. In 1845 Fremont returned, this time coming through the Uinta Basin. He camped where the city of Salt Lake now stands and explored the vicinity for two weeks. The path Fremont took west across the Great Salt Lake desert later became part of the ill-fated Hastings Cutoff. Among other things, Fremont first gave a reliable description of the Great Basin. This, with his other findings, was published in 1845 and read with great interest by Mormons in Nauvoo, Illinois, who relied heavily upon his report in choosing the Great Basin for their eventual destination.[16]

The First Mormon Settlements in Utah

A new era for the region adjacent to what is now the Wasatch-Cache National Forest was initiated in 1847 with the arrival of the Mormons. This group under the direction of Brigham Young was seeking a place to establish and practice their religion without threat of interference.[17] On arrival the Mormons systematically evaluated their surroundings and chose where the main settlement should be located. A stockade, known as the Old Fort, was built in a ten-acre square. Once it was completed, the 130 settlers in the Pioneer Company began preparing themselves for

winter. Then in September, a large band of 1540 Mormons arrived. In all, nearly 1700 individuals prepared to spend the winter in the Salt Lake Valley. This large group caused problems. Livestock ate most of the crops that had been planted. Luckily the winter was mild and the settlers continued to acquaint themselves with the surrounding country and to build homes, fences and grist mills. By the end of their first year, the Mormons were firmly entrenched in the Salt Lake Valley.[18]

In 1847 the Great Basin belonged to Mexico, but by February 1848 had become part of the United States. In view of this change the Mormons planned for statehood. In March 1849, a constitution for the State of Deseret was drawn up, and a delegation sent to Washington, D.C. Meanwhile, settlers operated as if the "State of Deseret"--the proposed boundaries of which encompassed an area larger than the present state of Texas--was actually a legal government.[19]

In coming to Utah, the Mormons believed they were establishing the Kingdom of God on earth. Church leaders assumed authority to act on God's behalf, and the Church controlled every aspect of Mormon life. When it came time to set up a government all apparently accepted it as appropriate that top governmental positions should be given to top church officials. Such devotion and discipline contributed in a real way to the survival of the Great Basin colonies.

However, it was this same devotion to religious principles that had caused the Mormons to be driven out of one state after another. Now as they sought statehood, a number of related influences combined to defeat the effort: the economic and political power wielded by the Mormon Church; its control over the everyday lives of its members; the promotion of teachings that were seen by non-Mormons as being contrary to traditional Christian beliefs; and the fear of proslavery congressmen that Utah would have to be admitted to the Union as a free state because it was not suited for slavery.[20] By creating Utah Territory as part of the Compromise of 1850, Congress sought to prevent the creation of a theocracy in the Great Basin that would be a part of the United States in name only.

Settlements Along the Wasatch

Between 1847 and 1869, three basic movements in Mormon settlement may be observed. The most significant step was the establishment of communities in the major valleys from Ogden in the north to St. George in the south. The second step was the movement into more distant valleys; and the third was the creation of distant outposts along supply and immigration routes.

Salt Lake was the Mormons' first permanent settlement and rapidly became the area's leading city. It was the home of Brigham Young, the headquarters of the Mormon Church, and the commercial and political center for the entire area. But life in this frontier metropolis was far from ideal. A mercantile policy was adopted which placed sharp limits on trade with the non-Mormon world and instead undertook ". . . to produce, manufacture, and make every article of use, convenience, or necessity among our own people . . ."[21] This quest for self-sufficiency and independence meant that, in the short term at least, settlers could expect to do without many things until the home industries were firmly established.

Mormon leaders were interested in establishing agricultural communities beginning with Salt Lake City and spreading outward from there. Yet, Salt Lake was destined to become an urban center. As it grew, demands placed on natural resources were tremendous. Together with the needs of the Mormon population, mining, railroading and manufacturing stripped the region of the Wasatch-Cache National Forest of timber, forage and minerals. As a result, the natural base upon which people depended was seriously depleted by 1900.

In the years immediately after 1847, other communities were settled in the Great Salt Lake and Utah valleys including most of the towns and cities that presently stand on the borders of the Wasatch-Cache National Forest. Important among these was Ogden, which became a railroad and timbering center and made demands on the resources that were particularly heavy. Established somewhat later were settlements in Cache and Bear Lake valleys, which were also dependent upon mountain resources. Elsewhere settlements extended as far afield as San Bernardino and Carson Valley, Nevada in the early years, and later to Idaho, Arizona, Wyoming, Hawaii and ultimately even into Mexico and Canada. Some 500

Mormon communities were founded by 1900; all looking to Salt Lake City as a cultural center and seat of authority.

The Mormon Village

Once settlers were secure in their new locations, they set to work building their own versions of the "city of Zion," a planned community of farmers and tradespeople that had been devised in 1833 by Joseph Smith. Under this plan most towns were laid out in a grid pattern with square blocks and wide streets running in north-south and east-west directions. Block size varied, but Salt Lake City may be taken as an example. There ten acre blocks were divided into eight 1 1/4 acre lots. Each lot had space for a house, garden and outbuildings, including barns and corrals. Each farmer was assigned five to twenty acres outside of town by his bishop or drew lots for his share. Farmer worked these fields during the day and returned to town at nightfall.

The village plan was designed to keep Mormons together in a close-knit society. The plan worked well in the early years of settlement, but in 1862 the Homestead Act made it possible for individuals to gain title to 160 acres or more. This put strains on the original concept of community, but was adapted and modified to fit into Mormon life.[22]

Ideally it was hoped to base this entire process of settlement on religious principles. Essential was a unity of spirit and purpose that, among other things, extended to resource utilization. Leaders taught that all resources belonged to God, hence no man actually owned them. Individuals would act as stewards, but the product was to serve the community. Originally, there was to be no speculative sale of land. Other resources, too, were expected to serve the community and were consequently placed under stewards rather than held for speculative or money-making purposes. Water was, of course, crucial to the Mormon plan to redeem the land and make it productive. Timber, too, was recognized as a key resource and efforts were made to control its use for the good of the community. As ecclesiastical authority was transformed to civil government, the territorial legislature placed control of water and timber along with other important resources under the jurisdiction of the county courts.

The Gathering

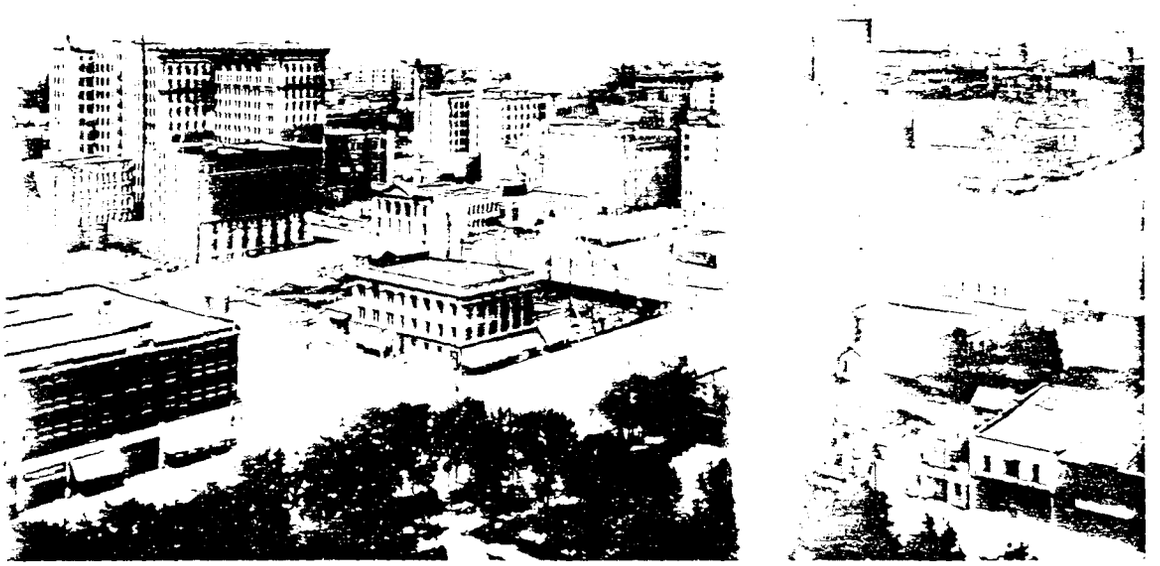
Now that Mormons had found their Zion, the next task was to build up the population. Missionaries sent overseas met with great success. By 1849, missionaries were proselytizing in Scandinavia, Germany, France, Switzerland, Italy, Spain, the South Seas and Australia. By 1852 Mormons were also preaching in South America, South Africa, Japan, China and India. Between the founding of the Church in 1830 and 1896 when Utah became a state, more than 100,000 men, women and children were contacted, converted, organized and gathered to "Zion" from various nations.[23] Mormonism offered not only the "one true church," but also economic relief. Each man could have his own land, each family could be assured of a happy and productive life, children would be educated, and no one would be left idle.

Not every person who wanted to emigrate could afford the journey. Various schemes were tried by Church leaders to remedy this situation. Eventually the Perpetual Emigrating Fund Company (PEF) was established. Under this plan, members in Utah contributed to help pay the costs involved in transporting converts from Liverpool, England. Once the immigrant arrived, he was expected to repay his debt to the PEF so others could make the journey. The response to this program so taxed Mormon resources that even greater economies were sought. In 1856, Brigham Young proposed that immigrants be outfitted with two-wheeled handcarts that could be pulled or pushed to Utah with 100 to 500 pounds of food and clothing aboard. A disastrous experience in the fall of 1856, notwithstanding, most companies proceeded as planned, and over 3000 people walked to Utah between 1856 and 1860.[24]

Government Surveys and the Utah War

The first episode in the long chapter of government management of the public domain of which the Wasatch-Cache National Forest is part, developed where Captain Howard Stansbury of the Corps of Topographical Engineers came in 1849-50, to map the Great Salt Lake and survey roads in the region. His findings helped influence the selection of stage coach and railroad routes and his reports contained accurate descriptions

Illus. 1 Salt Lake City about 1869



Illus. 2 Salt Lake City at [illegible] 1911

of the region and the early settlements. Stansbury's reports, and a book of observations about the Mormons by Lieutenant John W. Gunnison, one of Stansbury's officers, were published and did much to acquaint Americans with the Mormons and the Great Basin.[25]

As the 1850s advanced, Utah experienced serious growing pains. Controversies arose in which Brigham Young, who had been appointed governor, failed to satisfy all the regulations imposed by the federal government. Disputes over Indian policy, mail contracts, land policies and the court system were particularly troublesome. To further complicate matters, the newly formed Republican Party demanded in 1856 that those "twin relics of barbarism--slavery and polygamy" be abolished in the territories. Even though the Republicans did not win the presidential election of 1856, their campaign platform had focused attention on Utah and its society.

By early 1857, frictions led President James Buchanan to appoint a new governor and dispatch an army to Utah. Upon hearing of the army's approach, Brigham Young mobilized the Mormon militia and fortified the territory. The army was slowed down by bad weather and its commander, Albert Sidney Johnston, was forced to establish camp near Fort Bridger. When winter broke in 1858, a peace commission offered presidential amnesty to the Mormons, and Johnston's army established itself at Camp Floyd, west of present Provo.[26]

Even though the Utah War caused a great deal of tension it did not radically affect conditions in the Great Basin. One thing it did do, however, was to precipitate additional explorations. Notable among these was the work of Lieutenant Joseph C. Ives of the Topographical Engineers who was sent to ascertain the course of the Colorado River and determine if it could be used for military access. Also during the Utah War, Captain James H. Simpson charted roads between Fort Bridger and Camp Floyd and from Camp Floyd to Carson Valley in Nevada. The Pony Express and telegraph lines later followed this same path, as did wagon roads which opened up portions of what is now the Wasatch-Cache National Forest for the first time.[27]

Post Civil War Surveys

Perhaps the greatest mapping surveys ever undertaken in the West took place in and around Utah in the 1860s and 1870s. The purpose of these was to take an inventory of the natural resources of the West and make detailed maps in the process. Between 1853 and 1860 four great railroad surveys had been undertaken and from these reports one single map of the West had been drawn. After the Civil War there was considerable interest in filling in the gaps still left in western geography.

Ferdinand Hayden headed one of these great surveys from 1867 to 1879. Hayden was a physician, a geologist and a paleontologist, a historian and, according to one source, an "insatiable tourist." During his twelve years in the field he covered large areas of the Rocky Mountains and the Colorado Plateau, from cliff dwellings in northern New Mexico to Yellowstone Park in the north. In fact, one of his expeditions to Yellowstone started out from Cache Valley. Hayden eventually pushed a bill through Congress to establish Yellowstone National Park and a peak and stream are named for him in the Uinta Mountains.

Another major survey was led by Clarence King. His major goal was to complete a survey from the Great Plains to the Pacific Ocean which would facilitate the completion of a transcontinental railroad. In 1864 he was assigned the task of exploring the 40th parallel--a 100 mile wide strip of land running west to east from the California Sierra to the border of Nebraska. A survey of the Wasatch and Uinta Mountains was included in King's efforts, a fact which place names, King's Peak, still attest.

John Wesley Powell, perhaps the best known of the great surveyors, had fought as a major in the Civil War, and had been appointed a professor of geology afterwards. Like Hayden and King, he turned to Washington, D.C. in the 1860s and 1870s for the necessary funds to explore the West. Powell recognized that the numerous rivers of the Colorado watershed were among the least known regions of America, and set out to survey that area. In 1869 and 1871, he led two major expeditions down the Green and Colorado Rivers. Powell also spent considerable time studying the Indians of the area and was instrumental in establishing the Bureau of American Ethnology in 1880.

Perhaps Powell's greatest achievement was his Report on the Lands of the Arid Region of the United States, with a More Detailed Account of

the Lands of Utah, published in 1879. Depending in large part upon his observations in Utah, Powell declared that the West was an arid region that could not support dense populations and that any attempt to impose the small-farm, grid-style pattern of settlement used in the East would be disastrous for the settlers, inadequate for irrigation purposes, and detrimental to the fragile environment. Powell's surveys also left behind a rich photographic record of the West. Much of his data was collected near Salt Lake City and reflected water conditions there and on the Wasatch range.[28]

Summary

The Mormons originally came to Utah in 1847 because it was one place that nobody else wanted. It was fertile enough to sustain life, and yet forbidding enough to discourage others from moving into the territory. But the Mormons were not left alone to pursue their dream. Far from it. In 1869 came the transcontinental railroad. Soon thereafter the mining frontier followed. With polygamy and the Mormon question at stake the territory became a focal point of politics and after some hesitation the business world and the livestock kingdom also invaded the territory. Mormon peculiarity, including the doctrine of stewardship, were maintained until 1890, when with the church's decision to yield on polygamy, a move to embrace certain forms of American conformity, was initiated. Among other things this impacted directly upon natural resources as, with the canons of free enterprise supplanting those of stewardship, Utahns turned to speculative and exploitive development. However, old conflicts were hardly laid to rest before new conflicts emerged. Among these were growing frictions over the utilization of natural resources. With hundreds of cities and towns needing pure water, and a livestock industry that had infested the watersheds, the Utah background began to meet the background of the growing national conservation movement described in Chapter I. Thus beckoned by new times and new movements, the Wasatch and Cache National Forests took on finite bounds by 1905.

CHAPTER II

NOTES

[1]S. George Ellsworth, Utah's Heritage (Santa Barbara, California: 1977), pp. 14-17.

[2]Ibid., pp. 16-18. Lake Bonneville was named for Captain Benjamin Bonneville, a U.S. army officer in the 1930s who became active in the American fur trade. Bonneville was a poor businessman, a failure as a fur trapper, and inadequate as a topographer. Some feel he would have passed through history unnoticed if Washington Irving had not written a three volume account of the Captain's adventures. See Thomas D. Clark, Frontier America: The Story of the Westward Movement, 2d ed. (New York: 1969), pp. 438, 458-62.

[3]Robert L. Layton, "Utah: The Physical Setting," in Utah's History, edited by Richard D. Poll (Provo, Utah: 1978), pp. 8-9; Ellsworth, Utah's Heritage, pp. 18-19.

[4]S. Lyman Tyler, "The Earliest Peoples," in Utah's History, pp. 23-25.

[5]Ibid., pp. 25-30.

[6]Ibid., pp. 30-33.

[7]Ted J. Warner, "The Spanish Epoch," in Utah's History, pp. 35-49; Charles S. Peterson, Utah: A Bicentennial History, The States and the Nations Series (New York: 1977), pp. 6-9; Charles S. Peterson, Look to the Mountains: Southeastern Utah and the La Sal National Forest (Provo, Utah: 1975), pp. 5-8.

[8]Clark, Frontier America, pp. 454-57; David E. Miller, "The Fur Trade and The Mountain Men," in Utah's History, pp. 55-67.

[9]Miller, "The Fur Trade and The Mountain Men," p. 55.

[10]Ibid., pp. 55-67; Clark, Frontier America, pp. 55-67.

[11]Herbert S. Auerbach, "Old Trails, Old Forts, Old Trappers and Traders," Utah Historical Quarterly 9 (1941):13-63; David E. Miller, "Explorers and Trail Blazers," in Utah's History, p. 63.

[12]Ellsworth, Utah's Heritage, p. 112; Auerbach, "Old Trails and Traders," pp. 52-57.

[13]Fred R. Gowan and Eugene E. Campbell, Fort Bridger: Island in the Wilderness (Provo, Utah: 1975), pp. 47, 49-83, 85-101.

[14]Ibid., pp. 3-15, 61-69.

[15]Recently, the Utah State Division of Parks and Recreation have conducted a dig at the Fort Buenaventura site and propose to develop it as a historic property.

[16]Miller, "Explorers and Trail Blazers," pp. 72-79; Clark, Frontier America, p. 501.

[17]Earlier Joseph Smith explored the possibilities of establishing settlements in Oregon, California, Texas (then part of Mexico), and even Vancouver Island. See Leonard J. Arrington, The Great Basin Kingdom: An Economic History of the Latter-day Saints, 1830-1900, Bison Book edition, (Lincoln, Nebraska: 1966), pp. 38-44.

[18]After the Mormons had been driven out of Illinois, they travelled across Iowa and built a temporary settlement on the western side of the Missouri River. Nearly 3500 people spent the winter of 1846-47 huddled on the river bank in makeshift cabins and sod houses. Many died due to lack of proper food, shelter and sanitary conditions. The September immigration was made up of Mormons who did not want to spend another winter on the banks of the Missouri. See Arrington, pp. 38-44; Ellsworth, Utah's Heritage, pp. 15-56; Eugene E. Campbell, "The Mormon Migrations to Utah," in Utah's History, pp. 113-29.

[19]Joseph Smith believed that the word "deseret" was used by the ancient inhabitants of America to describe the honey bee. See Book Of Mormon, Ether 2:3. The honey bee has since become one of Utah's state symbols.

[20]Arrington, Great Basin Kingdom, pp. 38-44; Ellsworth, Utah's Heritage, pp. 160; Clark, Frontier America, pp. 604-608.

[21]Cited in Arrington, Great Basin Kingdom, p. 47.

[22]Ellsworth, Utah's Heritage, pp. 179-81, 190-93. For a discussion of how the Homestead Act effected the Mormon Village see Charles S. Peterson, "Imprint of Agricultural Systems on the Utah Landscape," in The Mormon Role in the Settlement of the West, edited by Richard H. Jackson (Provo, Utah: 1978), pp. 91-106.

[23]Gustave O. Larson, "The Mormon Gathering," in Utah's History, pp. 175-77; Ellsworth, Utah's Heritage, pp. 174-78.

[24]Arrington, Great Basin Kingdom, pp. 96-108; Larson, "The Mormon Gathering," pp. 177-82; Richard H. Jackson, "the Overland Journey to Zion," in The Mormon Role in the Settlement of the West, pp. 1-28.

[25]John W. Gunnison, The Mormons, or Latter-day Saints, in the Valley of the Great Salt Lake, (Philadelphia: 1852); and Howard Stansbury, An Expedition to the Valley of the Great Salt Lake . . . (London: 1852).

[26]Ellsworth, Utah's Heritage, pp. 208-21; Peterson, Utah: A Bicentennial History, pp. 84-85; Campbell, "Governmental Beginnings," pp. 165-70.

[27]Ellsworth, Utah's Heritage, pp. 237-38.

[28]On the past Civil War surveys see Richard A. Bartlett, Great Surveys of the American West (Norman: 1962); Gustave O. Larson and Charles S. Peterson, "Opening the Colorado Plateau," in Utah's History, pp. 375-78; Ellsworth, Utah's Heritage, pp. 238-43. Also see John Wesley Powell, Report on the Lands of the Arid Region of the United States, with a More Detailed Account of the Lands of Utah, edited by Wallace Stegner (Cambridge, Massachusetts: Harvard University Press, 1962).

CHAPTER III

BOUNDARIES AND THE GROWTH OF A FOREST

In significant ways boundaries summarize the history of the Wasatch-Cache National Forest. Boundary making was among the first evidences that forestry was coming to have an influence upon Utah in the turn-of-the-century years, and boundary shifts and reorganization of various kinds continue to characterize the Forest today. Reflected in the evolution of boundaries have been numerous developments. In the first years urban concern for culinary water, watershed protection and questions of grazing adjustement had a bearing upon the creation of the Forest's various divisions. In the years since, an almost unending array of interests, administrative needs, legislative developments and technological advances as well as personalities have played a role in boundary adjustments, making it clear that boundary making is a continuing process. Not only have boundaries been the product of divergent influences but they have varied almost infinitely in the size and the context of their changes. The largest boundary changes have involved a half million acres or more while the smallest have added or eliminated tiny plots of no more than an acre or two. Presidential proclamations, executive orders, congressional enactments, donations and administrative acquisitions under literally dozens of authorizing laws have been the means by which this process has moved.

In part these developments have reflected aggressive self advancing tendencies implicit in the Forest Service and in governmental bureaus generally. In part they also reflect controversy and political give and take as various interests have advanced themselves at the expense of others. In yet other ways Forest boundaries have been extended through cooperative effort, service to various clienteles and adjustment to economic conditions and the growth of other managerial agencies. All

in all boundaries and the Status Book of the Wasatch-Cache National Forest in which additions, eliminations and re-organizations are detailed come near being the story of the Forest in brief. They are a foreshortened statement, not merely of land transactions, but of the values, policies, economic interests and functions that have characterized the Forest during the eight decades of its existence. In Forest boundaries one reads not merely the course of events but much of character and influence as well. Consequently, it is appropriate at this early stage to undertake a statement about the establishment of the Wasatch-Cache National Forest and the various changes and reorganizations through which its present physical forms have evolved.

Matters of Size and Character

The sprawling size of the Wasatch-Cache National Forest is a point eminently worth considering. With its headquarters at Salt Lake City its bounds have extended through much of its existence for about 250 miles on a southwest to northeast axis from the limits of the old Vernon Division to Mountain View and beyond in Wyoming. On the north, the present limits of the Cache extend a full hundred miles from Salt Lake City and, in recent memory, lay over into Idaho an additional fifty miles, while after 1915 for more than two decades, the northern limits were pushed as far afield as Pocatello. To the south and east of Salt Lake City the Uinta National Forest absorbed other fingers of mountain country providing rather closely restricted limits in those directions.

Maps of this country, as of others, are seen as the crow files. On them, distances between points are minimized. But the Wasatch-Cache Forest, like other geographic units, has real size that its administrators have had to deal with and which should be understood as one contemplates boundaries. Although modern travel and communications ease its impact dramatically, size and the distance into which it translates conform to the mountains which the Forest administers and is limited by travel time. As a result, size is given very real dimensions that complicate not only administration but makes for complexity as one tries to see the development of the Wasatch-Cache National Forest as an administrative and functioning entity.

To further emphasize the sprawling character of the Forest, attention may be called to how it corresponds to other administrative subdivisions. The area now being administered lies, of course, in two states, Utah and Wyoming. More impressive, is that fact that in addition to the lone county of Uinta in Wyoming it falls, at least in some part, in twelve Utah counties, somewhat less than half of the state's total of twenty-nine. Within these counties Forest acreage varies widely from fewer than 100 in Utah county to 268,084 acres in Cache County and 507,088 in Summit County. More impressive still is that fact that for much of its history, the Wasatch-Cache extended in to five Idaho counties as well. In all, it presently (1980) consists of 1,133,370 acres. At times during the history of the two Forests as separate entities, total size varied upward to well over two million acres.[1]

Within this far-flung region the Wasatch-Cache is concentrated and scattered according to factors of nature and human need. More or less solid blocks of Forest are found in the Grantsville and Logan divisions and on the vast north slope of the Uinta Mountains which comprises most of Summit County's half million acres. Southeast of Salt Lake City a relatively concentrated block of Forest land is also situated while elsewhere, especially in the Ogden Ranger District, Forest property is widely fragmented and scattered by private and state lands.

Another factor worth noting in this context is the character of the Forest boundaries which are drawn to include large areas not actually owned by the Forest Service and under its jurisdiction only for a variety of rather narrowly defined functions. Thus, as one visualizes the Wasatch-Cache, one sees it in at least three geographic relationships; first, the broad region of thirteen counties in two states over which it spreads; second, the country embraced within its boundaries; and third, those lands actually owned by the United States and allocated to the Forest Service by official action for administrative purposes.

Diversity, too, prevails. At base this is a matter of natural conditions. In its contemporary form, the Wasatch-Cache straddles two physiographic regions; the Great Basin and the Colorado Plateau. Within these two provinces the Forest is drained by numerous streams, including six rivers of critical importance to the region: Green River, and its

affluents, including the Duchesne River, which flow into the Colorado Plateau; and Bear River, Logan River, Weber River and Provo River which empty into the Great Basin. Previously, when the old Pocatello Division was part of the Cache, the Forest also extended into the Columbia drainage, broadening its physiographic context even more.

Although the dominant natural theme of both the Great Basin and the Colorado Plateau is aridity, natural diversity is easily apparent in the country over which the Forest extends. At the southwest it extends into the salt deserts; a drouth wracked and salt encumbered country. Along the Wasatch Front it is characterized by granite escarpments, high elevations, precipitous canyons, limited timber and unstable, brush covered watersheds. With the exception of the Wellsvilles, which also form part of the Wasatch Front, the mountains adjacent to Cache Valley are less abrupt in their ascent, less lofty and less dominated by steep rocky walls. East and southeast of the Cache mountains extends yet another habitat; one of high rolling plateaus covered with sage and oak brush and slashed frequently by smaller canyons and drainages which are sometimes vegetated with evergreens and aspens. Finally, the north slope of the Uinta Range offers an additional distinctive natural region with its heavy growths of lodgepole pine and spruce-fir, its high country, and lakes and drainage systems.

Perhaps even more apparent than the distances that set it apart and the diversity of its natural settings are differences in what may be called the social influences that have impinged upon the Forest. From the beginning there has been a fundamental cleveage in the economic and social interests of the people who lived within the Forest's service area. On the one hand was the urban society of the Wasatch Front, which by 1900 was well established as a regional manufacturing and commercial center. This urban society has continued to be a major factor in the existence of the Forest asserting its interests in watershed management and leisure time uses and having a distinct impact on the Forest's functions and upon its administrative relationships with the Intermountain Region of the Forest Service. Elsewhere society has tended to be rural and in early decades, life phased off into conditions that were distinctly frontier like and in a few cases, even primitive in terms of communications

and contact with the outside world. In such areas interests tended to be limited to grazing, timbering, agriculture and other extractive activities and were carried on without the sophistication that characterized the more developed economy of the Wasatch Front. Influencing the Cache Division of the Forest was yet another major factor. Utah State Agricultural College at Logan did much to focus eyes on the need for forest reserves as early as 1900 and with the beginning of a forestry school in the later 1920s did even more to influence the functions and boundaries of the Wasatch-Cache Forest.

Establishment: First Developments and General Background

Now that attention has been drawn to some of the physical and social forces that influenced the growth of the Forest we may turn to the question of the Forest's establishment and the conditions and interests out of which it grew. There is no single organic act to which we may point as representing the birth of the Forest. Indeed, if its creation may be referred to as a birth at all, it must be styled as a multiple birth because what the Forest later became grew out of what, to begin with, were eight scattered forest reserves and a few major extensions which were added as time passed. Responding to local issues two of these reserves were established in 1903 (Logan and Pocatello), two in 1904 (Grantsville and Salt Lake), three in 1906 (Vernon, Bear River and Wasatch) and one in 1907 (Port Neuf). Created in what was almost a buckshot pattern, these small local units were later drawn together and have, in some cases, continued to be shuffled from one jurisdiction to another to meet new needs and administrative requirements.[2]

The years in which this flurry of forest building took place were an active time for conservation in Utah and the West. As we have seen in an earlier chapter, Mormons had initially approached their natural resources as stewardships to be wisely managed for the good of God's children. By 1890, however, evidence was everywhere apparent that speculative and promotional values that paid more heed to profit than stewardship were having an impact upon natural resources. Most dramatic were evidences that timber depletion and overgrazing had disturbed the balance by which nature maintained mountain watersheds.[3]

A number of factors tended to bring Utah into step with the forestry movement that was developing nationally and created a situation in which forest reserves could be created without the open conflict that accompanied the movement in neighboring Colorado and Wyoming.[4] Scientists and engineers of both local and national connections focused much attention upon Utah as the seat of Anglo-American irrigation following the first irrigation congress which took place in Salt Lake City in 1891. The city itself had only begun to enter the age of modern facilities in 1889 when it had some twenty-three miles of water mains and about 2300 taps which provided the central portions of town with fairly reliable service except during dry periods. By 1905 the city's water system had grown immensely. Under the direction of farseeing engineers like A. F. Doremus major steps had been taken to secure control of Utah Lake and the mountain watersheds that lay up City Creek, Emigration Creek, Mill Creek and Big Cottonwood Creek. Trades had been made with various irrigation companies throughout the valley making for more efficient use of water and assuring city residents of access to the more potable water of the mountain streams. Springs and streams had been cleaned and holding tanks and reservoirs built and a large concrete acqueduct was under construction to connect Big Cottonwood Canyon to the city. Efforts had also been made to control grazing and stock driving along watercourses that fed municiple supplies. Salt Lake City and other communities had also purchased key watersheds in their efforts to control the sources of drinking water.[5]

With a large percent of its people living in towns and cities Utah was thus predisposed to resource management and in some part overcame the characteristic western fear of eastern domination on the one hand and affinity for individual control implicit in free enterprise on the other. As a result, the state became a somewhat apprehensive supporter of forest reservations. Governors during the early statehood period (after 1896), including Heber M. Wells, William Spry, and John C. Cutler offered cautious support but sought to avoid the onus of selling out to the enemies of home rule by hedging their public remarks with demands that local people staff the new reserves and with provisions that control would revert to the state in the event its citizens so willed. In an era when party regularity was at a premium Utah senators and congressmen

played the role of what scholar Thomas G. Alexander has called "business minded conservationists" so successfully that several of them had considerable influence upon federal resource policy and upon the way the Wasatch-Cache National Forest came to develop. Particularly important in this context were Senator Reed Smoot, who for years served as chairman of the Forest Reserves subcommittee of the Natural Resources Committee, and Congressman Don Colton, who put together many of the provisions that became the Taylor Grazing Act before he, like Smoot, was defeated in 1932. Also influential were William Spry who, after he left the governor's office became Commissioner of the General Land Office, and Senators William King, who as a long time Democratic senator was only less important than Smoot, and George Sutherland who, although his tenure as senator was shorter, moved on to the Supreme Court where he wrote many of the conservative opinions of the court during the 1920s and 1930s.[6]

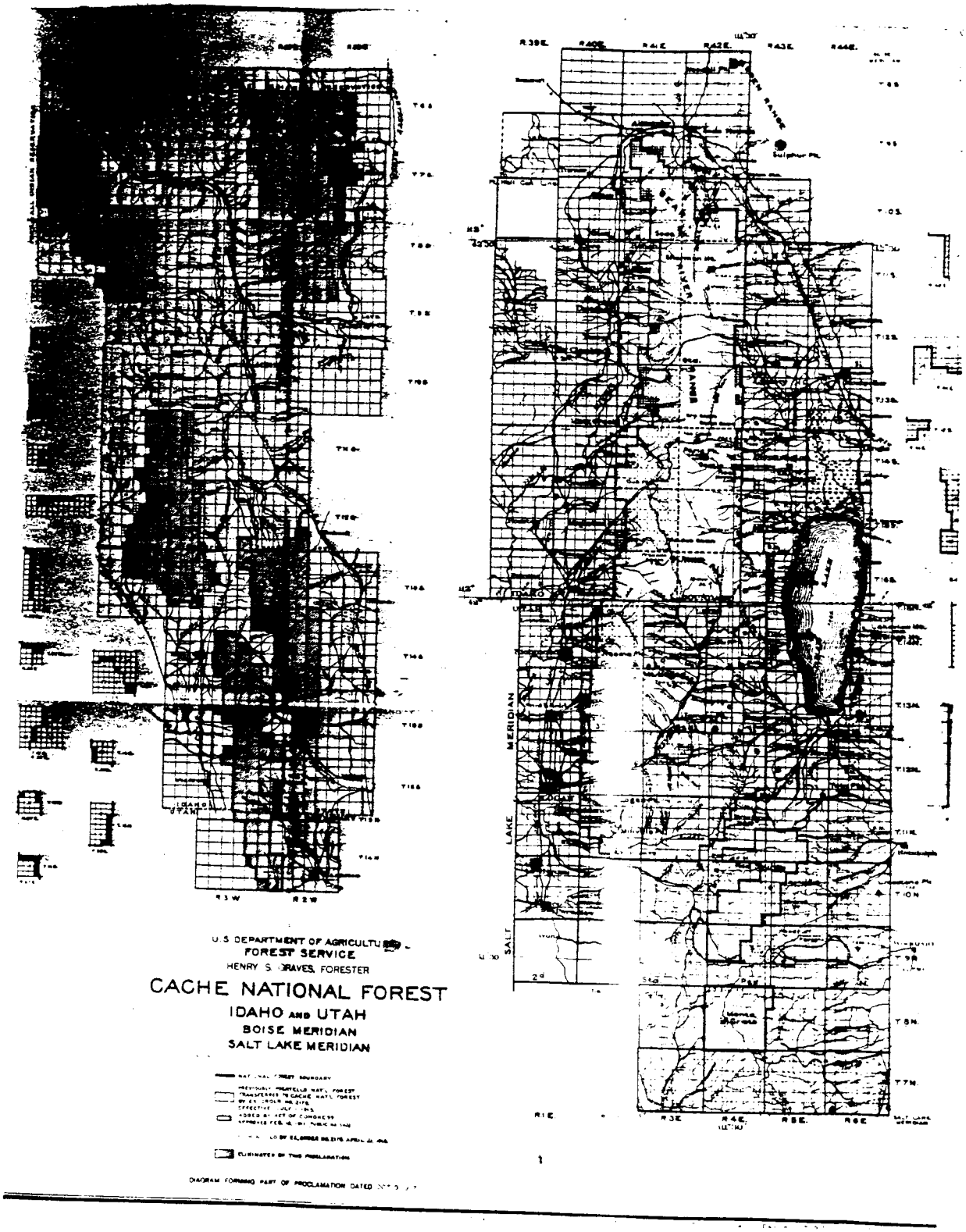
Thus, with remarkably little show of friction, Utah moved with the times as conservation was instituted in the years after 1896. In 1897 when Grover Cleveland set aside the Uintah Forest Reserve along with more than 20,000,000 acres in reserves elsewhere, officials and private interests in Utah complained enough to keep in good stead with their neighbors, but basically supported the president's action. Two years later, local interests petitioned that the Fishlake Forest Reserve be established, and welcomed the first "forest agent" who was assigned at Coalville along the Weber River to give the Uintah Reserve a shadowy semblance of administration.[7] Then in July 1902 as the Bureau of Forestry grew under Gifford Pinchot's vigorous leadership Albert Potter, a former Arizona stockman, showed up in Logan and as the grazing expert of the administrative cadre Pinchot was putting together, undertook a survey of the Wasatch Range that, over a period of five months, carried him from one end of Utah to the other. Responding to petitions from various local groups as well as to forestry's sense of urgency, he examined the Cache and Wasatch portions of the present Forest carefully. Both areas he found to be seriously depleted in terms of grazing and timber and in acute need of management and regulation. Referring to "the reserve" in a way that suggests plans in Washington were already well underway to create the Utah units he returned east in the fall of

1902, wrote his report and a large number of Utah reserves were thereafter established.[8]

Boundaries Take Shape for the Cache National Forest

The first of the new reserves was the Logan Reserve which was apparently withdrawn from public entry on May 7, 1902. While it is not clear what this meant in terms of legal status, it does suggest why Potter began his Wasatch survey at Logan and also clarifies a reference or two to "the reserve" in his report that read as if it were already established. In its earliest form the Logan Reserve embraced an area eighteen miles square or a total of nine townships east of Logan and Smithfield. Not included was the tier of townships that lay next to the Idaho border in which considerable state and private land had apparently been taken up. On May 29, 1903 the Logan Reserve was formally established. In response to Potter's survey a dozen sections were trimmed from the tier of townships that fronted the valley on the west and on the southeast about half a township was dropped in view of the private and state lands held on Blacksmith Fork near present Hardware Ranch.[9]

In a separate transaction the Pocatello Forest Reserve was created on September 5 of the same year. In October 1904 Forest Agent Smith Riley proposed that 94,390 acres be withdrawn as the "Malade Forest Reserve." Reporting that the population that lived in the area were nearly all "in favor" he employed a tactic widely used in the survey reports that preceeded the establishment of reserves in the Wasatch-Cache when he continued that the reserve was an "absolute necessity." "Under the present prevailing condition the land will soon become a barren waste that will be a menace, rather than a benefit, to the thrifty communities contiguous to it."[10] Riley's appeal notwithstanding, the Malad Reserve was apparently never established as a separate unit, but on May 26, 1906, 68,720 acres designated as the "Malade or Middle Division" were put together with 56,960 acres known as the "Marsh Creek or Western Division" and the 271,680 acres of the "Bear or East Division". In February of the same year "Monte Cristo Township" south of Blacksmith Fork had been added to the Logan Reserve which was now attached to the "Bear Division," forming a reserve extending from Soda Springs on the



Illus. 3 Cache National Forest 1915

north to Marsh Creek on the west and to Monte Cristo on the south. The unit thus formed totalled 683,280 acres and was given the name Bear River Forest Reserve. This name may have been an effort to placate Bear Lake livestock men, most of whom objected to the withdrawal of their range lands from the public domain, or compensation for maintaining headquarters in Logan.

Elsewhere, the Port Neuf Forest Reserve was withdrawn from public entry on March 2, 1907 and almost immediately attached to the Pocatello Forest Reserve. This arrangement was quickly altered when the Port Neuf was divided between the Bear River and the Pocatello reserves in 1908. The same year forest reserves across the nation were redesignated national forests and the entire Bear River was renamed the Cache National Forest. In 1915 the Pocatello National Forest was consolidated with the Cache where it remained until 1938, at which time what had been the Pocatello, Port Neuf, Marsh Creek and Malad Divisions were all transferred to the Caribou National Forest.[11]

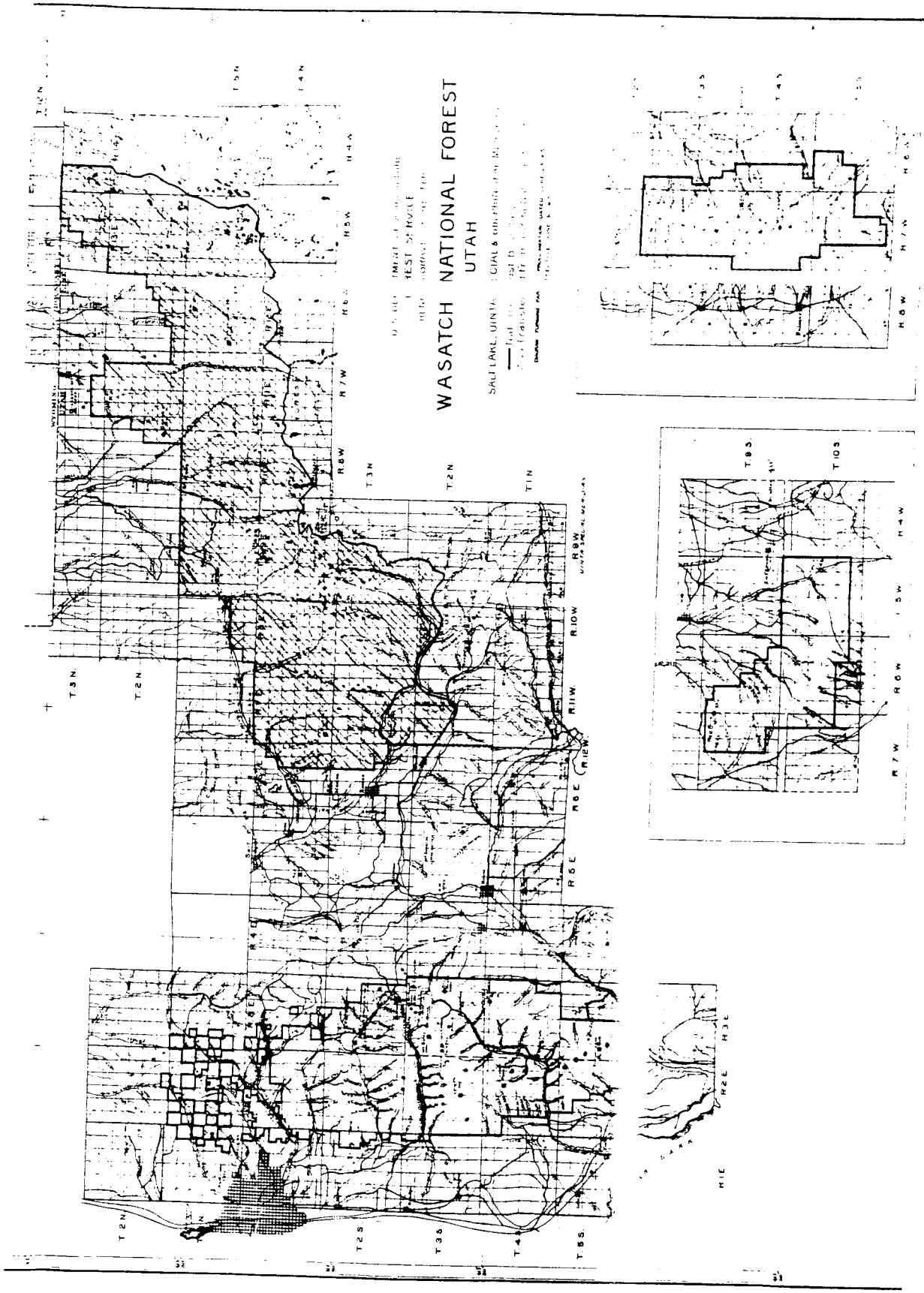
Beginning in 1934 a series of significant additions to the Cache National Forest were initiated as a result of growing interest in recreation and the serious floods that are discussed in detail in another part of this history. As background to these additions it should be recalled that during the Depression, land values were down sharply and that much land sold at tax auction or merely passed into the possession of various levels of local government. With a drouth of unprecedented severity and the great winds of the Dustbowl before them, people were sensitive as they had rarely been to just how subject mankind was to natural disasters. These developments coupled with the New Deal's general penchant for action prompted a movement of boundary extension that was second only to the early years of forest establishment. As expressed directly in boundary changes this movement began for the Cache National Forest with the addition of three sections of land adjacent to Willard Peak in the so called "Terry's Withdrawal" of July 27, 1934. Two years later on May 22, a much more comprehensive addition was made which encompassed the mountains along the Wasatch Front from south of Ogden to north of Brigham City. Interested cities and towns, promoters of skiing at Snow Basin, and groups interested in controlling floods at Willard and elsewhere joined forces to acquire large tracts of land

through purchase, donation and exchanges, which were then turned over to the Federal Government. Similar transactions culminated in a proclamation on September 6, 1939 bringing the Wellsville Mountains into the Forest's jurisdiction. The same year the Ogden Valley Addition extended the Forest boundaries south and east bringing within its limits 392,686 acres, some of which had been recommended for inclusion within the Forest as early as 1908 and 1909.[12] However, most of this vast addition was not placed under Forest ownership but appears to have been included in Forest boundaries because of federal reclamation projects then under way and because of Ogden City's interest in having a managed watershed. Two years later, on May 12, 1941, the Ogden Basin Reclamation Project came to a focus in the addition of the land immediately around Pineview Reservoir in the west end of Ogden Valley most of which had remained in private ownership.[13]

Thus, with developments that varied from the simple announcement of one ranger, forests in the early period to the balancing of such complicated and interacting forces as public opinion, competing interests, federal programs and the sciences of forestry in what may be termed its middle era, the Cache National Forest had, by World War II, assumed what would be its essential boundaries until the transfer of administrative responsibilities in 1973. At that time it was divided along state lines, its Idaho portions merged with the Caribou National Forest and its Utah portions assigned to the Wasatch-Cache National Forest.

Boundaries on the Wasatch Front

As in the case of the Cache, the initial establishment of the Wasatch Forest came about through the creation of a number of small reserves which were then consolidated and supplemented to become an administrative whole, with headquarters first apparently at Murray and later at Salt Lake City. A number of important considerations were reflected in the way these small reserves evolved. In the first place was the reality of the desert country in which the Forest lies. In this context, reserve making was a process of seeking out the areas of high elevation and withdrawing them from public entry. In addition, it was a process of responding to the patterns of land entry and ownership that had evolved



Illus. 4 Wasatch National Forest, 1915

in the six decades since the Mormons had arrived. As one forest assistant put it "alienation on this old settled country is so complete that it will be impossible to extend the boundaries" to many areas that by character ought to have been included.[14] As a consequence, the Wasatch Forest stood in contrast, even to the Cache, in the way pieces of the Forest were spread and in the way federal ownership extended only to bits of land scattered among a maze of alienated lands. Among other things, mining had contributed to this fragmented character of land claims and interests. In some localities, particularly up the Cottonwood Canyons, literally hundreds of mining claims, some of which overlapped each other in every direction, added to the complexity of boundary identification.

A second general observation is that on the Wasatch, as on the Cache, the 1930s were a period of extension. Depression, public sentiment and federal programs resulted in the extension of Forest boundaries and in the acquisition of considerable acerages as the need to manage resources became apparent.

The first hint of forest building on the Wasatch Front came in 1900 when tracts of land near Salt Lake City and Grantsville were withdrawn from public entry, evidently in anticipation of later establishment of reserves. In May of 1904 presidential proclamations established first the Grantsville Reserve with 68,960 acres and then the Salt Lake with 95,440 acres. In April of 1906 the Vernon Forest Reserve was created with bounds encompassing 54,240 acres and in August of the same year the Wasatch Reserve was established with 85,440 acres. In June of 1908 the Vernon and part of the Fillmore Reserve were combined to establish the Nebo National Forest and the Vernon name was discontinued. Almost immediately Supervisor Dan Pack of the Nebo returned a report unfavorable to the continuation of the Vernon under the administration of the Forest Service. After some discussion the Vernon Division was included in the Wasatch National Forest in July 1910. Meantime there was much administrative overlap between the Grantsville, the Salt Lake and the Wasatch reserves which culminated on July 2, 1908 when the entire Grantsville and Salt Lake Reserves were discontinued and their land added to what was by this time designated the Wasatch National Forest. Totalling about 304,000 acres these four units comprised the original core of the

southwestern portion of the Forest.[15]

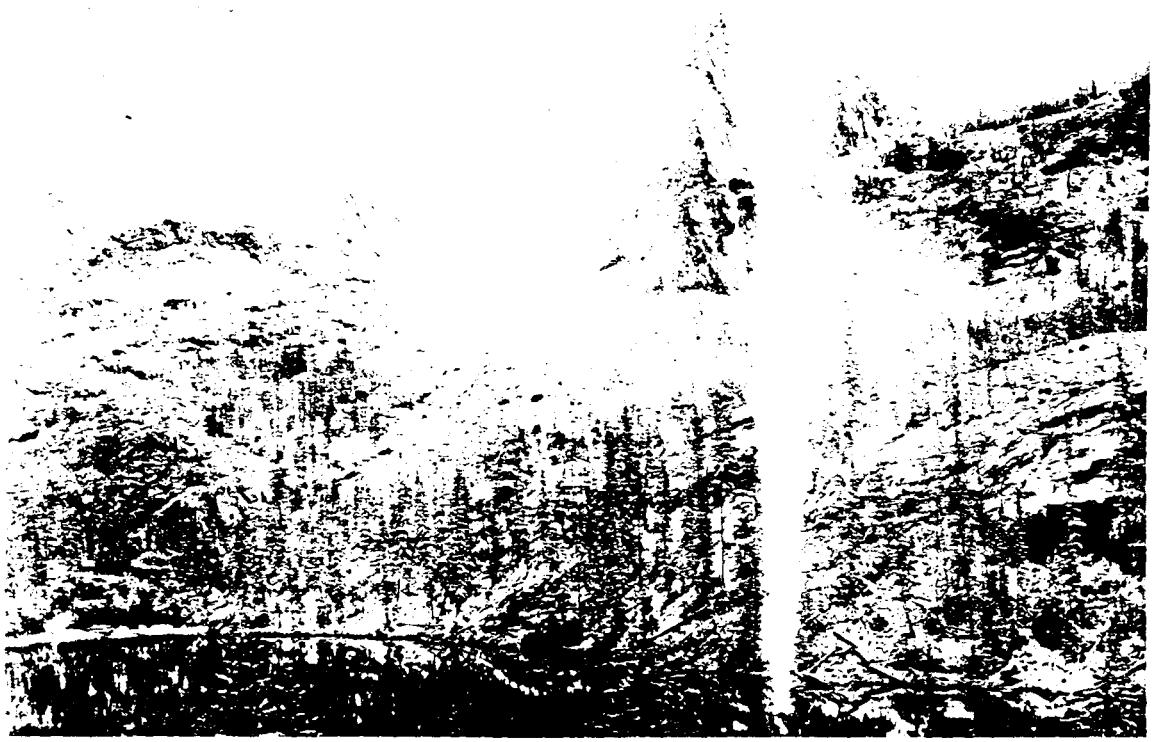
During this early period most people in Salt Lake and Tooele counties appear to have been favorably disposed to the forest reserve movement. As pointed out earlier, this was related in part to the need for domestic water in Salt Lake City and other communities. In the smaller cities and rural regions of both counties favorable sentiment grew also from the need to stablize irrigation sources. Although rural population had lagged behind city growth the number of farms had increased dramatically since 1890. Drouth from 1899 to 1902 combined with overgrazing and heavy use of timber to emphasize the growing shortage of irrigation water. To meet the problem, communities like Bountiful and Grantsville had, even before this early date, laid tile pipelines from springs and other mountain sources but farmers still found themselves to be shy of water, particularly in the later summer months.

The position of Salt Lake City and most of its residents was made clear in a letter of November 27, 1905 from the city engineer to E. H. Clark, "Forest Ranger" of the old Salt Lake Reserve:

> The Mayor has directed me to acknowledge receipt of your favor of November 20th, with reference to grazing on the Salt Lake Forest Reserve during the season of 1906, and to make a statement of the attitude of the city administration in this matter. Our city, as you are aware, has acquired the right to nearly half of the waters of Big Cottonwood Creek, and by July 15, 1906, the new conduit now in course of construction is to be completed after which time our proportion of the Big Cottonwood water will be brought in to the city . . . . We have also negotiated and are about to consummate a contract which will give us a portion of the waters of Mill Creek, which will also be brought into the city through the new conduit. You will see, therefore, that with the exception of the Little Cottonwood area, every watershed embraced by the Salt Lake Forest Reserve will be contributing to our city water supply. That this supply shall be pure is of the utmost importance, and to the extent that the city has jurisdiction over these watersheds, its authority will be exercised to the fullest extent to prevent any contamination. In the matter of the land within the Forest Reserve, beyond the jurisdiction of the city, we are depending upon the good offices of the Forest Service. We wish to urge, therefore, that during the season of 1906, no grazing be permitted on any of the lands within the Salt Lake Forest Reserve, exception only the Little Cottonwood watershed, which is not yet tributary to the city.[16]

In addition to such sentiments the wilderness movement so apparent elsewhere began to have an impact on Utah. Although Utah lacked prophets

Illus. 5 Mountain-Valley Relationship: City Creek-Salt Lake City



Illus. 6 Lake Blanche at Head of Big Cottonwood Canyon

of the wilderness ethic to call attention to spectacular scenery and herald its aesthetic and spiritual values who could compare to John Muir in California, there was something of an awakening to such values in the years prior to the establishment of the Salt Lake Reserve in 1904. Thomas Morin, Jack Hillers, Frederick Dellanbaugh and other imports who worked for John Wesley Powell and F. V. Hayden did much to publicize southern Utah's spectacular "standing up country" but it was people of a more local connection who advanced an aesthetic interest in northern Utah's mountains and thus had a bearing on the establishment of reserves there. Following the example of their collegues in California and elsewhere in the West professors at the University of Utah and Brigham Young University began to lead "natural history" expeditions that turned attention to the scientific and aesthetic potential of mountain country. Even more important were those that promoted the country for tourism. By 1890 Commercial Clubs began to spring up in the territory and by 1900 the Chamber of Commerce was well established. Together with the Union Pacific Railroad such groups extolled the scenic virtues of the Wasatch Mountains and the High Uintas.

Artists were the ready accomplices of such promoters. Among the foremost of these was H. L. A. Culmer who, in addition to celebrating southern Utah in his paintings, helped popularize the scenic wonders of the Wasatch Range.[17] Even more important in this context was Alfred Lambourne who did striking sketches and paintings of the Wasatch mountains. In 1891 and again in 1895 he issued collections that heralded the beauty of his homeland. The first undertook to redress what Lambourne considered to be the regrettable lack of awareness of Utah's scenery generally, in a series of pencil sketches accompanied by short romantic descriptions in Scenic Utah, which was published in New York. Included were portfolios on the Wasatch, on the Uintas, on Southern Utah, the Great Salt Lake and rustic scenes.[18] Four years later he turned his attention directly to the Wasatch Range, heralding its unique beauty in A Summer in the Wasatch with a deft brush and Thoreau like textual description.

Paralleling the growth of artistic interest in the Wasatch Mountains was the continuing development of interest in camping and picnicing.[19]

The public press, too, entered vigorously into the matter and one gets the distinct impression that the vocal portions of the public were overwhelmingly favorable to forest reserves. The usual pattern was for local interests to petition for the establishment of a reserve after which a forest examiner, usually Albert F. Potter or Robert R. V. Reynolds, would survey the area in question, write a report that would balance off the contending interests and give best promise of extending the jurisdiction of the Forest Service.[20] Reports would then recommend the establishment of a reserve or addition to one already established. Although a goodly number of names appear on some of the petitions, individuals and small groups of leaders had great impact. This was especially apparent on the Grantsville and the Vernon divisions. At Grantsville stockmen, farmers and the users of city water joined forces but it seems likely that William Spry, a native of the town, who was elected governor in 1908 was influential in the establishment of the reserve. There can be no question that he was a key figure in the development of its boundaries and its addition to the Wasatch Forest during his term as governor.

The Role of Local Interests in Early Boundaries

Men whose role in promoting the establishment of a reserve and then defending it was even more prominent were Alanzo Stookey, of Clover and Israel Bennion, Mormon bishop at Vernon. Members of early livestock families who had opened the West Desert country to Mormon utilization, their campaign for the reserves point up significant areas of common cause between conservation and the Mormon interest in stable communities. Bennion, Stookey and a few dozen other Mormon families eked out a livelihood at Vernon and Clover. At the turn of the century their survival in the country was threatened by drouth and sheep, some 400,000 of which wintered on the West Desert and trailed north to pastures in Wyoming and Idaho, passing through and around Clover and Vernon twice each year. Recognizing that in the long run sheep threatened their way of life, Bennion and Stookey promoted the establishment of the Tooele County reserves which by 1909 had become "little islands of refuge" in a sea of sheep.[21]

Not only had the settlers been united in petitioning that reserves be created but they maintained cordial relationships with their own political representatives as well as with all levels of the Forest Service from Gifford Pinchot to local rangers. According to Robert Reynolds, a forest assistant who soon became Forest Supervisor on the Wasatch, the Vernon-Clover group had "engineered the withdrawal through the aid of Governor Spry and Senator Smoot." In addition, Stookey had led a delegation to Ogden to congratulate Pinchot for his "efforts in behalf of the small ranch owners." Continuing, Reynolds reported that

> The local leaders of this sect [Mormon] are strongly favorable to the Service, and during a stop at the house of Israel Bennion, who is Bishop at Vernon, a most unusual action on the part of a Church officer was heard of. When Ranger Manwill was withdrawn from this region in May, Bishop Bennion gave his congregation a talk on the benefits of the Forest Service . . . . and urged every man to behave in the Ranger's absence precisely as they would have done had he been present all the time. The value of sentiment and backing of this nature cannot be over-estimated.[22]

Although Supervisor Dan Pack had recognized as early as 1908 that in the technical sense the Vernon Division was not forest area and had recommended that it be eliminated, all parties appear to have been well pleased with the situation in 1909 when an attempt was made to enlarge the Wasatch National Forest by adding land from the Onaqui Range that lay between the Grantsville and the Vernon Divisions. Proponents of this addition tried to meet the needs of sheepmen by leaving six-mile margins at either end of the addition, to allow maximum manuverability and access to feed and water as sheep trailed to and from winter pasture. As they had always done, Bennion and Stookey mustered the locals and in a great show of good will, Reynolds and they appeared to be well on the way to an enlargement of forest boundaries.

By 1910, however, things had changed. Pinchot had bitten off more than he could chew in a controversy with Secretary Ballinger of the Department of Interior, and President Taft showed signs of restructuring the conservation movement. As Henry S. Graves, who succeeded to the position of Forester when Pinchot was forced out expressed it, "under the agreement between the Secretary of Agriculture and the Secretary of the Interior we must hew to" a carefully defined line of what was

forested country, "regardless of public sentiment."[23] Obedient team member that he was, Robert R. V. Reynolds, who by this time was Supervisor on the Wasatch, did an about face. Claiming that the Vernon "has always been known as the most doubtful project in the District," he now called for its elimination. As he put it, "the retention of the Vernon is a very weak place in the defences of the Service and would be indefensible if the land were looked over by an unfriendly inspector."[24]

Almost immediately Bennion moved to the defense of the Reserve. Reynolds' recommendation was read in a public meeting where it "came like a prediction of earthquake, a declaration of war. Our people, sick of the turmoil of sheep, happy in the security of their Reserve," he wrote, "sold out their sheep; and turned their attention to improving their cattle and horses and their homes . . . . they thereby lost their Reserve privileges elsewhere. Now where are we?" Then he outlined the improvements that had revitalized springs and streams previously smothered under "tons upon tons of gravel and debris" before concluding "what Roosevelt and Pinchot wound, Taft unwinds. Call it error, call it foolish; but mark the outcome!"

Bennion seemed to see the dilemma as the outgrowth of "policies that may be broader than my field of vision" but others in his community saw only their own field of vision and in it sheepmen were the spoilers. In an eloquent appeal Per Emil Pehrson related that

> 400,000 sheep pass by this small Reserve and with a jelous [sic] eye cannot get on; how long will it last 400 thousand . . . ? It will not make a bed ground for them. Sheep men now have everything East and West of us, and now we believe they want this little corner and the earth and its fullness thereof . . . . our streams of water will grow smaller and our farms will be as dry land unproductive and of little worth."

In a final outburst of eloquence Pehrson appealed "please send a message that the damper may be turned and that this division may stand as solid as the rocks of Gibraltar and that the poor man may appreciate the hand of our good government." Bennion's final appeal had an element of prophetic threat, "We . . . are a unit for conservation of the Nation's resources. It is the people's demand; whoso fails to heed, will be ground to powder."[25]

The Role of a Senator

It seems likely that eloquent letters did little to save the Vernon Division. Nevertheless, it was not abolished nor was it taken from the Wasatch National Forest until much later. Specific information is lacking to explain the matter, but one is inclined to guess that good connections politically and careful efforts to cultivate good relations with the Forest Service paid off for the Vernon settlers. Although they made good cases for excluding the Vernon, neither Reynolds or the District IV officers (later Region IV) felt good about letting their old friends down. More important was the fact that a local man, William Spry was governor of Utah. Supporting the inclination to see political connections as important is the fact that Israel Bennion's brother, Hardin, was a member of the State Land Board. Finally, and the most important connection of all, was the fact that Reed Smoot, who had played an undeviating line of party regularity during both the Roosevelt and Taft administrations was chairman of the Section of Forests of the powerful and prestigious National Conservation Commission of which Overton Price, Associate Forester was secretary.

