United States
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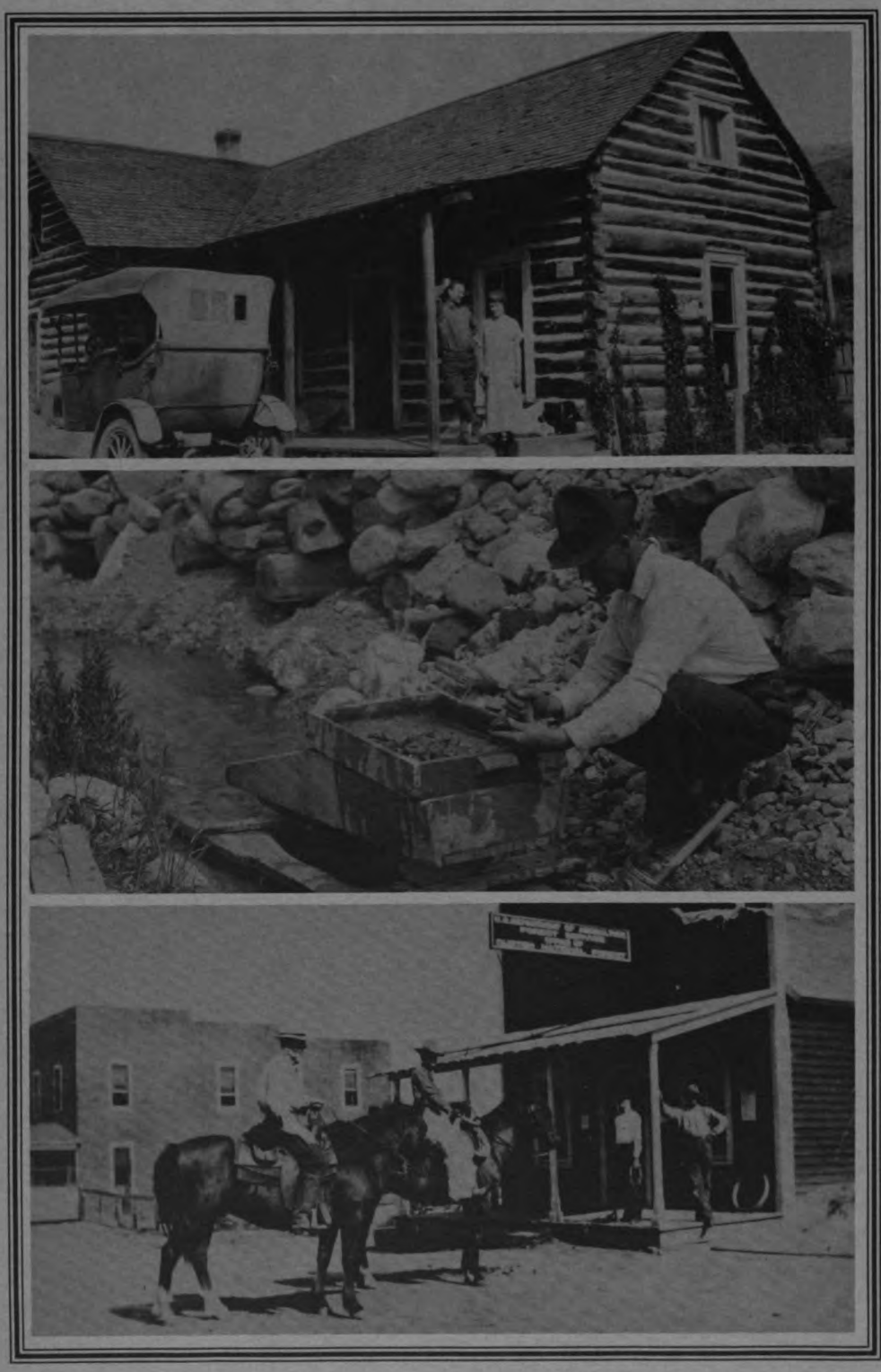
The National Forests of the Northern Region