Insight into the role Smoot played in this and other situations may be derived from correspondence connected with a 1924 proposal to make certain additions to the Vernon Division under the Clarke-McNary Act which authorized Forest Service acquisition of land for purposes of fire protection, watershed management and timber production. After referring to the fact that in contrast to all other western states but Arizona and Nevada, forest additions could be made in Utah by presidential proclamation as well as by congressional enactment, a letter from Acting Forester E. A. Sherman in Washington, D.C. spelled out the following explanation and instructions:

> In Utah a special condition exists with reference to additions which amounts in substance to this office refraining from making additions that are objected to by the Senior Senator. Under this arrangement more small additions have been made in Utah than probably any other state in the Union during the past 15 years. We should soon reach the point where our Forest boundaries in that state should be considered permanently fixed.

After referring again to the Vernon addition Sherman's letter continued,

"if the local public interested in this addition can secure the support of the senior Senator and their Congressman, Mr. Colton, I would be willing to recommend that this addition be made by Presidential Proclamation."[26] Whereas, by the terms of a congressional enactment of 1907 most western states protected themselves from unwanted additions by making expansion of national forests contingent upon legislative action, Utah apparently achieved an even firmer control of the way its national forests evolved through the role played by Reed Smoot during the five terms he sat in the Senate.

Whatever the case, the Vernon Division remained part of the Wasatch Forest until 1973 when it was assigned to the Uinta National Forest.

Boundary Additions that Failed

As was the case in the 1909 effort to add the Onequi Range to the Wasatch Forest, many attempts to make additions to the Forest's bounds failed. The so-called Bountiful and the Oquirrh additions are two examples that had a varied and long history and may be used to illustrate a number of problems implicit in boundary revision over the years. As early as 1909 farmers and townspeople of "south Bountiful" and Woods Cross launched a drive to bar grazing from their watershed and bring substantial portions of the mountains east of Davis County under forest administration. Irrigation companies constructed tile conveyance systems from mountain springs and the city of Bountiful purchased several hundred acres of land crucial to the town's culinary needs. Now as sheep pushed over the divide from Weber Canyon and increasingly foraged on Bountiful's watershed, people declared themselves willing to buy additional land and to turn it over to the Forest Service. E. H. Clarke, supervisor of the Salt Lake Reserve, recognized the critical condition of the watersheds and urged immediate action to acquire whatever land was available. Interestingly, he coupled his request with a proposal to combine the Wasatch and the Salt Lake reserves thus hoping to make substantial administrative savings. As it turned out, the Wasatch and the Salt Lake reserves were brought together, but due to the large amount of alienated lands in the Bountiful watershed as well as the influence of the sheep interests the addition failed.[27] It was only in the 1920s and 1930s

when floods demanded that action be taken that key blocks of land were finally added.

Several efforts were also made to add the Oquirrh Mountains to the Wasatch National Forest. One of these was made in 1909. Little evidence now exists of what steps were taken on the part of private or public parties, but a proposal was made officialy by the Forest Service to include some parts of it. A decade later, residents of Cedar Fort in Utah County initiated another move to incorporate part of the Oquirrhs. This was a local move and called for the withdrawal of land only in the townships directly north and west of the town. The Cedar Fort petitioners were apparently led by cattlemen who were objecting to heavy invasion by transient sheepmen. Ranger W. W. Smith of the Pleasant Grove District made the analysis for the Forest Service and found that upwards of forty-five percent of the area was owned privately and by the state. Although a good number of homesteads and pre-emption entries had been made, mineral patents were more common, particularly in the neighborhood of Bingham, Lewiston, Ophir, and Stockton. Because of its local focus and the large amount of alienated land within its confines, neither Smith nor Supervisor Dana Parkinson endorsed the petition with any enthusiasm and after an effort or two to adjust the land actually to be included, the movement apparently died.[28]

After more or less constant maneuvering during the 1920s a major bid to have the Oquirrhs added in the late 1930s points up growing complexities in the process of boundary adjustments including the fact that the establishment of the Grazing Service (later the Bureau of Land Management) in the Department of Interior provided both an escape gap and an additional option. This movement coincided with the successful additions of large amounts of land in Davis, Box Elder and Cache counties for flood control purposes and reflected some of the same interests. In Tooele, as elsewhere in the area, the general mood was favorable and the success of the Forest Service in arresting erosion and floods on other mountains undoubtedly featured in the course the campaign took. Finally, there was no place in the entire Region where nature and time had dealt more harshly than on the Oquirrhs.

The prime mover in the conservation drive was the city of Tooele which carefully gathered its support and conducted a well planned

campaign. Basic to its appeal were some 9,000 people who lived in towns around the mountain's peripheries. Most of these depended upon the mountain for culinary and irrigating water. In addition, a great many depended upon Kennecott Copper and other industries which were in turn dependent upon the limited amount of water generated by the mountain. Initially, it was proposed that almost the entire range be turned over to the Forest. Of this, the state owned 12,744 acres or twenty-five percent, private interests 23,258 or thirty-four percent and 37,312 acres were public domain and under the Grazing Service's jurisdiction in the Department of Interior.

Well aware of the difficulties it faced, the city orchestrated its efforts carefully. The help of Senators William King and Elbert Thomas was enlisted. Towns and communities from around the entire circumference of the mountain were mobilized. Dozens of groups and organizations were lined up. Important among these was the Salt Lake City Chamber of Commerce whose Gus Backman persuasively talked of Salt Lake City's furture recreational needs and the contributions a revitalized mountain range could make. The basic document around which all of these elements rallied was a skillful brief prepared by Tooele's city attorney detailing past problems of misuse, current deterioration of a vital resource and future needs as well as presenting a roster of the formidable array that had come together to achieve this end. With what, in view of the existing structure of ownership and administration, can only be termed unblushing self confidence, Tooele asked that 106,000 acres be designated as watershed reserve and placed under the Forest Service. To signify its own earnestness and bait the trap it pointed to its considerable and not too successful attempt to meet need for culinary water and offered to donate some 2000 acres it owned on the Oquirrh watersheds.

But the elaborate preparations were not a matter of overkill. Indeed, one evidence of opposition showed up early in the campaign when the Lehi Cattle Users Association objected to transferring public lands on the southeast part of the range from the Grazing Service with whom they were well pleased. In addition, officials of the Forest Service proceeded cautiously. They acknowledged the need to take steps to bring the Oquirrhs under control but recognized the key position of the

Grazing Service and the Department of Interior. Finally it was the Department of Interior and its claims to the public lands involved that turned the case. At successive levels the Forest Service had endorsed the addition, but at each step had warned the Tooele forces that a necessary feature was the support of the Department of Interior. On May 16, 1939 Grazing Service officials took a firm position, refusing to "O.K. the addition of the west slope of the Oquirrh Mountian Range to the Wasatch on the grounds that the Division of Grazing could solve the problems in this area as well as the Forest Service."[29]

The North Slope: Interforest Boundaries on the Uinta Mountains

With this action and the successful addition of mountain areas in Davis and Box Elder counties the western and frontal divisions of the Wasatch Forest had assumed the approximate boundaries that would characterize them in the years to come. Meantime developments to the north and east had drastically rearranged boundaries of the Wasatch Forest in those areas. A number of major factors contributed to this porcess including administrative adjustments between the Uinta, the Ashley, and the Wasatch Forests, and the addition of new public lands, the establishment of fire-protection and erosion control areas and the acquisition of military reservations. In contrast to boundary development on the Wasatch Front, boundaries on the northeast were in large degree the product of interforest adjustments. In addition, forest additions in this portion of the Forest were more apt to be large and part of major forested regions rather than small isolated tracts. However, on the Uinta Range, as elsewhere in the Forest, conflicting claims existed, including railroad grants, military reservations, Indian reservations, state lands and various kinds of private ownership.

The different scale that pertained was apparent from the first in the old Uintah Forest Reserve and it successor the Uinta National Forest. Created in 1897 by presidential proclamation, it had first consisted of 482,000 acres. On July 14, 1905, 1,010,000 were added, largely from the Uintah Indian Reservation, and 429,848 additional acres were placed within its bounds the next year bringing its total size to 1,921,857 acres.[30] As use patterns began to emerge and the Forest Service worked

its way toward an administrative organization that hinged on the Regional Office in Ogden and supervisor's offices at relatively easy access to users, 952,084 acres were whittled off the Uinta in 1908 to create the Ashley National Forest which, with headquarters in Vernal, catered to users in the Uinta Basin. Short of a major readjustment of interforest boundaries the Wasatch and the Uinta Forests traded functions during the next few years in an effort to accomodate graziers, many of whom lived in Heber and Provo and timber men who were apt to be found in Kamas or Evanston. Due to the way transportation systems and use patterns were evolving, this proved to be administratively awkward and inconvenient to users so 355,405 acres were eliminated from the Uinta in 1915 and transferred to the Wasatch thus nearly doubling its total acerage at one stroke.[31]

Beginning with this major concession to the Wasatch National Forest, interforest boundary adjustments continued to characterize the three Forests which had jurisdiciton over the Uinta Mountains. In general, these adjustments undertook to respond to the needs of livestock men, timber users and later to recreationists as well. In the long run, they have tended to favor the Wasatch Forest, if growth of forest size and administrative authority are taken as the gauges. Although, as we shall see, additions, including that of the Ft. Bridger Military Reservation, have enlarged the total number of acres as have boundary extensions to areas not actually under Forest Service title, interforest boundary adjustments have probably contributed most to the Wasatch's growth. In recent years the three ranger districts on the Uinta Mountains account for at least 675,000 acres or nearly half of the Wasatch-Cache acreage.

Factors considered in making up these interforest boundaries included numerous natural, economic, political and administrative influences as well as some that were personal. We have already considered the role of Reed Smoot and other political figures as well as public sentiment. Here it may be well to refer to a number of considerations that received attention in making the original transfer from the Uinta Forest to the Wasatch Forest. In a memorandum weighing the pros and cons, J. F. Bruins, Supervisor of the Wasatch, repeatedly argued that prior committment to keep graziers and timber men in one district or another needed to be

honored. Not surprisingly, costs, transportation and geography were also seen as factors. In a rationale that almost smacks of geopolitics, Bruins wrote:

> The main highway through this country, being built by the State and Forest Service in cooperation, crosses the District in question and leads directly to Kamas, thence to Park City and Salt Lake, Kamas being the natural headquarters of the northern part of the old Uinta Forest . . . . The commercial use of the timber . . . is hauled to or through Kamas, part being used there and the remainder at Park City, and the Forest users at Woodland, at the lower boundary of the District, are entirely tributary to Kamas and have comparatively little connection with the settlements down the Provo . . . . As to fire protection, since the main road leads from there, Kamas is the natural outfitting point for supplies and men and it is most accessible to the ranger there. There is no natural boundary between the District and the country to the north, except that the Provo River forms a boundary for grazing purposes.

It was, continued Bruins, "a well settled principle that any unit of Forest administration should be an area of convenient size accessible to a given line of transportation from one headquarters . . . . fully 90% of the people . . . use the road . . . which leads to Kamas . . . and thence to Salt Lake." Before resting his case, Bruins pointed out that stockgrowers who ran elsewhere on the Uinta Range congregated in Heber and in the Uinta Basin and, on the one hand, looked to Provo as their natural place of business and, on the other, to Vernal.[32]

Within a surprisingly small number of years, recreation, together with population and transportation became a consideration in the way interforest boundaries evolved. An example of this was the Granddaddy Lakes district which was added by proclamation to the Wasatch National Forest from the Uinta, effective July 11, 1929. Making clear the way Salt Lake City's population worked to the advantage of the Wasatch boundaries and detracted from the Uinta is the following from Regional Forester R. H. Rutledge:

> The series of lakes on the Wasatch and the Uinta constitute a unit from a recreational standpoint and to secure the most effective administration should be under the jurisdiction of one Supervisor. The only approach to these areas by road which now extends over the divide to Mirror Lake is through the Wasatch and the people who are most interested in and visit the area are located in or near Salt Lake City. Our plan of develop-

> ment contemplates treating the whole as one unity and to have jurisdiction in two different Supervisors is going to unnecessarily complicate the situation.[33]

Pointing up the fact that no change is sacrosanct and perhaps that roads and communications have made it less imperative that population and administrative centers coincide the lake country of the High Uintas is currently evenly divided between the Wasatch and the Ashley Forests. Even the system of lakes of which Granddaddy Lake is a part was later transferred to the Ashley where it remains.

Interforest boundary changes sometimes involved three way trades between the Wasatch and the Ashley and the Uinta Forests. A case which demonstrates this nicely, focused upon the American Fork-Pleasant Grove Ranger District and Timpanogos Cave within it. In the early years it was well known locally that a cave, discovered in the 1880s in American Fork Canyon, had been stripped of its dripstone and ruined as a natural history site. Then about 1914, a boy, James W. Gough, discovered Timpanogos Cave which his father soon filed on as a mining claim and within a few years undertook to exploit commercially. During these years mineral areas in the Cottonwood canyons of the Wasatch and elsewhere throughout the West were being abused by developers of recreational sites under mineral claim filing laws. Well aware of this, forest officials were alerted by rumors of the find almost at once, but evidently failed to actually locate it until 1921 when Deputy Supervisor Walter G. Mann and Ranger Vivian N. West followed a group into it and posted it as a public service site. It was learned that the claimant "was asking $10,000 for the cave" which led the Forest to contest the claim which was ultimately declared invalid. In conjunction with the American Fork Commerical Club and other local groups, the Forest made significant strides in developing trails and lighting facilities between 1921 and 1923. With its fame spreading nationally, efforts were made to bring the cave under the provisions of the Antiquity Act of 1906 and in 1924 an area one mile square was designated as the Timpanogos Cave National Monument. The Wasatch National Forest continued to have jurisdiction over the Monument until 1934, at which time it was formally transferred to the National Park Service over the protests of A. G. Nord, then supervisor of the Wasatch.[34] During the years it was in charge,

the Forest Service had asserted its authority over a natural history site within its boundary and had challenged a questionable use of mineral claim laws as well as worked effectively with local groups and shared jurisdiction with another federal agency.[35]

With the Timpanogos Cave National Monument within its bounds, the American Fork-Pleasant Grove Ranger District continued to be administered as part of the Wasatch Forest until the mid 1950s when a three way trade was negotiated that made substantial changes in forest boundaries throughout the Uinta and Wasatch mountains and contributed to administrative efficiency. Initiative for this change evidently came from Supervisor James Jacobs of the Uinta for whom administration of his wishbone-shaped unit was something of a problem. Located along the southwest slope of the Uinta Mountains the Uinta Forest's Duchesne District was a hundred miles and more from headquarters in Provo and involved a distinct group of users. Determined to have the American Fork-Pleasant Grove District which lay within "eyesight out the back window of my office," Jacobs initiated discussion with supervisors F. C. Koziol of the Wasatch and William Hurst of the Ashley. Not surprisingly Koziol was not anxious to make the transfer but after considerable negotiation the Wasatch boundary was modified to include the Mountain View District which lay next to its Evanston District and involved many of the same functions. On the part of the Ashley, Hurst was willing to let this "other-side-of-the-mountain" district go because of its inconvenient location and took the Duchesne District in its place, thus consolidating the Ashley along the south slope of the Uinta Range. With a sense of satisfaction that he recalls a quarter of a century later, Jacobs had lopped off a remote branch of his forest and acquired a unit that fit well with the rest of the Uinta Forest and could be administered easily.[36]

As nice a package as it was from the standpoint of the Uinta, it further extended the farflung limits of the Wasatch and raised one of the little ironies that abound in history. Through a process of addition, elimination and transfer, the Wasatch Forest had come to encompass most of the original Uintah Forest Reserve. The Uinta Forest still bore the name of Utah's first national forest, but through what may be called a process of administrative creep, it had been moved first from the North Slope and west end, then from various portions of the south slope and now touches only one corner of the Uinta Range from which its name comes.

The give and take between forest supervisors over questions of interforest boundaries sometimes lacked the spirit of accommodation that characterized this exchange. One such competitive situation grew between the Ashley and the Wasatch National Forests with reference to the Blacksfork and the Fort Bridger additions. Interest in adding the old Fort Bridger Military Reserve and a large slice of land to the west of it which had begun as early as 1914, took an upturn during the 1920s as local users and forest administrators alike began to see benefits in bringing the reserve and other forest lands into a more closely controlled management. Much of the north slope of the Uinta Mountains had been heavily cutover for ties, mining timbers and charcoal for the Salt Lake City smelters during the 1870s and 1880s. By the turn of the century, however, much of this activity had subsided, and as the country developed during World War I, a second wave of development was initiated in which graziers and timber men as well as the railroad company were involved. Now, as new users saw that their interests would be served by the Forest Service, petitions were made and power points touched.

In a remarkable effort to adjust boundaries to the needs of individual sheepmen and timber companies, the various levels of the Forest Service took the questions into advisement. After a great deal of give and take, during which the proposed Fort Bridger addition was reduced to an area in the immediate proximity of the old military reserve and the complex relationships of land ownership in the Blacksfork addition were worked out, the additions were made in the early 1930s. But as finally adjusted, the additions were to the Ashley Forest rather than to both the Ashley and the Wasatch as had been contemplated at various times during the long period of negotiation.[37]

The person of A. G. Nord whose presence as supervisor over the Ashley, the Wasatch and the Cache coincided with times of expansion for each, may explain in part why the Fort Bridger addition in particular was made to the Ashley. In any event, Nord was transferred to the Wasatch shortly before the old Military Reserve was incorporated into the Ashley. A new period of negotiations ensued, this time relating to boundaries between the Wasatch and the Ashley. Nord's own correspondence shows only skillful manuevering to set up a situation favorable to the Wasatch. James O. Stewart, who succeeded him on the Ashley was less

suave about the matter, although he, too, demonstrated a fair amount of restraint. After the issue had run on during most of 1931, the Regional Office urged immediate action early in 1932 to which Stewart replied, "Am glad you are taking it upon yourself to settle this inter-forest boundary. It is apparent that Mr. Nord and I couldn't settle it. Both too selfish, I suppose."[38] The outcome of this maneuvering is difficult to ascertain but one is inclined to guess that it was not altogether satisfactory to Stewart.

Accelerated Boundary Changes in the 1930s

While the matter of the Forest Service's relations with other governmental agencies is still in mind, reference should be made to the period of debate that preceded the passage of the Taylor Grazing Act in 1934. One of the major evidences of a dramatic shift in public land management was President Herbert Hoover's announcement within a few weeks of the great crash of 1929 that he would appoint a Public Domain Commission consisting of one member from each of the eleven public land states.[39] The Commission's duty, as Hoover laid it out, was to consider the disposition of public lands including the advisability of turning them over to the states. Interestingly, in our own times of inflated land values and incipient "Sagebrush Rebellions" (1979-1980), almost no westerners were really interested in accepting them. Among those who spoke out against the transfer was Utah's Governor George H. Dern to whom Hoover's offer of exploited and poorly managed land savored of a "squeezed Lemon."[40] Another who had his say was Will Rogers, whose fame was at its height. The offer of land without oil and mineral rights struck Rogers as being like offering to feed a hungry man but holding back the food. "You give him a plate and knife and fork, and you put him in a position to eat in case something shows up . . . . Nobody knows," concluded Rogers, "why Mr. Hoover got in it for the States and wanted to sick the land on them. If the Federal Government cant keep it up what could some poor State like Nevada do with it?"[41]

With the worn out public domain a drug on the market the idea got nowhere in the face of the Depression's mounting crisis. However, together with the threat of a reinvigorated Department of Interior

program to manage the vacant public lands which loomed behind the land use debates of the era, the Public Lands Commission did have an impact upon Forest Service policy. In anticipation that the public lands might soon be turned over to the states, Hoover proposed that the "forest reserves could be rounded out from" the remaining unreserved lands prior to the transfer. Responding quickly to this lead, Chief Forester R. Y. Stuart sent a directive to all forest regions on October 1, 1929 laying out a plan for immediate implementation of the president's proposal. He also issued "a supplemental series of boundary report" in event the findings of the Commission warranted even greater expansions of the national forests.[42] Subsequent instructions from Stuart called for "foresighted" boundary programs which would "anticipate future trends and developments" and made it clear that noncontiguous lands should be considered and that private ownership "of an otherwise desirable addition" should not preclude its consideration.[43] Finally, Stuart charged foresters to be aggressive in their proposals so that exchanges with private parties could later flesh out key forest areas. Thus directed, and with the unrest occasioned by the debate over the public lands to prompt them, foresters, including those on the Wasatch and Cache National Forests conducted quick studies and submitted numerous requests for additions.

In the Wasatch Forest the boundary survey took the form to reopening many areas earlier rejected and led to renewed efforts to complete additions then long in process, such as the Fort Bridger and the Blacksfork additions. Interests were also revived in annexing the Oquirrh, the Onaqui, the Summit County and the Salt Lake Valley additions. These surveys did much to stimulate the conditions under which the major additions of the 1930s were made. In the first place, foresters were awakened to the possibilities of aggressive boundaries programs. In the second place, little premium was placed on land generally during these years. Hoover was anxious to wish it off to the states who were in turn reluctant to accept it. In addition, thousands of acres of private land reverted to the counties because property owners either could not or would not pay taxes. It was in such a climate that the establishment of the Grazing Service was possible and it was in such a climate that a number of major additions were made to the Wasatch and Cache Forests.

The Summit County Addition

Several additions of the 1930s have been referred to briefly elsewhere in this chapter and additions near Farmington, Willard and Wellsville are considered in another chapter. Here it may be well to examine in some detail the Summit County addition of the early 1930s. One of the additions proposed in response to the Public Land Commission's appointment was the Summit County addition, consisting of 106,000 acres lying between the north boundary of the Wasatch Forest and the Wyoming border. Extending across a vital area where the headwaters of the Weber, the Bear and the Green rivers rise, the proposed addition had long been considered for possible inclusion in the Forest. Indeed, in 1906 when much of the area was still in the public domain, efforts to incorporate it into a reserve had been frustrated by local opposition. But in 1932, as Acting Secretary of Agriculture, C. F. Marvin noted with a touch of bitterness in a letter to Senator Reed Smoot, things had changed. Now, when only some 6000 acres of public lands remained, all parties were strong for the Forest Service to step in.[44] Among the active proponents of the Forest Service taking over were the Summit County Commissioners, local chambers of commerce and hunting clubs, the State Land Board, the Bureau of Reclamation, various private owners and the Wasatch Forest itself.

With Supervisor A. G. Nord doing what he did best, a formidable case was made in support of the addition late in 1931 and in 1932. Basic to the argument Nord presented, was the fact that this unprotected land was not only subject to a variety of afflications itself but was an avenue through which troubles spread to the Wasatch Forest and other resource control jurisdictions. In 1931, for example, six forest fires had swept through the proposed addition's 106,000 acres burning 3000 acres before being checked when the Forest Service stepped in to save threatened forest timber. In neighboring Uinta County of Wyoming a fire that threatened the Utah portion of the Wasatch in a similar fashion had burned an additional 2400 acres, making a total of 5400 acres, or 7 fires that averaged 770 acres each before being controlled. By contrast, Nord pointed out with a deft touch, the 850,000 protected acres of the Wasatch National Forest had only 86 fires which had been controlled with

a loss of only 520 acres or an average loss of 6 acres.[45] As if fires weren't enough, the relentless march of the pine beetle through this no-man's land, frustrated the Forest's efforts at eradication during 1931 and 1932 when some 5000 brood trees were burned on the proposed addition in hopes of establishing an effective quarantine.

By a similar token, floods originating near the headwaters of northern Utah's three major streams in this unprotected area played widespread havoc. Evanston and other towns were said to be threatened. Irrigation prospects for 100,000 acres on the Bear River, 42,000 on Blacksfork of the Green, and more than 20,000 on Weber River were adversely affected by accelerated runoffs from burned over and heavily grazed watersheds. In addition, Echo Reservoir, newly completed under the Weber Basin Reclamation Project, showed signs of immediate damage from silting as sediment laden water from Chalk Creek and other affluents of Weber River flushed off from watersheds that had been particularly hard hit.[47] As Nord pointed out:

> Forest protection bears a direct relationship to the conservation of the water supplies. In this case the municipality of Evanston, the Echo Reservoir, as well as several large farming settlements are involved. In fact, it is a condition at present which gives the municipality of Evanston no security for the protection of this portion of its waterhsed, since the lands are in another state and in private ownership. Likewise there is no form of control or regulation over any portion of the Chalk Creek drainage representing 30 percent of the watershed above the Echo reservoir now controlled by the Weber Valley Water Users Association.[48]

The problem of overlapping private and public jurisdictions was serious but for the moment, at least, appeared to support the case Nord made. Private land holders in the area included the Union Pacific Railroad, the Standard Timber Company, and stockmen Charles Blake, Thomas Painter, the Hatch Brothers and the Stahley Sheep Company who together owned more than 52,000 acres. Tax delinquent lands passing into county ownership amounted to a minimum of 13,000 acres and possibly as much as 26,000 acres depending upon the outcome of last ditch efforts to avert loss of delinquent lands by sheepmen, including the Mackay brothers of Salt Lake City.[49] State lands amounted to only 960 acres, but it was anticipated that one J. F. Livingston would default on a purchase of some 3840 acres and the State Land Board was anxious to work out some

plan of cooperative management by the Forest Service.

Because only 6000 acres of public land were involved, the Washington office raised "serious question as to the propriety" of the proposal. "doubt will exist" continued the declaimer, with scepticism that some may argue time has warranted, "as to the logic or justification of the public obligation which would inevitably result."[50]

The Regional Office, however, fell in with Nord and helped put together a proposal that finally resulted in the so called Summit County addition on January 12, 1933. Among the advantages that all the interested parties hoped to gain was the consolidation of their operations and a selling point frequently stressed by Nord was the prospect of exchanges allowing all parties to draw more efficient operating units together. Although private users had repeatedly stated their desire to make exchanges, time proved they were both unwilling to exchange or to sell necessary amounts of land to the government. As a consequence, a large block of alienated land remained within forest bounds until in 1957 Ranger L. J. Colton of the Kamas District called for the exclusion of a block of more than 42,000 acres. Its boundaries were, as he pointed out, illogical administratively and the "possibility of future acquisition" was very remote. Forest Supervisor F. C. Koziol endorsed the proposal but it apparently failed at the Regional Office level and the territory is still within forest boundaries.[51]

Rationalizing Forest Boundaries: Purchase and Exchange

Whatever the role of exchanges on the Summit County addition there can be no question that purchases and exchanges have been important in rounding out the Wasatch-Cache's boundaries. Purchases have been carried out with funds made available from a variety of sources including such special authorizations as the Davis County Land Purchase Act of August 26, 1935.[52] Purchase procedure is well worked out and has been much used. The piece of land desired is designated, appraisals acquired including evidence of recent sale price on similar land in the locality and hopefully the transaction closed. While exchanges have not always measured up to the expectation of foresters anxious to round out their operations, they have sometimes contributed to significant changes

in boundaries. In the interest of time reference may here be made to a single land for land exchange between the Cache National Forest and the Deseret Livestock Company in 1964.

Under authorization of "An Act to Consolidate National Forest Lands of 1922" 5792 acres were offered to the Forest in a string of seven sections running south from near the southwest corner of the Monte Cristo Township. Selected in exchange by the company were 5399 acres in at least thirty-three widely scattered parcels, many of which were as small as forty acres and none of which amounted to more than three-quarters of a section. After describing both the offered and the selected land, Forest personnel and Deseret Livestock Company representatives established respective valuations of $14.75 per acre and $15.30 and the exchange was consummated at a cash advantage to the Forest of $2815. Additional advantages to the Forest Service included improved control of grazing; improved protection of an important Ogden City watershed; reduction of fire responsibility in an area of some 80,000 acres of which the Forest previously had title to only seven percent; and the alleviation of an acute access problem to the scattered bits of land traded. Finally the Deseret Livestock Company exchange allowed the Cache Forest to begin building a block of land around the Causey Creek Reservoir that was then under construction.[53]

One thing, however, did not change. Function and jurisdiction had been altered, but the exterior boundary of the Forest had not. Now entirely under private ownership, 80,000 acres remain within the boundaries, a large, and to the casual observer, an anomalous extension which, like the Summit County addition, taxes the understanding of one who take time to observe it. When asked how such areas relate to the present Forest, old and practiced hands talk of protection and management, of special use permits and of cooperative agreements, but in effect they answer, "they are appendages of the past." At one time or another lines were drawn large with either the hope of filling in the ownership patterns or with an eye to what some early surveyor or examiner thought "boundaries ought to be because of the character of terrain and plant growth." Or perhaps, as Owen DeSpain, former ranger of the Logan District explained, today's boundaries are in some part the product of the crudeness of

early survey methods. He had, he recalled, "heard old timers tell of counting the number of steps their horse took per mile and then surveying boundaries horseback."[54]

Internal Administrative Boundaries

As we have proceeded, it has been apparent that not only has there been almost constant shifting in the external boundaries of the Forest, but that internal boundaries have also been subject to continuing definition. As uses have changed and the techniques and technology of management have advanced, internal subdivisions have proliferated into an untraceable but vital aspect of the Forest's character. Fundamental to this process are the ranger districts. Like the exterior boundaries, these have responded to administrative functions and to public need as well as to natural forces. Surveys have helped define the character and functions of various areas and have thrown light upon the administrative problems inherent in the Forest and have led to refinements in ranger districts. To begin with, districts often conformed to the original scattered reserves and responded to the people living adjacent to the district by utilizing men with local connections as rangers. As time has passed the tendency has been for ranger districts to be enlarged until, in recent years, the combined Wasatch-Cache National Forest consists of only six ranger districts. Several of these encompass more than one of the original reserves and the Salt Lake Ranger District bounds now encompass what remains of the original Salt Lake and Wasatch reserves as well as the Grantsville Division.

Within the confines of the ranger districts, whether the large new districts or the smaller ones of earlier times, numerous other boundaries have been superimposed upon each other. Some are natural boundaries, others are artificial; all relate to the doings of administration. In one way and another, mining claims, grazing allotments, cutting circles, recreational areas, fire protection districts and watersheds all have their boundaries. Not only are these superimposed upon each other in space, but they have dimensions of time as well and vary as use and management require.

The Wasatch-Cache National Forest, 1973

Administrative needs at the national level have also had their impact. We have observed, for example, changes of policy during the presidential administrations of William Howard Taft and of Herbert Hoover. Larger considerations also had important repercussions when President Richard Nixon's directive to administer geographic areas according to the "Standard Regional Boundary Concept" led to the consolidation of 1973. In accordance with the nation wide movement thus initiated, the Cache National Forest was divided along the Utah-Idaho border and its two parts merged with the Wasatch and the Caribou National Forests. At the same time, the Vernon Division of the Wasatch was transferred to the Uinta National Forest. Aside from the obvious transfers of land, there were no major restructurings of boundaries at that time. In spite of language suggesting that exterior boundaries would be redrawn at a later time, no action has been taken to achieve this in any significant way at this date (1980).

The process of consolidation was carefully and quietly orchestrated, reflecting a degree of administrative sophistication unfound in earlier changes. Such questions as costs, travel and services to users were carefully analyzed with the results pointing in each case to apparent advantages for consolidation. After considering boundary changes over a period of eight decades, one is impressed that, far more than in earlier times, this was an administrative change that reflected broader national needs including the needs and interests of a bureaucracy more than it did the needs of local constituents. Attention was paid more to internal factors generally than to how users and the public would respond although, certainly, these were not ignored. However, the direct approach to problems was often through what the impact would be on the Forest Service as in the case of the loss of payroll Logan would sustain when the thirty employees of the Supervisor's Office were transferred. One has the impression that far from being an outgrowth of any local groundswell, this change of boundaries was a governmental decision and that whatever the president's motives in issuing the directives from which grew the change, it was accepted without enthusiasm by most of the public. Users, too, appear to have sensed and regretted a loss of local influence.

For some of the latter class the change meant additional travel and less contact with the actual seat of administration. Even so, the consolidated Forest fell short of the minimum size proposed by the new guidelines. Advantages administratively included reduced costs at the Supervisor's Office and proportionately more money for ranger districts. All in all, consolidation perpetuated trends of growth and bureaucratic routine.[55]

Summary

At this point it would be well to ask what broad trends and insights have become apparent in the foregoing pages. Among other things, attention has been called to an almost constant tendency to evolve into a larger unit. Originally forest units were small, isolated tracts designated as reserves because of physical features and the interests of very local groups. These units were pulled together into larger units which have in turn been drawn together in a still larger unit. Where isolation kept competing interests apart in the early years, administrative and scientific principles, interest group balancing and public relations have been utilized in more recent times. The spread of the Wasatch-Cache Forest's geographic boundaries to include the urban communities of the Wasatch Front and the ranching societies of the North Slope, points up that social complexity, too, has been a continuing and growing factor.

Over the years natural forces, local conditions of land ownership, political mood and personalities have been important in the way boundaries have taken form. With some 7.5 million acres of national forest, Utah is one of the smaller national forest states in the West. This reflects the character of the land to some degree. It reflects, too, the relatively early initiation of settlement, railroad land grants and other state and private ownership developments. Timing, too, has been important in the evolution of boundaries. This is apparent on the Wasatch-Cache as it is on the other national forests in the state. A half decade, from 1903 to 1908 may be said to have been the formative years. A second major growth period occurred during the Depression years.

Personalities, too, have had an impact on the way the Forest boundaries have taken form. Early figures of significance in this

respect were Albert Potter and Robert R. V. Reynolds of the Washington Office who had close contact with many of the interest groups backing forest creation and wrote many of the reports on which action to establish forests was taken. In terms of supervisors on either division of the Forest one is inclined to see A. G. Nord as one with a special sense for extending boundaries. It is true, his tour of duty on each of the two forests was in the 1930s when conditions generally favored boundary extension. But he rose to the opportunity showing an aggressive flare for the procedures by which land was acquired during those years. Having acknowledged Nord's importance, however, it is likely that Reed Smoot, Utah's long time senator was the most important figure in the way Utah's forests, including the Wasatch and the Cache, took form. In the main his relationship with the Forest Service appears to have been remarkably ameniable but in a power structure that was otherwise rigged to favor Washington, he gave local influences a most effective voice. Smoot and Nord make clear that people had an impact on the character forest boundaries took. With questions of administration raised by boundary considerations, we should now turn our attention towards a few considerations about administration and personnel.

CHAPTER III

NOTES

[1]Acreage figures vary. The figures used here were taken from various sources. Summaries prepared in connection with the 1973 consolidation of the Wasatch-Cache National Forest indicate that the portions of the two Forests that were merged then amounted to 1,308,216 acres. See National Forest Consolidation, December 1, 1972, LP-Boundaries, Logan Ranger District Historical Files.

[2]Establishment and Modification of National Forest Boundaries: A Chronological Record 1891-1964 (Washington, D.C.: 1964), hereafter referred to as National Forest Boundaries.

[3]For a thorough treatment on grazing in Utah see Clair Anderson, ed., "History of Grazing," WPA Writer's Project MSS, Utah State University Library, n.d. For summary treatment see Walter P. Cottam, Our Renewable Wild Lands--A Challenge (Salt Lake City: 1961) also Charles S. Peterson, Look to the Mountains: Southeastern Utah and the LaSal National Forest, (Provo: 1975) pp. 110-116 and "Small Holding Land Patterns in Utah and the Problems of Forest Watershed Management," Forest History 17 (July 1973):4-14.

[4]Some recent studies have emphasized western opposition to conservation. One such is G. Michael McCarthy, Hour of Trial: The Conservation Conflict and the West 1891-1907 (Norman: 1977) who assumes that the conflict that characterized early Colorado was common to the entire West, including Utah. A brief, but more balanced and accurate statement of the Utah experience is found in Elmo Richardson, The Politics of Conservation: Crusades and Controversies 1897-1913 (Berkeley: 1962).

[5]Charles S. Peterson and John Lamborn, "Agriculture in Salt Lake County 1890-1915," prepared for the Henry Wheeler Living Historical Farm (1980), pp. 53-58.

[6]For an excellent treatment of Smoot's conservation related activities see Thomas Alexander, "Senator Reed Smoot and Western Land Policy, 1905-1920," Arizona and the West, 13 (1971); see Richardson, The Politics of Conservation, for the role of Utah's early governors.

[7]See Heber M. Wells, Annual Message, 10 January 1899, pp. 21-32. Here it may be well to note that numerous changes in spelling of forest names, including Uinta, have taken place over the years.

[8]See Diary of Albert F. Potter's Wasatch Survey, July 1 to November 22, 1902, Wasatch-Cache National Forest Historical Files. See also Charles S. Peterson, "Albert F. Potter's Wasatch Survey, 1902: A Beginnin for Public Management of Natural Resources in Utah," Utah Historical Quarterly, 39 (1971):238-253.

[9]National Forest Boundaries; and Untitled Boundaries Folder, Logan District Historical Files.

[10]Smith Riley, "The Proposed Malade Reserve, Idaho-Utah, October, 1904, in Untitled Boundaries Folder, Logan District Historical Files.

[11]For this information I have depended upon National Forest Boundaries; Untitled Boundaries Folder; and "Report Prepared for J. Cecil Alter by the Regional Forest Office, December 1930, L-Boundaries, Public Domain Commission, Wasatch, 1929-1930, Denver Records Center.

[12]See Report on "Proposed Addition to the Cache National Forest," Summarized from Reports of R. V. R. Reynolds, Forest Assistant, 1908 and Wilbur Winter, Forest Assistant, 1909, Logan District Historical Files.

[13]Unititled Boundaries Folder.

[14]Robert R. V. Reynolds, "Proposed Additions and Eliminations: Wasatch National Forest, Grantsville and Vernon Divisions, June 14-28, 1909," L-Boundaries, Wasatch, 1909 and Prior, Denver Records Center, hereafter abbreviated DRC.

[15]Acreage date from "Report Prepared for J. Cecil Alter by the Regional Forest Office December 1930."

[16]L-Boundaries, Wasatch 1909 and Prior.

[17]Charlie R. Steen, "The Natural Bridges of White Canyon: A Diary of H. L. A. Culmer, 1905," Utah Historical Quarterly 40 (1972):55-85.

[18]Alfred Lambourne, Senic Utah (New York: 1891); Lambourne, A Summer in the Wasatch (Boston: 1895).

[19]See A. F. Potter, "Report on the Proposed Salt Lake Forest Reserve, Utah, 1904," L-Boundaries, Wasatch, 1909 and Prior, DRC.

[20]Ibid.

[21]Reynolds, "Proposed Additions and Eliminations: Wasatch National Forest."

[22]Reynolds, "A Favorable Report on the Proposed Onaqui Addition to the Wasatch National Forest, June 13-27, 1909," L-Boundaries, Wasatch 1909 and Prior, DRC.

[23]Henry S. Graves to the District Forester, March 25, 1910, L-Boundaries, Wasatch, 1910 to 1919, DRC.

[24]Reynolds' letter to the District Forester February 21, 1910, L-Boundaries, Wasatch, 1910 to 1919, DRC.

[25]See letters of Israel Bennion to Clyde Leavitt, March 1, 1910 and to R. V. R. Reynolds, February 28, 1910 and Per Emil Pehrson to Reynolds March 1, 1910, L-Boundaries, Wasatch, 1910 to 1919, DRC.

[26]See E. A. Sherman to R. H. Rutledge, August 25, 1924 and August 26, 1924; also see R. E. Guy to Dana Parkinson, September 23, 1924, L-Boundaries, Wasatch 1925, 1924, 1926, DRC. Underlining by the authors.

[27]E. H. Clarke, "Report on Proposed Addition to Salt Lake National Forest, June 10, 1907," L-Boundaries, Wasatch, 1909 and Prior.

[28]L-Boundaries, Wasatch, 1910 to 1919.

[29]See "Proposed Tooele Addition," LP-Boundaries, Wasatch, 1928-1939, DRC.

[30]National Forest Boundaries.

[31]See "Report Prepared for J. Cecil Alter." Also J. F. Bruins, Memorandum: Location of Wasatch-Uinta Interforest Boundary, December 10, 1914, L-Boundaries, Wasatch, 1910 to 1919.

[32]J. F. Bruins, Memorandum.

[33]R. H. Rutledge, May 22, 1929 to the Forester, L-Boundaries, Wasatch, 1927-1929, DRC. The Mirror Lake Road was completed as far as the Lake in 1927 in partial response to the demands of fishermen who were becoming a formidable force in the state.

[34]Robert W. Ayres, "Racketerring the Outdoors: How the American Public is being Robbed of its Free Playgrounds by the Fraudulent Use of the Mining Laws," and "The History of Timpanogos Cave National Monument, American Fork Canyon, Utah," multilith copy (n.d. and n.p.) in L-Boundaries, Salt Lake Watershed, Wasatch, 1933, DRC; and also L-Boundaries, Transfer from Ashley to Wasatch, Wasatch, 1933, DRC. In his article Robert W. Ayres explains in detail how the mining claim laws were perverted and cites the Timpanogos case as follows:

"The Timpanogos Cave in Utah was discovered in 1915. There was no suggestion of valuable minerals in the geologic formation, but this did not prevent the discoverer from locating it as a mining claim. The claim was contested by the Forest Service and was declared invalid. The claimant was asking $10,000 for the cave. This natural curiosity was then developed by the Forest Service and the local community with trails and a lighting system. Then another 'miner' with an eye to business located it again and with the aid of a lawyer and witnesses tried to obtain possession. Fortunately he was unsuccessful and the cave remained in public ownership. It is now protected from the mining laws by being proclaimed a National Monument and is visited annually by more than 8000 people."

[35]Other interagency cooperation with implications for boundaries and administration may be seen in the Cache Forest's administration of Davis County's Clearfield Naval Supply Depot and Hill Air Force Base for many years. With the creation of the Bountiful Ranger District as part of the Wasatch Forest in 1959 the two military installations fell under the jurisdiction of the latter because "it seems logical . . . that the Davis County-Weber County line be the boundary between the two zones of responsibility." See Information Memorandum, Region IV, November 19, 1959, Intermountain Forest Region IV Historical Files. A far more extended relationship was that between the Wasatch Forest and Fort Douglas. During most of the Forest's eighty year history this relationship has dealt with Red Butte Canyon and its watershed. More recently it dealt with the Sunnyside Avenue property where the fire protection facilities for the entire Forest are headquartered. The negotiations of this transfer, which took place in the late 1940s were among the most complex the Wasatch National Forest ever entered into involving all levels of the Forest Service, the city and county of Salt Lake, the state of Utah, dozens of civic clubs and associations and an amazing array of military brass and political VIPs. See LP-Boundaries, Fort Douglas, Files 1, 2, and 3, Wasatch, 1947-1948, DRC.

[36]Interview, James Jacobs, June 24, 1980.

[37]See L-Boundaries, Blacksfork Addition, Wasatch, 1929 and Prior; L-Boundaries, Fort Bridger Addition, Wasatch, 1932; and LP-Boundaries, Fort Bridger Addition, 1932, DRC.

[38]January 18, 1932 to Regional Forester, L-Boundaries, Fort Bridger Addition, Wasatch, 1932.

[39]Utah's member was William Peterson from the Utah Agricultural College.

[40]Salt Lake Tribune, September 25, 1929.

[41]Salt Lake Tribune, September 22, 1929.

[42]L-Boundaries, Public Domain Commission, Wasatch 1929-1930.

[43]Stuart letter of July 11, 1930, ibid.

[44]July 1, 1932, L-Boundaries, Summit County Addition, Wasatch, 1932, DRC.

[45]A. G. Nord to W. O. Stephens, December 1, 1931, ibid.

[46]Nord, "Report on the Proposed Summit County Addition, December 15, 1932," ibid.

[47]Ibid., and Salt Lake Tribune, August 21, 1932.

[48]Nord, "Report on the Proposed Summit County Addition," December 15, 1932, L-Boundaries, Summit County Addition.

[49]Nord, Memorandum for Regional Forester, December 21, 1932, ibid.

[50]Quoted in a letter from Nord to M. J. McQuaig, manager of the Standard Timber Company, December 12, 1932, ibid.

[51]"Report on the Proposed National Forest Boundary Revision, April 23, 1937," LP-Boundaries, David County Addition, Wasatch, DRC.

[52]Ibid; and Samuel Trask Dana, Forest and Range Policy: Its Development in the United States (New York: 1956) p. 408.

[53]Exchange, Cache, 1965, Deseret Livestock Company, Logan District Historical Files.

[54]Owen DeSpain, Oral Interview, June 8, 1980. In addition to Owen DeSpain, this question was discussed with James Jacobs, L. J. Colton and Julian Thomas. Carl B. Arentson, supervisor on both the Wasatch and the Cache National Forests, was apparently one of the individuals DeSpain referred to. In trying to establish where the Forest boundary was for purposes of trespass action, he used a compass "and soon learned that I could pace quite accurately. In many places, the land office survey had covered portions of the Forest, and in other areas, the survey was close to the Forest boundaries. I tried to locate points of the Forest by picking corners near ranches and pacing them to the Forest boundaries . . . . I could use a compass and with a little careful pacing, could gauge my distance carefully enough to pick up the land office survey." Carl B. Arentson Oral History, April 27, 1965, Interviewed by Arnold Standing, Wasatch-Cache National Forest Historical Files.

[55]"National Forest Consolidation," Logan District Historical Files.

CHAPTER IV

ADMINISTRATION AND PERSONNEL: SOME VIEWS AND VIEWPOINTS

As we have considered the development of boundaries, it has been apparent that the Wasatch-Cache National Forest has also grown and changed in terms of administration and personnel. This chapter will be devoted to the people of the Forest and undertake to understand what they did. In other chapters much is said about the administration of the Forest and its personnel. Opportunity has been taken to consider various kinds of administrative developments in detail and to draw sketches that show the characteristics of various groups and individuals. Here an effort will be made to draw attention to general considerations that have to do with administration and people with the purpose of providing a perspective in which the more detailed aspects of Forest Service activity will take on added meaning.

Administrative Beginnings

As a human organization the Forest began small and has shown a continuing tendancy to grow. If one probes sufficiently far into its beginnings it is possible to claim the single forest agent to which Governor Heber M. Wells referred in 1899 as the entire local organization of the Wasatch-Cache National Forest.[1] If one looks to the present (1980) personnel on the Forest approaches seasonal totals of 200. If one considers a pro rata representation from the regional and national offices, the number soars even higher. As numbers have risen, function has, of course, proliferated. To manage this growing array of activities, the Forest's personnel has also tended to increasing specialization and to administrative routine.

In 1902 and 1903, when the first direct moves were made to create the Wasatch-Cache National Forest, forestry was still largely a function of the Department of Interior. Forest reserves, including the Uinta and the Fishlake in Utah had been created but no administrative apparatus had been provided. Their boundaries were laid out only in the most general way by presidential proclamation. The first effort to identify and define the new reserves fell upon the United States Geological Survey and resulted in a series of reports as summer crews assessed the general character of the various units. Not surprisingly, these surveys focused on geology and boundaries, taking note of trees and forest fires only as a matter of secondary interest.[2] Prone to carry on the work of forest reserves within the framework of its existing organization, the Department of Interior developed a limited and highly centralized administrative proceedure by the end of the century. The few forest agents that were appointed to the reserves were at best, local custodians. Decisions were made almost exclusively at the Washington level. Although there was considerable confusion as to how the terms were applied, the offices of supervisor and ranger had apparently come into being by 1903. These positions, however, had little authority. Routine decisions, even those invovling questions that could be handled much better locally, were dealt with at the General Land Office, sometimes even attracting the attention of the commissioner himself. (See page 197 below.)

However, even before forestry was transferred to the Department of Agriculture a decentralized organization had begun to emerge. Essential to this decentralization was field work and local examination. As a result, Washington based personnel traveled extensively. Beyond these, however, were forest inspectors who were apparently assigned to the various areas. Although his role is far from clear Robert R. V. Reynolds, who worked in and out of Salt Lake City was apparently one of the most prominent of these. Others included R. B. Wilson and Smith Riley, the latter being one of the "green college boys" picked up "one here and one there" as Gifford Pinchot began to put together his organization. With "snap and punch" that was a "delight" for Pinchot to watch, Riley "dived in," surfacing, among other places, at a fire on the north slope of the Uintas in 1902, where a brash but capable local

ranger named Dan Pack caught his attention.[3] Another of Pinchot's youthful inspectors was R. E. Benedict, who maintained some kind of a field headquarters in Salt Lake City prior to the establishment of the Intermountain District (Region IV). Benedict's presence in Salt Lake City may explain why the first supervisor of the Wasatch Forest was headquartered in Murray rather than in the capital city.

After 1905 Pinchot accelerated his efforts to decentralize administration. A cardinal rule that stood for many years was put into effect immediately. Supervisors and rangers were to be "selected . . . from qualified citizens of the States of Territories in which the said reserves, are situated."[4] Another major step that had special impact on the Wasatch-Cache National Forest was the establishment of the Intermountain District Forester only two years before he was replaced by E. A. Sherman (1911-1915). Sherman and the men who followed as district and regional foresters, including R. H. Rutledge (1920-1938) and C. N. Woods (1938-1943) were committed to the ideal of decentralization. Every issue was to be handled at as local a level as possible. By 1910 a highly decentralized four level administrative system existed. With offices in Washington, Ogden and onthe forests and ranger districts, it provided the basic framework from which forest personnel worked. Perhaps even more important was the pride and sense of identity that forest officers had come to have.

This organization was national in the complete sense of the word. In Pinchot's earliest days it had been elitist and eastern in point of view and personnel. At least as early as 1902, however, Pinchot recognized that the conservation system he and President Theodore Roosevelt were putting together could not play its proper role as a movement of any single region. In the same way America was an amalgam of contrasting forces, the Forest Service had to reach far and include unlike interests and characteristics. In personnel, the forest organization reflected regional biases, naturally. In the Intermountain Region more westerners found their way into the Forest Service than easterners. Once in, many of them resisted the mobility of the Forest Service, yet there can be no question

that most became part of a dynamic and shifting team. Inevitably they became more national than regional.

Interaction and tension were among the products. Tenderfoot and nabob from the schools of the East met lumberjack and cowboy from the mountain country of the West. Washington inspectors came and went. Scions of America's intellectual elites like Assistant Supervisor John Riis followed ranger trails north from the La Sal to the Cache and on to St. Anthony in Idaho, infusing new elements into local societies as he went. Rangers chosen locally were not for him. Notwithstanding complaints carried "to Secretary of Agriculture James Wilson through Senator Smoot" he opted for "Forest Assistants . . . fresh from the forestry schools of the East" and a "real Ranger force" built up "of men from other States."[5]

Matching the cultural flow from the East, westerners joined the team, touching and influencing Washington inspectors. In a continuing dialogue that broadened viewpoints, supervisors and rangers from the West spent summers at the national capitol helping to translate eastern theory and background into policy that could work in the West. Unlearned and rough, indeed almost totally untouched by refining influences, Supervisor Dan Pack hailed from the cow camps and freight roads of eastern Utah. He was loyal to his biases; a fighter, practical and forthright. To broaden viewpoints and perhaps to help write a few letters for Pinchot, Pack was one of about "30 Forest Supervisors from the western states" taken to Washington in the summer of 1908. The culture shock nearly undid poor Pack--indeed it led him out of the Forest Service in a few years as he continued to feel the tensions of unlikes coming together and the frustrations of rationalizing the wild and unrational that underlie the conservation movement. Although he complained that he was "never able to understand why the Washington office inaugurated a plan whereby they made a man feel as helpless as a kindergarten student in the hands of a professor," Pack knew full well that he was in Washington "for the purpose of" being "wised up." But like many westerners of his generation and later who have been unable to live with national as contrasted to regional or even individual control of natural resources, he was, at the end of his Washington stint, "convinced it was for the sole purpose of wising up" the Washington staff.[6]

Administrators on the Wasatch and the Cache Forests

Then, as now, the front line of the system were the supervisors and rangers. To begin with they constituted virtually the entire field organization. Many were originally appointed on temporary basis as "third class rangers" and almost all functions, including clerical duties, fell to them during the earliest years. Indeed, in the time before the shift to the Department of Agriculture some apparently had no office facilities whatever, working out of their homes or makeshift stations where they wrote correspondence longhand, although typewriters had been in wide use since at least 1880.[7] Salaries ranged from $60 per month for third class rangers to $120 and more for supervisors. In the main, the doings of these early foresters have disappeared with time, yet their activities stand out providing images of early forest administration that by contrast to the complexity that emerges from today's Forest Service are clear and understandable.

The earliest beginning to which the personnel of the Wasatch-Cache National Forest can be traced is in connection with the Uinta Mountains and dates to 1900, fifteen years before that area was transferred from the Uinta Forest to the Wasatch. George F. Bucher was supervisor with headquarters at Kamas. John Turnbow served as ranger and the next year was assigned with Dan Pack, a native of Kamas, to two North Slope ranger districts whose common boundary fell in the vicinity of Lone Tree, Wyoming. Camping together in the pasture of one of the country's most prominent cattlemen, Jim Phelps, the two young men danced, rodeoed and otherwise spend a great summer socializing with the North Slope's cowboy society. Sheepmen, not foresters, were the greatest threat to cattlemen who were holding the country "with clubs and bullets" and still so oblivious to the long term portent of the Forest Service that they extended the deadlines beyond which sheepmen were barred into the Forest Reserve itself.[8] Their work completed, Pack and Turnbow returned to Kamas in the fall where, like many of their contemporaries, they were furloughed for the winter.[9]

On the Divisions that became the early Cache and Wasatch National Forests, a variety of supervisors and "rangers in charge" were appointed concurrently with the establishment of the units. They and the rangers

appointed under their jurisdiction reflected the Washington Office's concern for local representation. The two names that emerge most clearly among the earliest appointees are John F. Squires of the Cache National Forest and E. H. Clarke of the Wasatch. Squires was clearly a product of the local culture. A Mormon immigrant of Scottish birth he had fought in Utah's Blackhawk War and was apparently appointed because of the influence of Congressman Joseph Howell. According to one account, his chief qualification was an affinity for the out-of-doors.[10] He trained two of his successors and served as acting supervisor of the Cache Forest during several interim periods and did a stint at the District Office in Ogden before retiring after he was well into his seventies. Nevertheless, he had little penchant for administration other than his intimate knowledge of Utah society and a lot of common sense.

Squires' reputation as the first supervisor of the Cache lived in newspaper accounts and in the minds of others. However, one finds little in the way of surviving documents to support or detract from the memory. Clarke, by contrast survives almost entirely in official documentation. He was apparently not one to put himself forward in the newspapers and always lived in the shadow of Forest Examiner Robert R. V. Reynolds, who took his place for one year in 1909 and 1910 and was otherwise very active in Forest affairs in Salt Lake County. Yet, Clarke emerges from the letters and reports he wrote as not only a careful administrator, but an imaginative one. However, neither Squires nor Clarke was of the arresting sort of character that established a clear tradition of excellence towards which subsequent Forest supervisors could strive.

Supervisors

In the decades since Squires and Clarke first took office, there have been twenty-five supervisors over the two Forests, each of which has had a total of thirteen. (See Table I.)[11]

TABLE I

List of Supervisors on the Wasatch
and Cache National Forests

Wasatch Forest			Cache Forest		
E. H. Clarke	1904(?)	1909	John F. Squires	1903	1907
R. V. R. Reynolds	1909	1910	W. W. Clark	1907	1908
E. H. Clarke	1910	1914	Mark G. Woodruff	1908	1909
J. F. Bruins	1914	1916	Clinton G. Smith	1909	1915
Carl B. Arentson	1916	1919	E. C. Shepard	1915	1922
Dana Parkinson	1919	1925	Carl B. Arentson	1922	1936
E. C. Shepard	1925	1930(?)	A. G. Nord	1936	1940
A. G. Nord	1931	1935	James O. Stewart	1940	1951
C. J. Olsen	1935	1936	Joel L. Frykman	1951	1954
J. E. Gurr	1936	1944	Ralph E. Crowell	1954	1962
F. C. Koziol	1944	1965	Theodore W. Kosekella	1962	1965
G. W. Tourtillott	1965	1969	Merlin I. Bishop	1965	1973
Chandler St. John	1969				

Wasatch-Cache National Forest
Chandler St. John 1973

One man, E. H. Clarke, was apparently supervisor on two separate occasions on the Wasatch and three men, Carl B. Arentson, E. C. Shepard and A. G. Nord, served as supervisors on each of the Forests. Chandler St. John was supervisor of the Wasatch Forest for four years before 1973 and has been supervisor of the combined Wasatch-Cache National Forest since that time. The longest administration was that of Felix Koziol who became supervisor on the Wasatch in 1944 and stepped down twenty-one years later in 1965. The only others whose tenure even approach this were Arentson, who was on the Cache for fourteen years and the Wasatch for three, St. John who is now (1980) in his twelfth year and E. C. Shepard, whose time on the two Forests amounted to twelve years. James O. Stewart, A. G. Nord, James E. Gurr, Ralph E. Crowell and Merlin I. Bishop all spent eight or more years as supervisor. The average tenure for the entire group is nearly six years. Interestingly, turn over was much more frequent in the early period than it has been in the modern, with thirteen holding office

during the first quarter century and twelve during the past fifty years. Also, three of the four supervisors who occupied the position less than two years were appointed before 1930.

Although several men of real stature were among the thirteen who held the supervisor's office prior to 1930, one is inclined to see their cumulative achievements as falling short of those who came in the later period. This may reflect on their ability, or perhaps upon their vision and imagination. It is also possible that it reflects upon their training and committment to the Forest Service as a profession. At least three of them, Robert R. V. Reynolds of the Wasatch and W. W. Clark (Cornell University) and Clinton G. Smith (Yale University) of the Cache, were trained in forestry. Others may have been as well. But several were not. Among these were men who, like John. F. Squires, had friends in high political places or had an affinity for the out-of-doors. Others were men of great native ability, but only modest educational opportunities. Such a one was Carl B. Arentson. Born in Idaho, he was raised on a ranch, freighted, and worked in the mines but had only "what might be termed, about a 12th grade common school eduaction."[12] He also spent five months at a business college in Boise and took occasional correspondence courses after he got in the Forest Service. But the point is, his formal education had been limited.

However, the nature of the opportunities afforded by the situation and the times was likely the most important factor in the seemingly limited achievement of the early supervisors. In part, this was a matter of money. The appropriations with which they had to work were limited indeed. In addition, the possibilites for leadership, both professional and public that lay in recreation and reclamation that has characterized the modern era had not touched them. As one views their times, one is inclined to the opinion that what forest people often refer to as an administration that was primarily custodial, placed limits upon what supervisors of the early Wasatch and Cache National Forests could make of their positions. Put in another way, neither Forest provided outstanding professional opportunities in terms of timber and range management and the eras of opportunity in watershed restoration and recreation development still lay in the future.

Thus, for even the best of them it was not a time of great opportunity, and a number of early supervisors throughout District IV left for private activities. Two who come to mind from other forests are Dan Pack and Orrin C. Snow, both of whom entered the livestock business after what, from this distance, appear to have been good beginnings in Forest Service administration. Carl Arentson was an acting supervisor after only three years in the Service and supervisor of the Wasatch in less than nine years, but limitations within the Forest Service and an unrequited dream from his youth led him to retire. Late in his life he described some of the problems forest personnel confronted in an oral history given to Arnold Standing. "I left the Wasatch" he recalled:

> in the spring of 1919. I felt that there was an excellent opportunity to enter the livestock business in Idaho and build up an establishment which would furnish a livelihood when I got ready to retire. Perhaps, I should say, that in the minds of many men in the Service about 1919, there was a question as to how we were going to be able to provide money for our older years. The activities and work with the Forest Service were wonderful, but the salaries were low. Expenses were high. At that time, I was receiving $2000 a year and expenses, and incidental expenses in connection with the Service work in Salt Lake took all of this money. There was little chance to save.[13]

Early supervisors were pretty much on their own. According to Regional Forester C. N. Woods, there was no travel money available whatever until about 1907.[14] For several years clerks appear not to have been provided, although by 1903 when the Wasatch and the Cache were established, some bigger offices obviously used them. Some clerks, perhaps a third, were female, many were temporary and some were snowbound rangers who had nothing to do on their districts, or perhaps clerked because they liked the supervisors as in the case of Sterling R. Justice who found winter duty as a clerk more burdensome after Supervisor Clinton G. Smith, who he admired was transferred from Pocatello to Logan.

Supervisors tended to all aspects of forest business to begin with. Within a few years, however, deputy or assistant supervisors were appointed who, unlike modern staff officers were generalists ready to step into the supervisors' shoes in any situation. The office of assistant supervisor was highly mobile and often vacant; a slot into which people on the way up or merely willing to move were plugged. This sense of motion is

apparent in the memoirs of Sterling R. Justice, longtime ranger of the Pocatello, Portneuf, Elkhorn and Oxford Districts of the Cache National Forest. Assistant supervisors he mentions between 1919 and 1927 include: Raymond D. Garver, E. B. Spencer, Hopkins I. Rice, James Stuart, W. C. McCormick, William M. Mace, F. H. Eyre and W. B. Rice. After leaving the Cache Forest in 1922, the last named "travelled around in the Forest Family until finally arriving as" regional forester in 1944.[15] Earlier assistant supervisors included John Squires, J. E. Rothery, John Riis, J. W. Humphrey and E. C. Shepard. At least fifteen assistant forest supervisors can be identified for the Wasatch Forest prior to 1943, including Felix Koziol for a brief period in 1935 before he was moved to the Grand Teton National Forest as supervisor.[16]

Also working with the supervisors were a variety of specialists. For example, a succession of people were involved in the timber sales on the Uinta Mountains portion of the Wasatch. Many of these were assigned from the District Office and most appear to have been technically trained, youthful, career people. Among the earliest timber examiners were Nils Eckbo whose meticulous surveys opened maturing lodgepole pine stands for harvest and initiated the second era of the North Slope's timber industry. Of more note were F. S. Baker, a Cornell University forestry graduate who had a distinguisehd Intermountain Forest Region career until the early 1930s when he moved on to the University of California and Lyle F. Watts who, of course, became chief forester (1943-1952). A succession of scalers, foresters and forest examiners and forest assistants were also assigned to the Wasatch during the early decades. Supervisors contined to be field-going officers themselves and were out of the office much of time and joined with the Regional Office personnel in a round of inspections and correspondence with the ranger districts and other forests and even other federal officers, including Indian agents and Bureau of Reclamation people.

Rangers

Even more fundamental to this growing organization were the rangers. These came from all walks. Predominating on the early Cache and Wasatch Forests were farmers and cowboys who found in resource management

opportunity to build on western traditions otherwise foreclosing to them. Also found were haberdashers from Scranton, defunct dentists from Iowa or by the late 1920s, graduates of forestry schools opening in the agricultural colleges and universities of the West. The earliest among them had only the vaguest idea of what being a ranger meant. For some, it meant little more than counting livestock, tolerating life out-of-doors and having families who were willing to put up with long work hours and movement to and from district headquarters in town and a succession of rudely furnished ranger stations. Others were inspired by conservation's mission and the opportunity to serve.

The out-of-doors claimed them. A rule of thumb held that they should spend at least half their time in the field. They were expected to know their districts thoroughly and rode them to count livestock, supervise timber sales, check watersheds and trespass and to show nurseries, plantations or eroded areas to a host of regional and national VIPs. They travelled summer and winter, with some of the most arduous of their experiences coming in the latter. C. N. Woods, for example, skiied over much of the region surrounding the Yellowstone National Park in his early years. Sterling R. Justice snowshoed over his vast district, froze his feet, rode in freezing and hair raising sleigh rides with wild Bill Campbell of one of the Cache Ranger Districts, and broke trails through armpit deep snow to keep trespassed cattle within Forest bounds so angry owners would be unable to reclaim them. At Kamas, Ranger A. E. Briggs snowshoed into High Uinta snowsheds with Cardy Clegg. A crusty veteran of twenty-three winter trips, Clegg refused to let "two husky young men," one a student at the Utah State Agricultural College and one a son of the President of the water users association, use skiis because of the route's ruggedness and his own memory of an earlier skier who had broken a leg.[17]

Under certain winter conditions some found it possible to use what A. E. Briggs called "snow ponies" which "had uncanny ability to travel . . . narrow, invisible packed trails at a sustained jog all day without plunging into the deep snow." These were used to particular advantage in mail and stage service. As Briggs recalled

> The vehicle commonly used on snow roads on the mail route and by some other folks . . . was a very light, homemade two runner

> sled enclosed by heavy canvas or light ply-board. The inside dimensions were approximately 3 feet wide and 7 feet long. It was not uncommon to see two or three passengers crammed inside in addition to three or four mail bags, a cream can, a small kerosene heating stove, and the driver. One had to be strong physically to endure the burning kerosene fumes and occasionally a strong cigar or pipe; but it was the only means of transportation to destinations outside the Valley, expect by snowshoes or skies.[18]

Camping was routine. For their ski trip to the Uintas Clegg and Briggs rolled provisions in blankets, carried them over their shoulders Civil War fashion and slept in sleeping bags cached along the way. Woods recalled late in his career that he

> carried a few blankets and two or three quilts, in a tarpaulin. Sometimes I took along a bed tent, a teepee about seven by seven feet, but often not. In 1906 I bought an air mattress, and I have ever since used one camping out. In the beginning we had no cabins of our own in which to stop, and most of the time we camped and slept in the open. Most of the cabins we used in those days were old abandoned cabins built by trappers and prospectors. In fact, until 1907 we had built very few cabins and those we generally built of logs, with no expense to the government except our time. Any nails, window glass, etc. that were used we ourselves provided.

Cabins and ranger stations were thought by some to be unnecessary luxuries. Indeed, Wood's superior, A. A. Anderson, formerly a New York portrait artist, "doubted the advisability of building very many cabins for rangers . . . . With comfortable cabins he feared the rangers would not get out and ride their districts as they should."[19]

But it is in the journal of Sterling Justice that one senses most clearly how imminent the out-of-doors was. In the years after 1918 conditions were almost unbelievably primitive on much of his vast district (Pocatello, Portneuf, Malad and Oxford). Life was a succession of camps. With the companionship of a rider from one or the other of the various cattlemen's associations, or by himself, he sloshed through the mud of spring thaws, spent weeks in wet clothes and sodden bedding and survived mosquitoes that drove horses and cattle into bunches for protection and scabbed the legs and bare faces of sheep. On occasion he also killed wild stallions that harassed his horse which ran loose for lack of enclosed pastures.

Some did not show Justice's penchant for the out-of-doors and drew the fire of inspectors and supervisors who, with the help of permittees

only too glad to get one on the ranger, traced their tracks or logged their time in town. But in the main, rangers perpetuated an out-door tradition as old as Daniel Boone and would have been as at home camped with Jim Bridger as with most men and women of their own generation.

Rangers were also horsemen. From the first they were expected to own their own horses and to mount inspectors and visitors. For some this meant owning, and until at least 1913 boarding, a string of as many as six to eight animals.[20] Most, however, appear to have been happy enough to work with horses and in various ways helped perpetuate the equestrian tradition in the American West. Dan Pack, for example, revealed something about himself, both as it applies to men and to horses, in the fact that every animal he rode sooner or later became a real bucking horse.[21] His "buckouts" in the streets of Nephi, Payson, Kamas, and Ogden would do the movie makers of present days proud.

Others handled horses more gently but were as keen on them as Pack, as is apparent in the number of memoirs that feature the partnership between man and horse. John Riss', Ranger Trails, for example, begins horseback as "southward you ride" to "Monticell" and other old time cowtowns. Paul H. Roberts who helped establish range management in the Forest Service and went on in the 1930s to plant the shelterbelts of the Midwest, touches similar themes in his Hoof Prints on Forest Ranges: The Early Years of National Forest Range Administration, and Them Were the Days. Sterling Justice appropriately entitled his memoirs, The Forest Ranger on Horseback and the only photograph is of himself and a favorite horse. A. E. Briggs entitles his autobiography Memoirs of a U.S. Forest Ranger, but captions a picture of himself and a horse "Teammates."[22] William Miller Hurst's Thinking Back is illustrated on the front by a picture of himself horseback, but his book does contain pictures of his family and of himself standing by a late 1930s Forest Service pickup truck. C. N. Woods alone fails to emphasize the horse by title or cover picture, although one need read only a few pages to know that Woods' heart, if not his major allegiance, was still horseback.

Again it is Justice who reveals just how near man and horse drew. He kept from four to six horses all the years he was on the Cache National Forest, riding and packing them all and boarding them in various parts of his district. More, perhaps, than any other account this writer has read

anywhere, Justice's shows the management of the horse to maximize its usefulness. Hundreds of wild horses were run down, captured and with a stick of an inch-and-a-half diameter tied in their mouths to cut their wind, were driven to slaughter for fox food. In particularly difficult cases, a few of the band leaders were tied front foot to tail to curtail their speed and make them manageable. Yet, Justice grieved at the entire process, particularly the separation of mares and colts and the occasional injury. Obstreperous pack horses were thrown as a matter of course night and morning to pack and unpack. With few fenced pastures, burlap hobbles were used to keep his string of horses at camp. When some were inclined to backtrack to pastures or barns, he tied them neck in neck to an animal that would not stray, or if they were pushy in their wandering ways, roped them with a little slack, head to tail with another animal which allowed easy grazing but made travel impossible. With the exception of work itself, the partnership between man and animal comes near dominating Justice's memoirs, although family, other foresters and nature also play important roles. As Justice put it, his horse "was a part of me at any job I under took to do."[23]

Intent on managing his horses for maximum production, Justice began to use a trailer at a surprisingly early time. Like a large number of rangers, he owned an automobile by the end of World War I which he frequently placed at government disposal. By 1924 he was discussing the use of a trailer with Forest Supervisor Carl Arentson and in 1925 rented one. After studying trailers at the Idaho State Fair for several years he had one made to order in 1928. It helped, but there were still months each year when cars were helpless and as late as 1936 when he was transferred to another forest, horses were still his most important mode of travel.[24] Until at least 1950 Justice, and rangers like him, were expected to spend 100 days per year horseback.

Not surprisingly, the transition to motorized transportation was accompanied by some problems. For years, the officers of the Cache and Wasatch Forests had traveled by train, buggy and sled or had hitched rides by various means to cover long distances. Extending the private horse policy, rangers were officially encouraged to use their own vehicles. Thus prompted, some, like William Miller Hurst in southern Utah, had low range gears "put in, which increased the power immensley." Thus equipped

for mountain roads automobiles "lightened the work on the District a great deal."[25] In a few cases this practice apparently interferred with the Forest Service policy that each ranger mount himself adequately for Forest business. Regional officers warned against the tendency to abandon the horse and at least one inspection report indicated a strong feeling that grazing could not be adequately managed without them. In a rather complete discussion of the problem, C. N. Woods offered strong criticism of Ranger Andrew Romero of the Paris Ranger District in 1919. "Whatever suitable horses Ranger Romero has," commenced Woods' report:

> he keeps on his farm during the field season, and does not use them on official work. This applied at least last season and so far this season. I understand last winter Ranger Romero took horses from his ranch for official work but not until after the close of the field season. When I was on his District, he informed me he had a couple of horses for official work but that they were unbroken or only partly broken and he could not use them for work in the hills at this time. When he desired to make a ride on horseback last season and this, he had to hire or borrow a horse. His diaries for the field season of 1918 do not indicate that he used a horse very much. He has a "jitney" and he usually travels in it. That is a mighty good way to travel as long as the proper route follows a passable road. I should say it is a might poor way to travel, however, in handling grazing administration on the Forest. It is true that there is a lot of timber work on Romero's district. He has also been doing considerable road work and at both these activities no doubt a car can be used to advantage. Nevertheless, he has a very important district with some 3,700 cattle and horses and 10,000 sheep. It is a grazing district also that requires a lot of attention since it has been badly overgrazed and is apparently considerably overstocked at the present time. It is therefore, particularly desirable that a careful check be kept on the numbers of stock and on their distribution over the range. Certainly the situation cannot be properly handled except by a lot of riding on horseback. In my judgment the Supervisor should insist that Romero prepare for and do this riding. In fact, the Supervisor tells me he took up this very questions with Romero some months ago, last season I believe, telling him that he was not doing a sufficient amount of riding over the District to properly handle the administration of grazing. I doubt that the admonition had much effect judging from the situation as I saw it when on the district. That was past the middle of June and from Romero's own statements he had not yet covered some very important range areas on his District during the season; areas on which many cattle and horses were grazing. This seems to be one of the cases which District Forester Reed some months ago in the Weekly Bulletin warned us against. It indicates an excessive use of a "jitney" and too little use of the horse, to the neglect of proper administration. In fact, it is the most extreme case of its kind that has yet come to my attention in District 4.[26]

But cars and trucks and even a motorcycle or two were making their way into official use on the two Forests and by 1928 Woods himself was advising the Cache supervisor to keep one truck and to buy a second one.[27] In 1927 each of the two Forests owned a pickup truck and throughout the Region there was an impressive total of thirty-seven vehicles, including two tractors. During the Depression years windfall appropriations sometimes led to the purchase of as many as ten vehicles on short notice, but the fact that in the short budget days of 1927 a Regional total of $54,662 was expended for purchase and upkeep on these vehicles and that in all 373,291 miles were driven suggests that any official aversion towards automobiles was fleeting indeed.[28]

Public Officers

Even more fundamental than the out-of-doors and horses in the life of the ranger was the fact that he was a public officer, a representative of the United States and an ambassador of conservation. In this context rangers partook of several influences and traditions. For one thing, they were touched by an almost militaristic sense of service. Uniforms were worn with elán. This harked back, perhaps to Prussian influence on American forestry but was infused with American traditions as well. For John Riis, who knew both Roosevelt and Pinchot, the Forest Service was something of a crusade. For others, its military-like character was a matter of service to the United States. These would have agreed with Sterling Justice who joined the Forest Service because he "felt it my duty to do what I could for my country."[29] Sensitive to patriotism, rangers from Utah organized a volunteer detachment to participate in the Mexican border difficulties of 1914 and were quick to enlist during World War I. But more important was the general sense of service to the nation.

As public servants with quasi-military sentiments, the ranger force partook also of a nineteenth century tradition for promoting resource utilization that was part of the spirit of Manifest Destiny. This process of conquest by the promotion and regulation of natural resources was launched by Thomas Jefferson. The Lewis and Clark Expedition--a military exploration--sensed the continent's portent and described it to the American people. Visionaries too, were the many explorers of the

Army Corps of Topographical Engineers who perpetuated the tradition. And the surveys of John Wesley Powell carried the nation's vision a giant step forward when he applied scientific principle to resource utilization. Pinchot, too, was in the mainstream of this tradition and the organization he founded was imbued with it. Thus rangers perpetuated a long and proud tradition that had its foundation near the heart of American nationalism. To see and promote the possibilities resources held was, and continued to be, a significant part of the Forest Service mandate. The efforts of a horseback ranger to sell frontier stockmen on regulated grazing, or of an F. C. Koziol to introduce skiing into the economy of the Wasatch Front or of a Chandler St. John to influence the outcome of public hearings on the Wellsville Crest Trail all have a common denominator in the mandate to promote resource use in the public interest.

But for all that, rangers were also public servants whose duty was to introduce regulations and to establish a climate in which they could be enforced. This was not easy nor was it quickly established or permanently settled. Not only was it necessary to establish forest law (regulations) but it was also necessary to refight, on a continuing basis, a battle as old as the thirteen colonies' struggle for self rule and as new as the Sage Brush Rebellion, a 1979-1980 campaign to reclaim local control of natural resources. Thus, the ranger wore two fundamentally different hats. On the one hand he was promoter and educator and on the other, policeman. It created tension and confusion and still does.

As a consequence, early foresters saw their roles diversely and applied widely different norms as they dealt with users. Some, like A. W. Jensen, first supervisor of the Manti National Forest, were of a legalistic bent and applied an unbending humorless letter of the law, pointing the way for adherence to administrative routine that has doubtless become the mainstream of Forest Service administration. Others, however, were less sure of their position and signaling their lack of confidence equivocated, acting now with vigor, then with hesitation, and occasionally arbitrarily. Still others were masters of the practical, teaching a rough lesson now and retreating again, but keeping the channels of communications open and the pressure on over the long haul. A few blustered, threw their weight and made enemies while some were merely imcompetent.

From the records at hand, it would appear that rangers of the Cache and Wasatch Forests preferred persuasion to strong legal action. Old John Squires expressed the spirit when he acknowledged that "we didn't push them much, but tried to be easy on them and get them gradually to see what Uncle Sam wanted them to do."[30] Indeed tact and patience were frequently practiced. Brief reference to an experience or two will serve to make the point. Kamas Ranger A. E. Briggs arrived on a ranger district in 1924 on the neighboring Caribou Forest to find one sheepman who had always defied both forest regulations and the spirit of cooperation that prevailed among other stockmen. Sensing quickly that it was his problem, Briggs began to apply pressure slowly, but was met by hostility and insults. Finally, however, Briggs was able to manuever the sheepman into such a position that his animals could be kept off the forest. Then in a show of generosity and cooperation that completely disarmed him, Briggs went far out of his way to count the stock and treated him as a full equal to all other users.[31] Similarly Carl B. Arentson was confronted by a cattleman who refused to have his stock counted which led all parties to assume he was running more stock on the forest than he had permits for. Counting these cattle became the test of the young ranger. At last, after careful planning, Arentson was able to count them without a confrontation. This he then noised around the livestock community. Taking it as "quite a joke" the stockmen were all "willing to cooperate with me in the handling of the cattle and in working out distribution of salting plans for the summer."[32]

One reason persuasion was preferred was that customary usage and all kinds of public relations and political questions weakened the hand of the ranger. Even such straightliners at the regional level, as C. N. Woods occasionally avoided confrontations and contradicted themselves. One result was that rangers were not sure just what their authority was. Stockmen were quick to sense this and as one sheepman in the Pocatello area was fond of saying, "a Ranger is like 'near beer,' he does not have much of a kick; we are not afraid of him."[33] Indeed some stockmen comitted the worst kinds of violations and did it for years causing much difficutly and greatly weakening the hand of the local officers. One such was a Pocatello Division cattleman who persisted in running his stock on the city watershed which had ostensibly been closed to all grazing.

After tolerating the discord it created for years, Ranger Sterling Justice finally moved with dispatch when the Regional Office told him to impound the offending cattle. Making a quick night ride he gathered about eighty head and pushed them across rough Forest country toward the ranger station. Shortly before arriving, he was met by Earnest Winkler of the Regional Office with insturctions to turn them back. The move had been premature. It was not until 1935 that Justice was able to control this particular individual.[34] By means of threats he was able to control others. He told one Malad user who had deliberately contrived a challenge that:

> There is not much limit to what I can do to you. I can arrest you and have you taken into the U.S. Commissioner's Court, where you are likely to get a heavy fine. I can impound your cattle and you have have to pay the cost of gathering them, plus a heavy fine; or we could sell them to cover these costs and fine; or we can have all or part of your grazing permit cancelled. I came down here to talk with you to see if we can arrive at some kind of a settlement so we will not have to resort to any of these severe measures. We . . . can settle this matter in an agreeable manner if you will do what we ask you to do.

Justice continued, "This man did as he promised, and we had no more trouble with him. Other men told me that the handling of this case as we did met with the approval of the people living in that country."[35]

Justice and other rangers, some of whose ethnic biases showed very plainly, added bullying to threats when they thought it would help. An innocuous and probably justified case of this kind took place on the Elkhorn alottment of the Cache Forest in 1918 when Justice forced two Basque herders to put out a fire using threats of a stay in jail as his prod.[36] Another case involved Mike Wilkins, a "wild buckaroo" of a forest guard who chose rather than to arrest a trespassing Basque herder to harass him with his lariat until "the herder started begging and promised he would move the sheep." Later, when the owner for whom the herder was working, approached Justice angrily about the matter, the ranger approved "the action" and threatened him with a suit.[37]

Strong-arm tactics, however, occasionally met their match. One case reported by Supervisor Dan Pack involved Ranger J. V. Manwill of the Vernon Division and an M. K. Green. The latter had taken out a June 11 homestead inside the Forest where he built a corral but owned no stock. Soon, apparently in 1907, other Vernon permittees began to complain that Green

was diverting their irrigation streams and holding their cattle in his corral and selling them. In Pack's opinion one ranger "resigned because he was afraid of Green." Sent to deal with the problem, Manwill was a "quick tempered determined sort of a fellow" who met Green head-on. Since Green had no cattle, Manwill issued him a "permit" to tear his corral down and on the day after the deadline set by the permit, began tearing it down and burned it himself. Green jumped him while he was in the process with a drawn knife ready "to cut your heart out" but Manwill got his gun and the two men coexisted at gun point for some time. Finally, as Green proceeded to prove up on his claim, Pack was able to manuever Manwill into calling on Green for help for a road survey that was necessary before the land could go to patent. The supervisors "sole" purpose was to "bring Manwill and Green together and let them get better acquainted with each other."[38]

As the body of regulations have grown and precedent has been established the policing function has become far less one of persuasion and education and far more one of routine legal actions that leave little room for arbitrary decisions although doubtlessly negotiations continue to characterize the relationship of rangers with users of various kinds.

The Role of Education

Paralleling changes in the regulative functions have been certain changes in the character of the ranger force. To being with, many of them were educated only in the most limited sense of the word and some of them, like many of the people with whom they dealt, distrusted education and educated people. Availability, family relations and what Carl Arentson called fear that the Forest Service would "employ men who were not familiar with the livestock industry" rather than formal qualifications were frequently the reason rangers were hired.[39]

Supervisor W. W. Clark left an analysis of his Forest staff shortly after he took over on the Cache in 1907 that points up both problems of eudcation and family connection. John F. Squires who had stepped down to deputy supervisor was of "good judgement" and "thoroughly reliable" but "does not like to stand out and let them [users] know that he is boss." James Leatham, deputy forest ranger, was "suited for handling a grazing

district" but "in an office would be of no use as his clerical work shows up badly and usually contains errors." Yet "before entering the Forest Service, Mr. Leatham made a living from farming and teaching school." Assistant Forest Ranger A. L. Andreasen at Mink Creek was "perfectly sound" in judgment and "ideas" but "his great deficiency is education." Hyrum O. Rose, another assistant ranger, lacked "training and experience in mapping, surveying, and estimating timber to which the few reports he has attempted to prepare abundantly testify." Rees V. Jones, a forest guard, was a "typical cowpuncher, about 27 years old, well liked by everyone but unable to qualify for ranger on account of his very poor education." At the bottom of Clark's list, however, was Assistant Ranger William B. Hoge who had been appointed because of family connections. According to Inspector E. A. Sherman and Supervisor F. A. Fenn, the Hoges were perhaps "the canniest and most unscrupulous Mormon outfit" in the Bear Lake country. Clark, who thought them "a smooth combination", did not trust him and hoped to crowd him out of the Forest Service by moving him from his home district.[40]

Considerable tension existed between the learned and the unlearned and between the Washington technicians and the local communities. Newspapers occasionally printed greenhorn stories that showed the utter incompetence of booktrained foresters. A good example appeared in the Logan paper in 1907. Under the heading "Instructed to Climb all Trees on Reserve" the article started out "the supervisor in charge . . . is an old Scotch doctor, [Squires], a man who is of very serious mein, and an individual who never perpetrates a joke--only sometimes." The naive college bred boy is then directed to count "snake eggs" and check the "number of worms at work in the reserve" and various other ridiculous tasks. One sees in the "hearty laugh, a side-splitter" of the wise old supervisor a relieving of tension on the part of the locals generally.[41] Others, like Dan Pack, found little relief in laughter and were scornful of book learning and quick to ally themselves with elements in the community which opposed the technicians. As Pack put it, the Forest Service was by 1912 "top heavy with booklearned men who were not at all familiar with conditions on the ground." In his opinion, the West would continue to have serious problems "just so long as those conditions existed."[42]

An effort to upgrade the learning of many of its rangers was a basic element in the Forest Service program. We have seen that many were assigned for short periods to Washington, D.C. More formal efforts to meet educational needs were also initiated. For example, in the winter of 1908-1909 Supervisor W. W. Clark taught a short course at the Utah Agricultural College which was attended in the main by furloughed rangers. This program was cut short by Clark's untimely death in 1909. Study by correspondence was also encouraged. During World War I a major correspondence program was conducted by the District Office. In 1917 nearly 100 "field men" completed a four part correspondence course.[43] In addition foresters were encouraged to attend colleges when possible.

Forestry course and courses in related sciences were evidently available at many universities throughout the West from earliest times, but it was not until the 1920s that forestry schools were established in Utah and Idaho. It is said that Lyle Watts, who was later chief forester, spent a year at the Utah Agricultural College establishing a school of forestry in the late 1920s.[44] In a few cases men already employeed by the Forest Service took advantage of this new development. One such was S. Bryson Cook, who Carl B. Arentson encouraged to further his education. For several years Cook worked in the summers and part time during school while he pursued his education. Other Wasatch-Cache Forest officers who graduated from the Agricultural College's forestry school during these early years include L. J. Colton, J. Deloy Hansen, Julian Thomas and Owen DeSpain. Edward Cliff, chief forester (1962-1972) was also a graduate of the UAC and Chet N. Olsen regional forest in the 1950s was an alumnus of the program. Both the Cache and the Wasatch Forests cooperated with the Agricultural College, providing summer employment for forestry students and introducing them to the Forest Service organization.

With scientific principles progressively replacing practical experience as the basis of Forest Service management programs, more and more of the field men came from colleges and universities after 1930. In Utah there was a strong tendency for Forest personnel to be Utah natives and to have college experience at Utah schools. For example, of the sixty range management people in the state (on all forests plus the regional office) in 1947, sixty-three percent were natives of Utah and eighty-five percent had farm or range experience. Twenty-five had some college schooling and

twenty-one were graduates. Thirteen or fifty-three percent of the graduates had degrees from Utah schools. In other Region IV states percentages were lower in all categories.[45]

Various intra-forest and inter-forest meetings were also used to good advantage in instructing rangers. These varied widely in the topic addressed and in the format pursued. At one time and another, meetings were held in almost every imaginable place. At times they met at the Supervisor's Headquarters or at a ranger station. They camped out, met at hotels, isolated themselves or stayed near Forest offices so problems could be dealt with. In addition to the supervisors and rangers, personnel attended from the regional and national offices and often from other forests. Workshops varied in length from a day or two to a full month at the summer workshops at Tony Grove that were held for many years after the Civil Conservation Corps built the forest camp there.

The Work Force

In addition to the line officers and a growing staff of specialists, the Forest Service used a wide variety of help as conditions called for it. At most ranger districts in the Wasatch-Cache National Forest, a handful of people were identified with whom Forest officers got on well and who understood Forest functions. On some grazing districts, rangers worked almost constantly with the stockmen's association riders. Sharing camps, running wild horses and building fence with them rangers sometimes came to know them better and depend upon them more than they did forest guards, clerks and other forest personnel. Periodically, crews worked on trails and roads and construction of fences, pastures and ranger stations and telegraph lines. As time advanced and projects became larger, jobs were let on contract but in early years many jobs were carried out by crews hired directly by the two Forests.

From earliest times emergencies led to interforest and even inter-agency assignments and the quick hiring of special crews. In 1909, for instance, Deputy Supervisor John Riis and his crew of forestry students were pulled off a timber cruising project on the Cache and dispatched to Idaho which "was a nest of a thousand fires." Prisons were emptied for

miles around, hoboes pulled off freight trains and Greek and Japanese section hands were pressed into the service, making in all a crew of 300 fire fighters.[46]

But doubtless the biggest influx of temporary personnel was caused by the Depression. With unemployment rife, the West literally teemed with transients. At Salt Lake City, Ogden and Pocatello, transient camps were established. At Pocatello, a CCC barracks at the Bannock Ranger Station was used and city authorities kept between eight and 125 tramps on hand all the time. These were fed, clothed and given medical attention by the state and paid $5.00 per month. The Forest Service provided jobs. They were difficult to handle and it was only through the winter help of rangers from all over northern Utah and Idaho that anything was gotten out of them at all.[47]

Vast numbers of local men, many of whom were highly qualified, were also unemployed. Under the Works Progress Administration (WPA) many of them worked for the Wasatch and Cache Forests. Former Ranger Kenneth Maughn recalls the scope and contributions of WPA work on the Wasatch Forest.

> We took out of SLC each day of the week including Sundays 1000 men into the nearby canyons. This work was almost entirely recreation construction. We literally rebuilt some areas where bad gullying had occurred before we were able to construct facilities. The depression was so severe that we were unable to rent large trucks in either SLC or Ogden and finally had to rent SLC buses to move the men. Crews left at 6, 7 and 8 A M. Buses which took the 6 A M crews out were able to return and take the 8 A M crews out. These men could only work 80 hours and were then "off" for 80 and then returned. Work done by these emergency camps included recreation, roads, range improvements (fences & water developments), timber stand improvement, insect control (timber), administrative improvements (ranger stations, guard stations, warehouses, pasture fences and trails).[48]

Elsewhere in this history, the role of the Civil Conservation Corps has been examined in considerable detail. Here, however, we may note that the two Forests fully endorsed the New Deal policy of conserving human beings as well as resources, and most Forest officers welcomed the CCC enrollees because of the program's human elements as well as for the fact that ten year improvement plans could be fulfilled in a single year. Forest publications from the 1930s are full of "testimonials" of lives

saved.[49] Even the day to day documents suggest that the young men involved responded splendidly, causing little trouble and giving good service.

Among the records of the Forest are the memoirs of A. E. Briggs, who in the 1960s recalled with great warmth his own contributions to one enrollee at the Soapstone camp. The young man had defied all authority and with much natural leadership ability was taking much of the camp with him into a spirit of rebelliousness. Briggs confronted him directly and then took time with him and gave him responsibility. Years later, he met the young man again in Las Vegas and learned of his success in life. All the elements of the stock testimonials of the 1930s are in Briggs' account, but there is no reason to doubt his sincerity or the sincerity of the humanistic interest of the Forest Service either then or in subsequent years.[50]

Among the programs of the New Deal that have been perpetuated in somewhat modified form are what may be called a number of "human conservation" plans. As a consequence, personnel of the Wasatch-Cache National Forest have continued to work with various groups under the sponsorship of federal programs. Known in recent years as cooperative programs, these include the Youth Conservation Corps, Young Adult Conservation Corps and the Work Study and Older American groups. Each of these programs and others of an entirely voluntary nature continue to contribute significantly to the success of the Forest. In addition, they still awaken strong feelings of idealism and service in an organization that is otherwise departing from the shared experiences that bound it together in significant ways. Officers at all levels continue to express a sense of accomplishment and satisfaction at the opportunity such programs provide to touch human lives.

This brings us to a final and important topic; that of the role of women and minorities in the Forest Service. Traditionally it has been a man's world and a man's world that has provided little opportunity for minority groups. Like Roosevelt, Pinchot's nationalistic spirit was boundless. It was the "bully boys" of good old America that took his attention. He reached beyond the "eastern establishment" of his time and drew men from all American mainstreams. But few, indeed, were the Mexican Americans, Orientals or even southeastern Europeans in the first ranks of the Forest Service in Utah. John F. Squires was of Scottish

birth. Two Mellenthin brothers who worked throughout the Intermountain Region were of German birth, but one of them, in an ill advised effort partially calculated to prove he was one hundred percent red blood American, got himself shot trying to bring a draft dodging sheepherder in.[51]

There never seems to have been a particular bias against women. In the early years, hwoever, it simply did not occur to the Forest Service that many of its functions were women's work. In this it reflected the attitude of the larger culture of which it was part. On the other hand, there appears not to have been a time when women were not hired as clerks on the Wasatch and the Cache Forests, although one suspects that senior positions were more often held for men. Young women were a very real part of the labor market of the early decades of twentieth century Utah. They left their homes by the hundreds for Salt Lake City, living in boarding houses along South State Street or in the homes of people for whom they did domestic work. They also made up by all odds the largest portion of the public school teachers in the state. The tendency was for them to teach a few years and then to marry and raise families, but new young women entering the teaching force maintained their numbers. Women clerks also appear to have worked for a few years and then moved on. Among those mentioning this experience is Dan S. Pack, who had a succession of three young ladies work for him while on the Nebo.

But others made lasting contributions. Margaret Jensen of Mendon, for example, was the first "Forest Clerk" of the Cache Forest where she reported for duty on May 1, 1907. For two full decades and the administration of six supervisors and twice as many assistant supervisors, she continued in the office, becoming in a real way the institutional memory of the Forest.[52]

In recent years the role of women has become much more significant. This process began at least as early as the Depression and World War II when the labor conditions were such that opportunities opened for them. Opportunity has accelerated significantly, however, in the last decade as equal opportunity legislation has set the employment of women and minorities as a national objective. As a result, all fields of the Forest Service are now open to women. Many are employed and a few have made a real difference in such field functions as range management, wildlife

management, recreation and timber management. At this writing there are no women serving as district rangers on the Wasatch-Cache National Forest. Some, however, with appropriate training and interests, are approaching the requisite GS 13 rating to take such a position. There is some uneasiness among oldliners for whom this is but one of the changes that raise tension and deep feelings about the nature of forestry's fraternity. At least one young lady, however, feels that the forces making for female opportunity are stronger in the Forest Service than those resisting it. In her role as a conservationist forester, she has had to watch certain problems, but feels the opportunity for achievement is really there.[53]

Thus, as the Forest approaches the end of its eighth decade, new challenges arise and new opportunities exist. It has grown from an organization of no more than a few persons to an institution of upwards of 200 people. Administratively it has always dealt with two basic functions; the one primarily promotional or developmental in character and the other regulatory or policing. The body of regulations has grown tremendously, but have in the process provided routine methods for dealing with problems that had to be handled by "good judgement" or not at all in earlier times. All told, several thousand people have worked directly for the Forest or with it by close assignment from other levels of the Forest Service. A number of major figures in Region IV and in the Forest Service nationally have worked on the Forest at one time or another and have been helped on their way by challenges and opportunities it afforded. Perhaps more significant are the Forest employees who have contributed at the supervisor, ranger and other levels, whose work is of such quality that they differ more in opportunity and aspiration from those who have gone on up the ladder than in real character. In a real way, the rest of this history deals with the administrative activities of the Wasatch-Cache Forest personnel. Consequently, we turn to questions of timber management and other vital functions of the Forest in the chapters that follow.

CHAPTER IV

NOTES

[1]Heber M. Wells, Annual Message, (January 10, 1899), p. 32.

[2]United States Geological Survey, Forest Reserves, Part V, Nineteenth Annual Report, 1897-1898, (Washington, D.C.: 1899); and United States Geological Survey, Forest Reserves, Part V, Twentieth Annual Report, 1898-1899, (Washington, D.C.: 1900).

[3]Gifford Pinchot, Breaking New Ground, (New York: 1947), p. 147; and Dan S. Pack, Forest Service Experiences, (n.p., n.d.), p. 19.

[4]U.S. Department of Agriculture, Laws, Decisions, and Opinions Applicable to the National Forests, revised by R. F. Feagans, (Washington, D.C.: 1916), p. 24.

[5]John Riis, Ranger Trails, (Richmond, Virginia: 1937), pp. 47 and 107. Riis' father, Jacob Riis, author of How the Other Half Lives, a well-known study of social conditions, was himself acquainted with Roosevelt and Pinchot. Indeed, he appears to have seen his tour of the West in much the same pattern as T. R.'s adventures as a rancher in the Dakotas.

[6]Dan S. Pack, Forest Service Experiences, pp. 59-61.

[7]In speaking of permits issued on the Nebo Forest in 1903 Dan Pack related that they were "made in triplicate with pen and ink. Typewriters were clear out of the question with the Forest Service in those good old days. That was the age of the Press copy book. Every letter had to be press-copied and we retained the duplicate, thereby rendering our work slow and tiresome." Ibid., p. 30.

[8]Ibid.

[9]Until at least the end of World War I, large numbers of rangers, forest guards and others were regularly furloughed for the winters because there was simply not enough to do. See L. F. Kneipp, "Winter Work," The Intermountain Review-Ranger, I, (December 10, 1916): 4-5, Region IV Historical Files.

[10]Logan Herald Journal, September 30, 1932.

[11]This list is prepared from Personnel, History of the Cache National Forest, compiled by Ralph B. Roberts, 3 binders, III, Logan District Historical Files, and from a folder entitled Wasatch Personnel Tapes 1929-1962 in the Wasatch-Cache National Forest Historical Files. A list from 1917, however, shows "Marshall, Reynolds, Pack, Clarke, Bruins and Arentson," as Wasatch supervisors. In some of his earliest correspondence, E. H. Clarke lists himself as "Ranger in Charge." "Marshall" was probably the

Dan S. Marshall who was also supervisor on the Uinta Forest. "Pack" may refer to Dan Pack who as supervisor of the Nebo was in charge of the Verno Division which was later added to the Wasatch. It could also have been his brother, W. I. Pack, who is also supposed to have served as an early supervisor somewhere in the Intermountain District, although I have been unable to pin down just where. See "An Interesting Showing of Changes in Supervisors on the Forests of District 4," The Intermountain Review-Ranger, I (June 19, 1917): i.

[12]Oral History of Carl B. Arentson, April 27, 1965, recorded by Arnold R. Standing, Region IV Historical Files, p. 3.

[13]Ibid., p. 16.

[14]C. N. Woods, Forty-One Years in National Forest Administration, (n.p., n.d.), pp. 102. These typed memoirs are found in the Region IV Historical Files.

[15]Personnel, History of the Cache National Forest, III.

[16]Wasatch Personnel Tapes 1929-1962.

[17]A. E. Briggs, Memoirs of a U.S. Forest Ranger, (n.p.: 1963), pp. 151-152.

[18]Ibid., pp. 9-10.

[19]C. N. Woods, Forty-One Years in National Forest Administration, pp. 2-3.

[20]See C. N. Woods, "Inspection Report of the Cache Forest, July 9, 1919" in Early Administration, History Cache National Forest, I.

[21]Dan S. Pack, Forest Service Experiences, references are scattered throughout. Indeed, bucking is one of his dominant themes.

[22]On his frontispiece Briggs included a sentimental note extolling his horse's many virtues and the comment that "Buck passed over the great divide and probably rejoined his kin in 1953." Briggs, pp. i.

[23]Sterling R. Justice, The Forest Ranger on Horseback, (n.p.: 1967), p. 125 and throughout from page 7 to 171.

[24]Ibid., p. 171.

[25]William Miller Hurst, Thinking Back, (n.p., n.d.), p.31.

[26]C. N. Woods, "Memorandum For the District Forester, July 9, 1919," in Early Administration, History Cache National Forest, I.

[27]C. N. Woods, "Cache Inspection Report, May 22 to 31, 1928," ibid.

[28]Early Administration, History Cache National Forest, I.

[29]Sterling R. Justice, The Forest Ranger on Horseback, p. 16.

[30]Early Administration, History Cache National Forest, I.

[31]A. E. Briggs, Memoirs of a U.S. Forest Ranger, pp. 10-21.

[32]Oral History of Carl B. Arentson, p. 5.

[33]Sterling R. Justice, p. 11.

[34]Ibid., pp. 42 and 49-51.

[35]Ibid., pp. 123-24.

[36]Ibid., p. 18.

[37]Ibid., p. 154.

[38]Dan S. Pack, pp. 42-43 and 50-51.

[39]Oral History of Carl B. Arentson, p. 5.

[40]W. W. Clark, "Report on Personnel Bear River National Forest, November 24, 1907," Personnel, History Cache National Forest, III.

[41]Logan Republican, May 25, 1907.

[42]Dan S. Pack, p. 83.

[43]The Intermountain Review-Ranger, I, (February 10, 1917): 14-16.

[44]Interview with James Jacobs, formerly Assistant Regional Forester, September 18, 1980.

[45]Grazing Statistics and Information Binder, Division of Grazing, Region IV.

[46]John Riis, pp. 109-120.

[47]Sterling R. Justice, pp. 145-50.

[48]Letter from Kenneth O. Maughn to Charles Peterson, July 31, 1980.

[49]Under a series headed "What the C. C. C. has Done For Me," American Forests, gave many young men opportunity to express themselves and helped create a positive frame of reference for the program. See for example, Frank Ranney, "It Has Taken Me Off the Road," American Forests, 40 (April 1934): 163; and H. H. Buckles, "I Have Learned to Know the Human Race," American Forests, 40 (May 1934): 218.

[50]A. E. Briggs, pp. 156-59.

[51]Charles S. Peterson, Look to the Mountains: Southeastern Utah and the La Sal Forest, (Provo: 1975), p. 138; also John Riis, p. 114.

[52]From a 1956 newspaper article cited in Early Administration, History Cache National Forest.

[53]Interview with Mesia Simmonds, conservationist forester on the Logan District, September 18, 1980.

CHAPTER V

TIMBER

Relatively speaking, forestry and timber production have not been important themes in Utah. Simply put, it is not a forested state. Its limitations have been apparent in this respect since earliest pioneer times and continue to be apparent today. This general point may be emphasized by referring to a 1930 publication of the Department of Agriculture. Only "about 5,000,000 acres in Utah are timbered," reported the publication. Total national forest sawtimber footage amounted to only 5 billion board feet in 1930 and an equivalent to another 3 billion feet of sawtimber existed in fuel and posts. Under the best management, it was estimated, Utah's forests could produce only half the 188,000,000 board feet needed annually by the state and, in actuality, "only about 37,500,000 board feet of" timber was cut each year. Thus the state was, and is, heavily dependent upon imported lumber.[1] Like the state generally, the Wasatch-Cache National Forest has not been noted for timber production.

While all this is true, timber products have been a significant factor in the development of the area of which the Wasatch-Cache is part and the use and management of timber resources are important and even exciting elements of its history. Therefore, attention will here be turned to timber management and related topics. Several facets of the early experience will first be considered, including pioneer utilization, the role of David Eccles as a Utahn whose major fortune depended upon timber and the exploitation of forest stands on the north slope of the Uinta Mountains. Attention will also be given the impact the Wasatch and Cache National Forests had upon twentieth century timbering practices.

Background

The presence of timber resources in neighboring canyons was an important consideration in the places Mormons chose to settle. As mentioned briefly previously (Chapter II), in the beginning of settlement, Mormons made a notable attempt to utilize natural resources for the public good. As Brigham Young is said to have put it "there shall be no private ownership of the streams that come out of the canyons nor the timber that grows on the hills. These belong to the people: all the people!!"[2] To achieve this end, grants were made to certain proprietors or "stewards" who, according to the Mormon ideal, were to develop roads and manage the timber in return for a "toll" as remuneration for their trouble.[3] Such grants, like land grants until 1869, and all other natural resource grants with the possible exception of irrigation claims, were at best, of questionable legality, part of the "squatters rights" tradition that so often characterized western settlement. Nevertheless, prominent church leaders like Parley P. Pratt, George A. Smith and Brigham Young himself were given control of important canyons during the 1850s by territorial legislative grants. Later, numerous licenses were granted by the various county courts to mill sites and timber along with franchises to saw for commercial or cooperative purposes.

This effort to regulate the utilization of timber appears to have worked fairly well during the initial stages of colonization when new communities lived on a subsistence economy and when property rights were not well established. Once communities were established, however, stewardships broke down in the face of profit motives and Mormons tended to act under the dictates of free enterprise in spite of the central leadership's best effort to control resource utilization.

As communities grew, a period of rather dramatic development to meet local demands ensued. By 1853, for example, there were said to be over 100 sawmills in the territory. During the 1850s the value of production increased eight times from $14,620 in 1850 to $119,145 in 1860. By 1870 ninety-five sawmills were producing lumber valued at $662,731 and employing a total of 500 men. Production continued to climb and, according to census data, by 1875, 128 sawmills sawed 20,772,800 feet of lumber and in 1880, 25,709,000 feet of lumber was sawed by 109

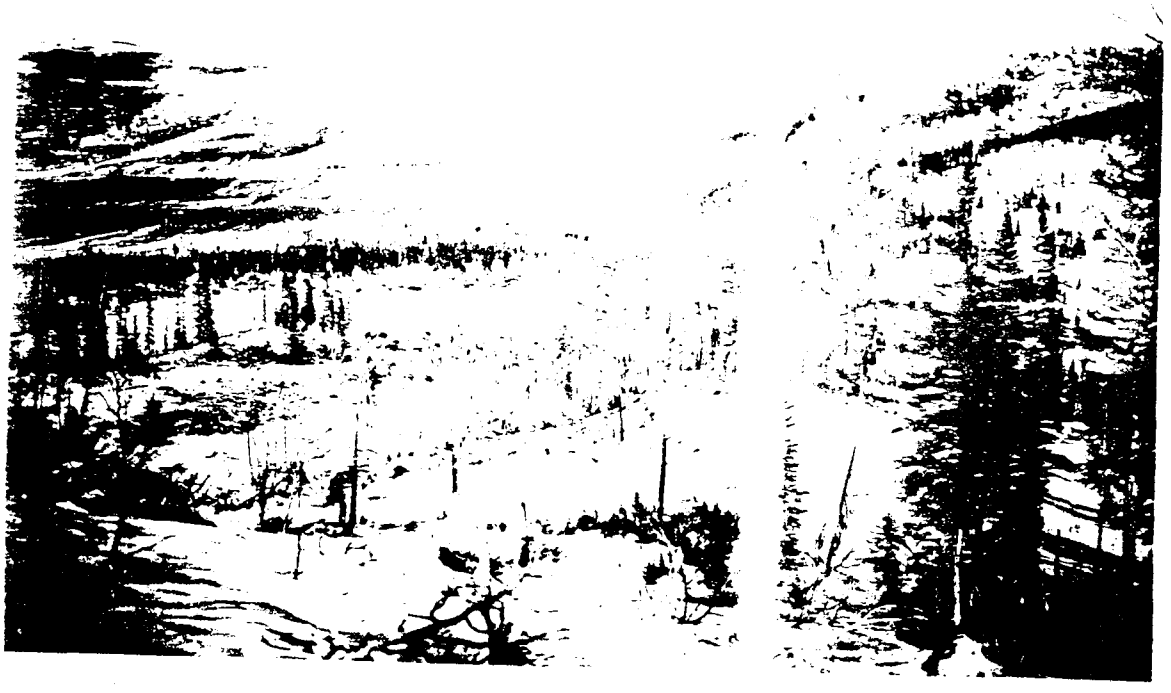
sawmills which, however, employed only 385 men.[4] Not accounted for in Bureu of the Census information is the fact that ties, mining props and charcoal were also produced in significant volumes by hewing or hand methods.

In spite of the good production record of 1880, a shortage of timber was clearly discernible by that time. Indeed, the census report indicated that the entire "west base of the Wahsatch Mountains, has been stripped of the available timber . . . the dearth of good fencing material is very noticeable throughout Box Elder, Cache, Rich, Weber, Morgan, and Salt Lake Counties."[5] The east slope of the Sierra Nevadas and Chicago are said to have "supplied" Utah with finished lumber "almost entirely" in 1880 and a single railroad, the Utah Central, which served Salt Lake City, reported that it carried 117,902,600 board feet of lumber between 1880 and 1884.[6] By 1890 only thirty-two sawmills were in operation. In them 256 men produced only $249,940 worth of lumber while no more than 1000 ties were produced.[7] After 1900 as the state moved into the forest reserve era, timber products began to climb again but we shall examine that development later, and for the moment will consider some specific cases in the area of the Wasatch-Cache National Forest that illustrate the character and development of pioneer or local production sawmilling.

Canyon Sawmills

No where did the proliferation of sawmills show up more quickly or more profusely than in the canyons east of Salt Lake City. Cache Valley milling lagged behind by ten or fifteen years, but followed a similar course of development. Sawmills were to be found in most Salt Lake County canyons, but in none was the timber industry more important than in Big Cottonwood Canyon. Roads were built relatively early into Big Cottonwood for wood and by 1857 more than 2000 townspeople were able to spend July 24th near what has since been known as Brighton.[8] The first mills appear to have been built low in the canyon by about 1850, but the major stands of timber at higher elevations were beyond reach until later in the decade. In 1856, Brigham Young and Daniel H. Wells, his counselor and mayor of Salt Lake City, organized the Big Cottonwood Lumber Company which had three large mills at work at the "Mill F" and "Mill E" sites

Illus. 7 Big Cottonwood Canyon 1902



Illus. 8 Big Cottonwood Canyon: Winter View at Brighton

and for several years "sawed better than 1,000,000 board feet" annually.[9] In 1865 Nelson Wheeler Whipple set up a shinglemill at, what by then was the abandoned "Mill E" site and in the next two years produced some 567,000 shingles for the Mormon Tabernacle, then under construction. Elsewhere in the canyon, including mill sites A, B, C, and D, lumber for mining camps was produced in what became increasingly a gleaning job during the 1870s. Over the years almost ever form of power was used; water and steam power, of course, being the important forms but horse and ox powers, similar to those that powered early threshers, and pits for hand sawing were also utilized. Although new mills were established as late as the 1890s, milling activity tended to be less a commercial enterprise and more part time jobbing to meet purely local needs. Some of it also contributed to specialized activities like furniture manufactury or merely degenerated into wood production to supply neighboring mines. On the other hand, Francis Armstrong, one time mayor and perennial promoter of Salt Lake City and successful businessman Ferramorz Little ran the Mill D Sawmill and one suspects that their influence and wealth, like that of Brigham Young and Daniel H. Wells may have been related to their milling enterprises.[10]

A "Canyon Culture"

As one reads of the Salt Lake Canyon timber country, one is impressed that by 1870 a well developed "canyon culture" had begun to form among people who lived near the canyon mouths or in them and made their livelihood from mountain resources. It was a colorful, zesty culture, earthy in its humor, opinionated in its self confidence, sometimes a bit superstitious, and more than a bit ignorant. Yet it was creative and strong. It was just such a cultural environment as to be able to respond and grow when thousands of prospectors and miners rushed into the canyons in the 1870s, and much later, to the summer folk and ski culture that have characterized Alta and Brighton. Asa R. Bowthorpe, who himself followed what may be termed a canyon way of life, left a delightful account of the early day sawmills and the lore connected to them. Although Bowthorpe is sometimes contradictory in his detail, the lore with which his account is interlarded is rich and lively. It also conveys a sense for the culture's pre-mining

roots. Like many of their Mormon contemporaries, the mountain folk that people Bowthorpe's pages were not overly pious but, at heart, true believers. A story that he repeats twice, once about a Mill Creek sawmill and once about one in Big Cottonwood, tells of unexplained and persistent loss of tools and "spooky" nocturnal manifestations, including, in one case, repeated startings and stoppings of the mill before the owners could get to it. Perplexed, operators of both mills apparently approached Brigham Young for guidance and were advised to move because "the ground where the mill sat was a sacred spot to the spirits of human beings that once lived there." In both cases the "spirits" were apparently placated and in the Mill Creek case, the owner "found all the missing tools in a hole that had been covered with mill slabs."[11]

Another story about Brigham Young shows a different kind of response but, at the same time, suggests that for whatever reason he did indeed try to regulate and limit resource utilization. Archibald Gardner, a well known and oft married polygamist with an obsession for building mills, constructed

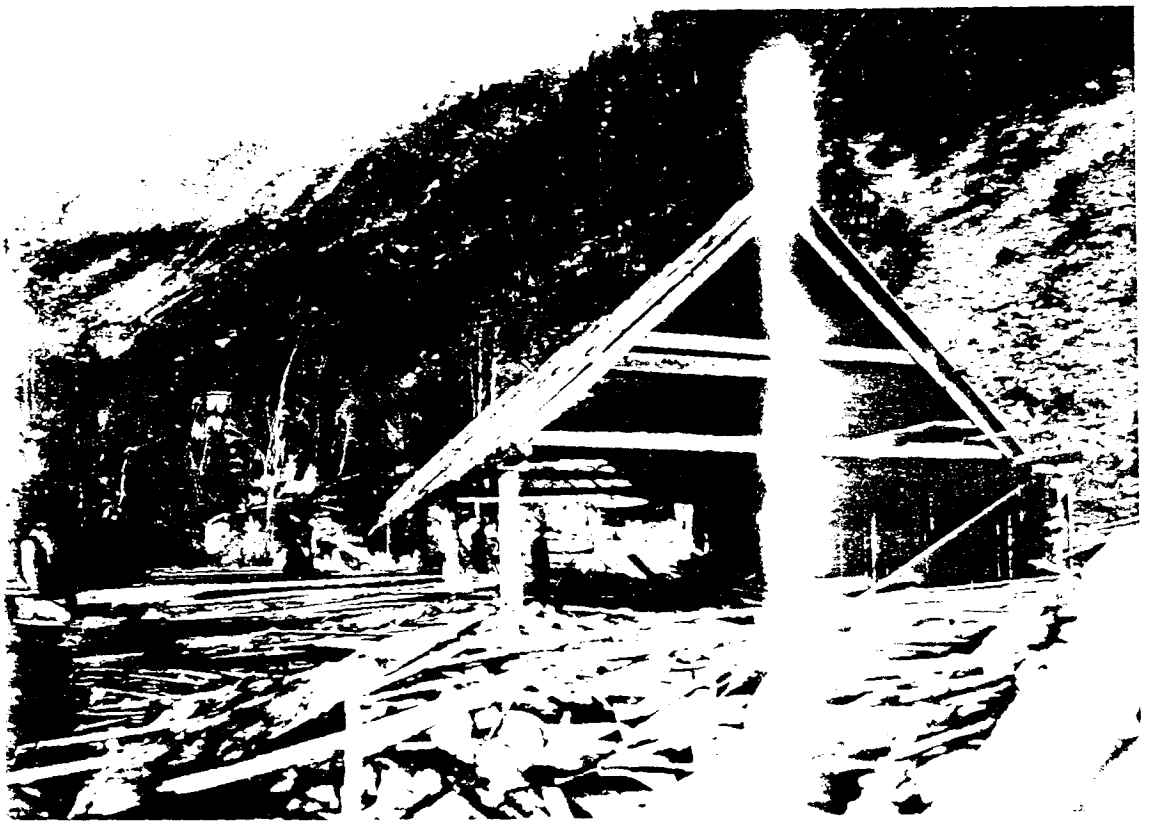
> a water powered saw mill close to the road at the mouth of Butler Fork. About the time Archibald Gardner got his mill ready to operate, Brigham Young came along and gave him a severe scolding for building another mill, saying there were already too many sawmills in the canyon. Then Brigham Young added, "Now go home and apostatize."

Gardner responded to Young's invitation to make the issue something other than whether or not he would follow the church leader in temporal affairs when he replied that he would not apostatize, "I have just as much right in the Mormon Church as you have."[12]

There is also a touch of the mysterious as well as a lot of the physical in other Bowthorpe canyon tales. A story that illustrates both points unfolded at the Armstrong-Bagley "Mill D" site.

> One morning a tall fine looking man came riding into the mill yard with one of the lumber wagons that arrived from Salt Lake Valley for a load of lumber. He climbed down from the wagon and came into the mill and inquired for a man by the name of William Covert. Upon being introduced he asked if he was the Mr. Covert that claimed to be the great wrestler. "I do some wrestling, but that does not make me so great that I know of," Mr. Covert replied. The fellow told the crowd of mill hands that had gathered around, that he was a professional wrestler

Illus. 9 Thin Timber and Ground Cover Little Cottonwood Canyon



Illus. 10 Little Cottonwood Canyon: Waterpower Mill, about 1900

> from San Francisco, California, and that he had heard of Mr. Covert's fine wrestling. He stated that he would like to challenge Mr. Covert to wrestling sometime in the near future if arrangements could be made. "No time like right now," Mr. Covert retorted. "You surely will want to take a few days to get ready?" replied the stranger. "I'm ready right now," Mr. Covert firmly stated. The stranger agreed and the mill was shut down immediately. The men leveled down a pile of sawdust for a mat and the match was on. It wasn't long until the stranger went down for the first fall. He tried for a different hold on the second round, but went down harder on the second than he did on the first. On the third try he went down harder than either try before. The stranger got to his feet after the third fall, he shook hands with Mr. Covert and remarked, "You know your wrestling better than I had any idea." He caught a ride back down the canyon with one of the lumber wagons. They never learned his name or ever saw him again.[13]

Stories about snow slide tragedies, for which Bowthorpe has a special interest and to which he brings a tragic and brooding fatalism, tie the timber culture to mining history and to the Wasatch National Forest's research in avalanche control. Bowthorpe comes by his fascination for slides rightly, having been "present myself" in an early morning slide on January 31, 1911 "at the head of 'Mill F' South Fork." He and twenty-three othere were caught while asleep. Eight of them crawled from the wreckage of their bunkhouse, others were rescued, but three died. Bowthorpe's list of groups even less fortunate is impressive. In the 1860s, for example, the Taggetts ignored warnings and undertook to winter at Cardiff Fork. "Father mother and five children" were killed. In 1872 two miners were killed at Big Cottonwood's Maxfield mine; three years later the wife and children of a "Mr Hayes" were carried to their death, and so on.[14] It is a tragic lore, but one that helps identify the area's culture.

Finally it may be noted that although few women apparently spent time in the canyon, they shared in its tragedy and in its tradition. When Albert Potter surveyed the Wasatch Mountains in 1902 he met a Mrs. Green who herded a few cattle and ran a makeshift mill on public ground.[15] We have seen above that at least two women met their deaths. Women were also the butt of stories that suggest the male dominance of the early canyon society. A case in point is Bowthorpe's account of three old maids who camped in Neff's Canyon only to be frightened by an owl "shouting to the top of his voice 'who-who-who'." As echoes amplified the owl's voice one of the elderly spinsters is supposed to have stepped

out of their tent and cried "any old dude will do" the returning echo seemed to say "any one of you will do." Thoroughly unnerved, the women slept no more that night and the next day inquired at a neighboring timber camp about the night sounds and were told that they had doubtless heard the voice of a black man killed by an avalanche and buried nearby "answering back up among those high ledges."[16] The ladies soon packed up and left. Thus, Salt Lake County's canyons produced their own traditions and a recognizable culture began to emerge that over the years has touched the Forest administration in its personalities and, more significantly, in the way the canyons have been utilized.

Pioneer Lumbermen on the Uintas

By 1870 pioneer lumber men were working as far afield as the west end of the Uinta Range. Indeed, in 1874, Sloan's Gazet[t]eer reported that no fewer than seven sawmills were operating in that locality.[17] Typical of these early day outfits was a mill that belonged to John Taylor, Mormon apostle, and produced lumber for the Latimer-Taylor Lumberyard in Salt Lake City. The Taylor mill was an ancient and dilapidated steam outfit capable, in its prime, of perhaps 7000 board feet production daily but now, in its haywired dotage, extremely prone to break downs and almost impossible to adjust. Prior to 1873 it had operated on the "Head of Weber" above "Chamois" (Kamas) where "but very little of the millions of this beautiful timber is large enough to saw into lumber so that it will pay."[18] Taylor, who gave only occasional oversight to the operation, had a crew consisting of three sons and six other men of varying ages gathered from Tocquerville on the south to Bear Lake on the north. Included were two choppers from Hoopersville, a logger, a cook and Thomas Mace, the engineer. Arriving at the old set "a terrible lonesome looking place," on July 31 the crew spend a week or two moving the mill to a new spot nine miles east of Kamas. Following Beaver Creek as does the present Mirror Lake Road, they broke "road through a new district of heavy timber and herbage." For Levi Savage, a young diarist employed by Taylor, the summer that followed was many things. It was a time of breath taking beauty, of wilderness hikes, of rough camaraderie, of boredom and of frustration as the mill stalled again and again and of

frightened learning as he ran naked, fighting a night fire that fairly exploded "up through the oily leaves of balsams and streamed out above, like a mighty plag of the fairies that was wafted in the night breezes."[19] The summer also proved to be a sad lesson in basic economics as the Panic of 1873 gripped the territory, and joined the crippled machinery of the mill, to make it a time of financial disaster for all hands.