Living Legacy—



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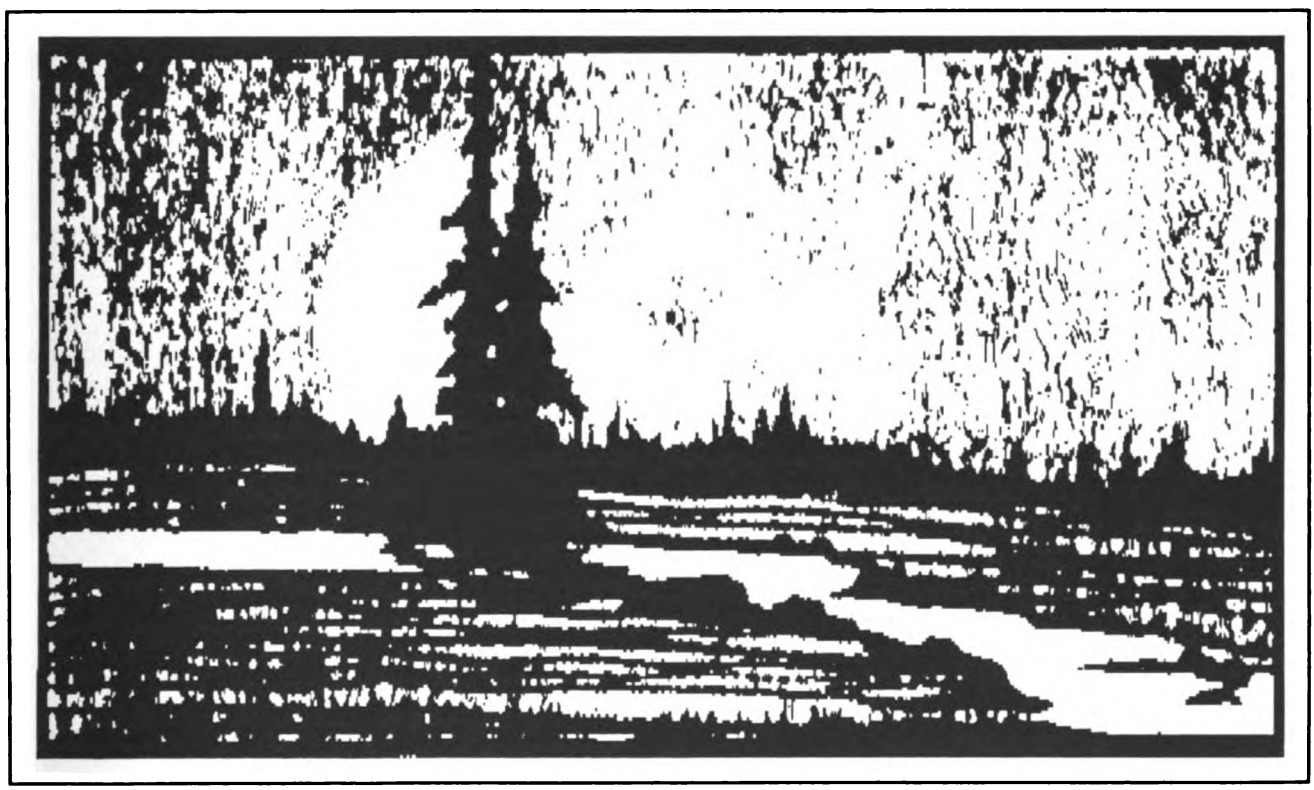
November 1993



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Preface

At the September 1989 celebration in Helena of the 100th Anniversary of the admission of Montana, Washington, North Dakota, and South Dakota to the Union, President George Bush said that once "where man sought the treasure that lay beneath the Earth. And today it's the land itself we treasure—a living legacy we must preserve and pass along." The national forests of the USDA Forest Service Northern Region are a living legacy of the American people.

We have attempted to distill the essential elements of the "history as it happened" in the Northern Region and to present an informative, readable, accurate, and interesting story of the people and events. This history should help foster a better understanding among foresters of their work and mission. Hopefully, the interested public and diverse users of national forest resources will more fully comprehend the work of the Forest Service and its living legacy that is encompassed by the national forests of the Northern Region.

This history begins with the inception of the Forest Service's operations in the Northern Region. It then traces the social and economic development of the States most directly associated with the Northern Region and examines the historical changes that have occurred during the eight decades of direct Forest Service administration, from 1908 to 1988. The authors have concentrated on the changing aspects of resource management by the Forest Service.