David Eccles

The lumber fortunes of John Taylor might have been more favorable other years, but one suspects that he, like most Utah sawmill men, limped along rarely making any real money. An exception to this rule, however, was David Eccles of Ogden, who founded one of Utah's greatest family fortunes (now embodied in the First Security Banking System) through a timber and sawmill operation. His was a classic rags-to-riches story. A Scottish immigrant, he travelled and worked in the Pacific Northwest before 1871 when at the age of twenty-one he took his first timber oriented job; a contract skidding logs where Wheeler Creek joins Ogden River. The next year he contracted to fell logs and move them to a mill at Monte Cristo, an undertaking that required him to hire several men. The following year, the same ill-fated 1873 that brought John Taylor and his men low, Eccles joined with others to purchase a sawmill and thereafter added more or less constantly to his operation; first lumber-yards in Ogden, then sawmills near Scofield in Carbon County, and later in Idaho and the Pacific Northwest. There can be no doubt that much of his wealth came from his Idaho and Oregon operations, but his Utah rise was based on the forest resources of what became the Wasatch-Cache National Forest and possessed many of the qualities of quick fortune, including Eccle's capacity to utilize public resources to his own advantage. One result was a continued correspondence between him and the Department of Interior and the Attorney General's Office in Washington, D.C., the real nature of which continues to need historical examination.[20]

Early Timber Enterprises in Weber and Cache Counties

Eccles was doubtless that best known of the Weber County lumbermen

but there, as in the Salt Lake canyons, hundreds of men worked at timber related enterprises and reference is made to scores of early mills. The earliest was evidently established by Lorin Farr in 1851. Charles F. Middleton, a pioneer settler, recalled that each winter many young men would penetrate Ogden Canyon, in which there was as yet no road, to about the modern site of the Hermitage where

> trees growing near the banks of the river were hewn down, each man putting his personal mark on the logs, and they were run down to the river in the fall and with the spring floods they were carried down the stream to the valley. When the floods had subsided each settler took his team and traversed the river banks between Washington Avenue and the mouth of the canyon, singling out his timber. Then the logs were hauled to the sawmill owned by Lorin Farr, southeast of 1251 Canyon Road, where they were prepared for use, the miller getting one-half of the amount sawed as his compensation.[21]

By the 1870s numerous other mills had been established and at least two lumberyards were in business including one owned by Barnard White who hauled his lumber from Paradise in Cache Valley. As time passed, Ogden lumberyards, like those in Salt Lake City, dealt in various specialty materials, much of which was locally manufactured including lath, shingles, pickets, sash doors, blinds, mouldings, tongue and groove, square-edged flooring, wainscotting, and all kinds of re-saw lathe and scroll work.

In Cache Valley lumbering took a different turn as a result of two developments in the Mormon Church. The first of these was the Church's construction of the Logan Tabernacle and Temple which led to the opening of Temple Fork in Logan Canyon and to the cutting of thousands of cords of wood in the vicinity of Wood Camp Hollow and wood drives down the Logan River to a boom built about three miles from the canyon's mouth where the wood was taken out and ricked at a lime kiln. The other development was in the rise of United Order timber companies in the various Cache Valley towns. Established in the mid 1870s as a response to the growth of worldliness after the advent of the railroad the United Orders added scope and size to timber operations in the locality. Together with private companies of various kinds they helped harvest the area's timber until, by the turn of the century, little remained.

In the diary of his 1902 survey of the mountains adjacent to Cache

Valley, Albert F. Potter described again and again how complete the harvest had been.

> July 6, 1902--Went . . . up Green Canyon . . . . Much cutting has been done all along.
> July 7, 1902--up Logan River . . . . Fires have burned over most of the areas which have been cut out. There are very few young trees . . . . turned into Cowley Canyon . . . . has been some cutting done in the little side canyons. At present there is very little spruce or fir timber.
> July 8, 1902--up Blind Hollow . . . . sawmill was operated near the top many years ago, all of the large spruce and fir having been cut out . . . . arrived at Crowther Brother sawmill, a little mill cutting custom lumber for the settlers of Cache Valley. There were about 75 logs on the yard but no sawed lumber . . . . They are building a road to reach the body of timber on the high mountain on the east side of the basin.
> July 9, 1902--Tony Grove . . . . cleanly cut for sawmills . . . . up Beaver Creek to Montrose's mill. These people are cutting considerable timber in an area burned over three years ago and most of the trees killed.
> July 10, 1902--for Bear Lake . . . . Saw a number of basins covering large patches in which the timber had been totally destroyed by fire. Some of these areas had been cut over and the tops left and other places the timber was young with apparently very little dead and down, but still the forest was entirely destroyed.
> July 12--Millville Canyon. Very little of the conifer area of this proposed reserve has escaped the axe of the logger. The north slope of the ridge south of Providence Canyon has been cut clean and then burned over entirely destroying the Forest.[22]

While Potter deplores the scorched cut over character of the Cache forest it is interesting to note that he recorded no evidence of diseased or beetle infested trees in the entire period he was in the area although he does mention "borers . . . working" on dead logs. He also refers to the infestations of "ground squirrels" and saw two men catch 100 of them in an hour using "fish poles and a string noose, the squirrels being baited with grain spread upon canvas."[23]

With the possible exceptions of the sawmills of David Eccles and the United Order companies, the lumber businesses we have observed here may all be defined as pioneer operations. A number of things appear to have characterized them. Most were geared to local needs and markets and by comparison were small operations of a seasonal character. More often than not they also seem to have been operated in conjunction with farms, freighting or construction jobs or in such a way as to round out the

working time of the operators. Another important observation has to do with the way they were worked. There were no lumberjacks in the usual sense. The small custom job character of the mills resulted in part time help and cooperative arrangements, as farmers and ranchers used slack time to cut timber and traded logs for sawed lumber on an established formula. Perhaps even more important was the fact that the mill towns, logging camps and the remote woods of commercial operations elsewhere were almost totally lacking. Utah's timber business was, in short, an extension of the general urban and country experience.

The North Slope: Ties for the Transcontinental Railroads

There was, however, one important exception to this rule. With the construction of the transcontinental railroads a commercial timber industry came to exist on the north slope of the Uinta Mountains and in the mountains around Cache and Bear Lake Valleys. Important in this development were ties, mine props and charcoal, all of which were produced with relatively little overhead to meet rather short term demands. The market for ties opened first as the Union Pacific and Central Pacific Railroads built their original tracks in 1868 and 1869, and continued as they later extended and upgraded their lines. After 1872 the Utah and Northern Railroad, which was built north from Ogden to the mines of Montana added to the demand for ties. And before railroading in the locality of what became the Wasatch-Cache National Forest finally began to play out in the middle 1880s, the Oregon Short Line also contributed to the demand. Between them these railroads created a brisk regional market for ties that lasted for at least fifteen years.

Also important was the demand for mine props and charcoal. Silver mines in Utah and coal mines in Wyoming required a continuous supply of props and other rough building materials and the smelting industry at Murray and Sandy in Salt Lake Valley, created a market for charcoal that abated only when coking coal became available in the 1880s.

Key to this market was the Union Pacific Railroad. Dominating its shipping area with a ruthless hand, it charged prices for hauling coal from its southwestern Wyoming mines that Salt Lake City residents could only regard as outrageous. It was slow to pay its contractors and when

it finally did, frequently paid in Union Pacific bonds. It also moved aggressively to force competitors from the field and ultimately took over both the Utah and Northern and the Oregon Short Line roads.[24] Its determination to monopolize shipping and to exert control over related industries was not apparent immediately in 1868 and 1869, but in the years that followed it brought the entire timber industry under its control

Instrumental in this process were contractors Coe and Carter. Historically a somewhat anomalous outfit Coe and Carter show up frequently in the mountain country of northern Utah and southern Wyoming and Idaho but I have been unable to find specific information about their operation, or even their full names. One is tempted to relate the company to Judge William A. Carter, subtler at Ft. Bridger and long time merchant, cattleman and political figure in southwestern Wyoming. The judge is said to have had a sawmill "fifty miles" south of Carter, his headquarters on the railroad, which suggests he himself may have been the Carter involved.[25] Or it may have been his son by the same name. Yet Alexander Toponce, one of the Old West's most free spirited and wide ranging figures, relates that he first became aware of the Coe and Carter Company as freighters in Montana in 1864. While this would not preclude the outfit's having been Wyoming based, it at least suggests that it may not have been.[26]

However, as important as Coe and Carter may have been, other frontier opportunists appear earlier in the fragmentary timbering records that survive from the dawn of the western railroad era. In those early times the north slope of the Uintas was still a remote and untamed region. It had been home to Jim Bridger, Uncle Jack Robertson and a few dozen other fur-trade-derelicts-turned-squaw-men, who lived on the fringe between the Indian world and the white, when the Mormons arrived. Tension soon developed between the squaw men and the Mormons and all but a few of the most case hardened wre forced out by the time of the Utah War in 1857. During the Utah War, the north slope country was a border area, and like border generally, generated its share of exploits as guerrilla fighters like William Hickmen, Porter Rockwell and Lot Smith prowled the meadows, bluffs and high country around a temporary U. S. Army installation known as Camp Scott. Later, during Fort Bridger's

era as an active frontier military post, the area attracted the riffraff of one of the great national trails and the entire regions from Southpass to Soda Springs became a no-mans land, bitterly contested between Mormons, who sought to enlarge the Kingdom, and other frontier types. While it was doubtless the harbinger of civilization as its promoters claimed, the railroad's immediate effect after 1867 was to add to the region's tensions and wildness and perhaps none of the "hell on wheels" camps exceeded Beartown, near Hilliard, for sheer toughness. Hangings, vigilante action and beatings were frequent, if not actually common, during the town's short life. One day in 1868 violence reached a high point when Irish working men held the town hostage (they were trying to get at a crusading editor who had called upon the community to expell them) for several hours before a shoot out between the workers and barricaded businessmen is said to have finally resulted in the death of seventeen of the workers. Alexander Toponce, who claimed he had helped the editor escape, was laconic about the affair. "Some people called it a massacre," he later wrote, "but it had a good effect and just as in the case of the 'Vigilantes' in Montana there was an end to the rough stuff on the Union Pacific."[27]

It is in this setting that the tie and charcoal business unfolded. Among the first to exploit it was Alexander Toponce, who by 1868 had been in the West a quarter century. Responding to booms and crises like a fly to honey, he had freebooted his way from Denver to San Francisco to Virginia City, Montana and to northern Utah, freighting, trading, and punching cows. Now, he joined with John W. Kerr, a Salt Lake City banker and Charles S. Durkee, an ex-carpetbag governor of Utah who lingered in the territory in hopes of turning a dollar. Mid-year 1868, as the Union Pacific built in off the plains,the partners brought seventy-nine wagons and nearly 250 yoke of oxen from the Salt Lake district of Wells-Fargo and Company which, recognizing that its main stay, stage coaching over the Central Overland route, was defunct, sold cheap. Contracting to cut 100,000 ties on the north Uintas at 80¢ each, they evidently met their deadlines, thus contributing to the Union Pacific's track building competition with the Central Pacific to see which company would control Utah.

Always willing to exploit a situation, Toponce contracted

immediately (in October of the same year) with the Central Pacific to deliver 100,000 ties cut by "James Noonen" (probably James Nounan for whom Nounan Valley in Idaho is named) between Soda Springs and Montpelier to the mouth of the Bear River where Corinne was established the next year. This operation ran against an extremely tight schedule and Toponce put fifty ox teams on it at once. Although he got the ties to the Bear River that fall, the freeze caught him before he could drive his ties through Bear River Canyon. In 1869 spring came late, and when Toponce got "the ties out of the river" on May 15th the great race to Promontory was over and the Central Pacific refused to take the ties. Piling them "on the river bank at Corinne," Toponce waited and several years later sold them--evidently for more than a dollar each--to Moses Thatcher, agent for the Utah Northern Railroad.[28]

Ties, Mine Props and Charcoal

By the mid 1870s things had changed considerably. Prices were no longer inflated by the race to Promentory and number one ties brought no more than thirty or forty cents each. The Union Pacific now dominated the scene. In view of the fact that it later straightened its line through southwestern Wyoming, it seems likely that the track was originally laid close to the flank of the Uinta Mountains' north slope specifically because that course of travel placed much of the best timber country within the railroad's grant lands or at least within the lieu lands strip that lay beyond the twenty-mile limit of the grant. The Union Pacific grant may also explain why by the mid 1870s the General Land Office was well under way with its survey of Uinta Mountain country that was otherwise wild and remote. Whatever the case, the odd sections of much of the timber land were owned by the Union Pacific Railway, giving it obvious advantages in the developing North Slope timber industry. Indeed, its hold upon the tie business was nearly complete for, as one seasoned lumberman testified in 1876, there was "no other market for ties in this country except the Union Pacific Railroad."[29]

With its monopoly secure, the railway company not only paid low prices, but timbermen frequently waited as much as two years for their pay. Furthermore, the firm of Coe and Carter had by this time, become

the only tie contractors with whom the railroad company dealt. Nevertheless, a number of other firms were active on the North Slope and several hundred men were apparently employed in the industry's various phases. That this was so, depended in large part on the fact that in addition to ties there was now some market for locally sawed lumber, for mining timbers and for charcoal. Among the successful outfits were the Evanston Lumber Company and the Hilliard Flume and Lumber Company, both of which operated in all four phases of the industry.

Evanston Lumber was run and, at least partially, owned by Jessie L. Atkinson.[30] It was apparently a sizeable institution and dominated the Bear River as a timber course and along with driving its own logs and ties evidently handled most of the river traffic for other tie operators as well. The fact that its sawmill at Evanston also met building needs there and in neighboring Almy, a Union Pacific coal mining town, leads one to suspect that it had connections with the railroad company. In any event, it was well established, had trusted employees who had been with it for several years and did a good business.[31]

The Hilliard Flume and Lumber Company appears more in the context of a challenger without any special connection with the Union Pacific. Involved in it, however, were a number of strong personalities, including John W. Kerr and Alexander Toponce, who we have already met, and an opinionated development minded businessman named W. K. Sloan. Instead of competing with the Evanston Lumber Company for access to the Bear River, Sloan overrode his reluctant colleagues and pushed through the construction of a flume for more than twenty-six miles from west of Hayden Fork headwaters to Hilliard.[32] A branch flume six miles long, called the Howe Feeder, was also constructed on the headwaters of the Stillwater Fork of the Bear.

Known at first as "Sloan's Folly" the flume was a real engineering feat for its era. It was built with local timber and "eighty tons of square spikes." It carried water almost without leakage over trestles as high as sixteen feet and could deliver logs in two hours time.[33]

Together with thirty-two charcoal kilns and a portable sawmill that operated at various points along its course, the flume enable Sloan and his partners to process various grades of timber. Like the Evanston Company, which reported in 1876 that it had converted 27,000 ties into

charcoal, they made a profit by using the whole tree and adapting to market conditions.[34] Thus, Sloan and his colleagues ran the flume successfully until about 1880 when they sold to what one source says was a Boston firm and another says was a Mr. Charlton, who subsequently moved to Ogden.[35] The flume was utlimately dismantled after 1885 and the timber used for ranch buildings in the Hilliard area. The charcoal business was also important at Piedmont, a few miles northeast of Hilliard and on Sulpher Creek, using timber sledded and hauled from Mt. Elizabeth and Big Muddy and Sulpher creeks.[36] It should also be noted that Forest Service timber surveys from early in this century suggest that the tie and charcoal industry was not restricted to the Bear River drainages but that extensive operations were also conducted on the various branches of Smiths and Blacks forks of the Green River and that logs and ties were likely run down both of these streams during the 1870 to 1890 period.[37]

In addition to the three major Bear River operators, (Coe and Carter, Evanston Lumber and Hilliard Flume) several smaller outfits also worked on the headwaters of the Bear River. Most of these were shoestring operations and competition was keen among them. Yet a "code of the woods" was necessary because most of them apparently cut in the same locality, snaked their logs to the same stream banks and had their logs run in Evanston Lumber's general drive. On one stretch of Hayden Fork alone, upwards of seventy-five tie hackers worked in 1874 and 1875 and ties were stacked along the stream for a stretch of two or three miles with intervening breaks of as little as twenty feet separating ties that belonged to different outfits. As a result, marking and separating logs were of prime importance. Speaking of marking customes, one small operator explained:

> My ties had three hacks, Tyman's had two hacks and Smith's one hack, Ferris' were marked, I think with a cross and one mark. He had but a few of the ties. A good many men were cutting ties, from fifty to seventy-five on Haydens Fork. Some were cutting for the Evanston Lumbering Company some for Burris and Bennett and some for me. Each man had a mark on his ties. A man would spot off a piece of timber and put some special mark on his ties.

In addition to such marks, the major companies branded their ties as they put the various consignments of a drive together. The Evanston Lumber

Company, for example, branded with a circle, Coe and Carter with a "C", while Burris and Bennett, who subcontracted for Hilliard Flume, burned their brand with a "B" and a "BB". Some apparently even undertook to control the complex swapping of ties and services that ensued with marks made of materials as subject to the elements as paint or even chalk. Inevitably, there were conflicts and a number of court cases grew out of arguments about ties and marks. The small operators were a hard-bitten lot--at least one traveled under an alias because "I lost property and changed my name on account of . . . shame"--but two disputes in which Hilliard Flume was a party, were decided in favor of small operators, suggesting that the bigger outfits, too, operated according to rather tolerant codes.[38]

By 1876 Coe and Carter had apparently extended their tie operations to other areas where a combination of manpower, timber and streams existed. One such region was the mountains east and southeast of Cache Valley where Coe and Carter established their own "tie camps" and contracted with United Order firms, some of whom delivered as many as 75,000 ties.[39] Coe and Carter apparently cut ties in Logan Canyon, Blacksmith Fork and in its affluent Hayes Canyon. With headquarters at Hardware Ranch, they paid up to forty cents for hand-hewn Douglas-fir ties delivered to the river bank. Ties were then run in the spring down Blacksmith Fork to the Little Bear River and from there to Corinne via the Bear River. Hundreds of Cache Valley men found winter employment and got seldom seen hard money, hacking ties and for several years Coe and Carter made significant contributions to the Valley's economy. Suggestive of its role was the following from the Logan Leader in 1879, "On Monday last twenty thousand broad gauge ties were started down to Corinne from 'Logan boom'. They were used in repairs on the Central Pacific track. Coe and Carter are the owners . . . . Coe and Carter have spend about $60,000 here this season."[40]

At this point it may be well to note that there is no evidence to indicate that Coe and Carter's interest extended beyond ties to mining props and charcoal. Thus, it seems likely that unlike the outfits that restricted their operations to the North Slope, they made no attempt to process portions of timber felled that did not meet specifications for their ties. One result may have been a particularly wasteful and dirty

operation in the Cache Valley area that left slash littered around timber areas. The tendency for stockmen to clear grazing grounds of this litter resulted in heavy burning which explains, at least in part, the sorry conditions Albert Potter and other early foresters found in the region.

For many, including Alexander Toponce and his hard-case contemporaries on the North Slope as well as Cache Valley's farm boys, tie hacking and its related woods and river activities were high adventure and escape. The romance of mountain country, river booms, splash dams, railroad sidings and sawmills, together with the directed effort of man, animal and machine made an imprint that touched succeeding generations. Getting at some of those sentiments is the following from a note on the Temple Sawmill in Logan Canyon which may be used to conclude this section.

> Life was wonderful most of the time at the saw mills--the sound of the saw eating its way through a pine log, or the odor of fresh pine saw dust, the sound of the choppers up in the timber and the tall pines crashing to the ground. Down the long dusty drag road the bull whackers came in with heavy drags of logs. Some of the logs would cut three 16 ft. lengths. When the oxen knew it was their last trip for day they were eager to get in . . . . There were 84 head of cattle at the mill. The men used a bull-whip to give orders but hardly ever touched the ox. He could pop the whip over the oxen's head with a report as loud as a 38 pistol. The whips were about 12 feet long, and were braded by George Sparks. The yokes were much stronger than the standard yoke and were made of cottonwood by brother Lindsey. The cattle were put in a large corral and Richard Hinks, the night herder, would take care of them until morning.[41]

The Forest Service after 1900

Most accounts agree that something of a lull occurred in the timber industry of northern Utah during the 1890s and some make it sound as if commercial timbering, as contrasted to local use operations, ceased for all practical purposes. Examination of early Forest Service surveys from the North Slope, however, suggest that this lapse may have been less than complete. Reference is made, for example, in survey reports submitted about 1915 to timber runs in the Bear River in the 1890s and to logging operations "15 to 20 years ago."[42]

Nevertheless, the timbering story in the Bear River region is lost for a period only to reappear after 1910. That it resurfaces at this

time has much to do with the fact that the Wasatch National Forest had been established and the Forest personnel had entered the scene. This is a major new development and one is tempted to attribute not merely the existence of records on which timbering's story may rest to the Forest Service's influence but to inquire if the very resurgence of timbering, particularly, on the North Slope, is not itself the result of Forest Service efforts to apply Gifford Pinchot's well known principles of conservation through utilization. The earliest management plan dates to the year 1910 and appears to have been put together with an eye to turning a profit for the government from a publicly owned resource as well as serving as a prospectus for potential timber companies. In fact, North Slope surveys of the entire decade after 1910 have much in common with the prospectus. Trees are estimated and categorized, markets are identified, road and stream conditions are evaluated and all manner of cost factors, including depreciation, are weighed, providing a body of production data not unlike the promotional tracts used by mining and land developers of the era. In this context it should be recalled that 1910 was a time of special challenge to the Forest Service. Pinchot had been removed and under the direction of President William H. Taft, Chief Forester, Henry S. Graves was emphasizing the Service's role in the management of national timber resources. In addition, the Forest Service was confronted with a general reluctance on the part of the lumber industry to sumbit to the limitations its regulations placed on them and was consequently under some pressure to sell its timber and its services.

In keeping with this general movement, a series of timber surveys were made on the North Slope and detailed reports were issued between 1910 and 1920. Forest personnel who contributed to the process included Nils B. Eckbo, F. S. Baker, A. C. Hauge, Herman Work and L. R. Watts. All of these men appear to have been from the District IV Office in Ogden and their crews were made up of personnel other than the regular Wasatch Forest officers. At least Baker, who became dean of the forestry school at Berkely, and Watts, who became Chief Forester in 1943, were marked for future prominence. Beginning with surveys by Eckbo on the West Fork of Blacks Fork in 1910 their surveys proceeded through the various affluents of the Bear River and Smiths Fork as well as Blacks Fork. Their plans and descriptions gave some attention to the history

of the various drainages and very brief accounts of the survey process itself were presented. In justice it should be said they did go well beyond promotional data in their discussions of marking practices, cutting, brush disposal and in their concern for what timbering would mean in terms of watershed, insect and fire control. One point that hind sight may or may not consider valid, was apparent in recommendations that Alpine fir and Engelman spruce be rigidly marked and cut to encourage long term growth of lodgepole pine "because this . . . should be managed as a tie forest."[43] The effort to attract timbermen was itself a recognition that certain stands of trees had long since passed their time of maximum growth and were for various reasons creating problems of reproduction or fire and insect control. Yet, only occasional reference was made to disease and insect infestation and when it was, it was most frequently to give a clean bill of health to some timber compartment or other. Even when insects' potential for damage was recognized, the tendency was to a kind of fatalism that is still to be sensed in Forest Service circles. For example, a 1915 comment by N. B. Eckbo about Mill Creek may be referred to. "This timber," he wrote:

> is attacked to a small extent by bores, and scattered trees can be found which have been killed from this cause. In no particular locality is the damage excessive at the present time, but it is impossible to foretell when they may develop to an extent to cause damage similar to that in the Dry Fork of Weber River, where about 50% of the timber was killed in three years. To prescribe preventative measures in Mill Fork where the Government controls but 41.5% of the land would be useless; because any action taken on this land would be nullified by the conditions on the surrounding land.[44]

At no point, however, was the disparity between early twentieth-century and more recent thinking more apparent than with reference to "improvement" of streams for driving purposes. Basically the problem was an outgrowth of the special relationship of lodgepole pines which matured at a sixteen to eighteen inch size and the numerous North Slope creeks that would float a tie or sawed timber, but were inadequate for saw logs. Hoping to add to the appeal of the Uinta's lodgepoles the reports repeatedly spoke of tie drives of as much as a hundred miles with offhand casualness. One, that proposes environmental changes with abandon was written in 1915 by Lyle F. Watts, urging that the West Fork

of Smiths Fork be improved to run ties to Granger, a stop on the railroad northwest of present day Little America. "West Fork," he wrote:

> has a fairly uniform fall and sufficient banks for driving ties and props. The flow late in June is about 80 second feet. The stream bed varies from 4 or 5 feet to 14 or 16 feet in width, with a corresponding variation in depth from 10" to 12" on up. The banks are covered with a narrow band of willows for a large part of the distance. While there are few large boulders in the stream bed, there will be considerable expense for widening, straightening and clearing the channel in places . . . . In order that a driving head of water may be maintained for a sufficient length of time it would be very advisable to construct a dam across the outlet of the small lake a few chains north of the center of Section 28, T. 2 M., R. 13 E. It is possible to turn all of West Fork into the lake by constructing a short ditch. The cost will be $1,200 for dam and ditch.
>
> From the junction of the two forks of Smiths Fork to Blacks Fork of Green River, a distance of about 40 miles, the river is not good for driving over much of its course. As soon as the more flat valley is reach above Robertson the stream begins to split until at the lower end there is a scarcity of water except during the spring freshets. To make this 40 miles of river safely drivable it will be necessary to expend $16,500 . . . . During the drive a crew of 125 men should be employed for a period of six weeks.[45]

Evidently, it was not until the 1925 to 1936 period that the Smiths Fork compartment was finally timbered. During those years some 250,000 ties and 100,000 mine props are said to have been driven annually the seventy miles to Granger, from where they were hauled to Standard Timber Company's yards in Laramie for creosoting. As Watts had predicted, it proved necessary to build at least one splash dam to "maintain a driving head of water."[46]

Tie Hacks and the Standard Timber Company

Whether it was because of the Forest Service's efforts or because of changing times, a period of new North Slope timber activity that lasted for at least a quarter of century began in 1912. D. M. Wilt evidently initiated this new period as a private contractor for the Union Pacific Railroad, but in 1913 organized the Standard Timber Company. Suggestively, the new company was based in Omaha, as was the railroad company. Even more pointed evidence of the connection

between the two, is the fact that Standard's contract with the Union Pacific Railroad called "for six to seven million ties to be delivered within 9 years." In any event, the company ultimately spread its operations over the entire North Slope and from the earliest years to the latest apparently had significant interests at Laramie.[47]

A truly remarkable portrait of a Standard Timber Company tie hack operation in its first season was written the winter of 1912-1913 by foresters F. S. Baker and A. G. Hauge. I have been unable to learn who Hauge was, but Baker was a young Cornell University graduate, new to the west and filled with curiosity and with first rate capacities for observation. He went on to a distinguished career in District IV until 1928 or 1929, when he went to the University of California's forestry school, serving brilliantly as department head and dean. Evidently put together as an aid to Forest Service management, the Baker-Hauge study described what seems to be a well organized system that belies specific references indicating that Standard Timber was newly organized.[48]

In 1912 and 1913 the Standard Timber Company's tie operation was located on Mill Creek Fork of Bear River where it worked seven sections (31 and 33, T3N, R11E and 3, 9, 5, 17 and 19, T2N, R11E). Employed were 160 people of whom 125 were tie hacks, 22 haulers, 17 women, 14 men at the commissary and on the river and a supervisory force of 3. The tie hacks were divided about equally between Scandinavians and local farmers and ranchers and lived in "camps" of from six to a dozen in well-made cabins erected by the men themselves at an average cost of $23.00 each. In the winter months they hewed logs on individual "strips" laid out before snowfall on each of the sections and connected by haul roads to the stream. Although the period of the Baker-Hauge report was from December through March, it was anticipated that tie hacks would normally spend upwards of eight months in the woods each year. Their tools included a broad ax, a double bitted ax, a peeler, a saw and a "pickaroon, an instrument made by cutting an old axe head down." Paid by the piece, men averaged about twenty ties per day, which after board left them about 96¢ per day for their efforts. Tie haulers lived at the camp for which they hauled, with each moving the ties of about eight hacks or upwards of 200 per day. Each camp had its cook or batched and all dealt at the commissary where prices were marked up twenty-five percent over Ogden,

and where the workers apparently spent most of what they had coming. Between November and Christmas the store was heavily overstocked from Evanston with "from one to six outfits going all the time, four and six horse loads being hauled in. Six-horse teams averaged six tons per load."[49]

For its part, the company worked timber on government sections and on one-time railroad lands, belonging now to sheep outfits, on which the Union Pacific had reserved timber rights. The first year's cut ran about 200,000 ties, well below the 700,000 needed if its nine year contract was to be met. In addition to the tie hacking was the river drive of about forty miles which, it was expected, would employ most of the tie hacks an additional two months making a total work season of ten months each year. Mill Creek's bed broadened at certain points into meadows where rotting ties and timber from earlier years attested to the need for improvements. As a result, stretches amounting to about one-third of a mile were cribbed on either side and the channel grubbed and cleaned. Roads to Evanston were in good shape. Very loose supervision was given to tie hacks and haulers who lived and worked very much on their own. Tie hacks cut only such trees as they wished from their strip although timber bosses could demand that they cut good, but slow hewing trees and if they declined, fire them. The Mill Creek operation, like others for which Forest Service representatives drew plans, was to have a duration of about six years.

In winter the social life of tie hacks must have been limited and quite dependent on the individual camps. Most worked eight hours, six days per week and in addition to Sundays took from a half day to three days off for Christmas depending on their diligence and energy. There was little sickness reported and few accidents. Few of the tie hacks appear to have gone to Evanston during the winter, although the stage apparently provided delivery and mail service twice weekly over the thirty-five mile road. There was, however, considerable difference in productivity. One veritable Paul Bunyan hewed forty-eight ties in one day. Others did well to get a dozen and one camp whose sluggishness was legendary averaged far worse. Mountain lore from the region indicates that tie hacks sometimes met for "all gents" dancing and there is at least one account of three hacks who committed suicide on the Smiths Fork suggesting that by the 1930s, at least, some of them may have been

misfits whose efforts to escape into the woods had not been entirely successful.[50]

Timber Management

Although much emphasis was placed on what might be termed "making the sale" it is clear that even by 1910 forest management was a well developed science. As a science it has continued to grow and will doubtless continue to do so in the years ahead. To establish some feeling for developments of this sort we will look briefly at timber management on the Cache National Forest and on Logan District. In the very earliest years of the Forest a few reports were made that related at least partially to timber, but there is no evidence that surveys comparable to those on the north slope of the Uintas were made although it seems likely that timber surveys of some kind were undertaken. By 1921 experimentation had become a part of timber management and F. S. Baker isolated three small tracts of Douglas-fir on Meadow Creek in "the Robert Price Sale Area" to study the effects of a special system of cutting, which extant records do not explain fully, but which was apparently calculated to leave a good deal of understory or secondary cover for new growth.[51]

There can be no doubt, much progress was made on the Cache National Forest in the years that followed 1925 when a "Timber Crop Report" indicated that the total timbered area was 357,700 acres. The next year a major timber survey was initiated which, in its first phases, lasted until 1928 and which became the basis for additional surveys and computations extending into the late 1930s. The 1925 survey, for example, was headed by Ranger Joe A. Libby and undertook to type the timber in what was called the Nounan Working Circle and to classify trees by age. Part of the crew was on the job only two weeks and only one man for a full month. Total costs came to $1362. By 1940 rather specific management plans were being based on the data gathered by Libby and later surveyors.

Paul A. Grossenbach, for example, wrote a long term management plan in 1942 for the Bear Lake Working Circle, a vast two state area of 201,052 acres of which 58,661 were productive timber. Basing his calculations on the assumption that the effective growth cycle would be

150 years with a cutting cycle of fifty years he laid out the following objectives: 1) to establish "a continous yield . . . by regulation of the cut;" 2) to harvest mature timber during the first cutting cycle and work toward even-aged stands in future cuts; 3) to coordinate timber use with other usages; 4) to reduce disease and insect damage by intelligent cutting; 5) to encourage natural reproduction by sound cutting practices; and 6) to plant where natural reproduction failed. Cutting policies were recommended and sales plans projected through both the first and second cutting cycles or for a full century. By Grossenbach's calculations, the optimum sale would average 2,260,000 board feet annually, all of which he expected would be consummed locally. Among the factors to be considered in actually making the sales were the needs of people and communities in the area and the interests of the eighteen small mills that worked on the cutting circle. Grossenbach recommended that no additional mills be permitted to cut in the circle and that some of the existing mills be moved so that harvest potential would conform more nearly to timber stands. Stipulations restricted "culling" of sawtimber stands for special products such as poles and mine timbers, suggesting that until that time, such practices had not been uncommon. Contracts were not to exceed five years nor sales average more than 2,252,000 feet per year with the maximum sale size to be 400,000 board feet.[52]

From other sources it is learned that during the ten year period beginning in 1939 and ending in 1948, the total harvest from the Bear Lake Working Circle amounted to 23,439,060 board feet. When divided by ten, this total approximates the allowable annual cut projected by Grossenbach very closely, suggesting that management plans became effective guides. During this same period the allowable cut for the entire Forest apparently totalled about 7,000,000 board feet per year and in most years sales approached that figure.

By 1950, however, the allowable cut was scaled down to 4,988,000. Thereafter the annual take was calculated at about 4.5 million board feet on a sustained yield basis until 1973 when the Forest was divided. During the 1950s annual harvest plans broke the cutting circles down by compartments showing cuttable acreages, ten year average cuts and approved cutting budget for the year, which were sometimes considerably smaller than the ten year averages, but in significant cases much larger.

By 1961 the system had been refined into Five-year Cutting Budget and Sale Programs that scheduled the annual cut and showed at a glance how the long term goals of the Forest were to be achieved. Timber sold was usually restricted to Douglas-fir, subalpine fir, spruce and lodgepole pine, although after 1956 when 1,800,000 board feet of aspen was harvested from the Monte Cristo area, Aspen was sometimes sold.[53]

In recent years complexities have multiplied as various environmental standards have been applied and as use concepts have broadened from the idea that timber was produced and used by local mills and local people to include a wide and complex range of factors and interests. Where in the 1940s much logging was still done by horse and all sawing was done near the timber stands, often by mills in the woods, relatively heavy mechanization has entered the woods and instead of a dozen or so mills located in canyon mouth towns, the Wasatch-Cache Forest now has a mailing list of about fifty timber companies, many of which haul logs from Logan District to mills as distant as Evanston, Star Valley or Pocatello.[54]

Within this changing context reforestation has become a matter of increasing importance. Neither the relatively long summer drouth nor the abrupt rocky character of the Wasatch Mountains have been congenial to natural reforestation. Watershed and aesthetic considerations as well as sustained yield have made it doubly critical that the problem be solved. As consequence, various cutting practices including shelter-wood and clear cut have been utilized in attempts to encourage natural regrowth. Efforts to improve on nature led to artificial planting which in recnet years has become a normal function of timber management. The first halting steps in this direction were taken almost immediately after the founding of the Cache National Forest. W. W. Clarke, the second supervisor, responded to local needs by setting up an "enclosed nursery" in the summer of 1907 "about a mile up the left hand fork of Blacksmith Fork canyon."[55] There is no evidence that anything came from the "interesting experiments" of that year, but in 1910 more extensive experiments were underway in Logan Canyon. Locally produced seed was sown and 10,000 "three year old yellow pine and red fir" seedlings were planted.

These seedlings were evidently procured from a nursery in Little

Cottonwood Canyon on the Wasatch National Forest, but until 1917 most plant stock came from a nursery at Pocatello. Thereafter little was done in the way of plantations until after 1936 when the Tony Grove Nursery was started under the supervision of James W. Augenstein, with the plan of producing two million conifer seedlings annually for use in Utah and Idaho. Using seed from several forests in Region IV a million and a half seedlings were started by 1939 and by 1942 the Tony Grove Nursery delivered nursery stock, valued at $17,954, to the School of Forestry at Utah State Agricultural College and fourteen Region IV forests. In 1959 the Lucky Peak Nursery, near Boise, was established on a 296 acre farm. By 1965 it was producing eleven million seedlings per year to become the chief supplier of the Wasatch-Cache National Forest and other forests throughout the West.[57]

For years, however, planting was only moderately successful on the Wasatch Front Forests. In part, the success of artificial plantings was limited by the same problems that beset natural reforestation. Rodents, particularly northern pocket gophers, were also a problem. Indeed, results were so discouraging that in 1931 F. S. Baker declared planting was hopeless in a technical bulletin that for many years influenced the thinking of Wasatch-Cache foresters.[58] By careful attention to the details of planting and the unflagging effort of Al Dalgren at the Regional Office a shift in thinking was launched in the 1960s and in the years since, planting has been conducted with relatively good success.[59]

Also changing in recent years on the area of the Cache has been an assumption that Engelmann spruce made for the most efficient management. As viewed now, lodgepole pine with its quick growth and pleasing aesthetic qualities is an encouraged stock although a balanced stand of various native types has obvious advantages. To facilitate planting and regrowth, clearcutting has often been required under terms of the Sale Area Betterment clauses of recent sales. Slash is machine piled and in some cases partially removed by home use wood haulers. After inspection to see that the contract has been lived up to in terms of cutting, erosion control, roads and piling, a logged over area may be treated for pocket gophers during the previous fall and then planted in the spring. During the 1970s labor costs for planting have run about four to one for the

cost of planting stock. A typical crew of seven or eight persons working under reasonable conditions can plant 600 trees per day. While not all sales areas are replanted, many are and what began as brave experiments and went through a long period of frustrating failures has finally become a routine operation that produces good prospects for improved stands throughout the Forest.

Summary

In conclusion, it should be observed that the era of timber utilization in the area of the Wasatch-Cache National Forest is divided almost evenly between pre-national forest times and the era of managed utilization under the Forest Service's administration. Unlike many areas, the Wasatch-Cache region experienced an early attempt to manage timber resources for the public good under the Mormon stewardship plan. As time passed, timber was used on the Wasatch Front almost exclusively for local needs. In the main, it has been harvested by small and sometimes cooperative operators who have often spent only part time in the business. An exception to this rule was David Eccles whose quick rise to wealth was based on timbering in the Ogden area. Perhaps the most romantic and yet typical timber operation on either Forest was on the north slope of the Uinta Mountains where the Union Pacific Railroad exploited a natural resource that it had laid claim to early.

It would appear that far from retarding timber utilization, that Forest Service management helped reactivate a moribund industry on the North Slope. There, efforts to achieve maximum growth, control fire, and turn a profit for the government from public resources resulted in surveys, management plans, timber sales and the development of roads and streams. In the years between 1940 and 1973 the Cache National Forest was one of the largest and most consistent timber producers in the Intermountain Region.[60] Yet timber operations there have remained small and markets have, in the main, been local and for rough or "unmanufactured" lumber products. Timber management on the Cache Division has, of necessity, responded to these conditions. Sales have often been small and for years were to companies based at the foot of the mountains themselves. More recently, however, trucking has enabled operators to

become involved who are located at more distant sites. Among other things, management has included increasing emphasis upon planting. Reforestation and sustained yield are becoming realities in many localities as management learns more and more about the rhythms actually involved in the 150 year growth cycles of timber stands. Lodgepole pine with its high regenerative capacities and relatively quick growth is important on the Wasatch-Cache National Forests. In addition, lodgepole pine is relatively easy to manage in terms of insect control, and in spite of a fire covering more than 3500 acres on the Evanston Ranger District in the summer of 1980 is still considered relatively resistant to burns. Because fire and insect control are themes of considerable importance in themselves, attention will be turned to them in the next chapter.

CHAPTER V

NOTES

[1]United States Department of Agriculture, Forest and Range Resources of Utah: Their Protection and Use, Miscellaneous Publication No. 90 (1930), pp. 57-60.

[2]Avery Craven, "Utah and the West," The Western Humanities Review 3 (1945): 282.

[3]Many good treatments of this exist. Perhaps none is better than Leonard J. Arrington, Great Basin Kingdom, an Economic History of the Latter-day Saints, 1830-1900 (Cambridge: 1959), pp. 53-54.

[4]United States Bureau of the Census, Twelfth Census of the United States: 1900, Manufacturing.

[5]United States Bureau of the Census, Tenth Census of the United States: 1880, Manufacturing.

[6]See Douglas M. Bird, "A History of Timber Resource Use in the Development of Cache Valley, Utah, " (Master's thesis, Utah State University, 1964), p. 15.

[7]Twelfth Census of the United States: 1900, Manufacturing.

[8]One account reports that "2,587 people, 465 wagons and carriages, 1,028 horses and mules, 332 oxen and cows and several brass bands" made it up for the grand occasion. Asa R. Bowthorpe, "History of Pioneer Sawmills and Local Canyons of Salt Lake Valley," (1961) in Forest History Wasatch, 2 binders, I, Wasatch-Cache National Forest.

[9]Ibid. This information, like most of it in this section, is taken from Bowthorpe's account.

[10]Mormon historian Andrew Jensen has the following to say about Francis Armstrong and the lumber industry: "In the spring of 1862 he began working for Feramorz Little at his lumbering mill in Big Cottonwood Canyon. He subsequently purchased the mill from Mr. Little for twenty-one thousand dollars and started in business for himself, forming a partnership with Charles Bagley, and conducting a general lumbering business. The firm of Armstrong & Bagley prospered and the senior partner next purchased an interest in the business of Latimer, Taylor & Romney, manufacturers of doors and sash." Latter-day Saint Biographical Encyclopedia, 4 vols., II, (Salt Lake City: 1914), p. 483.

[11]Bowthorpe, "History of Pioneer Sawmills."

[12]Ibid.

[13]Ibid.

[14]Ibid.

[15]Diary of Albert F. Potter's Wasatch Survey, July 26, 1902, Wasatch-Cache National Forest Historical Files.

[16]Bowthorpe, "History of Pioneer Sawmills."

[17]Gazet[t]eer of Utah, and Salt Lake City Directory, 1874, edited by Edward L. Sloan, (Salt Lake City: 1874).

[18]"Book A - Levi Mathers Savage: The Look of Utah in 1873," edited by Charles S. Peterson, Utah Historical Quarterly 41 (1973): 15.

[19]Ibid., pp. 16 and 19.

[20]Leonard J. Arrington, David Eccles, Pioneer Western Industrialist (Logan: 1975), especially chapters 5-7.

[21]"Sawmills in Weber County," History Cache National Forest, compiled by Ralph B. Roberts, 3 binders, II, Logan Ranger District.

[22]Diary of Albert R. Potter's Wasatch Survey.

[23]Ibid.

[24]Leonard J. Arrington, Great Basin Kingdom, an Economic History of the Latter-day Saints, chapter 9; also see Robert Athearn, Union Pacific Country (New York: 1971), chapter 13.

[25]For a sketch of Carter's role at Fort Bridger see Fred R. Gowans and Eugene R. Campbell, Fort Bridger (Provo: 1975), pp. 145-47.

[26]Alexander Toponce, Reminiscences of Alexander Toponce: Written by himself, new edition, (Norman: 1971), pp. 69-70.

[27]Ibid., pp. 143.

[28]Ibid., pp. 146-47.

[29]"Bill of Exceptions, B. F. Woods vs the Hilliard Flume and Lumber Company, March 17, 1877," transcribed by James E. Ayer from the District Court Records of the Third Judicial District, Evanston Wyoming. A copy is in the Evanston Ranger District Historical Files. As the transcriber notes, this is one of the few primary documents dealing with the early phase of timbering on the North Slope.

[30]See former Forest Ranger L. J. Colton's excellent "Early Day Timber Cutting Along the Upper Bear River," Utah Historical Quarterly 35 (1967): 202-08.

[31]Ibid., p. 203; also "B. F. Woods vs the Hilliard Flume and Lumber Company."

[32]L. J. Colton, whose long experience as a ranger on the Uinta Mountain districts acquainted him with the country, indicated that there were thirty-six miles of flume and that construction cost $200,000. See "Early Day Timber Cutting," pp. 204-05. However, Alexander Toponce, who rarely understates anything, indicated that the flume "was twenty-six miles long," and that together with the company's charcoal kilns it cost only $150,000. Reminiscences, p. 160. On the other hand, N. B. Eckbo, an early forest examiner, indicated that there was as much as seventy-five miles of flume on the North Slope, suggesting that either the Hilliard Flume and Lumber Company or other outfits had flumes in addition to the Hayden Fork-Bear River run. See "Forest Description: East Fork and Stillwater Fork of Bear River, Bear River Block," in Timber Survey 1915, p. 30, Evanston District Historical Files.

However many miles of flume, construction by the Hilliard Flume and Lumber Company was a considerable achievement. As L. J. Colton described it "a small city known as Mill City Creek near Fold Hill." The city had a population that numbered as high as 500, a company store, and barracks for the men to live in. Remnants of this once flourishing camp are still present. Throughout the area that supplied the flume with timber, remains of once well-built cabins that housed loggers can be found. [The cabins likely belonged to a later era.] At three different places along the course of the flume, ponds or eddies were constructed. These were used to hold, reassemble, or sort logs if necessary and replenish the water in the flume. One eddy was located at the mouth of East Fork of Bear River, one where the flume crossed Mill Creek, and one at the upper end of Hilliard Flat. The one at Mill Creek was known as the "big Eddy." Remnants of this eddy and the one on East Fork can still be seen. At two different locations lookouts were stationed. These were located on the flume. A system of light signals was used to send messages back and forth." Colton, "Early Day Timber Cutting," p. 206.

[33]Ibid.

[34]"B. F. Woods vs Hilliard Flume and Lumber Company."

[35]Colton, "Early Day Timber Cutting," p. 207; and Toponce, Reminiscences, p. 160-61.

[36]Colton, "Early Day Timber Cutting," p. 208.

[37]See, for example, N. B. Eckbo," East Fork and West Fork of Blacks Fork, Bear River Block," Timber Survey 1915, p. 16, Evanston District Historical Files.

[38]"B. F. Woods vs The Hilliard Flume and Lumber Company;" also "Bill of Exceptions, Amos Mosher vs The Hillard Flume and Lumber Company, February 28, 1877," transcribed by James E. Ayer from the District Court Records of the Third Judicial District, Evanston, Wyoming. A copy is in the Evanston District Historical Files.

[39]Douglas M. Bird, "A History of Timber Resource Use in . . . Cache Valley," p. 34.

[40]The Logan Leader, October 30, 1879.

[41]Alfred E. Crookston, "The Temple Saw Mill," History Cache National Forest, II.

[42]N. B. Eckbo, "East Fork and West Fork of Blacks Fork," p. 16; and F. S. Baker and A. G. Hauge, "Report on Tie Operation; Standard Timber Company, 1912-1913," Evanston District Historical Files.

[43]Eckbo, "Forest Description, Mill Fork of Bear River, Bear River Block," Timber Survey 1915, p. 25, Evanston District Historical Files.

[44]Ibid.

[45]Lyle F. Watts, "Smiths Fork, Green River Block," Timber Survey 1915, p. 13, Evanston District Historical Files.

[46]Ibid. See T. R. Jenkins, "Splash Dam" and "Commissary," recorded by Lula Goodrick, Forest History Wasatch, I, for reference to the Union Pacific contract and to its Laramie activities in 1912.

[47]Baker and Hauge, "Report on Tie Operation;" and Jenkins, "Splash Dam," for references to activities in the 1930s.

[48]One possibility is that D. M. Wilt and the name Standard Timber Company are what was really new and that an earlier outfit, perhaps the "Union Timber Company" had established the patterns that seem so well fixed in 1912-1913. Of course, it is also possible that this was a well established pattern throughout tie forests and that is was easy to duplicate it quickly on the Uintas. For reference to "Union Timber Company" see Standard Timber Company Map, December 12, 1913, Ranger District No. 6, Blacks Fork, Evanston District Historical Files.

[49]Baker and Hauge, "Report on Tie Operation." A description of the Smiths Fork Commissary which was built in 1927 and ran until 1936 is worth including here: "Immediate surroundings consisted of this commissary, a boarding house, blacksmith shop, dance hall, one school room with teacher's living quarters attached and a stable, hay and grain building. Five cabins besides the manager's home known as the 'Edin Residence' were close in . . . . During the summer supplies were trucked in daily, a distance of forty-three miles from the nearest railroad at Carter, Wyoming. (2500 pound of freight was the average load.) Winter provisions came by team and sleigh from Carter to Robertson, Wyoming. Here the company's bob sleighs and four horse teams continued the haul into camp,

once a week. The commissary carried a full line of groceries, shopping supplies, clothing and livestock feed as well as caring for out-going and in-coming mail. Many winter staples were stocked before snow came. One hundred twenty-five tons of hay, ten tons of potatoes and sixty-thousand pounds of oats were trucked in every fall of the ten years the Standard Timber Company took timber from this area." T. R. Jenkins "Commissary."

[50]"Olaf Olsen" it is said, "was old. He died alone in his cabin up country a pace. While the country cornor prepared the body for burial, a friend and a Reverend dug a grave. It was spring and Olsen was lowered in one foot of water. Jack Rose was ill and had been for some time. He was found dead in his cabin several days after he committed suicide with his hunting rifle. Two men returned upstream thirty miles from Drive Headquarters to bury Rose by moon light. Charlie Mattson was a drinker. He ran out of whiskey, got despondent, and hiding from imagined pursuers crawled beside a fallen tree about a mile from his grave site to take a long rest and hide a long time. Mattson cut his own throat with a razor." All three are said to be buried at Suicide Park. Lulu Goodrick, "Suicide Park," Forest History Wasatch, I.

[51]F. S. Baker, "Memorandum for Office in Charge of Robert Price Sale Area, Meadow Creek, Cache National Forest," History Cache National Forest, II.

[52]All the documents referred to here are under "Timber Management," History Cache National Forest, II. Especially important among them is Paul A. Grossenbach, "Management Plan, Bear Lake Working Circle, Cache National Forest, 1942."

[53]Timber Management."

[54]Timber Management Files, Logan District.

[55]The Journal. May 17, 1907.

[56]See undated and unidentified newspaper clipping in "Timber Management."

[57]Lucky Peak Nursery, (Ogden: n.d.).

[58]Interview with Professor Theodore Daniel, Utah State University, July 10, 1980.

[59]Ibid.

[60]Region IV Statistics and Other Information, Book I. Data Relating to timber production is found under the Timber Management heading. The particular copy we used is found in the Range Management Division of the Regional Office.

CHAPTER VI

FOREST FIRES AND INSECT CONTROL

Along with surveys, timber sales, reforestation and nurseries, fire and insect control have been important and continuing elements of timber management on the Wasatch-Cache National Forest. Indeed, they were of such significance and character as to merit treatment historically in a separate chapter. In the pages that follow, fire will be treated in its general attributes first, and then as it applied to the Cache and Wasatch National Forests. The problem of insect infestation and the experiences encountered in dealing with it will then conclude this chapter.

Fire

Fire has always posed a great danger for the lodgepole pines, aspen and fir-spruce stands on the Wasatch-Cache National Forest although not to the extent it has on the great "fire forests" of northern Idaho. In early times, local farmers, stockmen and loggers sometimes deliberately set fires to clear the forested lands of what they felt were old, unwanted trees or brush that presented a nuisance. Around the turn of the century, for example, loggers at Stump Hollow, four miles south of the Idaho-Utah border, set a fire to clear away some troublesome brush. The small brush fire soon raged out of contol, spread northward to Beaver extending ultimately into Idaho. As the fire continued to burn during the summer months, it destroyed large acerages of valuable forest cover.[1]

Similarly when Albert F. Potter conducted his survey of the Wasatch Range in 1902, he found that forested lands had been damaged by fire and were especially vulnerable during the summer months when forest use soared. Potter reported that a fire (possibly begun by miners) had broken

out on August 1, 1902, near the town of Midway. The fire started, he noted, "about a mile below the Steamboat and just opposite of the Big Four mine . . . and burned over an area of about 100 acres . . . . All the young seedlings were destroyed and much of the large timber seriously damaged."[2] Man-caused fires were a serious problem throughout the forested lands of Utah, and by the first decade of the new century, public concern was becoming evident. About this time, a Logan citizen, surveying the damage done by fires in the northern part of the state argued that "Fires are very prevalent and the land [is] in need of fire protection."[3] In 1906 Bountiful residents were so concerned about the condition of their watershed, seriously damaged by both fire and overgrazing, that they petitioned to include the area in a national forest for fire and grazing protection. Elsewhere the pattern was much the same.

After the initial forest reserves were established in Utah, sections that were to form parts of the later Wasatch-Cache National Forest were brought under fire control. At first, Forest authority and funds were both inadequate to ensure an effective fire control program, and difficulties abounded. John Squires, first supervisor of the Logan Forest Reserve in 1903, complained that he was "provided with nothing more than a wet blanket to put out fires on the reserve."[4] His ironic (but fairly accurate) assessment dated back to the problems he faced as a fire fighter in his first months on the job. In 1903 a fire had broken out, and the inexperienced supervisor (he had been a barber for the previous thirty-five years) quickly turned to his only source of information and authority--the Forest Service Manual. All the manual told him was that he had $200.00 to purchase tools and to hire fire fighters. After quickly gathering a crew from the Logan Fifth Ward, Squires set off to put the fire out. With inadequate training, little equipment and a motley collection of local boys, Squires was fortunate that a rainstorm doused the fire. But even then Squires had to spend considerable time and effort in getting the necessary appropriation to pay his quickly assembled firemen for the work they had started, if not completed.[5]

Funds were always limited and it was fortunate that from 1906 to 1908 only eight fires broke out on the Cache. The unbelievably small sum of $8.00 was expended in their suppression. During this period, some difficulty was also experienced on the Wasatch as the Forest Service began

to establish minimal control measures there. As early as 1909, however, rangers there were warning that limited techniques were not enough and calling for fire patrols and posting fire warnings.[6]

Fire fighting techniques and fire control methods improved in subsequent years, although by modern standards they remained crude and limited. It would take decades of technological advances before Forest personnel would have sophisticated tools at their command to fight forest fires. Despite these limitations, by 1912 the fire situation was improving on the Cache National Forest. Supervisor Clinton G. Smith, of the Cache, reported that fire had not been much of a problem for the past year, in part, because forest users were cooperating with Forest personnel by quickly reporting and/or putting out any fires. In his report to the district forester, Smith went on to describe an important aspect of fire control/cooperation in those early days:

> tools are cached throughout the Forest at different points under seals which may be broken. On these tool boxes are instructions to break the seals in case of fire, and the tools may then be removed and used.[7]

During this period, tools were cached on the assumption that forest permittees were obliged to fight fires in their areas without any compensation. Indeed, it would appear, that free use and other permits were sometimes issued specifically for the purpose of assembling a fire fighting force. In a recent book, forest historian Harold K. Steen suggests that this method of recruiting fire fighters contributed to the problem of overuse when far too many permits were issued to loggers and stockmen.[8] In any case the fire tool cache system apparently got a bit out of hand on the Cache, and dissatisfaction with it began to mount in the Service. By 1928 C. N. Woods, from district headquarters in Ogden drove north to inspect the Cache National Forest and reported back to the district forester. He argued that there were far too many fire tool sheds on the Forest, often at inaccessible sites where it was unlikely they could even be discovered, let alone utilized. Woods also reported that many of the standard fire fighting tools were in poor and even dangerous condition. Ax handles were loose and both shovels and axes needed to be sharpened; in addition fire tools were often mixed in with other equipment and could not be readily reached or used. Apparently Wood's report had

some impact; shortly thereafter the supervisor of the Cache eliminated many of the fire tool sheds, located more fire fighting equipment at the ranger stations and made sure they were in better condition.[9]

Overall, the effort to improve fire fighting techniques and preventative measures is a major theme underlying the story of fires on the Wasatch and Cache National Forests. Time and time again, regional and national directives as well as interdistrict memos emphasized the need to improve preventative and suppression methods as well as promote cooperative ventures with local, state and civic agencies to provide the best possible protection for the forested lands in northern Utah. And, equally important as a linking theme was the growing public perception that the forest ranger of the national forest system was perhaps the most important person to turn to for fire control.

An example of this growing perception may be observed in 1931 when six fires swept through Summit County, burning over 3000 acres. Private citizens as well as the commissioners of Summit County expressed deep concern about the total lack of fire control in a key area of more than 100,000 acres at the headwaters of the Weber, Bear and Green rivers. W. O. Stephens, chairman of the Board of Commissioners, contacted the Wasatch Forest for any available information about the area, including maps, types of stands, etc. Shortly thereafter Supervisor Arthur G. Nord responded with a lengthy letter to aid local citizens and officials in their efforts to develop a fire control program.[10]

Nord detailed the fire damage on the unprotected area outside Forest boundaries and contrasted it with the overall fire situation on land included within the Wasatch National Forest. In 1931 approximately 100,000 acres in Summit County were without fire protection and 3000 of these had been burned over. On the other hand, of the 850,000 acres included within the Wasatch boundaries, only 520 acres had been burned. The lesson seemed clear--control programs could limit the damage caused by fires. Nord also pointed out that forest fires in Summit County threatened the largest pine-fir-spruce forest in the state. To further aid the commissioners in their quest for obtaining needed fire protection, Nord took the time to carefully summarize existing laws and fire control methods that they needed to consider. He explained that either (1) the area could be designated as a fire district under state law with the

county directing and paying for a program; (2) federal-state cooperation in administering a program could be obtained under the provisions of the 1924 Clark-McNary law; or (3) the area could be included within the boundaries of the Wasatch, and a cooperative fire plan could be developed and carried out by Forest personnel.

After noting that it did not matter which plan of operation was followed, Nord went on to describe and outline a detailed fire program,

> The area involved is considerably smaller than the ordinary ranger district. If it were added to the National Forest, a cooperative plan would be developed for the protection of the area as a whole, calling for the services of a summer patrol man who would be engaged in fire prevention activity such as enlisting the cooperation of the private owners, reducing hazards and for quick action getting onto fires while they are small. This together with the organization of man power and placement of fire fighting tools for emergencies would go a long way toward eliminating the fire problem and in reducing waste.[11]

Nord closed his letter by noting that any fire control plan, either federal, state or county sponsered, would be helpful. But not surprisingly, given his detailed response and interest, Summit County eventually included the land within the Wasatch National Forest--primarily for purposes of fire control and watershed protection. (See Chapter III)

Even before the area was actually under Forest jurisdiction, Nord moved to prepare a comprehensive fire program and pave the way for its implementation. Nord's plan, and the speed with which it was offered, shed light on Forest fire control programs during the Depression years. Nord felt that the Wasatch Forest's standard fire control program could easily be put into operation in the Summit County area and that it would cost less than half a cent an acre annually. He went on to note that the threatening and critical situation could be controlled by "the effective organization of existing resources into a cooperative effort and perhaps the [hiring] of a summer patrolman from 6 weeks to perhaps 3 months during the extra hazardous period." In arguing for an organized fire patrol under Forest Service direction, Nord pointed out that the cost of suppressing the 1931 fires in Summit County would have paid for such a patrol for twelve to fifteen years.[12]

During this same period, which was one of extreme drouth, inadequate fire protection was a problem elsewhere throughout the state. In Ogden

Canyon,for example, two separate fires inflicted considerable damage in 1934. One fire was apparently caused when telephone linemen tried to destroy a wasp nest. The fire they set, spread quickly, and given the hazardous conditions of the summer, swept up the mountainside. A second fire destroyed Hermitage Lodge, a well known recreation spot and restaurant, along with several hundred acres of adjacent timber land.

A report later filed by Ranger Clark Anderson suggests that inadequate or nonexistent protection had been a perennial problem in Ogden Canyon. He noted that fires had constituted a real problem in the area because there were "no agencies available to put them out."[13] Anderson drove home his point about inadequate protection: "several young men in Ogden have mentioned how fires have gone up the face of the mountain east of Ogden until they reached the top, without any effort being made to put them out until some rain or snow came to extinguish them."[14] Once the area was included in the boundaries of the Cache National Forest, fire protection programs were instituted.

The Wasatch and Cache National Forests had additional help in suppressing fires with the advent of the Civilian Conservation Corps to Utah in the 1930s. CCC crews were especially helpful in fighting forest fires in the critical year of 1933. In September, a fire east of Bountiful burned 500 acres and CCC enrollees (probably engaged in watershed work) were called to help professional fire fighters suppress the blaze. About a month later, 103 CCC enrollees from the American Fork camp and the Woods Cross camp worked nonstop to control a blaze in American Fork Canyon. Ranger Joe Libby of the Cache National Forest rousted 100 CCC boys out of bed at two a.m. one morning to fight a fire in Mill Canyon the same year. The tired youths worked ten hours before they brought the blaze under control, confining the damage to fifty acres.[16]

CCC crews helped fight forest fires throughout the scattered boundaries of the Wasatch and Cache during the entire decade. In 1935, Company 1979 from the Soapstone camp under the authority of the Wasatch Forest worked approximately two weeks to control a fire near Kamas. Elsewhere CCC fire fighting efforts greatly aided professional control agencies, and their work is an important part of the story of forest fires on the Wasatch and Cache. Indeed, between 1933 and 1942, CCC enrollees

logged approximately 40,000 man-days on the firelines throughout the state.

Although CCC crews provided desperately needed manpower for fire fighting, occasionally their very presence created a fire hazard. In the summer of 1933, for example, a CCC crew from the Blacksmith Fork camp under the authority of the Cache National Forest had to spend several hours suppressing a fire they had started. They had been burning brush at the bottom of the canyon, where they apparently failed to take proper control measures and the fire eventually spread.

In the early history of fires on the Wasatch and Cache, the work of the CCC crews, the crude fire fighting techniques and the efforts to bring critical areas under fire protection were important elements. After 1940, several other issues became significant. Especially important were technological advances, educational and cooperative ventures, specific efforts of Forest personnel to suppress fires and problems they faced in doing so.

Fires and the Cache National Forest

A 1940 fire plan for the Cache National Forest points up the advancements that had been made since 1903 when Squires and his green crew had straggled out of Logan. The 1940 report contained detailed information about topography, precipitation rates, fuel types and the location of various tool caches; in short, information which would help rangers on the Forest's six districts to identify, report and combat any fire.[17] But its show of sophistication notwithstanding, this fire plan betrayed certain grassroot biases in its categorization of five classes of visitors who presented special fire problems for the Forest.

> The following classes of forest visitors must be given special consideration on the forest by tactful personnel contacts in the plan for prevention and/or suppression of man-caused fires:
>
> 1. The small boy because of his irresponsibility, forgetful habits, and desire to play with fire.
>
> 2. The small foothill farmer clearing land for cultivation and desiring to burn during the driest weather and generally overestimating his knowledge of fire behavior and overconfident of his ability to control the fire.

3. The foothill farmers who burn off their stubble land and ditch banks.

4. The poolhall frequenter who, due to his habits, is rarely contacted in fire prevention endeavors and who has an exaggerated opinion of his knowledge of proper fire practice, a tendency toward antagonism of restriction, and often an indifference toward protection of forest lands against fire.

5. The visitor from the "big city" who wants no interference in the form of fire use restrictions, who is not informed of proper fire practices, and who, having had few contacts with the forest, has an indifference toward cooperation.[18]

Such information in the 1940 fire plan at least underscores the growing awareness on the part of the Forest Service that increased use often posed special fire hazards. As population increased along the urbanized Wasatch Front, forest fires soared dramatically. The direct correlation between population growth and forest fires was especially evident in the Ogden Ranger District as early as the 1930s, and had reached critical dimensions in Davis County as well. Although the Cache National Forest was classified as a medium hazard Forest at this time, special attention and care was focused on the Ogden Ranger District. From 1936 to 1940, eighty-one fires burned there while throughout the rest of the Cache, there were only twenty-seven additional fires. The Ogden Ranger District tried to combat the special fire hazards by mounting an energetic fire prevention program. Directives from the supervisor and regional forester emphasized the need to strictly enforce fire laws and to work closely with state and local officials to combat the high number of man-caused fires.[19] In addition, more fire tool caches were located on this district than on any other in the Forest; twenty-five separate caches were on the Ogden River District in 1940, including a large one at the Huntsville CCC camp.[20]

In order to deal with the fire problem throughout the Cache, the Forest Service pursued a variety of approaches. Among the most important were the fire inspection trips made by the regional fire control officer. In 1943 F. W. Godden from regional headquarters toured the Cache National Forest with Supervisor J. O. Stewart and his assistant to evaluate the general fire suppression program. In a report filed on July 17, 1943, Godden explained "It is my opinion that the communication system on the

Cache is very weak."[21] The inspector felt that there were not enough telephone lines or radios, and urged that the communication system be improved and developed. Godden also criticized the location of emergency detection points, arguing that many were superfluous, particularly the one below Grace, Idaho. In an effort to better utilize personnel time, he noted: "Preseason arrangements with the housewives and ranchers would probably buy better detection and coverage without tying up a man who is needed on prevention and suppression. In his report Godden also delivered praise that he felt was merited--especially for the excellent condition of the fire tools. Ranger Jay B. Hann at the Paris station earned specific mention in this respect. The regional inspector closed his report with the following: "I found the Forest overhead enthusiastic, on their toes, and extremely helpful to me on my trip."[22]

The inspection trips made by Godden and his successors greatly improved fire suppression plans on the Cache. Equally important were the technological advances in communication and transportation. By 1950 Cache personnel had access of SPF (Semi Portable Phone) and VHF (Very High Frequency) radios, heavy equipment such as tractors, plow units and tankers as well as air transportation, including three planes at the Logan Airport under Forest Service contract.[23]

Fires and the Wasatch National Forest

In much of the time since 1940, perhaps the Bountiful Ranger District in Davis County constituted one of the most difficult areas for fire control for the Wasatch National Forest. The available records are especially rich in detailing the specific fires there and in describing the causes as well as the efforts of Forest personnel in implementing preventative and control programs. While it is impossible to discuss each specific fire in the Cache and Wasatch National Forests, significant historical insight can be gained by treating the Bountiful Ranger District in some detail.[24]

Historically the most serious fires have occurred in recent times as urbanization and forest use have increased in Davis County. From 1950 to 1959 there were 110 forest fires between Emigration Canyon in Salt Lake City and Weber Canyon in Ogden; over eighty-six percent of these were

man-caused. One of the most damaging fires was caused by young boys playing with matches in the hills east of Hill Air Force Base. On August 17, 1959 the resulting fire burned over 450 acres and caused several thousand dollars worth of damage. In addition, one fire fighter lost his life when he was struck by a helicopter rotor.[25]

Children and matches continued to be a deadly combination in the dry hills of the Wasatch Mountains, especially during the summer months. On August 9, 1960, for example, two teenagers caused a serious fire east of Centerville. They later told investigators that they found some matches, lit them and thought they were out before discarding them. They soon noticed a small blaze and tried to put it out; when their effort failed, the panic-stricken youngsters ran to some nearby homes. But before they could alert authorities, the fire trucks were already on the scene. A variety of federal, state and county agencies worked to contain the blaze and prevent it from reaching Centerville Canyon and destroying the town's reserve water supply. Davis County and the Forest Service supplied fifty-four fire fighters, but additional help also came from crews supplied by the State Department of Forestry. The blaze was eventually suppressed by a variety of techniques. Besides using pump trucks, tractors, and shovels, the Forest Service made use of more sophisticated equipment. Two converted Navy bombers, under contract with the Forest Service, dropped hundreds of gallons of bentonite, a clay and water fire retardant, on the blaze. After four hours, the blaze was contained at a cost of approximately $7000. In this incident, the combination of children and matches had blackened over 225 acres of land.[26]

In an attempt to prevent such fires in the future, Ranger Gordon Van Buren of the Bountiful District, gave interviews with local papers alerting the public as to the causes and damages. More directly, the Bountiful District mounted a massive public outreach program throughout the 1960s, appearing at local schools, distributing Smokey the Bear kits, encouraging participation in the junior ranger program as well as appearing before civic groups and showing fire prevention films. In 1965 alone, Van Buren and his assistants on the district appeared at sixty-eight schools in Davis, Morgan and Salt Lake counties in an attempt to reach children for purposes of fire prevention.[27]

Besides such educational ventures, the Bountiful District participated in other programs designed to promote fire protection and safety. Especially important were the workshop series to illustrate improved fire fighting techniques. In the 1960s, for example, Ranger Van Buren played an important role in a fire control workshop for Davis County personnel. After discussing the most effective methods in containing small fires, he showed a Forest Service film illustrating the techniques. The workshop participants also gained valuable practical experience when Ranger Julian Thomas conducted a two hour field practice session.[28]

The decade of the 1960s was particularly critical in the Bountiful Districts. In 1962, for instance, Van Buren told the Salt Lake Tribune that the high number of fires in the area was due to the work of arsonists. For over a year, arson continued to plague the area and in 1963 Van Buren announced that the Forest Service would pay $100.00 for any information leading to the arrest of the arsonists. The ranger appealed for a cooperative effort in halting this serious fire danger and noted that Salt Lake and Davis counties as well as Bountiful and Centerville were also offering cash rewards. Besides the monetary incentive, Van Buren also stressed civic duty and asked that citizens be on the alert for any "unusual activity . . . in a fire hazard area," and requested that people "get a description of the persons, and the license number," and phone the information to the Bountiful office. By August 1963 the arsonists had ceased their work, and Van Buren, at least, attributed the change to the increased public vigilance as the reward money reached $650.[29]

The "suburban fires" of the Bountiful District confronted foresters with a number of interesting problems in the actual process of fire fighting and containment. Besides the obvious danger presented by any blaze, difficulties arose as interested onlookers hampered transportation and communication lines. During the 1963 fire season the problem reached such proportions that a Davis County official described the fireline as an "obstacle course" noting that "housewives come from as far as three miles away and bring their children."[31] Besides trying to cope with large crowds, the personnel of the Wasatch Forest faced special hazards because of the technological advances made in fire fighting throughout the century. The use of chemicals and aircraft especially, produced

new hazards and in numerous cases fire fighters were splattered by fire retardants and several flyers and support crew members were killed throughout Region IV.[32]

Given these problems and the incidence of forest fires during the early 1960s, Wasatch personnel were justly proud of the safety award they received in November 1963. Regional Forester Floyd Iverson presented the Forest Service's coveted "Million Hours Safety Club" certificate to Supervisor Felix C. Koziol. Wasatch personnel had logged 1,400,000 man-hours without a disabling accident since August 18, 1959. The award was the first to be received in the Intermountain Forest Region and Chief Ed Cliff from the Washington office noted that it was won "under some of the worst working conditions in our national forests." Such safety awards as well as the educational and technological approaches promoted by both the Cache and Wasatch National Forests are impressive achievements. Without the efforts of forest personnel, their constant attention to better methods of both prevention and suppression, fire-related damage would doubtless have been much greater in Utah from 1903 to 1963.[33]

Technological advances, safety records and public education campaigns are not enough, however, to attain adequate fire protection. The personnel of the Wasatch-Cache National Forest are confronted by a difficult and continuing if not insurmountable problem. As recreation use has exploded on the Forest in the last twenty years, fire has inevitably followed. Two of the largest fires in the history of the Wasatch-Cache National Forest occurred in 1980 during the writing of this history. Carelessly tended campfires spread near Lily Lake and at Murdock Basin to engulf upwards of 6000 acres on the Uinta Mountains. Fire fighters from the Wasatch National Forest rushed to both sites, and with help supplied by crews from neighboring forests worked several days containing each blaze. At the Lily Lake fire over 500 individuals struggled in the face of high winds to suppress the fire and prevent it from spreading to nearby summer homes. With the aid of three planes, two helicopters, eight bulldozers and more traditional tools, the crews completed a fireline and the threatened homes were saved. But all this technology and manpower would have been unnecessary if forest users had been more careful. And

the correlation between forest use and fires will continue to constitute the greatest challenge for Wasatch-Cache personnel in the future as they try to prevent forest fires.[34]

Insects

While man-caused fires have presented the most obvious and spectacular damage to the timber stands on the Wasatch-Cache, less dramatic, but in certain respects more insidious forest enemies also exist. Insects and plant diseases have destroyed or damaged billions of dollars worth of Douglas-fir, Englemann spruce and lodgepole pine. Historically the damage caused by these natural enemies has far exceeded that caused by forest fires.[35]

Although the connection is less obvious than in the case of the man-made fire, human culpability is also a factor in disease and insect infestation which are more likely to occur or be worse in areas that have been misused. Often timber damage has followed in the wake of overgrazing, forest fires, lumbering, severe winds or from a complex combination of overuse.[36] Under the use circumstances that have prevailed in Utah, it is no surprise that forested lands have at various times been riddled with insects as well as fungi and other plant diseases. However, even if a forest is properly managed, insects may appear in epidemic proportions--and certain species are more susceptible to infestation than others.

While the timber stands within the present day boundaries of the Wasatch-Cache have been infested and damaged at various times in the last eighty years, it is impossible to recount that history in detail. It is well known that dwarf mistletoe, bark beetle and various species of sawfly or fungi have damaged, destroyed or defoliated timber in the past but the documentation is too fragmentary to permit historical generalizations about the frequency or severity of the attacks or the attempts of Forest personnel to combat the menance.[37]

This limitation, however, does not pose a serious problem in trying to assemble a picture of Wasatch-Cache personnel in recent efforts to protect the timber in their jurisdiction. Certainly the most significant project of this type undertaken on the present National Forest was

Illus. 11 Lodgepole Pines Infested with Mountain Pine Beetle

initiated in 1958 to combat a deadly attack of the mountain pine beetle. Detailed reports of the project were kept and contain valuable information as to cost and methods of treatment, and even refer to problems posed by the mountain pine beetle in previous years. In addition, several aerial and ground surveys were undertaken and maps drawn to indicate the infested and treated areas. Given the available records as well as the scope and magnitude of the project it seems worthwhile to treat the Wasatch Insect Control Project in some detail.

The Wasatch Insect Control Project

In many ways the story of the ongoing battle to protect the timber on the Forest from this insect closely mirrors the efforts of the Forest Service in maintaining and developing fire prevention and suppression programs. In the early years CCC work played a role, and treatment methods were incomplete and inadequate. With the initiation of the massive insect control project in the 1950s other factors became of paramount importance. Technological advances enabled the Wasatch to pursue a highly diversified attack; treatment methods became increasingly complex, varied and highly innovative. As in the fire campaign, the Forest Service launched a multi-faceted public education program. With these broad similarities in mind, the Wasatch Insect Control Project of 1958-1964 can also provide a great deal of insight into larger issues and problems that the Forest Service has faced in fairly recent years, and how that agency and its national units has responded to a variety of complex multiple-use problems

In the early 1920s the Forest Service began to assemble data about the infestation of the mountain pine beetle (Dendroctonus monticolae) that was becoming a serious problem on the north slope of the Uintas. The tiny beetles, only 1/5 of an inch long, were destroying acres of lodgepole pine by boring between the bark and the wood and girdling the tree. For the next ten years the severity and intensity of the attack escalated until it had reached epidemic proportions by the 1930s.[38]

In 1930 an insect infestation destroyed approximately half a million board feet of timber in the Blacksfork drainage. At this time much of the infestation occured on private land outside Forest boundaries. In

his letter to Summit County officials concerning the need for fire protection in the area, Supervisor Nord has also mentioned the problem of the insect damaged stands, and went on to sound a grim warning: "Nothing has yet been done by the owners of the timber outside the National Forest to check the infestation . . . it is certain the infestation will continue to spread in epidemic form." In an attempt to prevent the infestation from spreading in the Summit County area, the Forest Service treated 2300 trees in the spring and fall of 1931, and a similar number in 1932.[39]

Overall, the chief methods of treatment in those early years involved burning and/or preventative measures. Crews from the Wasatch National Forest using hand pumps doused the infected trees with fuel oil and then set the trees on fire. In cases where tall timber was infected crews would first fell the tree before igniting it. Both practices were dangerous from the standpoint of fire hazard, and operations could only be carried out in the spring and autumn months.

Besides destroying the infested timber, the Wasatch National Forest pursued two basic preventative measures on its north slope Uinta districts. Old, overmature lodgepole pines were girdled; primarily on upper Gilbert Creek as well as the West Fork of Smiths Fork. In addition crews logged infested and overmature timber, and then offered it for sale. Although such timber was suitable for railroad ties, mine props or firewood, few bidders came forward in those lean Depression years.[40]

Insect control projects were also undertaken on other areas of the Wasatch National Forest. In 1932 large scale treatment of infested trees began around Spring Canyon and Lambert Meadows on the Kamas District. In the following years additional projects were instituted in an effort to halt the epidemic.[41]

Although CCC crews on the Wasatch and Cache made their most significant contributions in watershed work and, to a lesser extent, in fire fighting, they also supplied important manpower for insect and rodent control projects. During the 1930s the Soapstone camp near Kamas helped Forest personnel in their efforts to rid the area around Alexander Lake of the mountain pine beetle. According to retired Ranger Larry Colton, who at the time was a summer employee of the Forest Service, many of the CCC enrollees were from Virginia and the southern boys used to relieve the tedium of the bug job by pulling pranks. One afternoon, after leaving

Illus. 12 Burning Trees Infested with Pine Beetles

the hot work, several CCC boys were playing around Alexander Lake. When one youth clambered onto a rock overlooking the lake, he made such a tempting target in his baggy, ill fighting trousers that a companion "in a drawl so thick you could cut it" yelled "There's goosin ya one for a jump in the lake;" and with the appropriate gesture so startled his friend, that the hapless youth did indeed jump into the lake.[42]

Despite such occasional lapses, the CCC crews made an important contribution to the early Wasatch National Forest attempt to combat the invasion of the mountain pine beetle. Overall, from 1931 to 1936 approximately 140,000 trees in the Wasatch National Forest were treated. Although the number seems insignificant when one considers the total number of trees involved, the fact that it was as large as it was is due to labor supplied by CCC enrollees. Although the records are contradictory for the next few years, it appears that some additional work took place in the 1940s. Records from the Kamas Ranger District indicate that a large control project was begun in the Soapstone Basin and Iron Mine area. Although the standard report filed at national forest headquarters does not mention this work, the district records note that from 1940 to 1944, approximately 250 men were hired by the Forest Service to work in the area. Among others who recall the insect control projects of these years is former Ranger Owen DeSpain of Logan. A recent study suggests that DeSpain's memory and the Kamas District files are accurate; some control work did take place on the Wasatch National Forest during World War II when over 62,000 trees were treated.[43]

Although the early work was carried out in the 1930s and 1940s, the mountain pine beetle infestation posed a perennial problem. A flare up of insect activity occured on the Wasatch in the late 1940s, but died down until 1953 when the beetle population once again exploded. Personnel from the Intermountain Forest and Range Experiment Station conducted an aerial survey of the north slope of the Uintas in 1956 and verified that the mountain pine beetle represented a threat of epidemic proportions over the entire area. Intensive ground surveys the following year further alarmed the Forest Service when they indicated that over 100,000 trees on the North Slope were infected. The Forest Service marshalled its manpower, available funds and technology and in 1958 initiated the Wasatch Insect Control Project.[44]

During the treatment project, a variety of specialists were called in to help solve the problem. Entomologists and other scientists again surveyed the area and recommended that treatment begin on the east end of the infested area along the Wasatch-Ashley forest boundary and sweep westward. Camps were eventually established at Hole-in-the-Rock, Dahlgreen, Deadhorse, Gilbert Creek and Hewinta-Blacks Fork. Every district on the Wasatch National Forest sent individuals to the North Slope to provide manpower for work crews, camp guards, fire control agents as well as project fiscal agents.[45]

The entire project was marked by experimentation and the willingness to try various methods of control suitable to the intensity of the infestation, the slope of the terrain and existing weather conditions. As in the early insect control work of the 1930s, standing burning, felling and burning (or peeling) and logging were used. Technological advances also expedited the work. Forest crews used flame throwers and experimented with various fuel types. Overall spraying with the chemical insecticide EDB (ethylene dibromide) was the most frequently used method on the North Slope. Because the intensity of the infestation was not abating and the project was eating up allocated funds, the Forest Service began to consider a new method of treatment early in the project--chaining timber over and burning it.

Operation Pushover

Shortly after the disease control project began on the north slope of the Uintas, intensive reserach efforts were launched. Based on their outcome, a radical departure from traditional methods of treatment was undertaken. The most important element in this process was Operation Pushover which the Wasatch National Forest initiated in 1960. The plan provided that where areas were highly infested the timber would be "treated" by removal to prevent the spread of the infestation to nearby, healthy stands. Two large tractors linked together by an anchor chain 150 feet in length would move across the planned area, uprooting the lodgepole pines. Bulldozers would then push the downed trees into windrows so crews could burn the infested trees. The method here described is often referred to as unit piling and burning.

Illus. 13 Unit Piling on "Operation Pushover"

Studies compiled at regional headquarters indicate that cost and the severity of the infestation played the most critical factors in developing and implementing this method of treatment. Because funds were limited and the infected area was so large, foresters began to consider a variety of less costly but hopefully effective approaches. Initially Operation Pushover was to cover 2500 acres containing over a quarter million trees south of Fort Bridger and Mountain View in some areas of which over ninety percent of the trees were infected. Spraying that area would cost $625,000 while the estimated cost of chaining and burning would be $125,000. By opting for chaining, the Forest Service could funnel the "saved" money into treating other areas infested with the beetle.[46]

A study later done by Wasatch personnel stressed that this method of treatment was economical, effective and compatible with multiple use. The report noted that Operation Pushover occured in an area that had "little recreational or aesthetic value" and that "the value of the timber destroyed was rather slight because the merchantable timber had already been destroyed by the beetles."[47]

Operation Pushover provides a great deal of insight into the internal workings of the Forest Service and indicates its careful concern about and regard for public relations. The Forest Service rightly anticipated that the reaction of significant portions of the public would be adverse. To cope with this, the Information and Education Division of the Regional Office prepared a broadly conceived media campaign. Among its proposals were the suggestions that the unit piling and burning technique be underplayed and that it be discussed as only one of several control methods. In addition, publicity was to stress that "Operation Pushover" was being implemented on only one-fourth of one percent of the project control area.[48]

In paving the way for the project's implementation the regional forester also sent memoranda to forest supervisors and key personnel with a detailed list of important politicians, scientists and newspaper men who should be informed about the project. On October 28, 1960 Supervisor Koziol received this memo and was assigned thirty-nine contacts. Among them were Senator Frank E. Moss, Congressman Davis S. King, and Gus P. Backman, secretary of the Salt Lake City Chamber of Commerce. In addition,

the regional forester encouraged Supervisor Koziol to contact and inform people with whom he had established cordial relations in his efforts to promote skiing and recreation on the Forest, including sportswriters for both the Salt Lake Tribune and the Deseret News. Always conscious of public relations Koziol had already contacted several of the people on his list and had even arranged a tour for at least one before he received the official directive.[49]

Despite this careful groundwork, some criticism of the project surfaced, although it was certainly less vocal and strident than if the public education program had not been mounted. Interestingly enough, one internal decision caused Operation Pushover to be abandoned. The Forest Service stopped the project in 1961 because it feared that the public might become hostile and because foresters and ecologists were warning that the long-range consequence of the operation could not be predicted.[50]

Although Operation Pushover had been abandoned, the Forest Service continued battling the beetle throughout the boundaries of the Wasatch. Besides the ongoing work on the North Slope, additional surveys conducted in 1962 pointed up the need for further work. A project crew worked in the Provo and Weber drainages on the Kamas Ranger District during 1962. Contractors treated six areas while Forest crews concentrated on nine others. Over two-thirds of the contract employees commuted from Kamas, and the project boosted the local economy. Under the supervision of Forest personnel, these men treated 12,613 trees by spraying or by felling and peeling. Although the contract work proceeded well on the Kamas District, other problems hampered the foresters in their struggle with the beetle. The steep rocky terrain and the late snow melt caused delays in starting and then completing the project. Although work had been planned for the Weber River and Boulder Creek areas, it was not completed in 1962 because of shrinking funds and because more heavily infested sections required treatment.[51]

During the winters of 1961-1962 and 1962-1963 treatment was applied on the Stillwater-Bear River Drainage. In order to make the best use of rapidly shrinking funds, the insect camp used the facilities at the Stillwater campground and borrowed equipment from the largest camp on the Forest--the Gilbert Creek Insect Control camp. In the Stillwater project

the Forest Service made use of funds supplied by the Accelerated Public Works program and hired unemployed men from Summit and Utah counties in Utah and from Lincoln County, Wyoming. Although the turnover rate was very high on this project as inexperienced men left because of the arduous work and cold weather, Wasatch personnel completed treatment only a few days behind schedule. Over fifteen hundred infested acres had been treated, primarily by the standing burning method.[52]

The Wasatch Insect Control Project continued until 1964. During its period, 1958 to 1964, over 734,140 trees were treated at a total cost of four million dollars. In many ways the project itself is important for the commitment it reveals on the part of the Forest Service to protect timber. That commitment had been evident on the part of Wasatch personnel as early as the 1930s, and was strikingly demonstrated from 1958 to 1964 as the Service marshalled its monetary and technological resources as well as its manpower to avert the menance of the mountain pine beetle. Hundreds of thousands (perhaps more than a million) man-hours were logged on the project without a single accident causing lost time. The constant attempts to regulate and enforce safety standards during the work mirrors the attempt to achieve high safety standards during fire control at the same period.

In concluding, several important points about the project must be made that are sometimes overlooked by critics who have noted that the infestation has continued. The control project could not eradicate the beetle--such invasions are cyclic and depend on elevation, climate, and the condition of the stands. These facts have only been highlighted as forest research and eradication efforts have continued. In many ways, what was learned during the Insect Control Project was as important as the actual work carried out. The Wasatch Project is an important part of the history of the present day Wasatch-Cache National Forest because it so clearly embodies several themes that have characterized the Forest Service in Utah; the commitment to protecting timber and to achieving high safety standards, the willingness to reevaluate methods of operation and the constant concern for public reaction.

CHAPTER VI

NOTES

[1]"Brief History of Important Fires, History Cache National Forest, compiled by Ralph B. Roberts, 3 binders, III, Logan Ranger District. Forest fires were often deliberately set by stockmen, especially by sheep owners, to burn off sagebrush. Frequently these fires spread and damaged adjacent timber stands. This practice is also documented in "Boundary Report on Proposed Ft. Bridger Addition to the Wasatch and Ashley National Forests," in L-Boundaries, Fort Bridger Addition, Wasatch, 1932, Denver Records Center, hereafter DRC.

[2]Diary of Albert F. Potter's Wasatch Survey, July 1 to November 22, 1902, Wasatch-Cache National Forest Historical Files.

[3]Quoted in "Fires," History Cache National Forest, III.

[4]Logan Republican, June 22, 1907.

[5]"Fires," History Cache National Forest, III. Also see Logan Herald Journal, September 30, 1932.

[6]Wasatch National Forest Folder, Region IV Historical Files.

[7]Letter from Clinton G. Smith to District Forester, May 28, 1912, in "Fires," History Cache National Forest, III.

[8]Harold K. Steen, The U.S. Forest Service: A History (Seattle, Washington: 1976), p. 175.

[9]C. N. Woods, "Cache Inspection Report, May 22 to 31, 1928, "Fires" History Cache National Forest, III.

[10]Letter from A. G. Nord to W. O. Stephens, December 1, 1931, LP Boundaries, Summit County Addition, Wasatch, 1932, DRC.

[11]Ibid.

[12]Letter from A. G. Nord to J. M. Shiverly, December 14, 1932, LP Boundaries, Summit County Addition.

[13]Clark Anderson, "Historical Information on the Ogden Ranger District, 1942," Cache National Forest Folder, Region IV Historical Files.

[14]Ibid.

[15]Deseret News, October 12, 1933.

[16]A good treatment of CCC effort in fighting fires is contained in Kenneth W. Baldridge, "Nine Years of Achievement: The Civilian Conservation Corps in Utah" (Ph.D. dissertation, Brigham Young University, 1971), pp. 71-73, 193-97.

[17]The 1940 fire plan included the following districts: Logan, Ogden River, Laketown, Paris, Preston and Malad.

[18]"Fire Plan: Cache National Forest, 1940," in "Fires," History Cache National Forest, III.

[19]Cooperation with private citizens as well as local and state agencies was particurlarly important. On almost every ranger district, the Forest boundaries included sections of state and privately owned land. In 1937 the Utah State Legislature had passed a fire law, but it proved difficult to enforce and violations were common on state and privately owned land within forest boundaries.

[20]"Fire Plan, 1940."

[21]F. W. Godden, "Fire Inspection," July 17, 1943, in "Fires," History Cache National Forest, III.

[22]Ibid.

[23]"Fire Suppression Plan of Action, 1950," in "Fires," History Cache National Forest, III.

[24]Fires that have not been specifically mentioned and that are of interest might include the 1934 Bloomington Canyon fire that burned over 1400 acres and the 1961 summer blaze in Bountiful which threatened Mueller park and charred over 400 acres. One reason for concentrating on the Bountiful District in greater detail is the availability of historical sources; another is that of all the districts on either Forest it has had the greatest incidence of man-caused fires. Since the trend is for man-caused fires to increase as summer use and urbanization mount, it seemed worthwhile to concentrate on the Bountiful District.

[25]Press Clippings, Wasatch National Forest Historical Files.

[26]Salt Lake Tribune, August 10, 1960; "Juvenile Firebugs Bring Death and Destruction to Forest Lands," Information and Education Circular, August 13, 1960, Region VI Historical Files.

[27]Press Clippings, Wasatch National Forest Historical Files.

[28]Ibid.

[29]Salt Lake Tribune, October 5, 1962; July 21, 1963; August 14, 1963. Arson, however, has continued to be a problem.

[30]Salt Lake Tribune, December 1, 1964; Deseret News, January 21, 1964. The 1964 fire season on the Wasatch was particularly bad because of the number of fires caused by hunters during the two week hunting season.

[31]Deseret News, July 26, 1963.

[32]Deseret News, September 15, 1962.

[33]Deseret News, November 13, 1963.

[34]Logan Herald Journal, June 25 to 29, 1980.

[35]"President Sets National Forest Products Week," Information and Education Circular, October 13, 1960.

[36]C. R. Tillotson, Care and Improvement of the Farm Woods, U.S.D.A. Farmer's Bulletin, no. 1177, (1941) p. 14.

[37]The dwarf mistletoe, a disease, and the mountain pine beetle and the Engelmann spruce beetle have posed the greatest concerns for the Wasatch National Forest. The last serious epidemic of the spruce beetle occurred in 1958. The dwarf mistletoe has been a continual problem and was recognized as a pest as early as 1910. The most recent control project took place in the early 1960s on the Kamas District when approximately 700 acres were treated at a cost of $11,000. Although the Forest Service has tried to deal with other insects and diseases that threaten the timber of the Wasatch National Forest, nothing has compared in magnitude to the Insect Control Project begun in 1958.

[38]"Mountain Pine Beetle Insect Control History," Forest History Wasatch, 2 binders, II, Wasatch-Cache National Forest.

[39]Letter from A. G. Nord to W. O. Stephens, December 1, 1931.

[40]"Mountain Pine Beetle Insect Control History;" J. Gerber, "Existing Management Situation: Insects and Disease, March 19, 1980;" and William L. Thompson, "Functional Timber Management Report: North Slope of the Uinta Mountains Study, January 26, 1971." All in Wasatch-Cache National Forest Historical Files.

[41]Kamas District Historical Files.

[42]Ibid.; Interview with Larry Colton, Orem, June 25, 1980.

[43]Owen DeSpain, Interview, Logan, August 28, 1980; Kamas District Historical Files, Gerber, "Existing Management Situation."

[44]"Mountain Pine Beetle Insect Control History."

[45]Ibid.; Interview with Frank Grover, Wasatch-Cache National Forest, June 26, 1980.

[46]"I & E Analysis for Wasatch Control Project, 1959," Region IV Historical Files.

[47]"Mountain Pine Beetle Insect Control History."

[48]"I & E Analysis."

[49]Floyd Iverson, Regional Forester, Memorandum, October 28, 1960, Region IV Historical Files.

[50]"Mountain Pine Beetle Insect Control History;" Gerber, "Existing Management Situation;" Interview with Frank Grover, June 26, 1980.

[51]"Provo and Weber Insect Control Project: Accomplishment Report, 1962," Forest History Wasatch, II.

[52]"History and Accomplishment Report: Stillwater Insect Control Project, Winter, 1962-63," Forest History Wasatch, II.

CHAPTER VII

UTAH GRAZING AND THE CONTRIBUTIONS OF THE WASATCH-CACHE NATIONAL FOREST

Vastly more important than timber in the tradition of the region of which the Wasatch-Cache National Forest is part, is grazing. Few themes have seized the imagination and interest of Westerners as have ranching and livestock and while cowboy boots and big hats belong more rightfully to certain other localities than they do to northern Utah and the adjoining portions of Idaho and Wyoming, grazing has been a continuing element in the region's economy, politics and myth. More significantly, no aspect of resource utilization has been more important throughout the entire era of the Wasatch and the Cache National Forests than grazing, unless it is watershed management. Never in Utah's history was the actual significance of grazing greater than in the years just before the Wasatch and Cache Forests were created. Essential to this development were mountain ranges where, in lieu of other claims or effective regulations, livestock men had established such rights as customary use could give them. In the decades that have followed, grazing has undergone a continuing decline. Although they have by no means been the only factors in this process, the Wasatch and Cache National Forests have contributed to the character of the grazing industry since 1905 in significant ways. In the pages that follow, livestock will be discussed; first in terms of background developments and then in terms of the twentieth century experience and finally in terms of the range management programs established and applied by the Forest Service.

Background

In a number of ways the growth of grazing in the region of the

Wasatch-Cache National Forest differed significantly from other regions of the West. Although both Wyoming and Idaho contributed significantly, these distinctions belong particularly to Utah. Prominent among these considerations were broad geographic influences and the timing of settlement in the Great Basin. Although Utah is in some ways a transitional region between the Northwest and the Southwest, it is isolated by the great canyons of the Colorado River from Spanish influences. Checked by the canyons, Spanish livestock did not penetrate into Utah in the presettlement era. Later, when Texas longhorns and Spanish merinos were trailed north, physical barriers forced cattle and sheep drives to flank Utah reducing the number of stock that entered the territory from the Southwest. Also diverted by the canyon barriers were ranching customs which, as they extended from Texas throughout the West generally, had relatively little impact upon what geographer Donald Meinig has called Utah's core (the settled valleys along the Wasatch Front).[1]

By contrast, Utah lay across the main road of the great central overland migration and, after settlement, quickly became a resting and service point. One result was that new infusion of "states cows" were imported by immigrants and dropped off by overlanders and merchants. Thus, Utah became an outpost of the Midwest and Northeast more than of the Southwest as far as bloodlines and its first stockgrowing culture went.

A Mormon Livestock System

However, eastern influences notwithstanding, land utilization and management practices were quickly adapted to the arid climate and wilderness circumstances of pioneer Utah. Construction time, and material for fencing were lacking and town herdgrounds and community herding practices were quickly initiated. To begin with, range land was abundant and little effort was made to establish claims to any of it until after 1853. At that time Colonel Edward Steptoe, who had led a detachment of federal troops into Utah Territory, took action to establish military grazing reserves. Thus challenged, Mormons tried to improve their claims upon certain prime grazing areas. In steps that reflected their committment to the communal principles of stewardship (see Chapter II), and yet lacked the clear cut injunctions that land should not become a private

speculative commodity that characterized their earlier distribution of farm lands, they moved their own stock onto some of the areas in which Steptoe was interested, in what may be rightly be considered the territory's first range war.[2] Although totally lacking in jurisdiction over the public domain the territorial legislature backed up this step by giving the county courts (equivalent to modern county commissions) authority to designate local herdgrounds and grant them to communities or individuals. More important in the immediate sense were the herdgrounds granted by the legislature to prominent Mormon leaders and groups throughout the territory.[3] While there is no evidence to prove that most of these grants were ever translated into actual titles, at least two appear to have become the property of grantees. Brigham Young was allotted the whole of Cache Valley and Heber C. Kimball much of Parley's Park. Later, after the United States Land Office had opened in Utah, Young acquired almost 10,000 acres in the south bottoms of Cache Valley and the names, Kimball Ranch and Kimball Junction still attest to the lasting influence of the Kimballs in that locality.[4]

Mormon herds multiplied quickly and infusions from the states continued with the result that Utah became a grazing country of some importance before the 1850s were over. Indeed, during that decade it was among the important grazing states.[5] Men with imagination and drive, like Salt Lake City's William Jennings put the various components of this situation together to become merchant princes, freight carriers, cattle buyers and butchers to an intermountain regional commonwealth that was emerging.[6] More typical was Alexander Toponce, who we have already met running ties on the Bear River. Setting out from Salt Lake in the fall of 1867 he collected debts owed his mercantile firm and traded merchandise for 6000 head of "cattle, big and little" which he drove to the Comstock mines in Nevada and sold for $300,000.[7] Similarly a cattle buyer named Ben Heywood gathered herds of as many as 10,000 head "north of the lake" and would then "trail them slowly across the country" to Omaha in the days prior to the railroad.[8] Some sheep, too, were trailed into the territory during the early period and farm flocks to meet family needs for yarn and mutton were an essential part of the local economy, but the sheep industry did not show the early growth that characterized cattle.

The substantial nature of this early livestock industry notwithstanding Utah was in no sense a ranching country in the pre-railroad era. Indeed, Utah's first livestock era was well established before ranching spread to most of the West. Far from being an offshoot of the Spanish ranching culture, the grazing practices of Utah's first three decades were shaped and formed by the Mormon penchant for cooperation and group life. Most "Saints" lived in towns and villages from which they worked small general farms. Almost all of them kept a few head of cattle and sheep. When these were not fed on the farm, they were grazed in town pools or cooperative herds. In this situation, the disparity between farm stock and range stock was blurred, a point that is underscored by the fact that Utah's first use of mountain ranges was by community sheep herds and by summer dairies staffed by women or entire families. In time this allowed for specialization and a class of stockmen began to emerge who gradually acquired animals in such numbers as to make them dependent upon the open range rather than local farms. Although cooperation was customary at roundup time and in certain other situations in the cattle industry throughout the West, cooperation in the Mormon system differed in the great number of cooperating owners and in the small number of farm based stock owned by each person.[9] The extent of cooperation in the early community sheep herds differed even more radically from the western tradition generally, where sheepmen were notorious for their individuality and independence.

The livestock pools were, in the main, not notable for the number of animals assembled. Yet, on occasion, when natural and social circumstances were right, large numbers were brought together. For example, at Brigham City where the cooperative tradition included a vigorous textiles industry and an abundant range lay adjacent, the co-op sheepherd is said to have numbered 50,000 head in the years around 1880. Some of these sheep were doubtless held in the community herd year round, but part of the annual routine was an autumn ritual when the entire town was filled with milling sheep as people sorted out their small flocks.[10] Mountain dairies could also take on considerable size with some running as many as 250 cows and one on the Beaver Dam divide between Salt Lake and Cache valleys, collecting 750 head of milk cows from farmers on both

sides of the mountain and employing up to twenty-five milk maids who lived dormitory fashion in the second floor of the dairy building.[11]

Thus, by the late 1870s what may be called a Mormon village livestock system had developed throughout the central mountain valleys of Utah. Extending from Cache Valley on the north to southern Utah's Dixie country and Kanab, its growth had kept pace with farming development and by 1880 was putting heavy pressure on the grazing resources adjacent to the nearly 400 farming towns and villages that had come into existence.

The Ranching Invasion

Meantime buffalo herds had been killed off in the years after the Civil War, opening ranges for longhorns driven from Texas and allowing ranching, based on vast stretches of public domain, to be established as a system of livestock management. For a decade and a half after 1865, this had relatively little impact on Utah, but in the years after 1880 both internal and external conditions functioned together to superimpose the ranching industry upon the well established customs of the Mormon system.

To some degree this change was reflected in growing livestock numbers. The upswing began first in cattle, which in 1885 numbered about 200,000 head. This number grew rapidly to 356,621 head in 1895. Thereafter, with great pressure from sheep, and with the adverse effect of the panic of the middle 1890s, cattle numbers barely held their own until 1905. Apparently encouraged by Forest Service policy, that partially offset the advantages sheep had gained, cattle increased again, numbering 412,334 in 1910. With demand growing out of World War I helping, the trend continued, and cattle numbers reached a high of 505,578 in 1920, a level they held until 1925 before dropping again. Of the half million count of 1920 about 105,000 head were of dairy breeds although this had little bearing upon forest policy because of the close relationship that existed between farms and mountain ranges.[12]

After slow beginnings prior to 1880 sheep numbers increased explosively. By 1885 the territory's ranges supported one million head and by 1890 about 1,500,000.[13] By the turn of the century the tally had skyrocketed to a high of 3,818,000. In the ten years that followed with

drouth, slow markets and Forest Service policy prompting the trend, numbers declined almost as rapidly to about 2,740,700 after which sheep populations held steady at about two-and-a-half million for more than fifteen years.

Also revealing were fluctuations in sheep numbers in the eleven Utah counties in which significant parts of the Wasatch and Cache national forests were located. In 1890 some 718,618 sheep, or 47 percent of the territory's total, were owned in that region. A decade later the number had risen to 2,126,545 or nearly 56 percent of the total. In the quarter century after 1900 declining sheep numbers in the Wasatch-Cache counties ran far ahead of the state as a whole. By 1925, for example, when the state's total was 2,355,038, the eleven counties accounted for only 786,518 head, or 34 percent. Fluctuation was most dramatic in Salt Lake County which rose from 124,471 head in 1890 to 558,243 in 1900, at which time it was second only to Sanpete County where the census listed in excess of 600,000 sheep. During the next quarter century sheep numbers in Salt Lake County fell to 158,871. At the earlier date it had accounted for 15 percent of the sheep in the state and in 1925 less than 7 percent of a total that had itself fallen by a million-and-a-half head. Similarly, sheep numbers in Rich County soared from 31,713 in 1890 to 290,771 in 1900 and dropped again to 41,102 by 1925, while Summit County shifted for the respective dates from 14,414 to 228,875 and back again to 43,079. The only county in the Forest's region where sheep increased throughout the entire third-of-a-century was Wasatch County. There, only 4,200 sheep were owned in 1890. The number had increased to 68,225 head in 1900 and to 82,858 in 1925. In 1890 the eleven counties accounted for 47 percent of the Utah total. By 1900 nearly 56 percent of the state's total were listed there, but by 1925 the Wasatch-Cache regions of the state listed no more than 34 percent of the total. Not surprisingly cattle numbers tended to fall when sheep rose and to rise when sheep fell although at a less dramatic rate. In both 1890 and 1900 the eleven counties accounted for about 53 percent of all cattle in Utah but only 36 percent in 1925.[14]

A significant point that should be made here is that in 1900 sheep were crowding cattle from many Utah ranges. The state's geographical location at the "crossroads of the West" had some bearing on this and

hundreds of thousands of sheep trailed over driveways from and into neighboring states in a traffic that authorities on driveways feel about equalized itself in terms of the number of Utah owned sheep leaving the state and the number of sheep owned in neighboring states entering Utah.[15] Another factor contributing to the pressure sheep were putting on Utah's ranges lay in the fact that the West and East deserts provided more abundant winter range than the state's mountains could match in terms of summer pastures. In addition to placing heavy burdens on Utah's mountain ranges, this encouraged trailing to and from neighboring states where summer pastures were more abundant. The adverse impact of all this movement was especially heavy on what became the Wasatch National Forest because of its situation at the hub of this livestock crossroads. One early sheepman recalled looking through a quaking aspen grove and seeing no

> green leaf or sprig of any kind as high as the sheep could reach and the ground was absolutely bare. They ate everything that was green . . . . The bands of sheep on the mountain could be counted by the clouds of dust from the valley below . . . . The greatest damage was done by sheep men using the top of the mountain for a trail in driving sheep . . . . the whole mountain top became a dust bed.[16]

Early foresters too, were quick to see the calamity of overgrazing in the Wasatch-Cache area. Foremost among those who commented were Forest Inspector Robert R. V. Reynolds and Albert F. Potter, chief of grazing in both the old Division of Forestry and the Forest Service. For example, in his 1902 survey Potter observed thirty bands of sheep competing for grass in one small drainage. In another, 150,000 head had grazed the previous season. At yet another point sheep seemed to live "on fresh air and mountain scenery." Early mountain dairies and other cattle operations had been crowded out. At the time of Potter's visit there was little left, even for sheep. What feed they did obtain often came from "grubbing away at the grass roots."[17]

Boom Days and Sheep on the Range

A closer look at the human and institutional development of this grazing boom will be useful at this point. In Utah's core region, ranges

and new land for farming filled up about the same time. Aggressive and imaginative grazing families like the Bennions and others at Taylorsville in Salt Lake Valley had moved onto the West Desert even before the late 1870s and were overtaxing ranges there.[18] Elsewhere, along the Wasatch Front hundreds of younger men worked stock with the co-op herds to acquire a few animals and went on to succeed in varying degrees as stockmen. This transition was particularly apparent in the growth of the sheep industry which, in spite of its interstate movement, was in many respects a local or internal development.

Towns which lay adjacent to good ranges or at points between winter and summer ranges made particular contributions to this process, as boys who found no opportunity farming, turned to sheep. An occupational profile from Draper, in the south end of Salt Lake Valley, for 1900 will serve to illustrate this point. Of the town's 257 employed people, thirty-nine were stockmen and sheepherders. Of these, seventeen were young men or boys who listed their domicile as their father's household and worked for wages as herders. Some of the twenty who listed themselves as stockgrowers owned farm property, but more did not. Although those who owned no land were heads of households, they were relatively young, suggesting they had worked up from herders to herd owners but that they were entirely dependent upon the public domain for their grazing. Some probably never acquired farms and went on to be users of of the public domain in the conventional ranching sense. In addition to Draper, other Wasatch Front towns that were located so as to encourage young people to turn up livestock included American Fork, Lehi, Riverton, Woods Cross (Home of the Deseret Land and Livestock Company), Layton, Brigham City, Hyrum, Franklin anc Preston.[19]

Typical of those who became sheepmen was Andrew Peterson of Lehi. His father had migrated from Sweden in the middle 1860s and was comfortably fixed as a farmer and townsman, but had few resources to help his sons establish themselves. As consequence, Andrew ran sheep. Ranging close to home in Cedar Valley and up American Fork Canyon, he took his young brothers out of school to herd for him, and for a few years did well enough.[20] Also reflecting the importance of family in shaping the livestock enterprise were Hyrum and Wilford Hatch, who, with the help of a brother who had married into the Thatcher Brother's Bank of Logan, to

build sheep herds of seven or eight thousand by the turn of the century. These were grazed at the time of Potter's Wasatch Survey, in mountain country along the Utah-Idaho border and wintered to the northwest on public lands near Bancroft, Idaho or in the Cache Valley fields where they and sheep from as far distant as Iron County were fed hay.[21]

Another example was E. J. Jeremy and his sons, who acquired substantial land in East Canyon by the 1890s and with boys hired from Salt Lake Valley's farming communities, including Harry Lunn, made properties along the Jordan River bottoms the axis for a sheep operation that apparently numbered about 10,000 head. They wintered on the West Desert, trailed their sheep, along with upwards of 300,000 others, around what became the Vernon and Grantsville Divisions of the Wasatch National Forest, sheared near Grantsville, lambed on Northpoint, west of the present Salt Lake International airport, and in a tragi-comedy of dust, grazed lawns, sheep manure and frayed nerves strung their herds out in an all day trek through Salt Lake City, by way of what is now 21st South Street. From there they trailed their sheep through the city's watersheds and proceeded on to the Uinta Forest Reserve. By 1901 they were looking with gratitude to an almost legendary ranger named Grant Carpenter of Kamas, who killed dozens of bears and other predators.[22]

The Jeremys, the Hatches and Andrew Peterson, like many others, made homes in the core communities the hinge on which their sheep operations revolved as they moved from winter to summer ranges. For some, farm pastures "on the Jordan bottoms" or elsewhere became a vital element in the success of a sheep industry that swung east and west from its moorings in the central valleys. Others with no farm base grazed year round on the public domain.

Another point that may be illustrated by the Jeremy operations is the fact that their eight to ten day trip from Skull Valley to the head of the Duschesne River was something of a race. Many of the Wasatch Front sheepmen operated under a gentleman's agreement about where the various outfits grazed, but southern Utah herds and transients from elsewhere, were apparently more competitive. Violence rarely threatened but camps were located early in efforts to hold grass, and shortcuts were taken or trails hewn for miles through timber to regain grazing advantages. Competition was more keen in the Bancroft-Chesterfield area adjacent to

the Pocatello Division of the Cache National Forest. There the powerful partnership of Kollin and Finch had preempted a "fine spacious range" which "range-hungry" sheepmen, many of whom were French in background and "strictly nomadic," invaded in desperation. Kollin and Finch protected their interests by a simple but effective expedient. They grazed a herd of bucks in the approaches to their range and instructed Frank Robertson, who has left a classic account of sheepherding, to drive the bucks headlong into invading herds which were almost always ewes and lambs. This strategy was based on the assumption that if the threat of mixing herds failed to turn back invaders, that the prospect of a lambing season badly off schedule would. With young Robertson's skilled herding this device worked well in most situations, but once a determined German herder with a reputation as a killer forced a showdown in which it seemed one of the two men would be injured or killed before the German finally yielded in the face of Robertson's rifle and its superior fire-power over his Luger pistol.[23]

Part of the Kollin and Finch operation was a purebred Shropshire herd which they lambed in sheds and otherwise gave special care. Different only in their emphasis upon the Rambouillet breed were a number of purebred breeders in Utah. Prominent among these were W. S. Hansen of Collinston on the west slope of the Wellsville Mountains and John H. Seely of Mount Pleasant who, between them, dominated Rambouillet breeding in Utah, and perhaps the United States, for several decades at the turn of the century. As a merchandising technique they also developed ram sales at Salt Lake City that were known around the world. Seely, especially was possessed of great ability and held considerable political influence. His neighbor, David Candland, long a key member of the State Land Board. was never loathe to influence land decisions; and Reed Smoot and George Sutherland, United States senators from Utah were his confidants. That he followed enlightened grazing practices is also suggested by the fact that Albert Potter borrowed his "principal employee" W. C. Clos, "an encyclopedia on range management," to help formulate the emerging practices of the Forest Services' grazing division in the years after 1905.[24]

It is apparent that growth in the sheep industry in the decades after 1890 was in many respects a matter of internal development. One way and another this development touched the lives of thousands of Utahns

and became a major source of wealth among them. At the forefront of this homegrown industry and giving it special clout was the Utah Sheep and Wool Growers Association, which by 1900 consisted of more than a hundred powerful sheepmen, at least seventy percent of whom lived adjacent to, or at some point of their operations, ran on what would become the Wasatch and Cache National Forests. Although Utah's sheepmen had adopted much of the individualism characteristic of their peers elsewhere, the Wool Growers united most effectively as an interest group. By 1901 their national connections were sufficiently strong to draw the annual meeting of the National Live Stock Association to Salt Lake City. Notable in the proceedings of that convention, which were otherwise given over to exaggerated compliments, toasts to the Utah hosts and other frivolous matters, was one serious note. With almost no sense for his own heritage, Salt Lake City sheepman, John C. Mackay declared that stockmen had been the forefunners whom farmers and civilization generally had followed. He then called for a liberal national land policy, giving each stockman as his earned dues; "permanent headquarters" and the "adjoining country tributary to his interests."[25]

All in all, the sheep industry was a force to contend with as the Forest Service entered the picture. Over the years it had changed dramatically. The economic need served by the farm flock had passed with the advent of commercial clothing. True, vestiges of the old system lingered in Utah making for smaller average numbers, but the persistence of little sheepmen detracted but little from the power of the Utah Wool Growers Association.

Cattle Ranching

More the result of general frontier influences extending into Utah was the development of cattle ranching during the same era. By the same cooperative processes by which the early sheep industry had grown, the central valleys of Utah had filled with cattle by 1880. Seeking new opportunity, certain individuals throughout the region turned increasingly to cattle. For exmaple, the Bennions rounded up 2000 head of cows when feed began to be scarce in west central Utah and under the slipshod custody of two teenaged boys sent them across the Wasatch Plateau to Castle Valley where

many were lost and starved.[26] More typical of developments along the Wasatch Front was the experience of John W. Thornley of Layton who watched as his father experimented with alfalfa and winter feeding during the early 1870s and, at the tender age of sixteen, began to buy and sell cattle himself. Among other things this brought him in contact with Utah livestock buyers including V. F. Saunders, a Salt Lake millionaire and "tramp livestock man", whose operations included buying, reselling and feeding as well as hit and run grazing practices that extended from the Grand Canyon well into Idaho. By 1883, as "the idea of summer grazing land came to have more and more significance," Thornley bought railroad land in Weber Canyon. Quickly learning "how easy it was to buy one section and to control a lot more because of water and location" he dealt in both cattle and sheep, grazing and feeding and selling mainly to Salt Lake City "killing houses" which included

> White and Sons killing house . . . in North Salt Lake, about a half-mile east of where Cudahy's plant is now.[1940] Milo Knight, Dick Patworth and Bishop West had another killing house slightly further south, about where the Utah Oil Refineries are now. Archie MacFarlane was another early butcher and had a killing house somewhere to the south and west of the city. MacFarlane was the man who drove the buffalo from Tooele to Antelope Island when the lake was low. The first stock yards in the state were built a short while after the first killing houses, and I recall trailing stock to these yards before I went on my mission.[1883] They were built sometime during the seventies and was situated in a hollow down below where the present Union Stock Yards are. This yard was owned by Leary and Warren. Later White and Sons and Leary and Warren decided to consolidate and build the first real packing plant in Utah. I was among the stockholders in this enterprise, and the plant was constructed on the site of the present Cudahy business. Milo Knight was in on the deal, so I think that his killing house was also cooperating in the packing venture. Knight supervised the buying of the stock for the grand opening, and had rounded up a large herd for slaughter. On the day before the opening, however, the uninsured plant burned down and we were left holding the sack. The interests were sold by us then and later the Cudahy plant was erected on the same site. I think our plant burned about 1889.[27]

Elsewhere cattle grazing spilled out of the central valleys into the corners of the state in a movement reminiscent of the outward movement of cattle from Texas. One branch of this movement proceeded from Heber where a consortium of cattle growers ran their stock on the Uintah Indian Reservation. In the late 1880s they manipulated the

Indians and much to the distress of the Indian agent sought to evade payment of very modest grazing fees.[28] Later, in 1898 the Heber Land and Livestock Company under John Austin leased Indian land along the south and west sides of the Duchesne River where they are said to have run "150 to 200 thousand sheep" denuding the range badly.[29] Yet by 1902 when Albert Potter was conducting the Wasatch Survey the "Heber Stockmen" were apparently pursuing an enlightened policy and were managing their Indian lease "as though they intend to continue in the stock business permanently."[30]

Elsewhere cattle were being crowded from interior ranges to new country. This was particularly apparent in the Sanpete and Sevier river valleys from which thousands of cattle were trailed after 1879 to stock southeastern Utah and the Arizona Strip. It is interesting to note that the cattle used in stocking this new country were "Utah cows" but that the first important cattlemen moved in from the outside carrying the ranching-open range customs with them. In San Juan County for example, the giant Carlisle Ranch was run by two English brothers and the Pittsburg Company was owned by investors from that city. Preston Nutter began his operations on the Arizona Strip but also acquired interests in southeastern Utah where his operations extended from the Roan Cliffs to Strawberry Valley and Nine Mile Canyon between Price and Vernal.[31] Also indicative of how the general ranching customs of the West were superimposed upon the early Mormon system was the Bar-M Ranch which was established during the middle 1880s on railroad and public lands in Box Elder County by a son of Railroader Charles Crocker. Running on about 300,000 acres young Crocker built his numbers to 45,000 just in time to suffer devastating losses in the bad winter of 1887--some say he lost 35,000 head of cattle. Although subsequent owners continued to run huge herds the Bar-M Ranch had drastically overstocked its ranges in the very beginning and suffered a quick calamity as result.[32]

At this point it would be well to pause and ask what this survey of Utah's livestock industry adds up to and what we can make of it for the Wasatch-Cache National Forest. It is clear that two sets of livestock customs and practices had been introduced by 1900; the one superimposed upon the other. The early one was Mormon and looked to the Midwest and Northeast and even beyond to England and Scandinavia for its antecedants,

including blood lines, purposes and affinity for farm operations. The second emanated from the Southwest, had Spanish antecedants and was extensive in its ranch and public land orientation rather than intensive and farm oriented. Slowed by the natural barriers that had limited Spanish infusions from earliest times, as well as the Mormon propensity to do their own thing, the ranch culture entered Utah relatively late and made some use of established blood lines and customs so that it intermixed with the farm culture rather than supplanting it entirely.

The core area of the Mormon community, essentially the Wasatch Front and settlements extending south and west from it, was the area where the original Mormon livestock culture was most thoroughly established. By contrast, the corners of the state were subject to the most dramatic infiltration of the general livestock frontier from where its influences tended to press inward but met a countering influence as the Mormon livestock culture pressed outward.

The sheep industry had become more important than the cattle by 1900 in terms of range control, of revenue produced and of political influence as well as in its sense of self identity. Ironically, the new sheep industry that emerged after 1880 had developed more from the interior valleys and through the medium of Mormon stockmen than did the new cattle industry. Yet there can be no question that it departed more completely from the earlier farm flock-community pool pattern than did Utah's cattle industry. The emerging dominance of the sheep industry was due to a number of things. In part, it was sheep's natural adaptability to Utah's range conditions. In part, it was the result of how the migratory quality of sheep lent itself to the hinge effect of an operation based at a community in the central valleys but swinging from winter pastures on the West Desert to summer grazing on what became the Wasatch-Cache National Forest. Finally, the growing ascendency of sheep was the product of the aggressiveness of sheepmen which expressed itself in how they utilized natural resources and organized themselves as an interest group.

The paradox of a range industry that was at once homegrown and yet typical of the broader range tradition also grew from a number of factors. Important among these was the fact that the economic need on which the farm flock-community pool system had rested--home production of woolen

goods--no longer prevailed. At a time when Utahns needed new opportunity, markets for sheep products, and new managerial practices were developed. Simultaneously, the necessity for universal ownership of a few farm sheep passed by the board. Thus, while the older tradition continued to manifest itself in the fact that the Utah sheepman on the average ran relatively fewer animals than in neighboring states, big sheepmen did exist and with the possible exception that more of them had some farm ground than in most states, they followed the range frontier patterns more closely than did Utah's small cattlemen.

The sharpness of antagonism that usually attended the confrontation of sheep and cattle as sheep became the new wave of the livestock frontier was largely lacking in the Utah core area and somewhat less explosive even in outlying areas. Several reasons suggest themselves. First, in the original farm culture, the sheepman and the cattleman were often the same individual and when overlapping ownership did not exist, the reality of stockmen's dependence upon diversified farming was a barrier to the development of competitive group consciousness. Second, although the growth of the sheep industry lagged a few years behind the cattle industry, the period of lag was less pronounced than it was in such range war states as Wyoming, Arizona and New Mexico. This, coupled with the fact that some sheep had grazed on Utah's ranges for a generation, reduced the proprietary sense of Utah cattlemen and resulted in a relatively peaceful transition. Nevertheless, it is important to bear in mind that the order of importance between sheep and cattle had been reversed during the 1890 to 1900 period. The relative peace that Potter, Reynolds and other early foresters remarked upon after 1902 was, in some degree, a reflection of sheep's ascendency.

If antagonism between sheep and cattle was less strident there was an important level of confrontation between established farm based livestock culture of the Mormons and the invading ranching-range lands system of the more general frontier which had an important bearing on the grazing situation the Forest Service met in the years after 1905. As we have seen, the farm based industry was well established in Utah's heartland when the general frontier invaded the corners of the territory after 1880. To meet this invasion, what may be called a Mormon livestock frontier was dispatched, by mission call and otherwise, and utilizing village based

livestock pools engaged in a competition with the individual ranches of the oncoming livestock frontier. In the first years of this confrontation, while ranges were still good and profits high, ranchers had no trouble in holding their own against the village pools, although their perception of the toughness of Mormon competition was apparent in such appelations as the "Bluff Tigers" describing the Mormon livestock pool at San Juan County's Bluff City.[33] However, as virgin ranges were grazed off and a series of dry years and hard times followed in the 1890s the staying power of the Mormons proved superior. With profits falling, ranching operators sold out or withdrew in all four of Utah's corners and "pooled" Mormon interests of one kind an another took over their operations. Many of the tactics of range wars had been employed. As was apparent throughout the West profit motives could be terribly destructive to grazing resources. But to all appearances in an economic competition to which a religious motive for surviving had been added, the resultant impact on the range was even more devastating. Thus, there were broad cultural influences that contributed to heavy uses of ranges in Utah and to a long cycle of overgrazing, watershed abuse and floods that after beginnings at Mountain Meadows and in Sanpete County in the 1880s finally culminated in the floods on the Wasatch National Forest in the 1930s.[34]

National Forests and the Era of Regulation and Adjustment

The establishment of forests represented the initiation of the third era of Utah's livestock history, or what may be called the era of regulation and adjustment. In this new era, which draws on to the present, elements of both the early Mormon and the more recent ranching traditions continued to be felt and to influence the grazing programs of the Wasatch and Cache National Forests. Forest Service policy tended to halt the rapid growth of the sheep industry and to encourage small livestock men, especially those who ran a few head of cattle, by protecting their access to ranges that large sheepmen had been threatening to take over a few years before. Another, and perhaps the most important characteristic of the livestock industry during the twentieth century had its initial focus in the Forest Service's effort to bring grazing resources into balance with human needs and with the romantic tradition of rugged independence

and self rule that had become an important part of our cultural heritage. Achieving this balance has meant regulation. Cut backs of grazing privileges have extended to the present in an evolutionary, rather than revolutionary process, making this entire era one of adjustment. In the main, livestock men throughout the era have been less aggressive than their predecessors. They have chafed under forest regulations and bolstered by economic need and tradition have resisted, yielding only slowly to a Forest Service campaign to bring livestock use into balance with the realities of resource production and the growing demands of other clienteles for forest privileges. To get at the character of the twentieth century livestock industry, we may first look at grazing permits--the system by which the Forest Service defined who would have access to the summer ranges, which were, after all, the key to the entire livestock equation.

Permits and a Profile of the New Grazing Industry

It is difficult to know just what immediate difference the establishment of the Cache and the Wasatch Forests made. For some forests, estimates exist as to how many animals were running on the forest in the years just prior to establishment. Nowhere, however, have satisfactory estimates been found of the number of animals that actually used northern Utah's mountain ranges in the immediate pre-forest years. Fortunately, more information is available for the early years of the forests, but even this data is unreliable on several counts, including the fact that the two forests went through a series of boundary changes between 1903 and 1915. In addition, major studies have conformed to state lines and existing statistics often refer only to the Utah portions of the forests.

A more fundamental question, however, is whether or not heavy reductions in livestock numbers were actually made in the first years. It is commonly held that changes almost revolutionary in character were introduced, or at least that very sizeable reductions were made generally and that tramp or transient sheepmen especially were almost obliterated from the scene. Although these assumptions cannot be disproved from the Wasatch-Cache historical files, neither can they be substantiated. On the one hand, the historian has the fact that Utah sheep numbers fell by

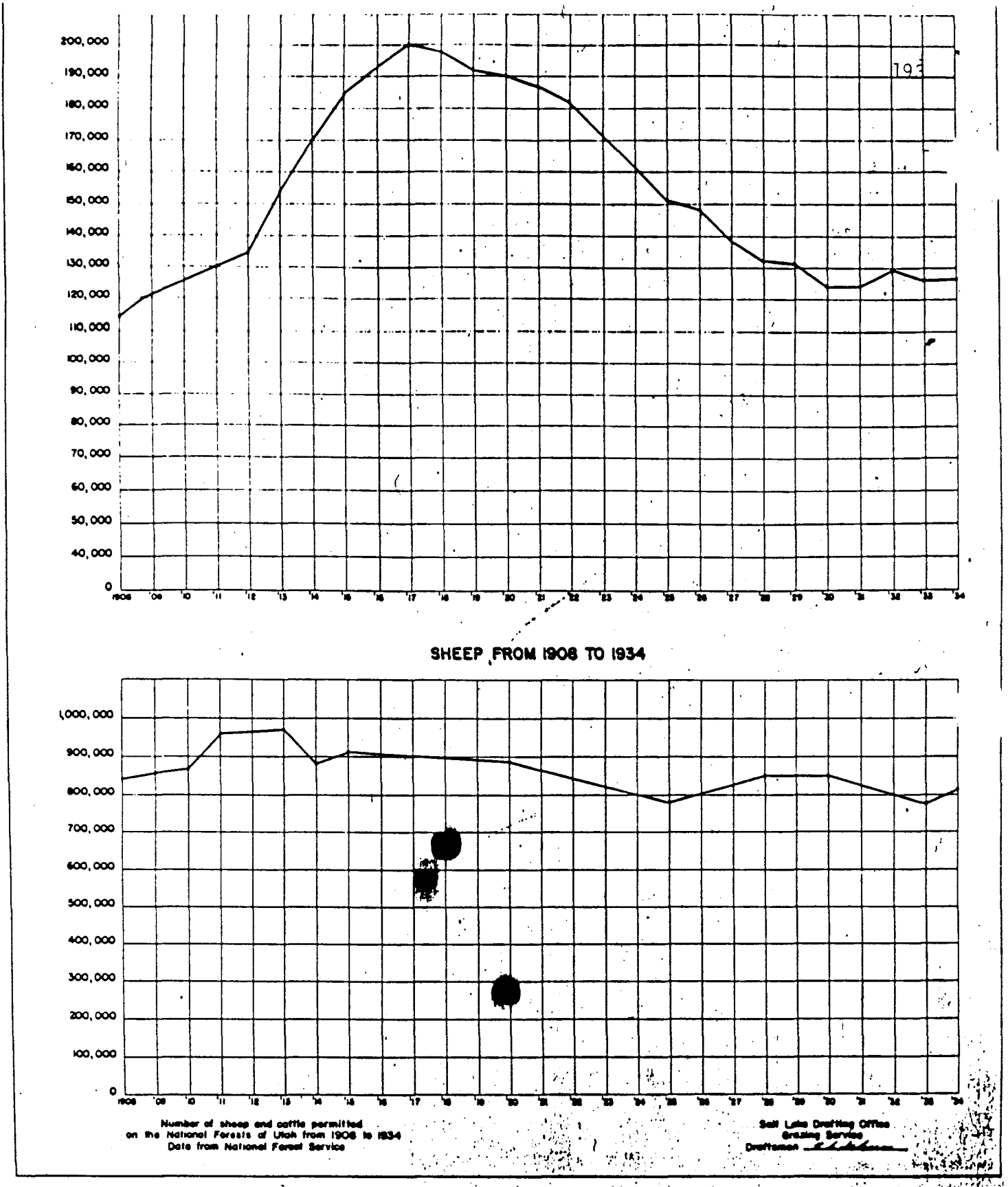
Illus. 14 Small User's Cattle, Wasatch Forest about 1910

Illus. 15 Range Improvements on the Grantsville Division in the 1930s

nearly a million head in the decade during which the forests were being established. Certainly the role of the Forest Service as a new factor had some influence on this. On the other hand is ample evidence of a positive and definite kind, that early foresters were sensitive to the needs of various clienteles, although perhaps less so to big sheepmen as a class than to some others. Although sheep numbers, and to a lesser degree cattle numbers, may have been reduced by excluding big owners from ranges in the immediate vicinity of the settled valleys, there is evidence that rather than being entirely excluded from grazing on the Wasatch and Cache Forests, even big users were given preferences on the north slope of the Uinta Mountains or in other remote areas. Indeed, it would appear that the earlier "tramp outfits" were shifted from forest to forest or that they, themselves, sought to be shifted as they tried to secure grazing advantages of one kind and another.[35]

Data gathered from all the Utah national forests indicate that sheep and cattle followed permit trends that differed somewhat. Both began with relatively modest numbers.(See Figure I)[36] Cattle permitted on the Forests rose dramatically from 112,000 to nearly 200,000 between 1908 and 1916. Thereafter their numbers descended slowly to about 120,000 in 1930. Nearly 850,000 sheep were permitted in 1908. This number increased to about 975,000 in 1913 after which sheep began a slow decline to about 780,000 in 1933. A significant point here is that after a low point early in Utah's Forest Service experience, permits for both classes of stock increased significantly, until about World War I.

Although the most dramatic changes in livestock numbers on the Wasatch and the Cache Forests coincide with the extension of forest boundaries, trends in permit numbers there corresponded rather closely with state trends generally. Cattle permits on the Cache Forest will serve to make the point. In 1903 when it was still the Logan Reserve only 5000 heads were under permit. In 1905 when the Malad, Marsh Creek and Bear Lake divisions were added, numbers jumped to approximately 17,000 head. Two years later 24,400 were grazed and after the Pocatello Division was added in 1915, numbers topped out at 32,500. Naturally, sheep numbers also increased with each change of the boundary, but at a less dramatic rate. On the Wasatch a similar pattern unfolded. There, however, the transfer of much of the North Slope from the Uinta National


200,000
190,000
180,000
170,000
160,000
150,000
140,000
130,000
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1908 '09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
SHEEP FROM 1908 TO 1934
1,000,000
900,000
800,000
700,000
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300,000
200,000
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1908 '09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
Number of sheep and cattle permitted on the National Forests of Utah from 1908 to 1934
Data from National Forest Service
Salt Lake Drafting Office
Grazing Service
Draftsman

FIGURE I

Forest resulted in far more dramatic sheep increases. Some idea of the general course grazing followed until the mid 1930s may be had from Table I.[37]

TABLE I

	CATTLE GRAZED		SHEEP GRAZED	
YEAR	CACHE	WASATCH	CACHE	WASATCH
1904	5,000	2,000	35,000	---
1908	24,400	6,844	104,633	15,500
1918	32,500	14,566	136,000	66,286
1928	32,500	8,863	100,501	54,861
1938	24,551	7,832	99,118	60,409

As administrators, one of the vital tasks confronting the first generation of foresters was the question of who would be allowed to graze their animals on the forest ranges. At face value, the procedure that quickly evolved was simple and straightforward; stockmen made applications for permits which were then awarded according to certain rules and according to general committments of the Forest Service as well as to the predisposition of individual foresters.

Among the more specific guiding principles was the doctrine of prior use. Stockmen whose livelihood had depended for a number of years on mountain grazing qualified in this respect. Proximity too, was an important consideration, especially as it expressed itself in what early foresters called "commensurate property". The stability of an applicant as well as his need for grazing privileges was best demonstrated by a farm adjacent to the forests and owners of such places had a clear advantage over transient herdsmen. Indeed, so important a role did commensurability play that more than ninety percent of all permitees in Utah had land adjacent to the forests on which their animals grazed.[38]

Early forest grazing policy also had what may be called a populistic bias. Put differently, Forest Service policy tried to favor the common man and to control wealth and monopoly. This was apparent at all levels. In explaining grazing policy, Gifford Pinchot wrote:

> In grazing, as in everything else, the little man and the home owner came first. Small nearby owners who lived in or close to the Reserve whose stock had regularly grazed on the Reserve range, and who were dependent upon its use, were given preference over all others. Next came all other regular occupants of the Reserve range, and last of all the owners of stock who had not regularly occupied the range.[39]

Similarly Albert Potter stressed that small operators would be given permit preference to support them in homemaking. Perpetuating the theme Chief Forester Henry Graves told a Utah farmer's group in 1909 that "one of the principal objects of the grazing administration is the protection of the settler and home builder in the use of the range," and in 1917 an assistant district forester in Region IV had written instructions, "it has been the policy of the Forest Service from the outset to make grazing resources of the National Forests contribute as far as practical to the maintenance and support of the greatest number of home units."[40]

As applied to grazing, concern for the "little men" gave rise, among other things, to "protective and maximum limits" which upon the Cache and Wasatch as upon other forests varied from district to district. In practice the maximum limit represented the top number of animals any permittee could graze on a particular allotment and the protective limit was a much smaller figure, below which foresters would not make permit reductions.

Closely akin to this concern for the "little man" was a general attentiveness to need. The circumstances of individuals, the economy, the nation and the weather were regularly considered in distributing permits. Furthermore grazing policy as applied by the early Forest Service was committed to further development of the country. In this particular it hinged to the general land policy of the nation and went hand in glove with programs to get people onto the land, such as the enlarged homestead and livestock homestead acts. The Forest Service's role as booster was particularly apparent in its "new beginners" policy under which the permits of large stockmen whose animals exceeded the protective limits were "reduced" and the grazing preferences so vacated allocated to individuals who were just getting into business or who were below the protective limits for other reasons.

When applied on the Wasatch and Cache Forests these principles and regulations worked to the advantage of the village-farm based operators

with very few animals. Not only could most of them lay claim to prior use of ranges within the Forests but they obviously lived adjacent to the Forest and were dependent upon it. Furthermore, almost all of them were comfortably below the threat of permit reductions under the maximum limits provisions. As a result, the mountain pastures of the two Forests were quickly overstocked and long lists of applicants waited for cancelled permits or reductions to enter the Forests as new beginners. Early Forest officers frequently reported that they were able to meet no more than half the demands for grazing privileges.

A situation that illustrates the pressure for permits as well as the preference given to farm based local stock appears in Supervisor Clinton G. Smith's annual grazing report for the Cache National Forest in 1910. Although owners of the 93,000 sheep authorized by the Secretary of Agriculture that year averaged fewer than 400 animals each, the owners with from 1000 to 3000 head were penalized up to 20 percent of their forest permits to gain grazing privileges for 3000 head to be redistributed.[41] Notice that applications for grazing privileges would be accepted was published in five newspapers and posted in the post offices around the Forest. The reaction was a veritable flood of applications to which the Forest Service was ill prepared to respond, but which it could obviously not ignore in its range management policy. When Smith tallied up the applications he had requests for 161,275 sheep, nearly double the number already permitted on the Forest and fifty-four times as many as the pittance he had in hand for distribution. Of this number, permittees with sheep already on the Forest applied for 137,273 head and new applicants for 24,000. It wasn't much, but Smith proposed distributing permits for 2000 head so as to allow "an increase of 8%," to all "former permittees owning less than 1000 head . . . who fed their sheep during the winter months on their own ranches." Permits for the other 1000 head were distributed to individuals chosen from forty-four new applicants.[42] Not surprisingly, competition for cattle permits was even more keen.

With the Forest Service making every effort to meet the needs of stockmen the number of grazing permits soared beyond all precedent throughout the state. In 1918 when demand was near its highest, due to World War I, permits were issued for 200,000 cattle and 800,000 sheep

belonging to 7582 separate cattle graziers and to 1406 sheepmen, making average permit allowances of 24 cattle and 570 sheep. By 1939 only 5178 permits were issued, but Utah forests still occupied a unique position in the total number of users. The disparity with other western states was dramatic. Arizona, for example, with public lands similar in extent and character had a total of 603 or scarcely ten percent as many licensees.[43]

Among Utah's high permitee forests were the Cache and the Wasatch where permits reached all time highs between 1917 and 1919. On the Cache no fewer than 1424 operators received permits for cattle and horses and 146 received permits for sheep. At 674 cattle permits and seventy-nine sheep, the respective figures for the Wasatch Forest are somewhat lower but still impressive. It was on the Manti National Forest, however, where cattle permits reached 1915 and sheep permits numbered 629 that all records were borken. The pressure for grazing privileges began early in the Manti Forest's experience. While local foresters were culturally prepared for the onslaught, bureaucratic routine was jolted in Washington, D.C. when Supervisor A. W. Jensen of the newly organized Manti repeatedly sent pressing appeals for more grazing application blanks during 1903. The acting commissioner of the General Land Office finally took the matter in hand himself, writing stiffly that something was

> radically wrong about the numerous requests for these blanks. For the small number of stock allowed in the reserve it is simply unprecedented, and it does not seem possible that the demand for them is legitimate . . . . You have already had 600 cattle application blanks. I venture the prediction that you will not have 200 applications . . . . But 100,000 sheep are allowed in the reserve. I venture the prediction that you will have 75 sheep applications to forward, yet you have had 325 sheep grazing application blanks.

And then as if to silence the upstart Jensen for good, the acting commissioner concluded

> the total number of cattle applications approved for 44 reserves in 1903 was but 4121, covering 529,973 head. You have already been sent more than one seventh of that number with but 15,000 head of stock.

Later when well over 1000 cattle and 600 sheep permits were issued, the Washington office made a lame attempt at apologies when it belatedly acknowledged that in Utah there were "a great many cattle owners with

but a very few head each, many with only one, two, five or ten head necessitating an unusual number of blanks."[44]

The other side of the grazing coin was that forest users on the Cache and the Wasatch National Forests were almost all owners of very small numbers of animals as compared to the grazing industry generally. This was particularly true of cattle owners. Although not all data supports it, examination of statistics prepared by the Regional Office for a grazing history in the 1930s indicates that the average number of cattle per permittee on the Cache between 1910 and 1935 varied between seven and eleven head and indeed averaged fewer than eight cattle between 1919 and 1932. Holding very steadily around an average of twenty head Wasatch Forest cattlemen were also among the smallest in a state noted for its small herds. Sheep numbers per permittee too, were low on the two forests averaging between 600 and 750 on the Wasatch for the entire period to 1940 and between 325 and 500 on the Cache Forest until the middle 1930s when the number of sheepmen dropped by nearly half, allowing the average to escalate to nearly 700 head for the remainder of the decade.[45]

Given the farm oriented context of the cattle business it is not surprising that on many allotments almost all of the cattle grazed were of dairy origins. By the time the Wasatch and the Cache Forests came into existence Cahce Valley was a well established dairy area and was moving away from the pioneer dependence upon such dual purpose breeds as Devons and Durhams. Until at least 1940 and to some extent to the present, this dairy orientation has been apparent in the "rainbow" herds that graze in the allotments adjacent to the valley. Similar influences existed in Salt Lake County although on the east side farms that contributed most directly to Wasatch Forest permits, family cows may have played a somewhat more important role in the overall picture than did commercial dairying. By contrast cattle on the north slope of the Uintas and on the Bear Lake side of the Cache Forest tended to be beef breeds. For forest rangers and local stock associations, the high incidence of dairy stock complicated bull programs, but otherwise problems of forest management were more directly related to the fact that dairying contributed in a real way to the dominance of small

permittees and to a total numbers problem that was never really dealt with until after 1940.

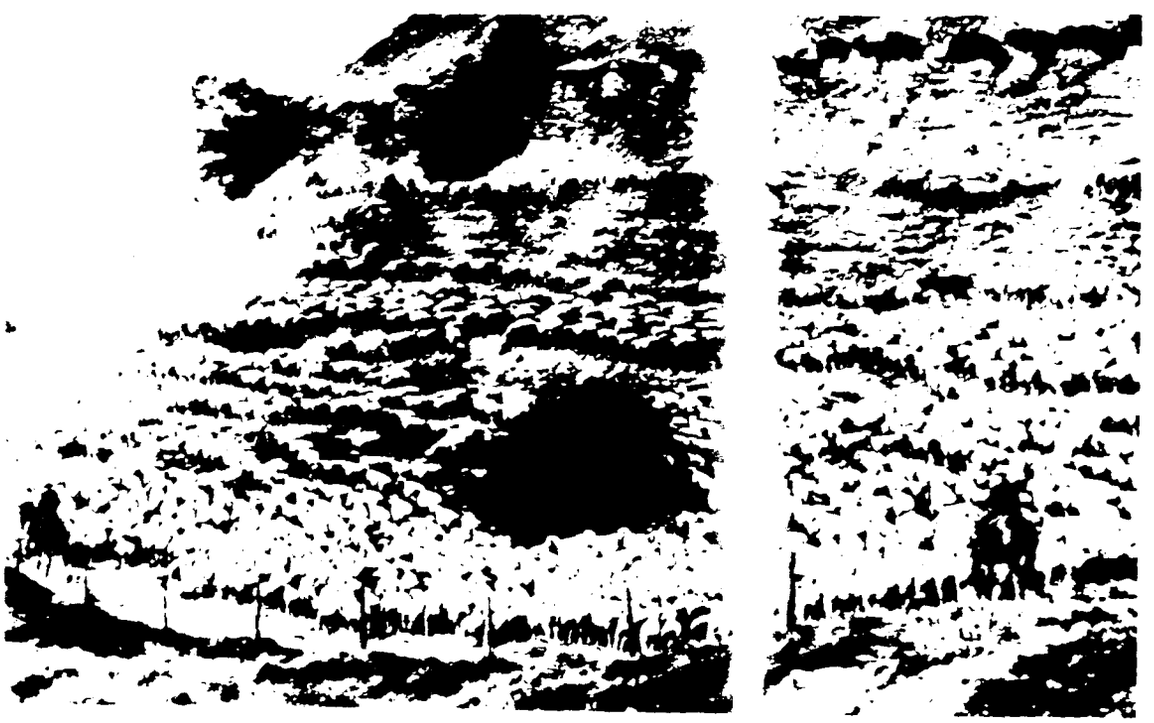
In summary, then, it can be observed that in the era of regulated livestock that followed 1905 the industry tended to stabilize in its mix of sheep and cattle. Furthermore, a unique mixture of the Mormon village and the ranching systems of livestock management confronted early officials of the Wasatch and Cache Forests with problems unlike those found elsewhere. On the two Forests the new grazing industry was made up of relatively small operators, most of whom were town and farm based. It seems likely that Forest policy enabled the farm based grazing system to perpetuate itself far beyond the period when it might otherwise have survived. It also seems likely that Forest regulations placed severe restraints on the sheep industry in terms of the course it followed after 1905, on the other hand, the competitive grazing of mountain ranges by which the sheep industry had advanced itself was checked and as further injury became apparent on unregulated lands by the 1930s was further curtailed by the Taylor Grazing Act.

The role of the Wasatch and the Cache National Forests in regulating the grazing industry as this new era matured may now be examined. This has facets too numerous to examine in a work of this sort, but in an effort to characterize the actual experience of the two Forests, reference may be made to stock driveways, to persistent overgrazing in the early decades, to the development of range management as a point of view and as a practical science, to the role of livestock associations and finally to a number of notable controversies in which the effectiveness of forest grazing policy was submitted to repeated challenges but finally upheld.

Driveway Controversies

For management of both cattle and sheep, stock driveways played an important role in the days before trucking began to dominate stock movement after World War II. In part, this was a matter of internal driveways. Trails, say for example, the one up Green Canyon to sheep country high in the Cache mountains, or a shorter one cutting crosslots over rugged country south of American Fork Canyon to avoid municipal watersheds, or even any one of several dozen that followed mountain

Illus. 16 Big Mountain Sheep Driveway 1914



Illus. 17 Sheep on the Trail

highways, became an integral and carefully balanced part of resource management and distribution. Likewise important, particularly in the earliest days of the Wasatch Forest, were driveways that extended hundreds of miles binding topographical provinces and economic regions together.[46]

Some of the most important of these converged to pass through Salt Lake City where they created serious problems as sheep trailed through town and its watersheds. Possibly no problem of range management was more serious for early foresters. On the one hand were arrayed the members of the Wool Growers Association, one of the state's formidable lobby groups. On the other was the region's largest city, backed by several newspapers and a growing body of scientific information making it clear that sheep trails constituted a clear and present danger. For decades the driveway had passed through Salt Lake City and up Emigration Canyon. About eight miles up the canyon it divided with perhaps a third of the 300,000 sheep that used it continuing on to the canyon's head to pass over Big Mountain and through East Canyon to Morgan County. The remainder turned right to cross Little Mountain into Parley's Canyon enroute to the Uinta Mountains.

As early as 1892 the territorial legislature had passed a "Seven Miles Limit" law, the purpose of which was to provide a legal tool to keep stock from polluting watersheds. Although a number of stockmen were successfully prosecuted under it, sheepmen continued to use the Emigration Canyon Trail. The movement to establish a forest reserve in the Wasatch Mountains had grown out of disastisfaction with the situation. The Forest's establishment apparently enabled the city to exclude grazing from Big Cottonwood Canyon, the major source of its water, but sheepmen not only continued to use both forks of the Emigration Canyon Trail, but were successful in 1907 in pushing through a state law that Class I cities (only Salt Lake City qualified) were under the necessity of providing a passageway for established livestock traffic. The city and the Wasatch National Forest, which apparently assumed varying obligations for watershed administration under a succession of cooperative agreements, sought to limit the evils of contamination by routing the entire traffic via the Little Mountain fork of the trail which, in addition to being

located away from streams for most of its course, had a bridge or two which avoided crossings necessary on the other fork. Sheepmen who grazed in Morgan County, however, complained that this added many miles to their drive, and denying that they polluted streams, continued to trail up the Big Mountain fork, occasionally taking their flocks through at gun point.

The issue came to a head of sorts in 1912. By that time, Forest Supervisor E. H. Clark had learned that city officials could not be depended upon to stand by arrangements to close the driveway and consequently attempted to withdraw from the entire matter until city officials made up their mind. The issue was further compromised by a "roads and trails" statute that placed authority to close established public thoroughfares only in the hands of county commissioners. Through the entire spring, summer and fall of 1912 the issue raged in the city commission and in the newspapers. Early in the cold spring of that year, one herd was impounded well on its way up the Big Mountain route, but released when it became apparent the sheep might all perish, thus causing a pollution problem of unprecedented magnitude. City patrolmen were accused of taking bribes and there can be no doubt licenses were issued by city officials allowing favorites to take their herds over the forbidden trail. Proposals to divert the sheep through Davis County were angrily rejected in that quarter, and an alternate trail suggested by Forest officials was derisively rejected because it proceeded along a ridge so both drainages would be contaminated. As the last herds trailed back towards the West Desert late in October, the issue finally wound down with the sheepmen still in possession of their trail rights, but the public was aroused as never before. In addition, a new contract under the terms of which Forest personnel would be paid by the city for managing key watersheds was negotiated and Robert R. V. Reynolds wrote one of the major studies of any Utah watershed produced to that time.[47]

Overgrazing

Until shortly before 1930 range use of the two Forests added up to continued depletion, or at best, almost imperceptible improvement. In general, Forest officers at all levels, as well as local influences

contributed to the dilemma. However, here and there a voice was raised in protest and by the early 1920s individuals with sufficient clout to alter the process began to address themselves to it. Among the earliest voices raised in protest was the ubiquitous Robert R. V. Reynolds. In 1909, while he was supervisor on the Wasatch Forest, a sharp dispute had arisen when Reynolds reduced by several hundred, the number of stock recommended to be added to the Pleasant Grove allotments of the Forest by his deputy, William M. McGhie. McGhie's sympathetic response to the human elements of grazing was apparent in his argument that the Pleasant Grove operators had done "everything in their power to help the range conditions and they are asking for so little in this case that I do not feel justified in turning them down after the spirit they have shown." Reynolds, however, insisted that the proposed increase be drastically reduced in interest of the resources with the result that McGhie informed him that he did "not wish to keep on quarreling" but that if his position was not "accepted I will not lay any claim to the grazing report and recommendations of this year."[48]

Reports emanating from grazing inspections also make it clear that many Forest officials were aware that the two Forests were seriously overgrazed. One 1919 survey, for example, gives a very adverse view of grazing resources on the Grantsville Division and comments at one point, that "what the stock live on is a mystery."[49] Other inspections call attention to problems of trespass, of common use between sheep and cattle and overgrazed canyon bottoms, as well as problems of watering and salt. Some make definite and even urgent recommendations but many are couched in very neutral terms and almost none undertake to deal with the problem generally.

One Forest official who had evidently given the entire matter some thought was Supervisor Carl B. Arentsen of the Wasatch. When criticized rather stingingly by C. N. Wood, assistant district forester in June of 1919, he responded in a defensive letter in which he discussed the small permittees of the Wasatch and held the comensurable property formula up for close examination. Among other things, he noted that

> Intensive grazing of the Salt Lake and Utah valleys demand an intensive enforcement of the regulations, probably more intensive than elsewhere in the District. We should not be prevented from

> strictly enforcing the regulations simply because the conditions elsewhere do not justify it. We must follow an intensive allotment policy or fail in our administration of the Forest.

He then discussed his rejection of an application for two cows by a Mr. Bush because, as he argued, Bush, who bought hay to feed the two animals in the winter, did not actually need them to round out the effective management of his farm property. While Arentson failed to really pull together all the loose ends of the special problems of overgrazing as they related to small permittees, he was struggling towards solutions and more than others of this era, seems to have understood that range management on the Wasatch was an intensive and technical business.[50]

In spite of voices such as Reynolds' and Arentson's, no one appears to have grappled with the problem in its broad perspective until at least 1921. At that time C. E. Rachford, a grazing examiner, made an extensive examination of national forest grazing in Idaho, Nevada and Utah. Grazing on Idaho's forests, he reported, was prime and on Nevada's, improving. On Utah's forests, however, conditions were critical. The problem lay, he concluded, in heavy and continued overgrazing that was itself the product of complex social forces and an exaggerated sense of democracy on the part of the Forest Service. "Capacity estimates" he wrote

> have become largely a question of the experience of the man making the estimate. While it has always been assumed that capacity estimates represents the best judgement of Forest officers whose experience should enable them to reach a fair conclusion, this judgement has been so influenced by the demand for range that it no longer represents even a good guess on carrying capacity. I do not know that Forest officers can be blamed for it particularly, because they are so thoroughly familiar with the needs of the livestock men that it influences their judgement to a very great extent. Furthermore many of them are men who have been on the same ranges for quite a few years and they have become so accumstomed to seeing the present state of affairs that they believe, or try to make themselves believe, that the range is improving or properly stocked. Then too, the conditions of stockmen have a great weight in influencing the judgement of the Forest officers on capacity.

Continuing, he shifted his attention to the Forest Services' espousal of the little man

> In our enthusiasm and earnest desire to help build communities and foster agricultural development, we have encouraged every land owner in these valleys who has a few head of stock to put them on the National Forest. I think we have really gone so far as to say that grazing of a few head of stock in the Forest is indispensible to the proper operation of the average farm in these communities. As a result of this propaganda and our desire to distribute our grazing privileges to the greatest number of people, we have probably gone to the extreme. We now have the distribution carried to a point where it is doubtful in my mind if the small number of stock grazed by the average permittee is of any real value to him.[51]

The validity of Rachford's observations, notwithstanding, the "wide distribution" policy that prevailed on the Wasatch and Cache Forests was difficult to reverse. In part this was related to the fact that personnel and attitudes within the Forest changed only slowly and a long era ensued, and to some degree continues today, in which forces responsive to the human needs of graziers yielded only slowly to more impersonal administrative considerations calling for a coldly scientific application of range management principles. As Rachford observed, line officers, especially supervisors and district rangers who dealt most directly with the people often found it difficult to yield to the dictates of scientific management. A good example of the give and take by which the two forces interacted took place on the Cache Forest during the depression years. Grazing inspectors T. Dean Phinney and Lester Moncrief reported in strong language after a close examination of range conditions that

> the Region has a problem of critical importance and high priority for aggressive attack on the National Forest lands bordering Cache Valley. Grazing of livestock must be curtailed promptly and drastically on the 25 mile face of short canyons and steep slopes extending from Blacksmith Fork northwest to High Creek. Otherwise, grave damage will occur to the mountain water resources on which the adjacent agricultural valley lands and communities are absolutely dependent. Present livestock use is by some 120 valley farmers who are permitted to summer an average of 9 head each of excess young dairy stock on the Forest plus 1 1/2 bands of sheep. The livestock use is not profitable. Nevertheless, it is obvious that a major public relations project is involved as the first step towards solution. The ranges facing the valley should never have been grazed by cattle. The canyons are short and narrow and slopes far too steep for cattle use. Originally they might have supported conservative sheep grazing but now they are too denuded for this class of stock.

Continuing, the two inspectors discussed individual canyons in even more

severe and pointed language. Millville and Providence canyons were denuded, not suited to cattle and total elimination had to be the objective. Green Canyon was "especially dangerous for any use . . . closure in order" but for the moement its 170 head should be reduced to 50. City Creek was "as pitiful an attempt to use unsuitable scraps of short steep slopes with scrawny offspring of underprivileged cows as the Cache can offer" and so on. Their sarcasm does not veil the seriousness of their effort to apply scientific principles where they had previously not been fully employed.[52]

The difference in point of view is dramatic in the annual report of Supervisor Carl B. Arentson of the Cache for 1935. While certain adjustments were acknowledged, the needs of people were the primary consideration. "Ability to graze a few head of stock on mountain or summer ranges . . . is a valuable asset . . . . The usual farmer wants and needs only a small cattle permit that he may put his young heifers on the range to relieve his pasture and give the young stock a better consitution. I believe the highest use of the Cache ranges is in supply of forage to these small owners."[53] In contrast to the sense of crisis that pervades the Phinney-Montcrief report and in contrast to his earlier thinking, there is an almost lulling quality of well-being in Arentson's words. It was in this tension between two attitudes that progress was made in range management in the years after the Rachford Report first called effective attention to the dilemma of the Wasatch-Cache Forest ranges.

Intensive Management and Changing Attitudes

Whatever Supervisor Carl Arentson's feelings in 1935 he had touched on a key to understanding range management's development on that June day way back in 1919 when he argued that "intensive grazing" demands "intensive allotment policy."[54] While the organizational capacity and dedication of the first generation of foresters cannot be denied, and while one is also aware that many stockmen, and perhaps others, would not say that changes in range management since 1920 add up to progress, none can deny that both the livestock industry and Forest Service management of grazing resources have become more intensive as the years have passed.

Moreover, there can be no question that intensive analysis and intensive administration have had a positive effect on resources and long term grazing capacity. A number of factors and developments have contributed to this growing intensity and the progress it has produced. Brief mention of some will contribute to an understanding of range management on the Wasatch-Cache National Forest.

Fundamental to the growth of "intensive allotment policies" have been a number of significant changes in personnel. In the first place is the matter of numbers. Sincer the earliest days the teamwork of line and staff officers has enhanced the achievement of the Wasatch-Cache National Forest. However, the growth of personnel in terms of numbers alone has enabled the Service's effective organizational structure to vastly intensify what was, of necessity, the most general and extensive kind of administration in the early days when a single individual ranger staffed an entire ranger district.

Not only are more people involved, but important changes in education, outlook and background have also contributed to intensive management. As C. E. Rachford was aware, early grazing managers were "of the people" in a direct sense and had difficulty in distinguishing between what "was for the people" and what was really good resource management. Although the livestock community of the Wasatch-Cache National Forest area doubtlessly continues to produce a disporportionate share of the people who staff both the Forest and the Region, greater distance has come between the stockman and the manager as forest tradition has matured and as education and professionalism have grown. The net result is that when conflicts have arisen in recent decades forestry people rally to each other and the principles of their profession. This is true even when not only the cultural bonds of the livestock community, to which many foresters were born, are involved but also, the bonds of a community as close-knit as the Mormon society. This is particularly true when foresters confront what seem to them to be unwarranted attacks such as one made by J. Rueben Clark of the first presidency of the Mormon church in the middle 1950s when cuts were made on his grazing permits on the Grantsville Division.[55] Call it bureaucracy, call it tyranny, or call it what you will, but values and customs develop over time that enable human beings to keep their eye on impersonal but vital

administrative goals. Thus bolstered, a district ranger can make unpopular range management decisions that successively subject him to the derisive and snide treatment of a livestock baron on the La Sal, then the hostility of an entire livestock community on Nebo District and finally the determined opposition of his friends and neighbors who ran cattle on the Logan Canyon allotment of the Cache Forest.[56]

Inspections, surveys, reports and paper work have crowded the hours and lives of range management personnel from the earliest times. Yet, in the years since 1920 significant advances have been made in terms of the capacity to actually assess all the contributing factors of forage production. Early surveys were made by teams, often from the District Office, who undertook to categorize the vegetation and estimate both the productive potential of ranges and their current capacity. These surveys moved systematically through an allotment, but daily covered as much as two sections per man, which suggests their estimates were general rather than intensive. Field notes were taken in a summer reconaissance and maps and statistical reports drawn up in great detail in the office during the following winter. Questions addressed in addition to vegetation types included topography, water, evidence of grazing, evidence of management by users, game, erosion and a half dozen other questions. The 1920s, particularly, appear to have been a productive period for surveys of this kind.

From data gathered in these surveys and more general inspection reports, use management plans were developed early, although the earliest were evidently relatively unsophisticated. The allotment system was utilized from early times as were efforts to control use by counting stock on, to the Forest, and by limiting the grazing season and resisting trespass. Salting grounds and water holes were always manipulated in efforts to distribute animals as was common use of both sheep and cattle where permittees would agree. On and off permits, utilizing both private and government land and nonuse arrangements were also employed in efforts to achieve balanced utilization and the protection of resources. Ranges were managed intelligently and with the close supervision of what are now often referred to as "the old horseback rangers" who spend most of their time in the field and knew conditions intimately and responded almost by instinct to changes in weather and other variables.

By the 1950s, however, what are now called "allotment analysis procedures" were replacing the earlier surveys, substituting more intensive scientific evaluation and administrative routine in their stead. Topography, soil and plant types were thoroughly analyzed to establish the percentage of range suitable for livestock on any given allotment. In addition, soil was categorized in terms of production and erosion qualities. Vegatation type, forage quality, reseeding potential and recovery time were studied by transect lines, fenced plots and various other means. Acreages were categorized as to whether grazing potential was good, fair or poor and assessments made as to what productive condition trends were for each category. The number and class of stock and type of management necessary were also entered into the formula.

In response to the change of policy Rachford had initiated in the early 1920s, the old practice of opening the ranges to a succession of new beginners was stopped, or at least heavily curtailed, and more and more permits were retired and reductions were made in efforts to restore overused ranges. Length of season, too, came under new scrutiny. Efforts had long been made to keep animals from following receding snow lines closely, but grazing season and grazing numbers now began to be manipulated in relationships ranging from seasons of a few days for large numbers to summerlong grazing for restricted numbers. Areas and plants normally used by livestock--designated as "key areas" and "key plants"--were closely observed and a "take half and leave half" formula came to be accepted as a useful rule of thumb to regulate grazing. Condition of vegetation, not fat stock, became increasingly the yardstick by which a range was judged. Herding practices for both sheep and cattle received continuing attention and both rest and deferred rotation plans were applied. All in all, the intent was to reduce to scientific expressions all the elements of grazing involved in achieving a sustained yield.

An important element in this era of intensive grazing management has been the "management plan". These had existed in rudimentary form since the early years of the Cache and Wasatch Forests, but by the middle 1930s had been refined and formalized. In still more recent years, they have been integrated with general plans to coordinate overall Forest programs. Matters considered in many of them include allotment description, history, problems, action plans, uses other than grazing, improvements, distribution

and salting. Plans have apparently been drawn for every grazing allotment on the combined Forest and appear to be updated at irregular intervals. Much of the data included is communicated to the users and becomes a plan of operation that both parties follow.[57]

Livestock Associations

Contact with the user is, and always has been, an essential element in the successful operation of this system. Stories are told of Wasatch-Cache Forest graziers who for one reason or other refused to communicate at all with early day Forest officers, and throughout the entire experience of the two Forests some users have been quick to cooperate and others have been less so. In the case of sheep where one or at the most a small number of permittees occupy an allotment (sometimes single sheepmen used several allotments, J. H. Broadbent, who for years was the permittee on three North Slope allotments would be a good example) communications were not complicated by numbers of permittees and sheepmen's associations were few in number and extended to large areas, perhaps entire forests. Cattlemen, on the other hand, were numerous. In virtually every allotment on the two Forests they varied from a half dozen up to thirty or forty users. As a consequence, assocaitions have been an important part of management since the earliest times. At best they coordinated many aspects of grazing and at worst were a continuing headache to district rangers or even an effective instrument of opposition.

An example of a strong and progressive association of the early years was the Mill Creek Grazing Association. First organized in 1910 it had about thirty members who had in the neighborhood of 550 head of cattle which ran in Mill Creek and Neff's canyons. It was encouraged by early supervisors, but their best efforts notwithstanding, lapsed into occasional disorganization. By the end of World War I, however, it was well established. To control its stock from crossing into neighboring Big Cottonwood Canyon which was closed to grazing and to distribute them for effective grazing, they hired a rider, salted on a regular basis and contributed extensively to building fences and developing water facilities. Bulls were closely controlled and efforts were made to deal with disease, including blackleg and "infectious abortion". In the early

1920s the Mill Creek graziers even went so far as to encourage reseeding an overture that was rebuffed by the Forest. Over the years annual assessments ranging from 75¢ to $2.50 for each animal grazed were made, depending on what was undertaken during the year. (See Figure II for an example of their operating expenses for 1921.) The best efforts of the Association notwithstanding, progress apparently caught up with them and because of watershed needs, their stock was phased out by the late 1920s.[58]

Elsewhere along the Wasatch Front associations existed for virtually every cattle allotment with as many as forty existing at various times on the two Forests. Some, like the Mill Creek group, were cooperators. Others were not. In some cases associations tended to regard their permits as rights. When this attitude prevailed, the Forest Service sometimes limited the amount of input they had into improvements so that proprietary inclinations would not be encouraged. Most frequently, however, associations cooperated in both the expenditures and the labor of improvements. To bolster the authority of associations, the Forests made renewal of permits contingent upon payment of association fees. This was a particularly critical issue during the 1930s when many stockmen simply lacked means to pay the fees.

Associations on the North Slope tended to have smaller memberships and to be less tightly organized. They lacked the close-knit community experience of the Wasatch Front groups and existed in a situation where, to use Arentson's term again, grazing was a less intensive business and controls of all kinds were more difficult to bring to bear. Yet there, as elsewhere, steady progress was made towards effective ranage management.

Reductions, Big Game and Protest

The Wasatch Front associations facilitated regulation, but they also provided a forum for opposition and on occasion, the organization for resistance. As a result, the most notable cases of overt opposition that the two Forests encountered took place there. As intensive regulation had advanced, a long series of grazing reductions were applied, both in terms of the numbers permitted and the length of the grazing season. This process began in the 1920s, shortly after the Rachford report. With the tragic floods of the 1930s to give overgrazing special emphasis, the

G
Coop
Mill Cr Assn

Sandy R.D. 2 Feb. 24 1921

Dana Parkinson
Forest Supervisor

Dear Sir:

The Foloing is our estimate of Expences for Mill Creek Grazing assn. for the season of 1921

2 Ton Salt.	@ $15	30
Fence at Elbow fork		25.00
To Complete improvement on Spring		30.00
1/2 of Bal Due on Bulls		250.00
1/2 of Bal " " Fence impr		84.00
Interest		35
Riding		700.00
Rent on Private Land		~~50.~~
		~~$1200.00~~
		1154.00

Yours Truly
Fred A Cooper Jr.
Sandy R.D.

482 C & H = 2.40 per head

FIGURE II

process of reductions continued on into the 1970s as conditions demanded and opportunities occurred. Permits that were cancelled or merely fell into disuse were retired rather than redistributed. Term permits which usually ran for five year periods were given reductions at the end of the period almost as a matter of course. Often, the reduction varied from 10 to 20 percent, but occasionally amounted to as much as 50 percent. When reductions were drastic, a year or so was given to allow stockmen to reduce their herds or acquire private holdings.

To get some feel for what reductions acutally meant, it may be pointed out that cattle permitted on the Cache Forest fell from 22,324 in 1935 to a low of 10,627 or by over 50 percent in 1968, after which numbers actually run on the Forest began to increase again. The pattern was similar for sheep, whose numbers fell from 95,180 in 1915 to 48,962 in 1972. A more telling set of statistics relates to animal months actually grazed. It is not clear when animal month data first began to be kept, but in the historical records available for the Wasatch-Cache, it appears it may have been about 1940. In any event, animal months for cattle fell from 78,329 on the Cache in 1940 to 27,804 in 1972 or by 65 percent and sheep from 180,018 to 81,080 or by 55 percent. To achieve reductions of this magnitude the Forest Service not only reduced the number of animals, but shortened the grazing period from an average season on the Forest of 4.2 months for cattle and 2.7 for sheep in 1940 to 1.6 months for both sheep and cattle in 1972. Another significant matter is that Forest Service estimates of what the range could carry progressed downward at a rate that paralleled the actual reductions in grazing numbers. Table II provides a summary view of how reductions proceeded.[59]

TABLE II

Grazing Reductions--Cache National Forest

		Cattle & Horses			Sheep		
Year		Number	An. Mo.[c]	Av. Sea.[d]	Number	An. Mo.	Av. Sea.
1935	Act[a]	22,324			95,180		
1940	Est[b]	16,044	67,371		66,234	175,576	
	Act	17,911	78,329	4.4	77,032	180,018	2.7

(Table II continued)

Year		Number	An. Mo.	Av. Sea.	Number	An. Mo.	Av. Sea.
1945	Est	15,845	55,183		65,675	170,577	2.7
	Act	14,085	55,080	3.9	64,541	153,992	2.4
1950	Est	10,771	38,775		58,874	133,800	
	Act	12,684	47,697	3.7	56,882	134,931	2.3
1955	Est	10,367	31,139		56,290	115,731	
	Act	12,435	43,562	3.5	57,621	127,766	2.2
1960	Est	9,714	27,419		57,248	107,437	
	Act	12,825	36,647	2.8	63,091	122,809	1.9
1968	Est	8,599	27,073		51,726	96,828	
	Act	10,627	30,693	2.8	64,331	94,419	1.4
1970	Est	9,861	27,368		47,537	91,578	
	Act	12,572	27,329	2.1	57,738	86,907	1.5
1972	Est	9,274	28,050		50,750	110,645	
	Act	14,892	27,804	1.6	48,962	81,080	1.6

[a]Actual Numbers Grazed [c]Animal Months

[b]Estimated Capacity [d]Average Season by Months

Reductions during the 1920s and the 1930s were in a special way related to the growth of Utah's big game herds. Beginning as early as 1825 when the buffalo receded from Cache and Salt Lake valleys, big game numbers had fallen continuously throughout the 19th century. Contributing to this was intensive hunting just before 1900 as impoverished Indians traveled from reservation to reservation exercising hunting privileges that treaty arrangements guaranteed them. Whites, too, exercised little restraint. The consequent near elimination of game from most of Utah's mountain ranges was a significant factor in the abnormally high numbers of livestock that the country could carry in the turn-of-the-century years and doubtlessly too, contributed to an illusion many livestock men entertained about the range's carrying capacity. In 1905, under the terms of the Dawes Severalty Act, Indians were deprived of much of their earlier freedom to roam which, together with the management of the state Fish and Game Commission, resulted in a resurgence in game numbers that after 1920 assumed explosive characteristics for about twenty years.

On the Cache National Forest, for example, the deer count increased from 910 in 1921 to 1900 in 1930 and then made a tenfold surge to 19,230 by 1940. On the Wasatch, the upswing during the 1920s was similar, rising from 650 to 2189. Elk which had been reintroduced to the Cache in 1916 increased from 235 in 1921 to 635 in 1930.

The impact of how big game's year round grazing compares to livestock must also be held in mind. For example, the 19,230 deer that grazed on the Cache Forest in 1940 translated to no fewer than 201,240 animal months. While this figure cannot be compared directly to animal months for cattle or sheep, it nevertheless, points to an impressive grazing burden. In view of this additional factor, the grazing equation was obviously even more adverse for the stockmen of the two Forests.[60]

Thus pressed, many stockmen worked out complex grazing programs that included private property, feed lots, leased land, Bureau of Land Management land and use of Forest ranges for periods of varying duration. Such practices, of course, interrupted the trailing routine of earlier days, and repeated movements by truck became necessary according to schedules that still took dipping, lambing, and shearing into account for sheep and calving and branding for cattle. It was costly business and demanded an intensification of management that even Carl Arentson could hardly have conceived of. With brand inspections, state lines and vaccination and quarantine, it seemed bogged in red tape to many stockmen as surely as occasional animals had bogged along mountain stream beds in days passed. For some,frustration and resentment reached the breaking point during the 1950s when it seemed survival demanded action. Reductions in grazing numbers was an identifiable point of friction and protest focused there. At that time unusually well organized and determined protests were launched in response to grazing reductions by the Gem Livestock Association of Montpelier, the Logan Canyon Association and the Grantsville Association. For our purposes brief reference to the controversies developing at Logan and Grantsville will suffice to illustrate the problem and the outcome. The Box Elder allotment on the Grantsville Division had been the object of concern and close observation by Wasatch Forest officials since at least 1941. At that time a range survey reported that things were in a bad way. Much of the allotment was not grazed because of steep terrain and distance from water. Vegetation

on range suitable for grazing was dominated by undesirable plants and allotment was heavily overstocked with

> an obligation of 265 cows for a total of 865 cow months . . . while the survey showed only 170 forage acres on the allotment. (If .5 acres were assigned to each cow every month - a minimum requirement - the allotment . . . was capable of supporting not more than 340 cow months use.)[61]

An allotment analysis was conducted in 1953 which returned adverse findings in terms of range suitability, range condition, and grazing capacity. In addition, range trends showed a deterioration since 1941 in every category considered. Improvements, management practices applied by the users, rainfall, and erosion were also analyzed and found wanting in various respects. Finally, District Ranger Mike Wright summarized all the data available and found that according to all scientific indices an eighty-five percent reduction should be taken. After considerable deliberation, however, it was decided that a twenty percent reduction could be made and that it would lead to a suitable long range improvement of the Box Elder allotment.

Securing the council of Arthur Woolley, the Grantsville Association appealed Ranger Wright's reduction successively to Forest Supervisor F. C. Koziol, Regional Forester Floyd Iverson and finally, Chief Forester R. E. McCardle. Among their contentions were the arguments that a grazing permit was a right not a privilege, that the reduction was not based on the real range condition, that to the degree overgrazing did exist it depended on mismanagement, not overstocking, that deer not cattle were responsible for range damage and finally, that the range would improve without reductions. All three levels of appeal upheld the ranger's reductions and the program went into effect in spite of considerable bitterness engendered by J. Reuben Clark's denunciation of bureaucratic interference (which, according to one Forest Service official, was made in spite of the fact he had not visited the allotment personally for many years).[61]

In many respects the Logan Canyon allotment controversy was similar. Members of the association were a close-knit conservative group, who for years had watched their "rights" erode in the face of road development, recreation, big game, and most of all, in the name of range management.

Like the Grantsville Association they had a friend in a high place. In this case, former Cache Valley resident Ezra Taft Benson, was Secretary of Agriculture. In that position his policy seemed to augur well for success of appeals against the twenty percent reduction that was levied against them. In other respects, the Logan Canyon Association seemed to be in a better position than their Grantsville colleagues. For one thing, their allotment was in a less grevious condition. But in the end appeals went much the same route that they did at Grantsville. The Regional Forester and Chief upheld the reduction plan. Although his decision hedged somewhat, the Secretary of Agriculture, too, upheld it in important respects, leaving little to conclude but that regulation not "seat of the pants cowboying," was in control.[62]

In its way, however, the Logan Canyon decision appears to have heralded an approaching end to successive reductions. Recent data suggest that the number of animals grazed on the Logan Canyon allotment, and indeed the Wasatch-Cache National Forest, may be coming into an equilibrium with estimated carrying capacity.[63]

Other variables, of course, are almost infinite and no one really knows the future of Utah's grazing industry. As we have seen, it has gone through two early eras of development and a long period of regulation and adjustment since the Wasatch and Cache Forests were created. While it is an entirely different business than it was in the turn-of-the-century decades, grazing is still a viable portion of Utah's economy. In retrospect, it is clear that the regulations applied by the Wasatch-Cache National Forest have been evolutionary rather than revolutionary and that far from wiping an industry out, they helped reach an appropriate equilibrium between sheep and cattle. Even more important, the Forest contributed significantly to a balance between livestock and resources on the one hand and between livestock interests and other human interests on the other hand that, however frustrating to the heirs of the livestock tradidion, promise survival and continuing contribution in a changing world where, among other things, recreation may well represent the new frontier.

CHAPTER VII

NOTES

[1]Donald Meinig, "The Mormon Culture Region," Annals of the American Association of Geographers, 55 (1965): 10-16. The livestock industry in Utah has received little historical treatment. The Utah Historical Quarterly, 32 (1964), features nine articles of varying strength dealing with cattlemen and the cattle industry. Articles dealing with sheep appear incidentally in widely scattered works. Clair Anderson, ed., "History of Grazing," is a W.P.A. Writer's Project study of grazing in Utah. A manuscript copy is at the Utah State University Library. Of general utility are two agricultural bulletins, William Peterson et al., "Cattle Ranching in Utah . . . 1925," Utah Agricultural Experiment Station, Bulletin, No. 203 (1927); and A. C. Esplin et al., "Sheep Ranching in Utah . . . 1925," Utah Agricultural Experiment Station, Bulletin, No. 204, (1928).

[2]Andrew Love Neff, History of Utah 1847-1869, edited by L. H. Creer, (Salt Lake City: 1940), pp. 180-84; also Ronald O. Barney, "Mormon-U.S. Interaction over Land Policies 1847-1860," typescript in possession of the writer.

[3]Among the best accounts of this process is Hosea Stout, On the Mormon Frontier: The Diary of Hosea Stout, 2 volumes, edited by Juanita Brooks, (Salt Lake City: 1964), II, pp. 507-08, 547-686.

[4]See Ronald O. Barney, "Mormon-U.S. Government Interaction over Land Policies."

[5]Leonard J. Arrington, The Changing Economic Structure of the Mountain West, 1850-1950, (Logan: 1963).

[6]H. H. Bancroft, History of Utah, 1540-1886, (San Francisco: 1889), pp. 764-65.

[7]Alexander Toponce, Reminiscences of Alexander Toponce, Written by Himself, new ed., (Norman: 1971), pp. 126-32.

[8]John D. Thornley Interview by C. C. Anderson, February 25, 1941, Works Progress Administration, "History of Grazing in Utah," (hereafter referred to as History of Grazing) a manuscript copy is at Utah State University's Library, see Coll 8, Box 4, Folder 4.

[9]Thomas E. Moore Interview by E. A. Correll, September 13, 1940, History of Grazing, Coll 8, Box 4, Folder 4.

[10]History of Grazing, Chapter I, p. 26.

[11]Paul Willis, "Early Development of Dairying in Cache Valley," typescript in possession of author; also Joel E. Ricks and Everett Cooley, The History of a Valley: Cache Valley, Utah-Idaho, (Logan: 1956) pp. 211-18.

[12]This data is compiled from the Agricultural Censuses for 1890, 1900, 1909 and 1910, 1920 and 1925, U.S. Bureau of the Census.

[13]Most census counts are made in terms of shearable sheep and therefore discount the year's lambs during which the count was made. The Census of 1900, however, reported all sheep. Figures presented there indicated the lamb crop amounted to almost exactly one-third of the total number of sheep enumerated. Although I recognize it is not an all together satisfactory formula, I have added a factor of one-third to the number of sheep counted in the other census years, each of which states specifically that the count excluded lambs under one year. See U.S. Bureau of the Census, Twelfth Census of the United States: Agriculture, Part I, (1890), p. 487.

[14]Data for sheep numbers was also compiled from the Agricultural census for 1890 to 1925. A different profile for both sheep and cattle emerges from statistics compiled by the Salt Lake Office of the Grazing Service in 1939. Using Bureau of Agriculture Economy data, the Grazing Service shows cattle numbers peaking in 1895 at something over 400,000 head after which a rapid decline occurred, dropping to approximately 350,000 by 1900 and to 325,000 in 1905. Thereafter, cattle numbers climbed slowly until 1920-1925 when a new peak of about a half million was reached. According to the Bureau of Agricultural Economy sheep numbered only 60,000 in 1885 but exploded to two million in 1890 and peaked at 2,600,000 in 1905. Sheep numbers then plummeted by nearly a million head in five years and continued the downward trend until 1920 when numbers increased again to three million in 1930. See Bureau of Agriculture Economy compilation prepared by the Salt Lake Office of the Grazing Service. History of Grazing, Chapter I, Table No. 2.

[15]U.S. Department of Agriculture, Sheep Migration in the Intermountain Area, by H. R. Hockmuth, E. R. Franklin and M. Clawson, Circular No. 624 (1942).

[16]Lauritz Nielson, Ephriam, Utah, April 1952, Manti-La Sal National Forest Historical Files.

[17]Diary of Albert F. Potter's Wasatch Survey, July 1 to November 22, 1902, Wasatch-Cache National Forest Historical Files.

[18]The best source for this development are the writings of the Bennion family. Their diaries, which number into the thousands of pages, are found in the library of the Utah Historical Society. Espeically useful are the statements of one of their number, Glynn Bennion. Most of what he had to say was written in the 1930s but remain unpublished. Manuscripts entitled "Let's Stop Kidding Ourselves," "The Dude in the Ascendancy," and "You Can't Eat All the Grass," are found in the History of Grazing,

Coll 9, Box 2. One, entitled "An Autumn Idyll," is in the possession of the writer and one was published as "A Pioneer Cattle Venture of the Bennion Family," Utah Historical Quarterly 34 (1966): 319-20.

[19]U.S. Census Bureau, Manuscript Population Schedule for Draper Precinct and other Wasatch Front precincts.

[20]Peterson's father's role in Lehi is referred to in Hamilton Gardner, History of Lehi (Lehi: 1913), as is the development of the sheep industry, pp. 187, 199.

[21]Diary of Albert F. Potter's Wasatch Survey, July 1 to November 22, 1902, makes reference to the Hatch Brothers operation. For feeding operations see J. C. Dowdle Journal 1844-1908, Utah State University Library, entires for 1900-1901.

[22]Oral Biography of Harry Lunn, 1974 taken by Craig Fuller, pp. 31-52, 61-72 and 83-112. A typescript is in the possession of the writer.

[23]Frank C. Robertson, A Ram in the Thicket: The Story of a Roaming Homestead Family on the Mormon Frontier (New York: 1959), pp. 252-54.

[24]For a careful account of the role Hansen and Seeley played see M. G. Seely, "A History of the Rambouillet Breed of Sheep in Utah," (Master's thesis, Utah State University, 1956); on the contributions of Clos see Paul H. Robert, Hoof Prints on Forest Ranges: The Early Years of National Forest Range Administration (San Antonio: 1966), p. 42.

[25]Proceedings of the Fourth Annual Convention of the National Live Stock Association, Salt Lake City, compiled by Charles F. Martin (Denver: 1901), pp. 392-93.

[26]Glynn Bennion, "A Pioneer Cattle Venture of the Bennion Family," and Charles S. Peterson, "Cowboys and Cattle Trails: A Centennial View of Emery County," in Emery County: Reflection on Its Past and Future, edited by A. Kent Powell (Salt Lake City: 1979), pp. 79-96.

[27]John D. Thornley Interview, February 25, 1941, History of Grazing, Coll 8, Box 4.

[28]Correspondence of T. A. Byrnes, Indian agent, Uintah Agency to the Commissioner of Indian Affairs, March 12, July 8 and November 1, 1887, Bureau of Indian Affairs Papers, National Archives.

[29]Statement of W. Jones Bowen Concerning Early and Present Range Conditions on the Uinta National Forest, taken by Carl H. Dopp, September 28, 1940, History of Grazing, Coll 9, Box 2.

[30]Diary of Albert F. Potter, p. 14.

[31]According to one report Nutter also "leased those lands in the former Uintah Indian Reservation that drained from the west and south sides into the Duchesne River" in 1892 and was allowed "not more than

10,000 cattle and no sheep." See W. Jones Bowen Interview and Virginia Price Nutter, and John T. Darby, "Preston Nutter: Utah Cattleman, 1886-1936," Utah Historical Quarterly 32 (1964): 232-52.

[32]History of Grazing, Chapter I, pp. 25-28.

[33]Charles S. Peterson, "San Juan in Controversy, American Livestock Frontier vs. Mormon Cattle Pool," Charles Redd Monographs in Western History, No. 3, edited by Thomas G. Alexander, (Provo: 1973) pp. 45-69; also Peterson, Look to the Mountains: Southeastern Utah and the La Sal National Forest (Provo: 1975) chapter 5.

[34]Charles S. Peterson, "Small Holding Land Patterns in Utah and the Problem of Forest Watershed Management," Forest History 17 (1973): 3-14. Also important on the impact of overgrazing on resource depletion are Walter P. Cottam, Our Renewable Wild Lands--A Challenge (Salt Lake City: 1961)--this volume collects six bulletins and position papers presented by Cottam including "Is Utah Sahara Bound?"; Reed W. Baily, C. O. Forsling, and R. J. Becraft, Floods and Accelerated Erosion in Northern Utah, U.S.D.A. Misc. Pub., No. 196 (1934); George Stewart, "Historic Records Bearing on Agricultural and Grazing Ecology in Utah," Journal of Forestry, 39 (1934); L. A. Stoddard, et al., Range Conditions in Uinta Basin, Utah, Utah Agricultural Experiment Station Bulletin, No. 283 (Logan: 1938); R. V. R. Reynolds, Grazing and Floods: A Study of Conditions in the Manti National Forest, Utah, U.S.D.A. Forest Service Bulletin, No. 91 (1911); Lincoln Ellison, Subalpine Vegetation of the Wasatch Plateau, Utah, Ecological Monographs, 24, No. 2 (1954); C. L. Forsling, "Erosion on Uncultivated Lands in the Intermountain Region," The Scientific Monthly, 34 (1932): 311-21; J. H. Paul and F. S. Baker, The Floods 1923 in Northern Utah, Utah University Bulletin, 15 (1925); Torrential Floods in Northern Utah, 1930, Report of Special Flood Commission Appointed by Governor George H. Dern, Utah Agricultural Experiment Station Cir. No. 92 (1931). Discounting the role of livestock are: A. C. Esplin, "You Can't Denude a Desert," The Westerner (1947), n.p.; and Ralf R. Wooley, Cloudburst Floods in Utah 1850-1938, U.S.G.S., Water Supply Paper, No. 994 (1946).

[35]This was especially apparent at the time the North Slope country was transferred from the Uinta National Forest to the Wasatch.

[36]Prepared by the Salt Lake Office of the Grazing Service in 1939 for the History of Grazing.

[37]Compiled from History of Grazing data and from materials in Range Management, Cache National Forest History, III, and in "Old Grazing" Folder, Wasatch-Cache National Forest Historical Files.

[38]Peterson, "Small Holding Land Patterns in Utah," pp. 2-14.

[39]Gifford Pinchot, Breaking New Ground (New York: 1947), pp. 269.

[40]For reference to these quotes see David G. Wilson, "Range and Forage Resources," in Henry Clepper, Origins of American Conservation (New York: 1966) p. 139; Henry Graves to Louis Larson, February 23, 1914, and Assistand District Forester to Alex Barton, May 2, 1917, Region IV Records, National Archives.

[41]In 1913 regulations were altered to the further advantage of small farm based sheepmen when the maximum reduction "which will be made in the permit granted any regular used, in order to provide range for new owners . . . was reduced from 20 percent to 10 percent in the case of owners of improved ranch property used in ocnnection with the stock." See the Salt Lake Herald Republican, March 11, 1913.

[42]Clinton G. Smith, Annual Grazing Report Cache National Forest, November 12, 1910, Cache National Forest History, 3 binders, compiled by Ralph B. Roberts, II, Logan Ranger District.

[43]This question has been discussed in more detail in Peterson, "Small Holding Land Patterns in Utah.

[44]See letters of W. A. Richards and J. H. Fimple to A. W. Jensen, October 10 and December 1903, Manti-La Sal National Forest Historical Files.

[45]See Grazing statistics prepared for the History of Grazing Coll 9, Box 4.

[46]See Sheep Migration in the Intermountain Area.

[47]Information for this section is taken from R. R. V. Reynolds, "The Watershed and Water Supply of Salt Lake City, Utah, October, 1912," Wasatch-Cache National Forest Historical Files; and from clippings from the Salt Lake Tribune, the Herald Republican, the Deseret News and the Salt Lake Evening Telegram, Wasatch-Cache National Forest Historical Files.

[48]See letters to and from Reynolds and McGhie, November 27 to December 6, 1909, Old Grazing Records Folder, Wasatch-Cache Historical Files.

[49]Dana Parkinson, "Memorandum: Grantsville Division, September 12, 1919," Old Grazing Records Folder.

[50]See C. N. Woods, "Memorandum for the Forest Supervisor, May 17, 1918" and Carl B. Arentson to the District Forester, June 19, 1918, Old Grazing Records Folder.

[51]C. E. Rachford, "Memo to the Forester, November 12, 1921," Grazing Supervision 1914-22, Region IV Records, National Archives, especially pp. 8 and 10.

[52]Italics are the author's. T. Dean Phinney and Lester Moncrief Inspection Report, July 6, 1942, Cache National Forest History, II.

[53]"Memorandum for the Regional Forester, February 15, 1935," History Cache National Forest, II.

[54]Arentson to District Forester, June 19, 1918, Old Grazing Folder; and page above

[55]J. Reuben Clark Folder, Manti-La Sal National Forest Historical Files; also conversations with James Jacobsen and Mont Lewis, June 1968.

[56]Conversations with Charles Redd of La Sal, 1953-1956; and Interview with Owen DeSpain, July 1980.

[57]The grazing plans from which the foregoing was selected is found in the 2210 files of the Wasatch-Cache National Forest and the various Ranger Districts.

[58]Mill Creek Grazing Association 1910-1925, Wasatch-Cache National Forest Historical Files.

[59]Compiled from Annual Grazing Statistical Reports for the Cache National Forest. The data for the years 1935 to 1960 is found in History Cache National Forest, II. More recent data is in a folder entitled, Old Cache National Forest Reports, Logan Ranger District Historical Files.

[60]Game statistics are taken from a game census prepared for the WPA Grazing History in 1940; and from Supplemental Report of Range Conditions, 1940, Cache National Forest, History Cache National Forest, II.

[61]Information on this controversy was taken from the 2210 folder for the Box Elder Cattle & Horse Allotment, Wasatch-Cache National Forest; also from personal interviews with James Jacobs of Ogden and Julian Thomas of Salt Lake City.

[62]Information on this controversy was taken from the 2210 folder for the Logan Canyon Cattle & Horse Allotment, Logan Ranger District; also from interviews with Owen DeSpain, district ranger when proceedings were initiated.

[63]Conversations with Don Hooper at the Regional Division of Grazing indicate that projections for the next few years suggest that modest increases in grazing may indeed be possible, as ranges continue to improve.

CHAPTER VIII

WATERSHED MANAGEMENT FOR SUMMER FLOOD CONTROL, 1920-1960

One of the principal purposes in establishing the Wasatch and Cache National Forests was to secure the protection of valuable community watersheds. Once the two Forests had been created, however, many of the inhabitants of northern Utah proved resistant to watershed regulations, including the transfer of additional land to federal control and public ownership. Furthermore, during this period, the Forest Service itself, according to long-time employee A. R. Croft, tended to give grazing and timber management priority over watershed management. During the 1920s and 1930s a series of disastrous floods in northern Utah, caused by "cloudbursts" over abused watershed, underscored the importance of watershed management for summer flood control, and the Forest Service increasingly turned its attention to halting these floods. The frequency of these devastating floods also served to convince local communities that the Forest Service should assume responsibility for watershed management on flood source areas. Eventually both the Wasatch and Cache National Forests expanded their boundaries to include these critical community watersheds.[1]

While foregoing chapters have referred to the broad issue of watershed management on Forest land, this chapter will focus on one aspect of that issue, summer flood control. In many ways, watershed management for summer flood control constituted the major challenge for personnel on the Wasatch and the Cache National Forests from 1920 to 1960 and formed the most critical aspect of Forest watershed management. Overall, the flood control programs supervised and carried out by Forest personnel proved remarkably effective in preventing future floods and in restoring badly misused mountain lands to productivity. The research and scientific

efforts sponsored by the Forest Service in northern Utah as well as the actual work on both Forests stand as models for watershed management and summer flood control throughout the United States.

Watershed Abuse and Mud-rock Floods

During the 1920s and 1930s a series of devastating mud-rock floods poured from the mountain canyons in northern Utah. The floods issuing from the Davis County and Willard watersheds were especially destructive. All told, from 1923 to 1936 these floods killed eight people and inflicted millions of dollars worth of damage.[2]

Following a cloudburst in the hills east of Willard in August, 1923, a wall of water, grinding with boulders, trees, debris and mud poured from Willard Canyon. As the flood waters struck the alluvial fan upon which the town is built, a portion of the the flood spread widely and went southward, while the remaining water, on a narrower and more destructive course, swept through the community of Willard. The rushing flood wall formed a battering ram and destroyed or severely damaged everything in its path. Homes were pulled from their foundations; orchards, crops and farms as well as the city's electric power system were all severely damaged. Besides the property damage inflicted by the mud-rock flows, two women were crushed to death in their homes.[3]

At the same time a similarly disastrous mud-rock flood spewed from the mount of Farmington Canyon, fifteen miles north of Salt Lake City. An eye witness account of the flood described the "front of the flood as a rolling mass of boulders, mud and timbers, shooting out sparks of light from the grinding rocks."[4] Although the onrushing flood waters inflicted less property damage here than in Willard, it proved to be even more catastrophic in the loss of human lives when four boy scouts and a newly married couple were killed at Cottonwood Grove in Farmington Canyon.[5]

As the citizens in the Willard and Farmington areas began to clean up the damage, remove the mud and boulders, and repair their homes, many felt that the floods were simply "acts of God" and could not have been prevented.[6] Scientific studies soon corrected that assumption, although it would take years and several disastrous floods before intensive rehabilitation and preventative measures proved successful.

Illus. 18 Site of Cottonwood Grove, Farmington Canyon 1923 Flood

Illus. 19 Flood Damage to Home Near Ford Creek 1923

Forest Service personnel were among the first to study the floods in an effort to understand their causes and suggest possible control techniques. Shortly after the 1923 floods, F. S. Baker at region headquarters in Ogden began to assemble scientific data about the causes of mud-rock floods. In 1925 Baker collaborated with J. H. Paul, a professor of Natural Science at the University of Utah, in an article entitled "The Floods of 1923 in Northern Utah." In it the authors identified the interrelated causes of mud-rock floods. During the summer months, torrential rains over barren watersheds precipitated the floods. While the weather could not be controlled, Baker and Paul noted that the barren watersheds, particularly in the upper reaches, should be revegetated so that the soil mantle would halt the disastrous rate of runoff. Their study of the flood source areas pointed up that here as in mountain flood areas elsewhere the soil mantles on the watershed had been damaged by overgrazing and burning. They concluded that the communities should purchase and regulate these lands, withdraw them from private ownership and institute control measures. The scientists argued that if 1000 acres on the Willard watershed and 3000 acres in Farmington Canyon were revegetated and protected from overgrazing and fires, that the communities would be "fairly well insured against flood damage."[7]

Unfortunately, their findings and recommendations were, in large part, ignored for the time being. Some flood barriers were constructed in 1924 on both the Willard and Farmington watersheds, but rehabilitation of the critical upper reaches was ignored. Gradually people forgot, to be reminded only by the advent of more devastating floods, particularly after 1930.[8]

During the summer of that year another series of mud-rock floods swept from the canyons of northern Utah. This time the most damaging floods came from the creeks lying between the communities of Farmington and Centerville. Mud-rock flows, propelling massive boulders of as much as 160 tons and accumulations of debris and timber, poured from the mouths of Parrish, Barnard, Ford and Davis creeks. Driven by the steep pitch of the mountain front, the powerful flood cut gullies in the mountain land, pushed houses and buildings from their foundations and damaged hundreds of thousands of dollars worth of agricultural land. Besides the direct, physical damage, the floods paralyzed the economy of the communities

for a time. Townspeople defaulted on interest and mortgage payments, and property values plummeted as anxious citizens tried to sell their property and settle elsewhere.[9]

Shortly after the floods of 1930, Governor Geroge H. Dern appointed a flood control commission composed of foresters, scientists, bankers and livestock men to recommend preventative measures. After touring the principal flood source areas, the commission returned a much more comprehensive plan than the one submitted earlier by F. S. Baker and J. H. Paul. Its sweeping provisions proposed the (1) critical areas be removed from private ownership, (2) barriers be constructed at the mouths of flooded canyons, (3) grazing be eliminated, (4) fire control programs be instituted and (5) areas be reseeded and planted to establish a ground cover.[10]

Eventually many of these recommendations were carried out by the Forest Service in the 1930s throughout northern Utah. But before the necessary rehabilitation work could begin, several critical, privately owned areas had to be included within the boundaries of the Wasatch and Cache National Forests. Even after the frequency of the floods convinced local communities that flood control measures had to be instituted, the necessary funds and manpower to complete the work had to be found. Intensive rehabilitation was supervised by Forest personnel only after additional floods underscored the urgent need for such measures and the Civilian Conservation Corps provided significant amounts of labor.

Each Forest faced different problems in instituting flood control programs and each Forest made slightly different contributions to the advancing field of effective watershed management. Perhaps the Cache National Forest, more than the Wasatch, faced the greatest community apathy to placing flood source areas under Forest management.

Flood Control and the Cache National Forest

Mark Anderson, a member of Governor Dern's Flood Control Commission, had sent a memo to Sylvestor Cannon, the chairman of the commission, summarizing the findings of a preliminary tour of the flood areas on September 18, 1930. In that memo, Anderson praised the earlier efforts of Dr. Baker at regional headquarters in identifying the causes of the 1923 flood on the Willard watershed and noted that it was unfortunate

that his findings had been ignored by the community of Willard. Anderson went on to sound a grim warning:

> It is my belief that the residents of Willard, in particular, are deluding themselves into a false sense of security and that within the next few years they will experience a much worse flood than that of 1923. They have done nothing to permanently remedy a situation that probably could have been remedied or nearly cured during the last seven years.[11]

Anderson's summary of the situation proved basically sound. Although a portion of the watershed was included in the boundaries of the Cache National Forest after 1930 and some rehabilitative efforts were undertaken, such efforts again proved minimal. In 1933 the CCC began working on the watershed. The crews of the Brigham City camp built five miles of terraces in Willard Basin.[12] Apparently Willard City hoped the early flood barriers and this terracing made possible by CCC manpower would be sufficient to prevent additional flooding. Anderson was correct in prophesying that minimum flood control measures led to a "false sense of security" and were not sufficient.

On July 21, 1936, the Willard watershed suffered another devastating mud-rock flood. At three-thirty in the morning, a cloudburst on the steep and funnel like walls of the basin at the foot of Willard Peak precipitated a torrential flood. The onrushing water, churning with boulders, trees and debris, poured from the mouth of Willard Canyon, indundating farms and homes, destroying crops and vegetation, and deposited mud, silt and massive boulders on the highway. When local citizens, state officials and Carl B. Arentson and John T. Matthews of the Cache National Forest assembled on the scene, they saw all to clearly the consequences of overgrazing, man-caused fires, and watershed abuse.[13]

From 1923 to 1936 the mud-rock floods originating on the Willard watershed alone killed two people and caused almost a half million dollars worth of damage (at a time when dollars were far more valuable than in recent years). A study later done by the personnel of the Cache itemized the direct economic damage caused by the floods. Few of the city's inhabitants escaped the far-ranging consequences of the mud-rock flows. Forty homes were destroyed or ruined by the onrushing water, mud and debris. The floods had a devastating impact on the economic life of the agricultural comnunity as valuable farm land was inundated and several

truck gardens and fruit orchards were virtually wiped out. Many families had to wrestle with the problems and inconveniences caused by blocked irrigation ditches, the damaged hydro electric plant and the mud and debris that tied up the region's transportation system for two weeks.[14] While many of these problems were shared by all who lived in Willard, for some individuals the damage and mental anguish caused by the floods were more difficult to assess. John Kunzler, known as "the hard luck man" of the Willard floods saw his home demolished and his farm buried under twenty feet of debris in 1923. Thirteen years later Kunzler's new home and farm were severely damaged by the second major flood from Willard Canyon.[15]

At long last, the 1936 flood convinced the citizens of Willard that they needed comprehensive rehabilitation programs for their watershed. In this crisis they increasingly turned to the Forest Service to provide watershed management for summer flood control. The personnel of the Cache National Forest played a critical role in directing and implementing plans for effective watershed management for summer flood control not only on the Willard watershed but in other areas of northern Utah as well.

Rehabilitation

Immediately following the 1936 flood, the Forest Service moved to begin comprehensive flood control measures. The day after the flood, Regional Forester R. H. Rutledge told the stricken community that the "forest service is willing to spend every effort in men and resources to insure the protection of the area, provided the town of Willard, Box Elder County, or the state will acquire the necessary lands and insure their retention under public ownership."[16]

Finally convinced, the City of Willard immediately took the initiative and formally instituted a condemnation suit against seven private owners. On September 5, 1936, the District Court of Box Elder County ordered that the municipality be given jurisdiction of the contested land.[17]

While the legal proceedings were still underway, the Forest Service conducted surveys of the flood source areas and began to determine appropriate control and preventative measures. A report filed in 1936 stated that man's abuse of the watershed had contributed to the disastrous

flood, and that the area had been so overgrazed by domestic stock in recent years that the "grass cover had been killed out." The Forest Service decided that the barren watershed must be closed to grazing and reseeded. The report also called for immediate flood control measures by constructing contour trenches to hold the summer rains and check dams to stop water from entering the gullies.[18]

The Forest Service began supervising intensive rehabilitation programs on the Willard Watershed as soon as the land was withdrawn from private ownership. CCC crews, under project supervisor John J. Wise, were sent from the nearby CCC camp in Hyrum. They established a temporary camp on the divide between the head of Perry Canyon and the north fork of the Ogden River. Like other CCC crews engaged in erosion control throughout the state, the boys from the Willard camp began immediately cutting roads and trails to reach the critical work areas. After cutting a six mile access road into the Willard drainage, they started felling trees under the direction of Forest Service employees and placing the timber along the slopes of the canyon. That fall, Forest officers directed reseeding and planting operations and the CCC crews planted orchard grass and smooth brome as well as several thousand conifers on the Willard watershed.[19]

In trying to reclaim portions of the watershed, technical arguments and weather conditions hampered the completion of the work. To begin with, work was slowed when a quarrel broke out among personnel from the Cache National Forest and those from the Intermountain Forest and Range Experiment Station over the best type of terrace to use. According to project supervisor John J. Wise, the engineers eventually decided to construct flat bottom trenches rather than the "V" type. After this argument had been resolved, the weather further delayed the project. An early snow storm forced Wise and his CCC crews, composed mainly of boys from Arkansas, to abandon work, evacuate camp and hike out. They returned to the main camp in Hyrum and waited. After a partial thaw, the CCC crews returned to the Willard area and completed their work by November 20, 1936. The CCC crews under Forest Service direction and using the techniques developed by Dr. Reed W. Bailey of the Intermountain Forest and Range Experiment Station had terraced and planted approximately forty acres of damaged, overgrazed and burned areas on the Willard watershed.[20]

The Forest Service sponsored additional reclamation efforts in the area besides supervising the CCC work. Initially the chief in Washington tried to get a $300,000 Works Progress Administration project begun on the Willard watershed, but a cut in the budget prevented the WPA work from being instituted. After this effort failed, a cooperative agreement with the Soil Conservation Service was made which resulted in Company 736 coming to Willard to undertake additional watershed work under the direction of the Cache National Forest. They terraced, fenced and planted other areas of the watershed from 1936 to 1940 and then moved on to Tremonton, Utah.[21]

Thus within a few years of the disastrous mud-rock flood of 1936, extensive reclamation efforts had been undertaken on Willard Basin. The City of Willard, pleased with the efforts made possible by forest research and direction and by CCC labor, took steps to officially donate the land to the federal government. Title to the municipal watershed was accepted by the solicitor general on October 20, 1941, and the 1807 acre tract was placed under the administration and jurisdiction of the Cache National Forest.[22]

A report compiled by the Forest Service in the 1960s estimated about 600 acres had been treated by the CCC and SCS crews under the direction of forest personnel. Reclamation efforts cost approximately $2000 an acre and were highly effective in preventing future floods. Another cloudburst over the Willard watershed, similar to the ones which produced floods in 1923 and 1936, occurred in August, 1945, but this time the ground cover and the holding capacity of the terraces were sufficient to prevent another disastrous mud-rock flood.[23]

Cooperation, Arthur G. Nord and Continuing Rehabilitation

Forest Service efforts at summer flood control in northern Utah came at many levels and many individuals contributed. The staff at region headquarters in Ogden considered management plans and made policy recommendations based on scientific research during this period that had a tremendous impact on watershed management. Forest Service employees such as F. S. Baker, Reed Bailey and A. R. Croft all played an important part. While Forest Service contributions were not a "one man show", and

research and policy developments at the regional level were crucial, so too was the practical implementation of all this work on the specific Forest. Before watershed rehabilitation measures were instituted, the land in question had to be under the jurisdiction of the Forest Service.

From 1936 to 1940 when Arthur G. Nord served as supervisor of the Cache National Forest additional progress was made in placing community flood source areas under Forest Service management. Besides the Willard addition referred to earlier, parts of the Wheeler Basin and Wellsville Mountain watersheds were added to the Cache National Forest. During this period Nord followed a careful policy of cooperating with diverse interest groups and municipalities to promote effective watershed management.

When Nord became supervisor of the Cache in 1936. Wheeler Basin, an important source of culinary water for Ogden, was in critical condition. Overgrazing, forest fires and indiscriminate timber cutting had seriously damaged the soil mantle; and after intense rains, mud-rock floods had followed. In 1936 the regional forester directed the supervisor to inspect the area, and in September, Nord accompanied seventeen of Ogden's civic leaders on a tour of Wheeler Basin. Most of the land adjacent to Wheeler Creek was privately owned, and overuse had led to soil erosion and to pollution of Ogden's water supply. During his tour, Nord saw dead sheep and other livestock floating in the creeks and springs of Wheeler Basin. In addition, inadequate piping systems had caused large amounts of silt to accumulate and thus contaminate the city's water supply.

On September 16, 1936, Nord reported his findings to the regional forester and recommended that corrective measures be instituted as soon as possible. Specifically, he called for more rigid fire control programs, grazing regulations and that the area be immediately reseeded.[24]

Shortly after making this report, Nord began working closely with the City of Ogden and various civic clubs to purchase the land from private owners. A court suit to condemn portions of the land was instituted, and other areas were directly purchased from the owners. Several civic clubs donated $3600 toward the purchase price, and the City of Ogden put up the balance. By 1939, most of Wheeler Basin had been included in the boundaries of the Cache National Forest. During Nord's administration, the area was closed to grazing, reseeded and replanted.[25]

Nord also made use of the Cache National Receipts Act of 1938 to acquire additional watersheds, particularly in the Wellsville area. The Act authorized the Cache National Forest to use $10,000 a year to purchase privately owned land within the boundaries of the Forest, and Nord made use of the money to obtain critical watershed areas that were subject to flooding. A heavy rain in July, 1937, had produced flooding on both sides of Wellsville Mountain. Farms, roads, irrigation systems and railroads had been severely damaged by the floods. Supervisor Nord worked with Robert Stewart, the county extension agent of Box Elder County, to acquire the privately owned land and place it under Forest management. Nord and Stewart convinced John K. Spires, who owned 11,000 acres of land on the mountain to close his area to grazing and begin negotiations to sell the land to the federal government.

After President Roosevelt issued a proclamation in September, 1939, extending the boundaries of the Cache National Forest to include the Wellsville area, the Forest Service began purchasing the critical watershed area. Supervisor Nord told Stewart that the Forest Service would use money from the Cache National Receipts Act to purchase half of Spire's land if he could raise the funds for the remaining acreage. Nord worked closely with Stewart who founded the Wellsville Mountain Area Project Corporation to help raise the money, acquire the land and donate it to the federal government. Eventually all of Spire's land was acquired by the Cache National Forest through purchase or donation. Supervisor Nord also worked with the chief's office in Washington to obtain other portions of the Wellsville watershed. After 1939, the Bureau of Land Management transferred 3800 acres in the area to the Forest Service so that the necessary watershed management could be carried out by the Cache National Forest.

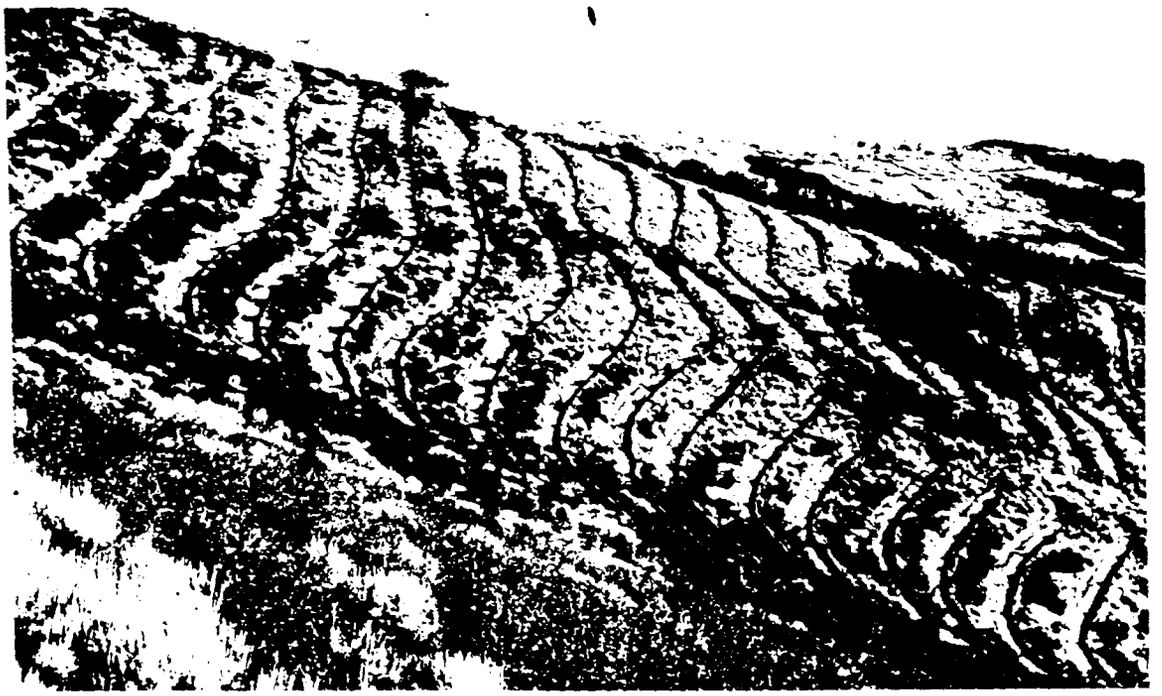
Once the land was under Forest jurisdiction, the Forest Service ordered that watershed studies be implemented to determine the necessary rehabilitation measures. Based on these findings, the entire area was closed to grazing and Forest personnel initiated rigid fire control programs. The protected watershed reverted to its natural condition and the ground cover was reestablished. No major flooding has occured on this Forest land for the last thirty years, alhtough some minor floods have originated on adjacent land still under private ownership and use.

During A. G. Nord's tenure as supervisor of the Cache National Forest, several important measures for summer flood control and watershed management were instituted. Nord effectively worked with varied public and private interests to secure and reclaim damaged watersheds. He played a critical role in acquiring several thousand acres of land near Ogden, Willard and Wellsville. As supervisor, he oversaw the reclamation efforts of the CCC on the Cache National Forest, worked with city officials to determine the extent of flood damage and initiated several long-range projects to protect community watersheds. Many of the projects he helped begin continued after he was no longer supervisor of the Cache National Forest and became models for future watershed management programs. From 1941 to 1950, Forest personnel working with local boy scout troops planted 66,000 seedling evergreen trees on the Wheeler Basin, another area that Nord's efforts had helped add to the Cache. Institutions which had a lasting impact included the Weber County Protective Corporation. Founded in 1947 to obtain watershed lands for eventual transfer to the Forest Service, it was modeled on the earlier Wellsville Corporation that Nord and Stewart helped start. In general, Nord's achievements as well as the successful rehabilitation programs carried out by the rangers, engineers and technicians on the Cache convinced the citizens of northern Utah that the Forest Service was the premier agency in effective watershed management; summer floods could be prevented and were not "acts of God", but rather the results of man-related abuse--overcutting, overgrazing and fires.

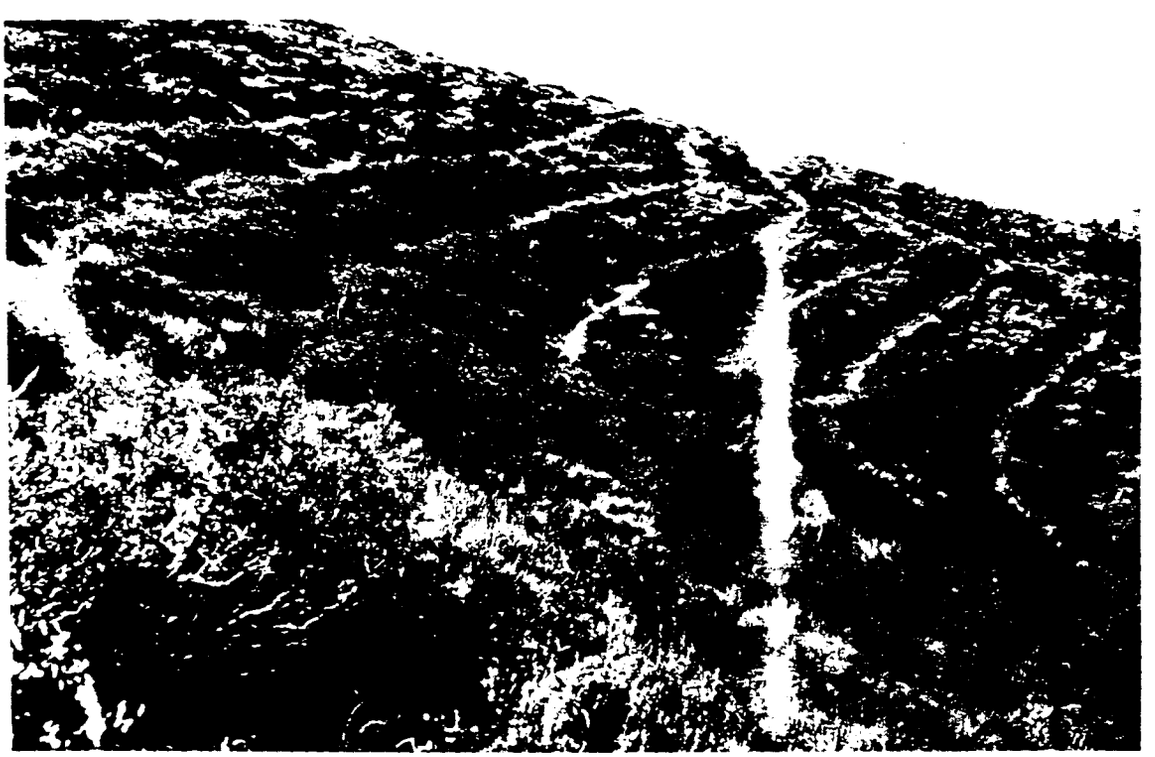
Flood Control and the Wasatch National Forest

The citizens of the Davis County communities adjacent to the Wasatch National Forest proved more willing initially than their counterparts further north to transfer land to public ownership for flood control. Following the disastrous floods in 1930, local citizens petitioned Congress to include the flood source areas in the Wasatch National Forest, and the Forest Service began concentrating on the problem[26]

The floods of the 1920s and 1930s had underscored how overgrazing had damaged the soil mantle and Supervisor James C. Gurr of the Wasatch National Forest ordered that studies be undertaken on various ranger



Illus. 20 New Contour Trenches, Head of Ford Canyon 1934



Illus. 21 Trenches in Ford Creek Area Several Years Later

districts. Ranger A. E. Briggs on the Kamas District in the mid-1930s reported that overgrazing had damaged important community watersheds there and recommended that the most seriously damaged portions be totally closed to grazing and that grazing be reduced by sixty percent in other areas. Following Briggs' report, Supervisor Gurr, all too aware of the connection between overgrazing and flooding, toured the Kamas District and told Briggs his suggestions "were not strong enough in some cases, and not too strong in any case."[27]

Eliminating or reducing grazing, however, was only a preliminary and limited step and intensive rehabilitation programs were also initiated. Local citizens, civic leaders and Forest personnel cooperated to rehabilitate the major flood areas on the Wasatch, especially in Davis County. Several thousand acres were eventually included in the boundaries of the Wasatch National Forest and comprehensive watershed work began. Approximately $39,000 was initially spent to purchase privately owned land in Davis County. As soon as the land was removed from private ownership, the Forest Service oversaw a variety of reclamation programs. Some work was carried out in 1932 with funds from the Reconstruction Finance Corporati but the major flood control programs really started the following year with CCC manpower. The Davis County Camp, located near the entrance to Mueller Park, spent the entire summer of 1933 treating the Davis County watershed accoring to plans developed by the Forest Service.[28]

For the next five years, several CCC crews supervised by Forest personnel constructed contour trenches and reseeded flood source areas. During this time, 1300 acres received intensive treatment at a cost of $300,000. Overall, the work done by the CCC boys and sponsored by the Forest Service merited high praise throughout the state. In 1938, Gus Backman, secretary of the Salt Lake City Chamber of Commerce, noted that "in the opinion of 99 percent of our people the forest service's program of CCC work has been outstanding."[29]

Record breaking storms dramatically tested the effectiveness of these early rehabilitation programs. On July 10, 1936, a cloudburst, totalling 1.14 inches, failed to produce a mud-rock flood on the treated watersheds. Almost all of the contour trenching and reseeding operations had been completed. However, the storm did produce mud-rock floods on the untreated portions of Farmington Canyon. Similarly, in 1945, another cloudburst

demonstrated the benefits of intensive treatment. Not one treated watershed produced a mud-rock flood, although one issued from a recently burned watershed fifteen miles from Salt Lake City. In a report issued by the Forest Service in 1947, Dr. Reed Bailey of the Intermoutain Forest and Range Experiment Station pointed out the obvious lesson: "the absence of floods from the fully treated watersheds clearly indicated the value of an adequate improvement program. If no contour trenching had been done in these watersheds, enough runoff would have been turned loose to create major mud-rock floods." Bailey concluded his study with the following strong statement: "watershed management can prevent flood peaks and erosion rates from becoming greater than normal."[30]

Davis County Experimental Watershed

The Davis County Experimental Watershed was established in 1933 to facilitate watershed research and make data available on erosion control throughout the nation. Originally, 800 of the 1300 treated acres in Davis County were used as experimental plots to study and analyze reclamation efforts and to develop additional flood control techniques. Dr. Bailey of the Intermountain Forest and Range Experiment Station used Davis Mountain to develop and test different types of terracing methods. In 1937 Bailey and his assistant A. R. Croft published a pamphlet which became the standard work on erosion control in the western United States. Bailey's innovations and his contour trenching techniques were successfully utilized on both the Davis and Willard watersheds and were instrumental in preventing further mud-rock floods.[31]

The Davis County Experimental Watershed has continued in its pioneering developments. Studies have not only been done to improve temporary flood control measures such as trenching but to develop more permanent preventative techniques as well. Critical reserach has focused on ground cover manipulation and determined, for example, that erosion on bare slopes is sixty-eight times greater than on slopes covered with aspen. Plots with various types of ground covers have been analyzed to discover which variety holds the greatest amount of moisture.[32]

The area has been expanded to include several thousand acres, and complete and detailed records have been kept on rainfall intensity,

reclamation techniques and erosion control since 1934. The research conducted on the Davis watershed has been made available to scientists and interested individuals. In 1963 the Soils Conservation Society visited the Davis County Experimental Watershed, and delegates from Iowa, Montana and Texas, as well as from Canada studied the findings and research. After a day long tour and following the explanations of Dr. Otis Copeland about the nature and scope of the research, the delegates concluded "the Forest Service and Utah can well be proud of the Davis County Watershed."[33]

Further research programs have been forthcoming. In 1964 District Ranger Gordon Van Buren of the Bountiful District, told the Salt Lake Tribune that watershed trenches had been completed at the headwaters of Halfway Creek to determine the effects of deep contour trenching, to protect the valley from mud-rock floods and to provide data for Forest personnel and other interested persons about watershed management. Otis (Doc) Copeland, assistant director of watershed reserach at this time also told the Tribune that this project was "the first operations of its kind in the United States." As the Tribune concluded, the Davis County Experimental Watershed was "the U.S. pacesetter in watershed research and management."[34]

As research was conducted and tested at Davis, additional rehabilitation measures have been carried out on other ranger districts on both the Wasatch and Cache National Forests. In the 1960s, for example approximately 900 acres of valuable watershed on the Kamas District was rehabilitated by reseeding, contour trenching and gully plugging. All were techniques developed, studied or refined on the Davis County Experimental Watershed.[35]

Summary

The impressive achievements of the Wasatch and Cache National Forests in watershed management for summer flood control were made at many levels from 1920 to 1960. The research conducted by such men at Dr. Baker at the Intermountain Region Office helped pinpoint the causes of the mud-rock floods and prepared the way for the related efforts of Bailey and his staff in developing techniques to prevent future flooding. The personnel

of the Wasatch and Cache National Forests were instrumental in working with local people to acquire damaged lands and begin rehabilitative measures suggested by Forest research. The reclamation and research projects as well as the fires and grazing control programs all helped rectify the watershed abuse that caused serious flooding.

New problems in Forest management and land abuse became critical in the 1960s as recreation use increased on both Forests. Forest personnel faced problems as formidable as those caused by the earlier mud-rock floods. After 1960, the greatest challenge to the men and women on the Wasatch and Cache Forests lay in coping with the greater recreational demands of Americans and in combating the resource damage inflicted by millions of skiers, hikers, campers and picknickers.

CHAPTER VIII

NOTES

[1]A. R. Croft, "The Relation of Forests to Our Water Supply, April 1951," Watershed Folder, Region IV Historical Files.

[2]Watershed Folder, Region IV.

[3]A. G. Nord, "Historical Information Concerning the Willard Watershed Rehabilitation," History Cache National Forest, compiled by Ralph B. Roberts, 3 Binders, I, Logan Ranger District; J. H. Paul and F. S. Baker, The Floods of 1923 in Northern Utah, Bulletin of the University of Utah No. 15, (1925), pp. 3-20.

[4]Cited by Paul and Baker, Floods of 1923, p. 3.

[5]Ibid., p. 12; Watershed Folder, Region IV Historical Files. The flood waters also damaged a hydroelectric plant in Farmington Canyon. Built in 1908, the power plant operated until August 23, 1939. In 1963 the abandoned shell was demolished by a Forest Service avalanche team, and a road was built through the site. See Salt Lake City Tribune, November 9, 1963.

[6]"Watershed Information," History Cache National Forest, I.

[7]Paul and Baker, Floods of 1923, pp. 3-20.

[8]Kenneth W. Baldridge, "Nine Years of Achievement: The Civilian Conservation Corps in Utah" (Ph.D. dissertation, Brigham Young University, 1971), pp. 56-57.

[9]Reed W. Bailey, George W. Craddock and A. R. Croft, Watershed Management for Summer Flood Control in Utah, U.S.D.A. Misc. Pub. No. 639, (1947).

[10]Sylvestor Q. Cannon, Torrential Floods in Northern Utah, 1930, tah State Agricultural College, Agricultural Experiment Station Bulletin, Cir. 92, (1931).

[11]Mark Anderson, Memorandum for Sylvestor Cannon, September 18, 1930, Watershed Folder, Region IV.

[12]Baldridge, "The Civilian Conservation Corps in Utah," p. 58.

[13]Box Elder News, July 31, 1936.

[14]Nord, "Willard Watershed Rehabilitation," History Cache National Forest, I.

[15]Salt Lake Tribune, August 1, 1936.

[16]Ibid. Although the Willard watershed had been added to the Cache National Forest in May, 1936, practically all of the land remained in private ownership.

[17]Nord, "Willard Watershed Rehabilitation."

[18]"Flood Control on the Cache National Forest," History Cache National Forest, I.

[19]Baldridge, "The Civilian Conservation Corps in Utah," p. 212; Clyde Brian Hardy, "Development of the Wasatch Trails in Salt Lake County," (M.A. thesis, Brigham Young University, 1975), pp. 205-213.

[20]Baldridge, "The Civilian Conservation Corps in Utah," pp. 212-14; Nord, "Willard Watershed Rehabilitation."

[21]Nord, "Willard Watershed Rehabilitation; Baldridge, "The Civilian Conservation Corps," p. 215.

[22]Nord, "Willard Watershed Rehabilitation."

[23]"Watershed Information," History Cache National Forest, I.

[24]Ibid.; A. G. Nord, "Report on the Critical Watershed Areas Above Ogden," September 16, 1936, History Cache National Forest, I.

[25]The information in this and following paragraphs has been extracted from material contained in "Watershed Information," History Cache National Forest, I. Also see, G. Nord, "Wellsville Mt. Watershed--A Problem Area in Utah," Watershed Folder, Region IV; and Sydney Storm, "America's Most Beautiful Valley," American Forests (1967).

[26]"Visitors' Guide to the Wasatch Experimental Forest," 1952, Watershed Folder, Region IV Historical Files.

[27]"A. E. Briggs, Memoirs of a U.S. Forest Ranger (n.p., 1963), p. 162.

[28]U. S. Department of Agriculture, Mountain Water and the Town, p. 20, Watershed Folder, Region IV Historical Files; Baldridge, "The Civil Conservation Corps in Utah, pp. 57-58.

[29]Quoted by Baldridge, "The Civil Conservation Corps in Utah," p. 120; "Visitors' Guide to the Wasatch Experimental Forest."

[30]Bailey, et. al., Watershed Management for Summer Flood Control, pp. 11, 16, 17, 18, 23; U.S. Department of Agriculture, Emergency Report on Flood Hazard For Certain Tributary Watersheds of the Salt Lake City Valley, Utah, Resulting from the Forest Fire of July 31, 1944 and the Floods of August 19, 1945 Watershed Folder, Region IV Historical Files.

[31]Baldridge, "The Civil Conservation Corps in Utah," p. 210; A. R. Croft, Contour Trenches Control Floods and Erosion on Range Lands (Washington: 1937); A. R. Croft and Richard B. Marston, "Summer Rainfall Characteristics in Northern Utah," Transactions, American Geophysical Union, 31 (1950): 83.

[32]Croft and Marston, "Summer Rainfall Characteristics," p. 84; Ogden Standard-Examiner, September 1, 1963.

[33]Ogden Standard-Examiner, September 1, 1963.

[34]Salt Lake Tribune, July 21, 1964.

[35]Kamas District Historical Files.

CHAPTER IX

RECREATION

The story of recreation use on the Wasatch-Cache National Forest embraces several themes and is a highly complex subject. In many ways, it is a difficult topic to treat in this larger history, because it could constitute a book in itself. The subject includes hiking, boating, camping, summer home use, hunting, fishing, wilderness and primitive areas, winter sports as well as visits to caves, tours conducted by Forest officers, public relations and visitor information services about Forest sites and history. Given this range, it is impossible to discuss each topic in the specific detail it merits. The story of recreation use, the role of forest personnel in providing facilities and in dealing with the growing demand can only be treated in part.

With this limitation kept in mind this section falls in two major portions. The first deals with recreation use from the pioneer period to the 1930s, and emphasizes the historically significant themes of that era. The second major portion treats the role of Wasatch-Cache Forest officers in enhancing the quality of recreation use and enjoyment in the state of Utah, their efforts to promote skiing and their ongoing efforts to cope with the varied and complex problems that recreation management entails.

The Early Years

Recreation within the present day boundaries of the Wasatch-Cache National Forest has a long a varied history. Although many studies note that recreation is an important aspect of present urban life, it had an early tradition in rural Utah. Similarly many works emphasize that after the Forest Service was established, it ignored recreation for many years.

Our discussion, however, considers recreation in a different context by paying attention to the early efforts of local Forest officers in recognizing how important recreation was in the state, their efforts to provide facilities, plan for it, and at times, to promote it.

A Preforest Tradition

Recreation use of Utah's canyons, lakes, streams and forests began early, and was firmly established as a local tradition long before the actual creation of the national forest system. In 1855 Church President Brigham Young told his followers to take time to enjoy the beauties of the surrounding countryside: "I am going to explore in the mountains, and I invite you to go. Take your wives, but not your babies, unless you take a cradle to keep them quiet. The out-door air is what the people need for health, it is good for them to camp out."[1]

In early pioneer days picnics and outings in the canyons near Salt Lake City provided a welcome break from the laborious and oftentimes tedious work of establishing homesteads and planting and harvesting crops. The first documented large-scale outing on the present Wasatch-Cache National Forest dates back to July 24, 1856 when local citizens celebrated the ninth anniversary of the Mormon arrival in Utah. According to the Deseret News, the Mormon Church issued an invitation for people to assemble near the headwaters of Big Cottonwood Creek early on the twenty-third. After camping out at the site that later became Brighton, approximately 450 people participated in a gala celebration the next day. Even at this early date the connection between forest fires and recreation was recognized. On the evening of the twenty-fourth, Brigham Young told the tired crowd: "We wish the company, so soon as breakfast is over, to put out their fires and vacate this ground, for I intend to tarry with the lumber company until the rest are gone, and see that the fires are well put out."[2]

Summer outings and picnics were frequent happenings in the shaded canyons adjacent to Salt Lake City, and constituted the most significant type of early day recreation use on the present Wasatch-Cache National Forest. According to Asa R. Bowthorpe, the 1856 celebration was so successful that the Mormons held a much larger one the following year

in Big Cottonwood Canyon, which over 2500 people attended.[3]

Such events continued and mountain outings became a well established tradition among the Saints, who oriented more and more of their free time towards the mountain canyons. As time progressed, the canyons were favorite sites for not only the Mormons, but for a rowdy and boisterous mining society as well. For example, miners at Alta took time off from working Little Cottonwood Canyon's great Emma Silver Mine, and from worrying about the "Crime of '73" (when Congress demonitized silver) to celebrate patriotic holidays. Sometimes, however, expectations about a good time were not met. The Independence Day celebration held at Alta in 1876 can serve as an example. The story of that day is surrounded by legend, folklore and earthy humor, but it is worth repeating for the point it makes about how recreation sometimes falls short of the expectations people have for it. According to local accounts, the great day's very beginning was marred when a dead man was discovered hanging from the flagpole early on the morning of the fourth. Alta's 2000 inhabitants tried not to let the grim fact subdue their spirits or hamper the day's festivities, particularly the traditional flagraising ceremony. In fact, the rowdy miners were not upset by the hanging, for violence was apparently familiar to the mining camp, but they were irritated because the victim delayed the scheduled flag ceremony. To make matter worse, the flagpole was broken in three separate pieces as they attempted to get the dead stranger down, with the result that the event had to be cancelled. Joe Brandy, the chairman of Alta's Centennial Committee, advised the disgusted crowd not to let a minor setback ruin a good time and consoled them with promises of patriotic oratory and fireworks. But promises and good intentions notwithstanding, disaster beset the entire celebration. While waiting for the traditional fourth of July speech, a group of men had fortified themselves at Brandy's saloon (one of twenty-six) and with tempers already frayed by the flagpole incident, drank heavily and played poker until finally a brawl erupted. One man was shot in the head, and now two dead men lay in the town's funeral parlor. According to one version, this new death "did not upset the plans to any extent, however, because the miner had not been very well liked, anyway." After this, the day lost its tragic elements, and began to take on the characteristics of a comic farce. When the honorary speaker ended the tear-jerking,

flag-waving, foot-stomping speech traditional at such events, an eagle was to be turned loose to soar majestically into the skies, signifying America's commitment to liberty and freedom. The eagle, however, unaware of his symbolic importance, "soared" a miserable three feet into the air, before flopping back to the dusty ground. The disappointed crowd relieved some of its accumulated tensions and frustrations when a group of boisterous, barefooted children chased "the squawking, fluttering bird along the dry creek bottom." It seemed as if Alta's inhabitants were going to have a miserable fourth, although not perhaps as they had originally envisioned. The miners and their families hoped to salvage the day by rounding out the festivities" with a gigantic firework display, but the comedy of errors continued as another disaster followed hard on the heels of earlier ones. The town's seven hundred dollars worth of fireworks exploded in a mad frenzy when a young boy dropped his lighted candle into the crate of stored foreworks. As the day ended, most of the miners were probably relieved to call a stop to recreation and "good times" and go back to work.[4]

Throughout the ensuing decades recreation use of the canyons began to increase as more and more families sought a brief respite from the summer heat in the cool shaded canyons. The promotional and artistic ventures referred to in an earlier chapter did much to popularize the beauties of the Wasatch Range during the 1880s and 1890s and undoubtedly sparked increased canyon use in the Salt Lake area. In any case when Albert F. Potter made his recommendations about the proposed Salt Lake Reserve in 1904, he found evidence of a nascent camper society. Potter was particularly struck by the intensive use locals made of the nearby canyons for recreation, and was impressed by the pleasant camping grounds in Big Cottonwood Canyon. After describing the power stations of Utah Power and Light at the mouth of the canyon, Potter went on to note:

> Passing this point, a summer resort known as Maxwell's Camp is arrived at. This is a beautiful place, located in a grove of maples along the bank of the stream and having a good water supply from springs breaking out at the mountain. A number of families from the valley were camping here and had the place fixed up very neatly. Following up the canyon a number of camps and houses were passed, all apparently just temporary residences for summer use, no clearings or farming land being seen.[5]

Potter, a precise and meticulous man, went on to document other camps and resorts in Big Cottonwood Canyon.

> Following along up the valley there are several pleasant camping grounds, and the summer resorts known as Grand View, Mountain Park, and finally Silver Lake. At the latter place in addition to the hotel, there is a post office, two stores and a large number of cottages used by summer campers.[6]

Always reluctant to hand out superlatives, he stiffly concluded with what came as near being a real compliment for Utah as he ever gave: "this is one of the prettiest spots I have ever seen in the state, and seems to be well patronized by people from the valley seeking a pleasant summer camping ground."[7] Although Potter's report suggests that recreation use in Big Cottonwood was more intensive than in some of the other Salt Lake City canyons, it does refer to some campsites and a resort in Little Cottonwood. Struck more by the density of the mining claims and the area's transportation network, Potter nevertheless mentioned "the Wasatch resort, a very pleasant summer hotel and camping ground, located on the brink of the stream in a grove of maples."[8]

Besides the summer houses, resorts and campsites in the Cottonwoods noted by Potter, other sources indicate that Emigration Canyon was also used for summer recreation. Around the turn of the century, according to Bowthorpe "the canyon became famous for the farms and summer homes which were built throughout."[9]

Further north Cache Valley citizens shared a similar interest in visitng their nearby canyon, although access was more difficult than in the Salt Lake City area. For several years the narrow, uneven road into Logan Canyon was a miserable affair, replete with both chuckholes and mudholes, and could hardly be characterized as more than a trail until well into the twentieth century.[10] Inadequate transportation facilities probably explains in part why Logan residents did not try to construct permanent summer residences in the canyon until 1911. The scenic beauties of the area, however, provided an irresistible lure for many willing to "rough it" and camp outdoors. Many local famileis and even "Ogden Swells," as Ranger Hopkins Rice termed them, developed a tradition of yearly outings and camping trips. The Thatcher family of Logan, for example, used to camp at Tony Grove each summer during the 1880s; the next generation of Thatchers continued the tradition and retired from

"city" life for a full six weeks during the hot, dry summers. The Thatchers, a banking family, together with their Eccles relatives from Ogden and other wealthy families gave the grove, which stood adjacent to the modern turnoff to Tony Grove Lake, its name because in local lore they were the "tony" or uptown set. By the turn of the century, however, the old grove was long gone, replaced by a dipping corral and a different reputation to accommodate the sheepherders who accumulated there. To it came herds of sheep by the score from points as distant as Ogden and Soda Springs. Far from a resort for the gentle and the wealthy, the Tony Grove area was now a vast dust bed, stripped of forage and trampled beyond recogniztion, its society sheepherders and according to some, enterprising madams who brought their girls to neighboring Hatties Grove.[11]

Obviously there is a note of lore in the stories of mountain amenities but more seriously, recreation within the boundaries of the Wasatch-Cache National Forest took on varied forms in the early days. While the more affluent in Utah made use of summer resorts or built cabins and their less wealthy neighbors escaped to the canyons for camping or picnics, both groups began to develop an interest in hunting and fishing by the turn of the century. Although most trout species have since been imported to Utah, early day fishermen could catch native trout from the streams in Big Cottonwood, Emigration canyons or nearer to home in the streams in the valley. Further north, Cache Valley inhabitants also fished their valley and mountain streams. While for the hardy and intrepid angler, willing and able to traverse the steep and rugged terrain of the Uinta Range, the hundreds of glacially-carved lakes provided both fishing opportunities and aesthetic appreciation. Although fishing as a form of leisure activity was not as prominent or as widespread as it is today, it was nevertheless a component of preforest recreation.[12]

The big game situation in nineteenth century Utah differed vastly from today. Early accounts left by pioneers, stockmen and explorers make clear that bear roamed the forested lands of Utah; antelope were so numerous around the Great Salt Lake that explorer John C. Fremont named an island after them; elk, too were present in the territory. Even buffalo wintered in Cache Valley until the middle 1830s after which they, and the antelope too soon disappeared; and numerous accounts refer to the shrinking number of deer, blamed in part on the continual hunting of

Indians. Changes in other wildgame habitat became increasingly obvious by the closing decades of the nineteenth century. Apparently the last elk in the northernmost part of the state disappeared when five were shot in Card Canyon near Logan in 1898, although many elk could still be found on the north slope of the Uintas. While some species of big game were present in Utah in the nineteenth century, their numbers declined as pioneers established farms and homesteads, built communities and kept a wary eye out for any kind of predator. Thus, the big game hunter has been a twentieth century phenomenan and has only become significant since the emergence of the wildlife management agencies.[14]

For the nineteenth century hunter, smaller game presented a better opportunity. Alexander Toponce, the nineteenth century freighter and tie contractor, left a colorful account of hunting opportunities in Utah in the 1880s that indicates both how plentiful some smaller game was and how greedy some hunters were. He and three business cronies from Wyoming enjoyed hunting ducks near Corrine, Utah and Toponce later recalled one memorable hunt:

> I stationed Doc. and one of his friends on the east side of the river and the other two on the west. A little shower came up and the ducks began to fly. They would come down one side of the river where they would get in range of the first man, when he fired they would veer over to the other side, only to get a volley from the next shooter.
>
> In this way some of the flock were in range of all four guns. In about three hours of shooting I filled the wagon bed, piling the ducks up. There were all kinds and we tied some on to keep them from falling off.[15]

Such avid hunting became increasingly common within the next few decades as a nascent sportsmen society began to emerge. Apparently the voracity of some of these hunters or fishermen began to be questioned and criticized by some of their more careful and wiser counterparts. In the 1890s a group of sportsmen in Logan began to express concern about the greedy tactics of other enthusiasts, and in 1894 banded together and formed the Sportsmen Club. The constitution of the club was printed in the local paper and sheds some light on contemporary hunting and fishing practices and documents a growing concern about appropriate hunting and fishing procedures. The club particularly objected to the "wanton destruction" that characterized local fishing and the club's

constitution warned that such behavior not only destroyed an important food supply, but threatened the very existence of a relaxing recreational activity.[16]

Recreation and the Wasatch and Cache National Forests, 1908-1936

Land management specialists and historians have pointed out that as reserves and national forests were established, recreation use tended to be ignored or slighted by the Forest Service. Initially the national organization grudgingly tolerated summer home permittees but regarded the "hordes" of picnickers, campers, hikers, boaters and nature enthusiasts as invaders of the forest.[17] The contention that the Forest Service was hostile or indifferent to recreationists has been based on comments made by Gifford Pinchot and his immediate successors as chief forester. In his autobiography, Breaking New Ground, Pinchot emphasized that forestry should be run on a scientific, profitable basis. Almost unbelievably from today's perspective, he proclaimed that "forestry has nothing whatever to do with the planting of roadside trees . . . parks and gardens are foreign to its nature . . . it has no connection with the decoration of country places . . . scenery is altogether outside its province . . . ."[18] Although Pinchot's successor, Henry S. Graves, was not as insensitive to recreation, he too proved unsympathetic to those who wished to use the forests for liesure activities. In 1913 Graves revealed a clue as to why the national organization regarded recreationists with a jaundiced eye: "transient camps, are of course, pitched wherever the recreation seeker chooses to wander, without permits, restrictions or formalities of any kind . . . ."[19] Two years later, in pointing out the connection between recreationists and fire, Graves bitingly condemned "the irresponsible transient visitor [as] a formidable menance."[20]

Although Graves was careful to limit his comment to the irresponsible, the very use of the word transient for any recreationist (except the summer home permittee) suggests something of the negative feelings in the Forest Service concerning recreation as a category of wise use. While this antipathy on the part of the national organization stood in marked contrast to the philosophy of the Park Service, it should not be unduly emphasized or distorted. The basic indifference of the national organization

to recreation use cannot be questioned, but this point of view does not reflect the day to day realities on many local forests. Early records for the Wasatch and Cache National Forests, while sketchy, do not reveal any hostility or overt antipathy to local recreationists. In fact, it appears that even at an early date, personnel on the Wasatch and Cache were aware of the strong local tradition of recreation use, and far from ignoring recreation, seemed to accept it as an enduring reality and even at times to promote it.

Local citizens continued to make frequent use of the canyons and streams for leisure activities even after the establishment of the national forest system in Utah, although not, of course, to the extent that they do today. A newspaper article discussing several aspects of forest management in Utah in 1908 referred to the popular Brighton summer resort as "one of the most picturesque spots of the Salt Lake national forest."[21] A railroad line operated from 1908 to 1916 bringing campers, sightseers and summer residents from Salt Lake City to Emigration Canyon, and the lush campsites that Potter described in 1904 in Big Cottonwood Canyon continued to attract citizens anxious to escape the stifling heat in the dry, sun baked valleys.[22] Around 1910 Supervisor Robert R. V. Reynolds of the Wasatch National Forest wrote an article for a local Salt Lake newspaper that documents recreation use there and reflects a keen appreciation of the area.

> Nature has kindly provided Salt Lake City with a magnificent playground at her very doors in the great gorges of the Wasatch mountains. These are ruggedly picturesque, full of dashing streams, grass and firewood and well adapted in every way to the wants of the summer camper. All of the best portions of this range north of Provo canyon are embraced in the Wasatch national forest and patrolled by the rangers of Uncle Sam. The object of the forest service is not to keep from the people any such great utility as the canyons afford, but to assist and instruct them in its proper and lawful use.
>
> It is estimated that 12,000 people at least take recreation at one time or another each year in the canyons on the Wasatch forest, from City Creek to American Fork inclusive. Some go for a single day, others for camping trips varying from three days to a month. A number of business men go up to camp or stay at the resorts from Saturday night until Monday morning during the summer.

> It is believed that the use of the mountains for recreation has increased by 200 percent since 1904. This is in part due to the growth of the recreation spirit in this country, and in part to the increase in population of the city, but mainly to the great improvement in the camping conditions under the restrictions imposed upon grazing by the forest service.[23]

A report later compiled by Wasatch officers indicates that rangers were constructing picnic tables for recreationists by 1912, although they may have done so a bit earlier.[24] Reynolds was evidently correct in stating that the "recreation spirit" was strong in the general area of the Forest.

Recreationists increased further north as well. In 1911, for example, the Forest Service granted a special use permit to Dr. T. B. Budge, and the first permanent summer dwelling was constructed in Logan Canyon. Later that same year, Dr. D. C. Budge also built a cabin nearby. Constructed near what is now known as Brown's Roll Off, the area in which the cabins stood was for years called Budge Flats. Additional summer homes were soon built throughout Logan Canyon, with five separate dwellings constructed in 1915 alone.[25]

Personnel on the Cache demonstrated an early interest in promoting recreational activity that in many ways appears farsighted and somewhat unexpected if only national directives and priorities are considered. While timber, grazing and watershed management constituted the major concerns for the Forest, personnel on the Cache seemed particularly attentive to local wishes and realities. Around 1910 several men who had been, or were currently involved with administering the Cache National Forest, joined with the local booster club in trying to secure better roads in Logan Canyon. John Squires, first supervisor of the Logan Reserve and latter associated with the District Office, and several members of the Commercial Boosters Club met with the Cache County Commissioners to convince them to improve the canyon road, explaining:

> It seems to us that Logan canyon is an underdeveloped resource which is situated almost in the central part of the valley and its roads should have the attention of the entire county. It is one of the most beautiful canyons in the west. When we see what Ogden and Provo are doing with their canyons and how California and other places advertise their pleasure resorts it seems time that we should wake up. If the Boosters are successful in building the new hotel and the macadamized road from the depot

> to the mouth of Logan canyon we will draw tourists and capitalists from all parts of the country and some of these people after being impressed with our beautiful trout streams, etc., will decide to locate and buy farms and homes in different parts of the valley and we believe every citizen in the county should be interested in this road.[26]

Interestingly enough the proposal had already received tacit support and approval from the current administration of the Cache National Forest since Supervisor Clinton G. Smith as well as Deputy Supervisor Rotherary were both active members of the Booster club.

A few years later Cache personnel were instrumental in directing a different kind of promotional effort. In August of 1914 Acting Supervisor E. C. Shepard was in charge of a party taking pictures of Logan Canyon to be sent to the Panama-Pacific International Exposition in San Francisco. The pictures focused on the H. H. Hedemark forest homestead, Forest Service fire tool caches, the livestock industry in Cache Valley and the scenic beauties of the area. According to a newspaper article, headlined "Appreciated at Last," the exhibition would also contain "pictures of camping, the government regarding the use of national forests for recreation purposes as important, and Logan Canyon affording a good opportunity to illustrate well-kept camps."[27]

The next year a similar spirit of boosterism led Logan citizens to purchase two boxcar loads of elk from Jackson Hole, Wyoming in order to reestablish a herd in the Logan Canyon area. Initially the Booster Club had worked with the Forest Service, and discussed the possiblity of building a pen for the animals at Upper De Witt Pasture. But for some reason this plan fell through. In 1916 twenty-five elk were penned on a corner of Tabernacle Square on Main Street in Logan City. When ticks began to plague the herd, local farmers, worried that the parasites threatened their dairy herds and livestock, complained bitterly. A few months later on April 16, 1916 the twenty-three surviving elk were driven to the mouth of Logan Canyon and turned loose. The genesis of the present day elk herd in the area dates to this event. Back in a natural habitat, the elk began to flourish; by 1925 the herd had increased and competition for food resulted in the elk raiding local farm crops. Once again, Cache Valley farmers protested, enraged at the problems, and in 1925 the State Fish and Game Commission evlauated the situation and

instituted the first regulated elk hunt in the state.[28]

As in the case with the elk, the deer herd on both the Cache and Wasatch National Forests began increasing at the same time. In 1908 deer hunting had been prohibited throughout the entire state for five years. By 1913 the herds had increased under careful management and a buck only hunt was allowed. The deer herd continued to flourish within the boundaries of the Wasatch and Cache National Forests, and by 1929 the Game Census compiled by the Forest Service reported that they numbered well over 4000. That same document also provides ample proof that the big game hunt was firmly established on national forest land during this period, noting that over 2100 individuals hunted deer, elk and bear on the Wasatch and Cache Forests in 1929.[29]

Fishing continued to be popular, and soared as a form of recreation use. The fame of Utah's streams and lakes began to receive nationwide attention, a point that is well illustrated by an event on the Cache National Forest in the mid-1920s. In 1924 Utah Agricultural College scored a coup in obtaining the summer services of the eminent and nationally recognized historian Frederick Jackson Turner. Signed on to teach a three week summer school course, Turner planned to take time off from his duties to enjoy fishing in Logan Canyon. An enthusiastic fisherman, his letters to his wife that year repeatedly refer to the beauties of Logan Canyon and its fishing opportunities. Turner arrived in Logan on June 8, and his first letter to his wife Caroline refers to his favorite sport:

> I was introduced to the real fisherman, an interesting Swiss named Hurti, who tells me that right in Logan he can put me in touch with trout that average from 1/2 to a pound and run as high as 4 to 6 pounds in a neighboring canyon. Season opens next Sunday. We shall see! But I wish Gray could be with be to show them how to cast a fly in these heavenly surroundings.[30]

When the fishing season opened a week later Turner reported:

> This morning I have been out to Logan River . . . . The Swiss took me out at ten and we got back by two. He had gone out at 3 A.M. and caught 2 three pound native trout and a half pounder by bait. The stream was lovely and I enjoyed the wading. Hugi using the huge May flies which were very abundant, caught a half pound black spotted native; and three little ones; but you would have had to beg a trout from some other fisherman than your husband. I tried the May flies and lots of other flies but I couldn't get a rise.[31]

Turner blamed his poor showing on the number of fishermen in the area, and his letter provides evidence of how popular the sport was becoming in Logan Canyon. He told his wife that "there was an angler every few rods and automobiles parked like in a city street." He tried his luck a few more times but with little success. The following year Turner returned to teach summer school because the salary was so attractive and he wished to continue his "struggle with the trout." According to historian Ray Billington, Turner had better luck fishing in 1925, although he did not provide any letters home because this time his wife accompanied him.[32]

Turner's contention that the area was a popular fishing site was basically correct, although it may have been slightly exaggerated to justify "the ones that got away." In any case fishing was becoming intensive, and by 1927 the Fish Hatchery planted over 416,000 trout in Logan River. The same trend was also occuring on the Wasatch National Forest. During the early 1930s, for example, the Summit County Fish and Game Protective Association helped plant over two million trout in nearby streams, lakes and reservoirs.[33]

Recreation on both the Wasatch and Cache increased during the "Roaring Twenties" as more and more Americans purchased cars and had greater leisure time. While many of the actual records kept by Wasatch personnel concerning recreation have not been available, a few surviving records for the Cache amply document the recreation surge in the 1920s. By 1927 at least, local Forest officers were assuming an active role in promoting recreational use on the Cache; rangers began writing a series of articles for newspapers in northern Utah that touted the beauties of Logan Canyon. An article entitled "Cache Playground" mentioned that Ranger H. I. Rice (using figures derived from a register placed under the first bridge in Logan Canyon) reported that over 79,000 cars passed through the canyon in 1926. After noting the high number of automobiles, the article mentioned that 14,500 boy and girl scouts camped at such sites as Spring Hollow and the mouth of Cowley Canyon, and that over 4200 people (an almost unbelievable figure) lived in the leased summer homes along the river. After bombarding the reader with this data, the anonymous writer reported that "The Recreational Engineer who is stationed each summer at Card Ranger Station made numerous checks on the number of

people who made use of the public camp grounds and arrived at the astounding figure of not less than 12,000." While the veracity of these "astounding figures" may be questioned, they do at least indicate recreation had become a major activity by the 1920s, and local officers such as the one who wrote "Cache Playground" were both aware of it and seemed to encourage it.[34]

In dealing with recreationists, Cache and Wasatch personnel were largely on their own. Recreation policy was still vague and inadequately formulated at the national level, and Forest officers were given a great deal of latitude. Overall, they seemed attentive to increased recreational demands in Utah and tried to plan for it. As early as 1927, the Cache National Forest warned that "the 30,000 people who visited the canyon last year are but the forerunners of a vast caravan of pleasure seekers who in the future will throng to the mountains in the summer."[35] In trying to cope with recreation use personnel performed a variety of tasks. They worked closely with the State Fish and Game Commission to regulate wildlife and fish habitat, enforce hunting laws, report and prosecute violations and helped to compile census data for various species. In addition rangers took the boy and girl scouts on arranged hikes and tours, made sure campground were clear of brush and constructed picnic tables as well as fireplaces for camps. They also issued special permits for summer cabins, worked to obtain better roads and trails and of course looked for forest firest as thousands used the Wasatch and Cache National Forests in their spare time.

High Uintas Primitive Area

Although the Forest Service as a whole was commodity oriented and found it difficult to adequately formulate and plan for recreation use for many years, certain individuals at the national level also began to advance aspects of recreation use that had consequences for the present day Wasatch-Cache National Forest. Aldo Leopold, a Forest Service employee from Wisconsin, serving in New Mexico, has been credited with pioneering the concept of wilderness areas in the 1920s. Leopold and others, both within the organization and the larger public, began to express concern that developments on National Forests, such as roads,

campsites, resorts, summer homes, etc., threatened areas that should remain in their natural state. His reports and efforts within the organization had an important impact, and in 1924 Chief Forester Greeley established the first wilderness area in the United States on the Gila National Forest in New Mexico. Within a few years, the Forest Service recognized two additional categories, research and primitive areas.[36]

Although Leopold's role in furthering the wilderness area concept was critical, it can be exaggerated. Donald Baldwin in 1972 wrote The Silent Revolution and traced the Forest Service's wilderness concept back to Arthur Caahart a landscape architect, as early as 1919.[37] Efforts to refine and clearly formulate aspects of wilderness policy occurred during the 1920s and continued on through the Wilderness Act in 1964 to the present. Although for many years, the concept was vague and its ramifications not clearly considered for decades, it nevertheless had consequences for the Wasatch National Forest at an early date.

Arthur G. Nord, who has been referred to elsewhere for his work with summer flood control, was supervisor on the Wasatch in the early 1930s. As supervisor he made important contributions to the cause of both recreation and conservation. Soon after assuming his position, Supervisor Nord took the lead to create a primitive area in Utah. Although the records that detail his role have been lost, he worked with the national organization on this project, and in 1931 the High Uintas Primitive Area was established. Currently under the joint administration of the Wasatch and Ashley National Forests, the High Uintas Primitive Area receives intensive backpack and horseback use. It remains one of the most important contributions the personnel of the Wasatch have made to recreational enjoyment in the state.[38]

CCC Work and Recreation

During the 1930s the Civil Conservation Corps (See Chapter IV) made significant contributions to a variety of physical improvements that greatly enhanced recreation use on the Forests in northern and northeastern Utah. One of the most important legacies of CCC crews are the miles of trails and roads they maintained or constructed. Unfortunately, as in so many other areas of the past history of the Wasatch National

Forest, the entire record of CCC labor related to transportation development or improvement is woefully incomplete. Primary sources are fragmentary, scattered, contradictory or simply lost in a maze of paperwork. Apparently, some doubt exists as to whether or not Wasatch personnel kept adequate records about CCC work in the first place. A student of trail development on the Wasatch, Brian Hardy, found ample records both before and after the 1930s, but concluded that "It is lamentable that better records were not kept by the Wasatch Forest Officials for worked performed by CCC enrollees."[39]

Given these problems it is impossible to assemble a complete account of CCC trail or road work, although scattered references do note some specifics. In 1932, just prior to the advent of the CCC to Utah, Supervisor Nord referred to a cooperative agreement between Salt Lake City and the Forest Service to use unemployed men for road work. Hardy believes that work on these trails was later continued by CCC crews, and included the following:

1. Mill B-Mill A Basin Trail
2. Mount Olympus Trail
3. Mill Creek-Bowman Fork Trail
4. Bowman-Butler Fork Trail
5. Elbow-Smith Fork Trail

Hardy, after a search at the Denver Records Center, maintains that CCC enrollees also worked on the following trails in the general area of the Salt Lake Ranger District during the 1930s.[40]

1. Storm Mountain Trail
2. Church Fork Trail
3. Doughnut Falls Trail
4. Green's Basin Trail
5. Kesler Peak Trail
6. Maple Grove Trail
7. Days Fork Trail
8. Mill A Basin-Neff Canyon Trail

Besides this trail work CCC crews spent time on road development, and worked on the construction of the Brighton Loop and smaller access roads to frequently used campsites and picnic areas.[41]

Further south, the first CCC camp established in Utah, was located in American Fork Canyon, where it completed some trail work. At the time this area was included in the boundaries of the Wasatch National Forest, and among other activities, the enrollees worked on the Timpanogas Cave Trail. The CCC camp on the Kamas District, mentioned elsewhere in

connection with fire and insect control, also did much work on the Mirror Lake Highway.[42]

Two reports currently on file at the Logan Ranger District provide additional evidence of CCC road work in the 1930s. From 1933 through 1934, Camp F-2 in Blacksmith Fork Canyon and F-1 at Tony Grove spent considerable time constructing new roads as well as maintaining older ones. The F-1 camp's primary effort was a road through Cowley Canyon and Herd Hollow into Blacksmith Fork Canyon. During the hot, dry summer months of those years, the F-2 camp worked on several road and trail projects, but concentrated on the Left Hand Blacksmith Fork Road.[43]

However, like most Forest Service camps, the CCC camps on the Cache National Forest were multi-purpose operations. Besides improving access to sites within the Forest, they completed a variety of tasks that facilitated recreation use. In 1933 the Tony Grove camps spent 246 man-days working on water systems for the Wasatch and Logan Park campgrounds. In addition they constructed a "comfort station" at Spring Hollow, cleared brush and trees from a new unamed campsite and weeded the ones at Brown's Roll Off, Spring Hollow and Logan Park. The CCC crew from the Blacksmith Fork camp finished similar jobs. Although busy on road work in 1934, they found time that year to build three bridges and picnic tables, work on a water system and construct toilet facilities and campground barriers. In following years, CCC crews built the Guinivah amphitheatre in Logan canyon and also tried to improve fishing by working on check dams in the Logan River.[44]

CCC camps on the Wasatch Forest also undertook a variety of projects to enhance recreation use. The Soapstone unit, for example, transplanted aquatic plants from Fish Lake to Mirror Lake, and then fertilized the lake to improve the fish habitat. Crews near Salt Lake built bridges and cleared areas for campers and picnickers. A study done in 1964 notes that throughout the boundaries of the Wasatch National Forest, CCC units constructed a total of forty camprounds.[45]

Although most CCC recreation projects on both the Cache and Wasatch involved work related to summer use, some labor was expended for structures for winter sports enthusiasts. During the closing years of the CCC's existence in the state, Wasatch Forest officers directed CCC manpower in the construction of the skiing lodges at Alta and Snow Basin.[46]

It should be noted here that Utah recreation sites owe much to CCC labor under the direction of other federal agencies besides the Forest Service. An example is the Pineview Reservoir. Originally built for water supply and conservatin, the Pineview project was supervised by the Bureau of Reclamation, and CCC crews carried out some of the work. Although the primary purposes of the Reservoir is water storage, the area has become a favorite spot for recreationists on the Wasatch-Cache National Forest and offers boating, fishing and picnicking opportunities, as well as camping and swimming.[47]

While the most important contribution of the Civil Conservation Corps in Utah was on watershed rehabilitation and reclamation projects in Davis and Box Elder counties, its efforts on road work and maintenance, campsites, picnic areas, and numerous other activities were also significant. CCC crews under Forest Service direction have provided an important if inadequately documented gift to millions of present day visitors to the Wasatch-Cache National Forest.

The Taylor Report

The Forest Service's CCC projects on recreation sites and the establishment of wilderness or primitive areas reflected a growing interest in recreation at the national level. This interest continued to grow, although it was often hampered by those within the organization who shared Pinchot's basic commodity oriented approach. Nevertheless, the trend within the national echelons of the Forest Service toward increased recreation use began to be more apparent and is well illustrated by an inspection report undertaken in the 1930s by a landscape architect.

In 1935 A. D. Taylor, a consulting landscape architect prepared a three hundred page report for the Chief Forester based on an inspection trip of several national forests. Taylor was asked to describe and criticize existing features and sites that affected recreational use and appreciation. Although the national organization's recreation policy was ill defined, Taylor felt that significant changes were being made and that the time was ripe for the Service to make a broader commitment to recreation by developing long term management plans. In the forward of his report he noted: "The forests, under the present day conception,

are no longer areas of economical value only. They are areas which are also developing an increasing social use, which must be given full recognition in the program of National Forest management."[48]

Taylor, accompanied by Forest Service officials, began his tour at Denver on July 27, 1935 and completed the inspection at Glacier National Park, on August 21. In less than a month he visited twenty-three national forests and six forest camps in national or state parks. Based on his tour, he filed a detailed report, complete with numerous photographs of picnic areas, lakes, and forest structures, to point out where existing facilities detracted from recreational enjoyment and aesthetic appreciation. Most significant for the purposes of this history is the fact that Taylor surveyed both the Cache and Wasatch National Forests. His report, completed late in 1935, provides important evidence of the intensity of recreation use in the 1930s, and the efforts of Wasatch-Cache personnel in planning and providing facilities for recreationists.

Taylor began his inspection of Region IV with a tour of the Wasatch National Forest on August 3. He was accompanied by Regional officers and Wasatch officials, including Assistant Regional Forester Stokes and Supervisor C. J. Olsen. After inspecting the South Fork and Timpooneke Ranger Stations and being generally impressed with their construction and physical appearance. Taylor surveyed the Aspen Grove picnic area. As a landscape architect, he constantly pointed out where facilities, no matter how well done, could be improved, and he always began each section with minor and sometimes major objections. However, he delivered high praise for the Aspen Grove site. After first criticizing the type of stove used because it did not blend in with the natural surroundings, he tempered his objection by noting: "on the other hand, I can say in its favor that from the standpoint of practical use in cooking, it is not surpassed by any other stove." His appraisal of the Aspen Grove theater was generous, although still tinged with minor complaints.

> In this picnic area, as in some other areas, a rather unusual procedure is being adopted in the development of an outdoor theater. This picnic area is intensively used and the development of this "Theater of the Pines" is this location is thoroughly justified.[49]

Taylor was, however, offended by the color scheme on the nearby toilet buildings. The white trim was too "shophisticated" and the entire

Illus. 22 Lily Lake, Wasatch National Forest 1935

Illus. 23 Mirror Lake Forest Camp 1935

structure should be relocated or obscured. Upon leaving the picnic site, Taylor travelled along the Provo River road pointing out where signs were ineffectually placed.

Although Mirror Lake was under the jurisdiction of the Wasatch, Taylor somehow believed that it was within the boundaries of the Uinta National Forest. This oversight may have occurred because when he reached this area on August 4, he was no longer accompanied by Forest officials. In any case, the landscape architect proved perceptive in recognizing the scenic beauty of the place and in identifying some problems that continued to plague Wasatch officials as recreation use soared in the following decades, and as the automobile invaded the Forest, spoiling scenic vistas.. Taylor remonstrated:

> At the present time automobiles and camps are allowed in the portion of the area adjacent to the lake, in which no automobiles and camps should be permitted. These distracting elements are most objectionable, especially to one who appreciates nature and who has travelled many miles over a forest road in order to reac a spot as beautiful as Mirror Lake, only to find automobiles and camps have taken possession of important portions of the shore line.[50]

After inspecting the Mirror Lake area, Taylor pushed on, and devoted part of Monday, August 5 to the Cache National Forest. As on Saturday, Assistant Regional Forester Stokes joined him. They were accompanied by Supervisor Carl B. Arentson and Ranger Joe Libby of the Cache National Forest. Taylor had time only to examine the campgrounds at Spring Hollow and Guinivah. But, the landscape architect gave them the highest marks he gave to any national forest site in Utah. He thought the boating dock at Spring Hollow was "extremely interesting" and included a picture to indicate how other forests might make similar arrangements.
When he turned to Guinivah Taylor for a moment forgot his critical mission and waxed eloquent about the good condition of the intensively used campground, the "interesting bridge," and the "rather well designed and appropriate fountain." In a burst of enthusiasm he described the ongoing construction of the Guinivah amphitheater, and commended both the CCC crews and the Cache personnel supervising the work.[51] Reverting quickly to his critical demeanor Taylor made several minor recommendations about "improving" the structure. After discussing sign problems (always a favorite topic) at the mouth of Logan Canyon, Taylor left Utah and

Illus. 24 Aspen Grove Picnic Area, Wasatch National Forest 1935

Illus. 25 Boat Dock at Spring Hollow Forest Camp in Logan Canyon 1935

finished his tour.

Taylor's report is useful for the photographs it contains, the discussions about specific campgrounds, and the problems of overuse as well as for the descriptions and locations of forest sites and structures during the Depression. One important point should be made, however, that sheds light on the nature of his remakrs. As a landscape architect, Taylor was trying to convince the national organization to reevaluate its attitude toward recreation and hire "professionals" to plan for recreation management. In the report he revealed his orientation and his own bias:

> Forestry is a very highly specialized field of activity, and landscape architecture is equally highly specialized. There may be, occasionally, a man in either field who is fairly well qualified to perform other service in the other field. This condition is rare and it is much more logical to look to the forester for the detailed solution of the forestry problem and to the landscape architect for the detailed solution of the problems of landscape and recreational planning.[52]

What is even more interesting was that his comments on regional forests varied proportionately with the number of landscape architects each region employed. Forests such as Mt. Hood in the North Pacific Region received the highest praise; that region also employed the largest number of landscape architects. National forests in Region I, which had failed to employ any member of Taylor's profession, received the most cutting criticism. Forests such as the Wasatch and Cache received equal measures of praise and censure, and Taylor later noted that Region IV while employing fewer landscape architects than Region VI was proceeding "in a logical manner" on recreation matters. At least Region IV had demonstrated its "good faith" as far as Taylor was concerned by employing two landscape architects.[53]

Taylor pointed out that he felt part of the problem lay in the fact that recreation "management" was decentralized, with each region developing its own procedures and using different types of structures. Apparently Taylor's study had some impact. Shortly after it was filed in national headquarters, the Forest Service initiated an important shift in management directives and priorities by hiring seventy-five landscape architects to develop plans for recreation use. This shift in policy, the growing

recognition of recreation as a legitimate (although still unequal forest use) occured with even more empahsis on the Wasatch National Forest at the same time with the birth of Utah's ski industry.[54]

The Recent Years

During the last few decades, the character of recreation use on the Wasatch-Cache National Forest has become increasingly complex and diversified. A new dimension emerged during the late 1930s and 1940s as Forest personnel began to promote a ski industry within the state. In addition, new themes and aspects of recreation management became more important as the national organization initiated "Operation Outdoors" in 1957 to meet the growing demands of millions of recreationists. Within a few years, the Wasatch and Cache became two of the most intensively used national forests in the country as millions of visitors interested in a variety of pursuits used them in their leisure time. Perhaps the two most historically significant themes of this period can be seen in the effort of Forest personnel in promoting skiing and in dealing with the problems associated with soaring recreational demands and urban pressure.

Skiing Comes to Utah

Members of the Forest Service have furthered recreation use and enjoyment in Utah at many levels. Nowhere is there contribution more important than in their efforts to promote skiing as a winter sport. Suring the 1930s, 1940s and 1950s personnel of the Wasatch and Cache National Forests were instrumental in bringing the sport to Utah and in working with various organizations to develop resort sites, particularly at Alta, Brighton, Solitude, Snow Basin, and Beaver Mountain.

Local Forest officers have served as advisors, promoters and consultants. They helped improve roads and highways to winter sports sites, pioneered safety techniques and worked (although unsuccessfully) to bring the Winter Olympic Games to the state. In short, they helped bring and then sustain an industry that has not only provided hours of leisure activity for local citizens, but has brought millions of dollars

to Utah as visitors from other states and countires have flocked here to enjoy skiing. The actual role of the Forest Service in promoting and developing this winter sport are particularly evident at Alta.

Alta

Cooperation is the key word for describing the beginnings of skiing at Alta as well as at other areas throughout the state. Personnel of both the Wasatch and Cache National Forests consistently followed a careful policy of working with civic groups, ski clubs and private individuals in first identifying the growing interest in the sport and then working to develop the industry.

Interest in skiing as a form of recreation was evident in America as early as 1904 with the organization of the National Ski Association. Locally the sport began to intrigue a few hardy souls, and a few years later the Norwegian Young Folks Society sponsored ski trips in the state, while students at the Agricultural College held winter carnivals.

The sport was in its infancy. Technological developments were primitive, access to potential ski areas was nonexistent or limited, and avalanche hazards prevented the full-time development and utilization of the sport. The situation began to change for the better in the 1930s both on the national level and in Utah. When the first chair lifts in the country were built at Sun Valley, Idaho, Utah citizens and government officials were quick to see the possibility and financial rewards of pursuing similar developments in the beehive state.[55]

Skiing facilities had been constructed in Brighton a bit earlier, but the earliest large-scale developments to build chair lifts were at Alta, the site of the once busy mining community. Anthony Bowman has done a fine study of the area, "From Silver to Skiis: A History of Alta, Utah, and Little Cottonwood Canyon, 1847-1966," in which he describes the beginnings of skiing there. While other sources have been consulted to detail the story of skiing elsewhere on the Wasatch-Cache National Forest. Bowman's study provides the basic framework for the events at Alta.[56]

In the 1930s George H. Watson, the self-appointed Mayor of Alta (then a sleepy ghost town) watched the developments at Sun Valley with

special interest. A skier himself, Watson thought that Alta could do for Utah what Sun Valley was doing for Idaho, and began to collect information about ski resorts throughout Europe and the United States. During this same period the Wasatch National Forest, using labor supplied by the CCC and Works Progress Administration, developed all weather roads to the general vicinity of Alta. Much impressed with the Sun Valley developments, the Wasatch Forest also began considering the merits of adding winter recreation to the more traditional forms of summer time use.

In 1937 the general interest in skiing coalesced further with almost immediate practical results. The area of the potential ski resort was crisscrossed with a multitude of mining claims. Thus the first step was to transfer and consolidate the titles to one agency able to oversee skiing development. After Supervisor James E. Gurr, of the Wasatch, consulted the national and regional offices, he apparently informed Watson and others that the Forest Service would develop Alta as a skiing site, but that the offer was contingent upon the land being owned by the federal government and placed under the direct jurisdiction of the Wasatch National Forest. With this assurance, events moved rapidly. The Salt Lake Tribune reported that on May 6, 1937, Watson deeded 700 acres to the federal government with Supervisor Gurr acting on the government's behalf. Within a short time the Wasatch National Forest received 900 additional acres in the area as William O'Connor of the American Smelting and Refining Company (himself a skier) as well as several other mining companies deeded parcels of land to the federal government.

As soon as the land was donated to the Forest Service, work was begun to finance and then construct a ski lift. Salt Lake City businessmen who were ski enthusiasts and farsighted enough to realize what the sport could mean in revenue, formed the Alta Winter Sports Association to facilitate the project. Less than two years after Watson had turned parts of Alta over to the Forest Service, the association had raised several thousand dollars to build the lift, and had obtained a permit from the Wasatch National Forest to construct a lift up Collins Gulch.

The Collins lift which began operations in the winter of 1938-1939 could accommodate 400 skiers an hour. Interestingly enough, this first ski lift in Utah, reflected the region's mining heritage. An aerial

mining tramway that had previously operated at Alta was relocated and the machinery was used in the ski lift.

Credit for developing Alta as a winter sports site belongs to such enthusiasts as "Mayor" Watson, members of mining companies, business organizations, the Alta Winter Sports Association and its president W. O. O'Connor and to personnel of the Wasatch National Forest, such as James Gurr, who were willing to promote this type of use on a national forest. During Alta's new existence as a ski resort, the Forest Service has continued to sustain the sport by improving facilities and enhancing safety conditions. According to Bowman, Wasatch personnel supervised the CCC crews who built Snow Pine Lodge around 1940, and decided to preserve the area's unique local history by using the old ore lockers of the Emma Mine in the rooms on the lowest level. In addition Wasatch personnel continued working with other agencies to improve road and highway access to the area.

"White Death" and the Alta Avalanche Study Center

While Wasatch Forest officials are proud of their efforts to develop Alta as a winter sports area, perhaps their most important contribution came in furthering safety conditions there, and throughout the nation. As soon as Alta was under the jurisdiction of the Forest, the Forest Service became responsible for public safety conditions. In fulfilling this responsibility to its public, the organization had to combat avalanche hazards. The area had a long and tragic history of avalanche related deaths, and even before the Collins Lift was constructed, the Forest Service formally instituted scientific investigation at Alta that would help it combat the danger and provide data for others interested in coping with avalanche hazards.[57]

Initially the Forest Service used negative control methods, and after identifying hazardous areas closed the potential avalanche sites to the public. During the late 1930s and early 1940s snow rangers would determine snow stability by crossing the slopes on skis or by detonating hand explosives. Immediately following World War II more sophisticated control methods were introduced. In the winter of 1945-46, Supervisor Felix C. Koziol (Kozy) supported the introduction of technology to control

and study avalanche conditions. Koziol, an avid skier himself, was interested in wartime developments that he felt could be used at skiing sites to enhance safety. In Europe artillery had been used to trigger slides, and test snow stability and Koziol was instrumental in hiring Monty Atwater who had learned the technique with the U.S. Mountain troops during the war.[58]

At this time the Wasatch National Forest obtained 75 mm pack howitzer artillery for use in Alta in a cooperative arrangement with the Utah National Guard. In 1950 the first 75 and 105 mm recoiless rifles were used. This artillery concept of avalanche control, although borrowed from Europe, was employed for the first time in the United States at Alta.

Overall, the control methods used here have significantly reduced the avalanche hazard and have made the site safer for millions of skiers. In most cases, skiers who have been caught in the treacherous slides have ignored safety warnings. In 1941, for example, when the only control method at Alta involved posting signs and closing the area to the public, one skier ignored the bright orange warning sign, crossed the middle of Greeley Hill and triggered a slide that led to his death.[59]

In their efforts to study and promote safety conditions, the Alta Avalanche Study Center, kept detailed weather records, compiled and collected data about avalanches at Alta and throughout the nation, and published bulletins to foster scientific knowledge and understanding of the hazard. In the 1960s Snow Avalanches: A Handbook of Forecasting and Control Measures produced at the center, was not only available throughout this country, but was translated into Russian as well.

In compiling data about avalanches at Alta, the center constantly reevaluated traditional control methods and pointed out areas for improvement. On March 7, 1964, for example, snow rangers had shot the steep chutes on West Rustler with a 75 mm recoiless rifle, but had triggered no slide. Skiing was then allowed and about three hours later, although the chute had been both shot and skied, a skier dislodged an avalanche that swept him almost four hundred feet down the face of West Rustler. Fortunately the skier was not injured, and studies later done about this avalanche questioned the effectiveness of using the 75 mm artillery shell as opposed to the 105 mm.[60]

The use of technological advances to prevent uncontrolled avalanches often entailed special risks, and personnel on the Wasatch had to develop additional safety procedures. In 1966 the Forest Service fired 1150 rounds of ammunition to release avalanches on Peruvian Ridge, Albion Basin, Snowpine, Superior, Hellgate, Flagstaff and Grizzly Gulch. Of this veritable bombardment, not fewer than thriteen rounds failed to explode. In an effort to prevent their future explosions, the target areas were pinpointed on a map. Although large snow banks initially hampered efforts to retrieve and destroy the misfires, District Ranger H. Ames Harrison directed crews in the summer of 1967 in collecting and destroying the ammunition.[61]

Thus, careful attention to safety procedures has characterized Wasatch personnel in their attempt to reduce hazards at Alta. In addition the reserach and scientific investigations there have furthered understanding of avalanches throughout the nation and the world, and constitute a significant achievement on the part of Forest Service personnel.

Other Ski Sites and Supervisor Felix C. Koziol

During the 1930s the growing interest in skiing had a continuing impact on the Wasatch National Forest. Brighton, like Alta, had a long history of mining and summer recreation use, and was also the site of deep, powdery snow during the winter months. Consequently, early promotional developments were similar to those we have just observed at Alta. In the mid 1930s a summer home was converted into the Alpine Lodge, and Fred Launer who operated the building worked with others in 1936 to construct a homemade "T" bar tow for the Alpine Ski Club. During World War II, however, skiing declined in the area, and it was not until Koziol became supervisor of the Wasatch National Forest that the first chair lift was built. Throughout 1946 Koziol worked to develop Brighton's ski facilities along with K. Smith (who had earlier purchased the original "T" bar and leased the Alpine Lodge), Dr. Gary White and Leonard Brennan, all members of the Brighton Recreation Corporation. A few years later, Koziol, who frequently skied at Brighton, supported the efforts of Zane Doyle and Willard and Dean Jenson to construct the Mount Majectic Double Chair Life. By the time Koziol retired from the Forest Service in 1964,

the facilities at Brighton included three chair lifts, one "T" bar lift, lodging for over 150 people and offered skiing lessons at the Brighton Ski School under the direction of Smith.[62]

Koziol also helped promote the ski industry on sites elsewhere in the boundaries of the Wasatch National Forest. He and Alf Engen, the prominent ski champion, worked to develop a ski area near Ogden. Again the story is much the same as at other winter sport sites throughout the state, with cooperation forming the major theme. Earlier, Wheeler Basin had been rehabilitated and protected through the joint efforts of Forest Supervisor Arthur G. Nord, the Ogden Chamber of Commerce, and the municipal and county governments. Koziol, Engen and others felt that the area was particularly suitable for a ski site, and again worked with private citizens, the Ogden Ski Club and local government agencies to promote it. In 1940 the Ogden Chamber of Commerce sponsored a contest to name the winter sports site, and Mrs. C. N. Woods contributed the winning name--Snow Basin.[63]

The Forest Service provided practical help as well as supporting the idea at its inception, primarily through the efforts of Koziol. Besides using CCC labor to construct the first ski shelter and construct roads, Cache personnel cooperated with Ogden City to clear the ski runs, and even sparked increased summer recreation use by constructing picnic and camping facilities.[64]

Development of other ski resorts and areas throughout the scattered boundaries of the Wasatch-Cache mushroomed during the ensuing years. The Seeholtzer family of Logan received a permit from the Cache National Forest to operate the ski lift at Beaver Mountain and the official dedication ceremony was held on February 10-11, 1951. Ski development continued in the canyons adjacent to Salt Lake City, and Solitude began operations in the 1950s.[65] Park City and other private land sites have subsequently been developed.

The birth of Utah's ski industry owes much to the personnel of the Wasatch and Cache National Forests. They were instruemental in supporting skiing as a major recreational sport in the early 1930s and helped contribute to the sport's phenomenal growth from 1935 to the present, by developing facilities at various ski sites, and by cooperating with several diverse interest groups to create, sustain and promote the industry's

development. In the story of skiing on the Wasatch and Cache National Forests, several individuals, organizations and interest groups played important roles; it was largely through cooperation that the skiing came to Utah and was developed as an important revenue generating industry. While the efforts of many individuals were necessary, the role played by Felix C. Koziol in his long tenure as supervisor of the Wasatch, was particularly noteworthy. While he served in this capacity, winter sports use soared on the national forests in Utah, in part due to his cooperation, encouragement and wholehearted approval.[66] Adept at public relations and possessing finely developed administrative skills, he participated in a variety of organizations, inclucing the Salt Lake Chamber of Commerce, the Governor's Committee for Tourism in Utah, and the 1952 Olympic Ski committee. He also served as vice president of the National Ski Association as well.[67]

His awareness of how important community and public relations were can also be illustrated by a few references to Forest Service records and local newspapers. In 1959 the fifty-eight year old Forest officer, never content with his administrative and organizational work, took on a physically active role in trying to promote the development of a ski area in Davis County. Koziol, Robert Safran, Wasatch recreation director, and Salt Lake District Ranger Julian Thomas, hiked into the area behind Bountiful Peak with Dennis Shattuck, a sports writer for the Tribune. Shattuck later wrote an article describing the potential ski area and credited Koziol with coining a picturesque name "Big Sky." In addition, the article contains the writer's wry assessment of the dedication of Forest officers willing to spend several hours one winter day hiking into and investigating a potential ski site. After completing the ardous hike, the writer concluded, "Forest rangers generally are nice people--but never go hiking with them. A determined lot, all they can think about is where they're going and getting there as fast as possible."[68]

Such banter aside, Koziol's attention to obtaining good press dominated all aspects of his endeavor to promote skiing. In April of 1964, just a few months before he retired, he sent the traffic count figures compiled by Wasatch personnel for Big and Little Cottonwood canyons to John W. Gallivan, publisher of the Salt Lake Tribune. Instead of just listing the figures, Koziol took the opportunity to write a warm,

personal letter of "Jack" explaining the numbers and expressing the hope that recreational use on the Wasatch, particularly winter sports in the Cottonwood canyons could "be the subject of a news story."[69]

As supervisor of the Wasatch, Koziol was also interested in developing recreational facilities for summer and like many in the Forest Service, was concerned that the aging campground facilities constructed by CCC labor desperately needed maintenance. Fully aware of the recreation demand he was helping to create in Utah, Koziol also supported "Operation Outdoors", helping to explain this new general policy of the Forest Service to the public and fervently believed that it would be a lasting improvement that the Forest Service could make to the state.[70] During his final years as supervisor, new sites were developed and transportation access was improved, especially with the completion of the Mirror Lake Highway in the fall of 1960. With this highway, recreation and hunting use of the Kamas and Evanston Districts soared, and throughout the entire boundaries of the Wasatch recreation visits grew steadily. Statistics compiled at regional headquarters indicate that almost 3,000,000 recreation visits were recorded in 1962, and by 1963 the Wasatch National Forest ranked third among the country's 154 national forests in recreation use.[71]

This impressive growth and the culminative efforts of Forest Service personnel in trying to meet it cannot, of course, be attributed to one man. With Operation Outdoors and then the passage of the Multiple Use-Sustained Yield Act of 1960 which recognized recreation as a fully legitimate use of forest lands, the Forest Service demonstrated its committment to recreation. But within this national trend, Koziol played an important role in furthering the cause of recreation use and development in a key western state. This contribution was recognized in a special way, even after he retired from the Forest Service, when Governor Calvin L. Rampton realized his abilities and appointed him Director of the Division of State Parks and Recreation. In that post he continued to make important contributions until at least 1969. When he died in 1976 the Salt Lake Tribune ran an editorial entitled "Kozy: Utah Benefactor", a fitting epitaph.[72]

A Paradox: Growing Use and Continuing Problems

Although the explosion in leisure time use with its opportunities for public service and resource utilization was in keeping with the most fundamental goals of the Forest Service, it raised problems of almost unmanageable magnitude. As environmentalists were quick to point out, there was a distinct danger of "loving the wilderness to death." For the Wasatch-Cache National Forest of the 1960s and 1970s, it was, in large part, a matter of sheer numbers and the resulting housekeeping problems. In part, the matter of numbers reflects the continuation of a trend for Utah's population to concentrate itself along the Wasatch Front in what were essentially urban conditions. Population growth in the post World War II era surged ahead of the national norm, although less dramatically so than in some other western states. In this process of growth an always strong tendency to urbanize was even more dramatic, running well ahead of the national trend. For example, in 1960 some sixty-seven percent of all Utahns lived in cities. By 1970 the number had increased to nearly eighty-one percent. Nationally, for the same period, the change had been from sixty-six percent to 73.4 percent.[73] Surveys indicate that for both rural Utahns and immigrants, the social tensions growing from the move to Utah's cities has been eased by a turn to the out of doors, with the result that a large percentage of the state's 1.4 million people make some use or other of neighboring forests. The resulting growth of recreational activities by residents has, until very recent years of the energy crisis, at least, been complicated by the tourist industry which, as we have seen in the discussion of skiing, has drawn millions of people onto the state's forests.

In what has consequently been a revolution of sorts, the Wasatch-Cache National Forest has been confronted with day to day administrative tasks of major proportions. Watershed abuse, littering, sanitation and resource damage are daily problems. With hundreds of thousands of hunters and fishermen taking to the mountains and streams, man-caused forest fires have increased with tragic consequences, In 1964, for example, at least forty-seven fires were caused on the Wasatch Forest by hunters who left morning campfires untended. Of almost unprecendented

consequences for Utah forests, were the Lily Lake and Broadhead Meadow fires of 1980, in which approximately 5000 acres of Wasatch Forest woods were devastated. Both were apparently man caused. But almost more than these major calamities, the problem is one of disposable diapers left in mountain streams, the use of caves for restroom facilities and the problem of disposing of mountains of refuge generated by heavy use generally.[74]

Efforts to combat such problems in recent years have been hampered by shrinking appropriations for operation and maintenance. Thus, in their efforts to cope with the problem, Wasatch-Cache personnel have been thrown onto their own resources and innovation. Among other thing, efforts have been made to educate the public to higher standards for cleanup and sanitation. In certain campsites, for example, campers have been left to bring out their own refuge with fairly good results that may not be altogether appreciated by state highway cleanup crews and service station attendants. Elsewhere, greater efficiency has been achieved by paying close attention to the voice of those most intimately connected with the problem. An example is Ranger Marvin Combs, of the Mountain View District, who in 1966 suggested that the Forest Service could save money on removing liquid wastes from campgrounds and ranger stations by constructing tanks from surplus materials. Combs built a prototype pumper unit himself to demonstrate the practicality of his idea and forwarded the suggestion to the regional and national offices. At the same time, H. Ames Harrison, timber management and fire control officer on the Wasatch (and later Salt Lake district ranger) made a suggestion that the Forest Service should distribute plastic bags to visitors when garbage cans were not available in the area. Like Comb's, Harrison's suggestion was adopted by the national organization, and both men received cash awards for their work.[75]

Vandalism

One of the most difficult problems, and perhaps the hardest to understand, involves vandalism. This malicious destruction of Forest facilities has imposed a serious drain on Forest Service funds and personnel time, and has been a chronic problem during the last two decades.

A continuing problem has been the mutilation of Forest Service signs by gunfire. Restroom destruction, repeated break-ins at summer homes, and vandalizing of campgrounds, guardrails, and fireplaces are among the repeated offenses.[76]

A study done on the Cache National Forest in the early 1960s pinpointed the monetary waste that vandalism entailed. Costs for repairing the damage inflicted by vandals in one year was enough to pay for the construction of a ten unit campground.[77] In hopes of dealing with the problem by law, Forest officials began to prosecute violaters more frequently in the 1960s. Perhaps by examining one vandalism case in detail the difficulties posed by this continuing problem can be illustrated.[78]

On May 10, 1968 some fourteen youths, ranging in age from seventeen to twenty years of age, seriously vandalized the Terrace Pines picnic area, and inflicted over two hundred dollars worth of damage. After breaking the lock on the Forest Service cable closing the area to the public, various members of the group destroyed restroom facilities, using the shingles to start a fire. About 11:30 that evening when three of the teenagers were leaving, they were apprehended by Recreation Guard David W. Wright. The Forest officer called Salt Lake District Ranger H. Ames Harrison who immediately contacted the sheriff. The district ranger joined Wright on the scene about forty-five minutes later, and both men took down license numbers as other members of the group began to leave. When the sheriff arrived about 1:30, the two Forest officers had already inspected the damage, and turned over the license numbers. Forest personnel spend a substantial amount of time working on the various aspects of investigation, prosecution and counseling. The drain on personnel time thus expended constituted a "cost" of the vandalism that was never estimated.

Certain aspects of the ensuing legal case received publicity, and allow us to get a fuller picture of just what problems the Forest Service confronted. With the cooperation and approval of state and county law enforcement officials, Harrison met with Judge R. Child, and recommended that the suspects, if found guilty, be billed for the material destroyed and perform restitution by working on some forest work projects. When the court session was held, and after all fourteen defendents pleaded

guilty, Judge Child asked each person if they were willing to accept a suspended sentence by paying for the damage and performing some work. When all the individuals accepted, it seemed as if a satisfactory solution had been found. Although the way Wasatch personnel handled the matter and their recommendations were praised by many of the parents and in the local papers, problems continued--especially the drain on personnel time.

A report filed by one Forest Service employee described the outcome of a single and unhappy day he spent supervising four of the convicted youths on the Elbow Fork Trail. His handwritten, five page report documents some of the problems he faced in trying to get the boys to clip vegetation from the trail, level the path and perform general maintenance work, and attests to at least one man's opinion of the value of restitution projects.

> I had to yell at them all day long to either get to work, or to stop doing some crazy thing or other. [He] started the tom foolery by rolling rocks down the mountain and we were above the Maple Grove Picnic area too. I told him in no uncertain terms to stop it; that there was a picnic area below and he countered by saying "good I hope I killed somebody." . . .
>
> All day long, I had [to] keep yelling at them, because of some fanatical misdeed or another . . . .
>
> Everytime (practically) I came back to check on them and to give them another job to do, I would find them sitting down . . . .
>
> On several occasions [he] threahtened [sic] to put a pick or shovel through my hard hat (jokingly of course) and threatened to push me off the trail or roll a rock down on me. [They] would make snide remarks about me such as "fatty," "paunchy," etc. and continually tried to "get my goat" by making derisive remarks about the government and the Forest Service . . . .
>
> I feel that we did not get a days work out of them and it was a waste of my time and surely was a regretable experience on my part.

After detailing all these frustrations, the report closed with a bitter note. The Forest Service employee stated his belief that one of the boys who was currently involved in an officer training program at the University was not fit material to represent the United State as an officer and . . . [should] be dropped from this opportunity."

Vandalism has continued to pose a serious problem on the Wasatch-Cache National Forest, and disrupts recreational use and enjoyment.

Despite publicity campaigns, warnings, fines, legal cases and restitution projects, the problem has grown over the years, especially along the Wasatch Front where a highly urbanized population is only minutes away from recreation sites.

A Diverse Clientele

Other problems besides fire, littering and vandalism surfaced as recreation boomed in the 1960s and 1970s. Environmentalists and nature enthusiasts objected to developments such as highways and increased summer home construction. For example, efforts to alter and improve Highway 89 through Logan Canyon during the last two decades touched off an enduring and at times bitter controversy. Charges that earlier highway construction has destroyed fishing holes, damaged game habitat and has lessened aesthetic quality are met by equally vocal concerns about safety conditions that would be improved if parts of the winding highway were straightened.[79] In many ways the Forest Service is caught in the middle between varied interest groups. Cross country skiers and snowmobilers compete for Forest areas, sometimes engaging in dangerous confrontations. The demands of one group that the Forest Service restrict another entails an angry chorus of criticisms in response. Similarly skiers demand improved facilities, yet when the Forest Service issues permits to construct a ski lift, environmentalists file suit protesting that removing trees in the area of the potential site damages the fragile eco-system. Thus, protests become a vicious circle as Forest Service officials try to enforce regulations concerning forest use and are met by charges of "government interference" as various angry publics are denied access to a favorite camping site, or prohibited from lighting campfires, or barred with motorcycles or fourwheel drive vehicles from long used trails and roads such as the Wellsville Crest Trail or the Bunchgrass Road in Logan Canyon. Forest personnel are confronted by an almost bewildering array of problems that range from malicious acts of vandalism to sincere objections based on opposing philosophies of resource management.

Shrinking funds, the sheer magnitude of maintenance problems, burgeoning paperwork, envirnmental studies, legal battles and other

problems associated with intensive recreation have become the almost ironic themes associated with managing recreation as a public resource. In addition, a growing environmental awareness within the Forest Service and in parts of the public it serves, may mean that the Wasatch-Cache National Forest will be entering a new era of recreation use that will make it historically different than in earlier years. Whether or not this is so depends on complex factors, including energy supplies, national directives, funding, the evolution of land management policies and the changing demands of extremely diverse and sophisticated clienteles.

While it is impossible to predict the future of recreation use on the Wasatch-Cache, several themes which have been important in its recent past may be briefly reiterated here in summary. Recreation has a strong tradition in Utah, a fact local Forest officers recognized as soon as the first national forests were established. Efforts to provide recreational facilities began in the first decades of the national forests' existence. By the 1930s Forest personnel were taking an active role in promoting the development of winter sport sites as well as constructing additional ones for summer use. Whether or not recreation on the Wasatch-Cache National Forest will continue in the same forms as it has in recent years, depends primarily on growing ecological awareness, but the important point must be made that the Forest Service has made vital contributions to the growing West as it has met the intensive and often conflicting demands of diverse recreation clienteles during the last seven decades.

CHAPTER IX

NOTES

[1]Quoted in Utah's First Forest's First 75 Years (Provo: 1972), p. 16.

[2]Deseret News, July 18, 1856.

[3]Asa R. Bowthorpe, "History of Pioneer Sawmills and Local Canyons of Salt Lake Valley," (1961) in Forest History Wasatch, 2 binders, Wasatch-Cache National Forest, I.

[4]Much of this story is taken from Lee Kay, "4th of July Celebration at Alta," Salt Lake Ranger District. Kay notes that his account is a revised draft of an article appearing in the Salt Lake Tribune in June of 1957.

[5]A. F. Potter, "Report on the Proposed Salt Lake Forest Reserve, Utah, 1904," L-Boundaries, Wasatch, 1909 and Prior, Denver Records Center, (hereafter DRC).

[6]Ibid.

[7]Ibid

[8]Ibid.

[9]Bowthorpe, "History of Pioneer Sawmills."

[10]Dennis J. Moses, "Transportation and Road Development in Logan Canyon," Utah State University Library.

[11]Ruth Clayton, "The History of Recreation Residence Building in Logan Canyon," Utah State University Library; for the decline of Tony Grove see Newell Croakstore, "Reminiscing of Logan Canyon," Utah State Library, p. 11. Oral reference is also frequently made to the tradition. For the reference to Hopkins Rice, Logan District Ranger, we are indebted to another early ranger, Bryson Cook of Nibley, Interview August 25, 1980.

[12]Hack Miller, "Fishing in Utah," in William F. Sigler and Robert Rush Miller, Fishes of Utah (Salt Lake City, Utah: Utah State Department of Fish and Game, 1963), pp. 10-11.

[13]Osborne Russell, who trapped in what is presently southern Idaho and northern Utah in the 1930s told of a great decline in Buffalo numbers and of grass growing over their unused trails. See Journal of a Trapper 1834-1843, edited by Aubrey L. Haines, Bison Book edition, (Lincoln: 1955) p. 123.

[14]Hartt Wixom, Fishing and Hunting Guide to Utah (Salt Lake City: 1974), pp. 129, 145; Glen H. Shagren, "Man in Logan Canyon: History of the Development of Hunting, Fishing and Skiing as Recreation," Utah State University Library.

[15]Alexander Toponce, Reminscences of Alexander Toponce: Written By Himself, new edition, with an Introduction by Robert A. Griffen (Norman: 1971), p. 162.

[16]Shagren, "Man in Logan Canyon," p. 11.

[17]Harold K. Steen, The U. S. Forest Service: A History (Seattle: 1976), pp. 113-122; Samuel Trask Dana, Forest and Range Policy: Its Development in the United States (New York: 1956), pp. 188-89, 227-28.

[18]Gifford Pinchot, Breaking New Ground (New York: 1947), p. 71.

[19]Quoted in Joe Mincolla "The Evolution of Outdoor Recreation Policy in the U.S. Forest Service," Seminar Paper, History Department, Utah State University, 1979.

[20]Ibid.

[21]Press Clippings, Logan Ranger District.

[22]Ibid.

[23]Wasatch National Forest Scrapbook, 1908-1910, Wasatch-Cache National Forest.

[24]Melvin L. Anhold, "The Development of Recreational Use on the Wasatch National Forest," 1964, Forest History Wasatch, II. Also see K. E. Barraclough, "The Development of Recreation By the Forest Service in the Big Cottonwood Canyon, Utah," Empire Forester 7 (1921): 20-22.

[25]Clayton, "History of Recreation Residence Building."

[26]Press Clippings, Logan Ranger District.

[27]Logan Journal, August 25, 1914.

[28]Shagren, "Man in Logan Canyon."

[29]R-4 Statistics and Other Information, Book One. This copy was obtained from the Grazing Division, Region IV.

[30]Quoted in Ray A. Billington, "Frederick Jackson Turner and Logan's National Summer School," Utah Historical Quarterly 37 (1969): 319.

[31]Ibid., p. 326.

[32]Ibid., p. 335.

[33]Summit County Bee, February 16, 1933.

[34]"Cache Playground," History Cache National Forest, compiled by Ralph B. Roberts, 3 binders, III, Logan Ranger District.

[35]Ibid.

[36]Steen, Forest Service, p. 25.

[37]Ibid., pp. 154-56; Donald N. Baldwin, The Quiet Revolution: The Grass Roots of Today's Wilderness Preservation Movement (Boulder: 1972), pp. 30-42.

[38]Kamas District Historical Files; Mel Davis, ed., High Uinta Trails (Salt Lake City, Utah: 1974), pp. 7-9.

[39]Clyde Brian Hardy, "The Historical Development of Wasatch Trails in Salt Lake County" (M.A. thesis, Brigham Young University, 1975), p. 108.

[40]Ibid., pp. 109-10.

[41]Ibid., p. 112.

[42]Kenneth W. Baldridge, "Nine Years of Achievement: The Civilian Conservation Corps in Utah" (Ph.D. dissertation, University of Utah, 1971), p. 41.

[43]"CCC Camp Operations, Fiscal Year, 1933 and Fiscal Year 1934," in History Cache National Forest, I; Baldridge, "The Civilian Conservation Corps in Utah," pp. 42, 73.

[44]Baldridge, "The Civilian Conservation Corps in Utah," pp. 42, 73.

[45]Ibid., pp. 189-90; Anhold, "Development of Recreational Use."

[46]Logan District Historical Files; Salt Lake District Historical Files.

[47]Baldridge, "The Civilian Conservation Corps," pp. 222-30. For problems regarding boundary adjustments and jurisdiction between the Department of Interior and the Cache National Forest (Department of Agriculture) see Pineview Addition Folder, Wasatch-Cache National Forest Historical Files.

[48]A. D. Taylor, "Problems of Landscape Architecture in the National Forests: Report to the U.S. Forester's Office on Trip of Inspection through some of the National Forest areas in Regions 2, 4, 6 and I, 1935," p. 4. A hardbound copy of the report is at the Intermountain Forest and Range Experiemnt Station.

For another useful study of this period see Kenneth O. Maughan, Recreational Development in the National Forests: A Study of the Present Recreational Use and a Suggested Plan for Future Development Together with a Recreational Management Plan for the Wasatch National Forest, New York State College of Forestry, Bulletin No. 1-A, 7 (1934).

[49]Taylor, "Problems of Landscape Architecture," p. 65.

[50]Ibid., p. 73.

[51]Ibid., p. 80.

[52]Ibid., p. 267.

[53]Ibid., pp. 138-39.

[54]Ibid., p. 266; Mincolla, "Evolution of Outdoor Recreation Policy," p. 20.

[55]Mark Heller, ed., The Skier's Encyclopedia (New York and London: Paddington Press, 1979), pp. 1-33; Shagren, "Man in Logan Canyon," pp. 19-20.

[56]Anthony Will Bowman, "From Silver to Skis: A History of Alta, Utah, and Little Cottonwood Canyon, 1847-1966" (M.A. thesis, Utah State University, 1967), pp. 68-75, 82-83.

[57]Bowman places the number of avalanche-related deaths between 225 and 250 for Little Cottonwood Canyon between 1865 and 1915. See p. 76.

[58]Ibid., pp. 76-80; Interview with Robert Safran, Ogden, Utah, June 20, 1980.

[59]Dale Gallagher, ed., The Snowy Torrents: Avalanche Accidents in the United States, 1910-1966 (Wasatch National Forest, Salt Lake City, Utah: Alta Avalanche Study Center, 1967), pp. 13-14.

[60]Ibid., p. 100; Bowman, "From Silver to Skis," p. 81.

[61]Deseret News, July 4, 1967.

[62]Robert D. Yates, "From Pioneers to Skiers . . . Brighton, Utah," (1963), mimeographed copy in Wasatch-Cache Historical Files, Wasatch-Cache National Forest. Yates notes that the article is "from information in an article written by Stella Brighton Nielsen, grandaughter of William Stuart Brighton and through the cooperation of the Utah State Historical Society."

[63]"Snow Basin," Cache National Forest Folder, Region IV, Ogden, Utah. Also see documents in Roberts, History of Cache National Forest, III.

[64]Documents in Roberts, History of Cache National Forest, III.

[65]Ibid. For a detailed treatment of the ski area at Beaver Mountain see Shagren, "Man in Logan Canyon," pp. 19-29; "Winter Sports Areas," Roberts, History of Cache National Forest, III.

[66]In 1963, for example, visits to Alta, Brighton, Solitude, Snow Basin and Beaver totalled over 600,000. See Five Winter Sports Sites Along the Wasatch Front Within the Cache and Wasatch Folder, Wasatch-Cache Historical Files, Wasatch-Cache National Forest.

[67]Salt Lake Tribune, November 28, 1964; Deseret News, August 5, 1976.

[68]Salt Lake Tribune, March 15, 1959.

[69]Traffic Count Folder, Wasatch-Cache National Forest Historical Files.

[70]For a brief overview of Operation Outdoors and fairly recent changes in Forest Service recreation policy see Steen, Forest Service, pp. 311-14.

[71]Kamas District Historical Files; Salt Lake Tribune, November 28, 1964; U.S. Department of Agriculture, National Forest Basic Facts-1962: Utah (Intermountain Region).

[72]Salt Lake Tribune, August 7, 1976.

[73]Richard D. Poll, and others, Utah's History, (Provo: 1978), p. 683.

[74]Press Clippings, Wasatch National Forest; also see Old Wasatch National Forest Press Clippings, 1966-68 Folder, Wasatch-Cache National Forest Historical Files.

[75]Deseret News, April 28, 1966.

[76]See, for example, Davis County Clipper, April 15, 1966; Morgan County News, July 24, 1970; interview with Lois Moser, summer home owner, Logan, Utah, June 9, 1980.

[77]"Changes in Multiple Use Concepts and Management," History Cache National Forest, I.

[78]The material on vandalism in the following pages has been extracted from several reports contained in Terrace Picnic Area Folder, Wasatch-Cache National Forest Historical Files.

[79]See, for example, Moses, "Transportation and Road Development in Logan Canyon." Jack Berryman, "Logan Canyon Road Controversy: Anatomy of a Principle," National Parks 37 (1963): 12-15; George Alderson, "Logan Canyon: Standards for Destruction," National Parks 43 (1969): 18-20; see also Herald Journal, September, 1980 for an example of the tension generated over the Logan Canyon proposal.

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Bibliographical Note In the early 1960s A. R. Standing reviewed R-4 National Forest histories and prepared an analysis and general bibliography on each National Forest's historical files. He noted that while extensive records had been kept for the Cache National Forest, the records for the Wasatch were woefully incomplete. Standing was somewhat surprised about the condition of the Wasatch historical file and noted that despite the area's rich historical past "the file contains about the least amount of historical material of all the Forests in the Region."

The basic accuracy of Mr. Standing's assessment notwithstanding, considerable historical information has been found for both Divisions of the Forest. Both Divisions have historical binders in three parts which are divided according to various administrative themes. Ranger Ralph Roberts compiled the one for the Cache National Forest (History, Cache National Forest, 3 binders) in the late 1960s. In it is presented a vast amount of primary information, most of which has not been assimilated into an integrated account. By contrast, the historical binders for the Wasatch National Forest (National Forest Histories, Wasatch, 2 binders) is no more than the folders and an occasional document. The Cache Forest is useful and informative; the one for the Wasatch Forest is not.

Yet a great deal of historical information for the two Divisions of the Forest has been found. The primary source of information has been five boxes of historical information on the two Divisions. These were stored in the basement of the Federal Building in Salt Lake City at the Headquarters of the Wasatch-Cache National Forest and were returned there when this account was finished. Included in this collection are many items, but by no means everything that appears on inventories prepared during Mr. Standing's era. Several large photograph albums are included, but unfortunately many of these photos have nothing to do with either Forest. One album, however, is outstanding for its graphic presentation of early Wasatch Forest scenes. Two newspaper clipping scrap books also provide useful information on the earliest times. Many early reports and

boundary surveys have also survived. Substantial documentation on timber and range management, watersheds, boundaries, recreation and administration are also included. These represent files that have, one and another, been pulled for history far more than they do any consistently organized summary of the events that have characterized the past. Yet the foresters of the Wasatch and Cache National Forest have been aware of the need for written records from earliest times and as hit and miss as the method of their collection may have been, the materials in these five boxes comprise a useful point of beginning for anyone who would study any aspect of the Forest's past.

In addition to the records gathered in these historical boxes a variety of materials from other places have also been available. Two boxes of records dealing with land status and boundaries on the two Divisions from earliest times were made available by the Records Center in Denver. These provided the core of information that went into the chapter on boundaries. Covered are the earliest reports and surveys on which the creation of the various parts of the original Forests depended. Thereafter, folders trace the additions and changes by which the two Forests have developed and finally merged. Also useful in this respect were smaller collections of status files from the Regional Office in Ogden, the Supervisor's Office in Salt Lake City and the District Office in Logan. For timber, the files of the Evanston District were especially helpful. Included were materials on the tie industry on the north slope of the Uinta Mountains. The Regional Office and the Intermountain Forest and Range Experiment Station Library, along with the Ogden Ranger District Office, contain considerable information on the mud and rock floods of the 1930s and the land transactions and restorative programs that were applied in the face of this crisis. The Logan District Office and the Supervisor's Office also supplied supporting information. In terms of information on range management the 2210 folders of the active files on the various grazing allotments provided much historical data of a general sort. Approximately one-and-a-half boxes of the five boxes of Wasatch-Cache National Forest historical material dealt with range management and represent the best single source of information on grazing. Data collected by the Works Progress Administration's grazing history team in the 1930s is also of great usefulness. Recreation records also form

an important part of the records collected at the various levels. Especially useful in this context are newspaper clippings, which unfortunately are not always cited as to source and date.

In addition to these written sources, numerous individuals provided information orally. Important among these were the three Contracting Officer's Representatives who worked with the project, Frank Fuller, and G. F. Horton of the Wasatch-Cache National Forest and Ted Navritil of the Regional Office. Retired foresters who were interviewed one or more times include James Jacobs, Julian Thomas, Deloy Hansen, L. J. Colton, Kenneth O. Maughn, Bryson Jones and Owen DeSpain. Information from the Salt Lake Tribune, The Salt Lake Evening Telegram, The Logan Herald Journal and The Deseret News as well as weeklies published in communities where ranger districts were located helped document the story.

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