The authors also sought to provide some insight into the hearts and minds of those who have managed the forests and, to some extent, to explain the needs and perceptions of those who use the Northern Region's forest resources. Region 1 provides a particularly vital and vivid historical model, representing changing needs and uses and the response by a large Federal agency whose charge from the start has been to conserve and manage forest resources for present and future generations.

The trust and responsibility for the management of those lands has been well placed. The foresters of the Northern Region have energetically and zealously sought to administer those lands to best serve the largest number of people in the wise use of those resources—not an easy task. Thus, the history here necessarily contains discussions that are controversial, but the reader should find the story informative and certainly interesting.

Although this history was completed under a USDA Forest History Unit contract that provided general guidelines as to the structure and length of the book, the authors were allowed to research and write the history as they determined it to be based on their research into archival, documentary, and secondary sources. They also benefited from numerous interviews, critiques of the Northern Region Retirees History Advisory Committee, and many letters and notes received from retired forestry personnel. This work is firmly based on documentary and primary sources, but the authors accept responsibility for those errors that may occur and for any omissions and perceived misconstructions. Four of the authors are historians, and one is a professor of forest science. All are published scholars and have previous experience in writing forest, timber, and regional history. Dr. Larry Burt, now head of the Division of Business and Social Sciences at the University of Science and Arts of Oklahoma, began the project as a professor of history at Northern Montana in Havre, Montana. He authored *Tribalism in Crisis: Federal Indian Policy, 1953—1961*, Montana history, and was Assistant Director of the American West Center. Robert D. Baker, professor of forest science at Texas A&M University, specializes in forest inventories, sampling, and aerial and satellite remote sensing as they relate especially to tax and management initiatives. He is coauthor of *Timeless Heritage: A History of the Forest Service in the Southwest* and, with Dr. Robert S. Maxwell, coauthor of *Sawdust Empire*. Dr. Robert S. Maxwell, professor

emeritus at Stephen F. Austin State University, specializes in the history of the timber industry and forestry. He is coauthor of *Timeless Heritage and This Well-Wooded Land,* among other publications. Victor H. Treat is associate professor of history at Texas A&M University; he specializes in regional and natural history. He also is a coauthor of *Timeless Heritage*. Henry C. Dethloff specializes in business and economic history. He is a coauthor of *Timeless Heritage, A History of American Business, Americans and Free Enterprise*, and other publications.

Acknowledgments

Collectively or individually, the authors of this work have participated in similar studies in the Southwest, the South, and now the Northern Region. In every instance, the participation and cooperation of those within the Regions have been critical. The foresters and staff of the Northern Region have been exceptional in their assistance and participation, and they have done so invariably in the critical spirit of "getting the story right." This work also has been facilitated by Judson N. Moore, the Regional History Coordinator, and Elizabeth L. Horn, Director of the Regional Information Office,

The authors have been uniquely assisted by the work, review, and advice of a special Northern Region Retirees History Advisory Committee, headed by Robert R. Milodragovich. The committee includes Jack Bennett (President of the Northern Rocky Mountain Retiree Association), Jack Puckett, Charles E. (Mike) Hardy, Anthony B. Evanko, Vern Thompson, Carl W. Wetterstrom, Dallas W. Beaman, and the late Henry J. Viche. The committee and other readers labored over the preliminary drafts of the manuscript and offered valuable direction and advice; however, this does not mean that they totally agree with the contents of the finished document. Their concern and considerable efforts are appreciated. The authors also wish to thank many people within the Region for sharing their information and views. They, too, may not approve or condone this work, but the authors are nonetheless grateful.

Neal Rahm, a former regional forester, played an important role in helping establish the general perceptions and approaches for the writing and research. Ray Karr offered insightful suggestions relating to the environmental controversies of the 1960's. Retired forester Bill Sharp assisted in developing the Civilian

Conservation Corps history. Zone archaeologist Milo McCleod provided useful early directions. The retired and active foresters from the Region listed under "Correspondence" or "Interviews" in the bibliography also provided valuable input.

During the course of the research, the authors visited each national forest headquarters and the Regional Office and were greatly assisted by the staff and personnel at every level. Forest supervisors who should be particularly acknowledged for their personal assistance include Frank E. Salomonsen (Deerlodge, now retired), the late Robert S. Morgan (Bitterroot), Robert S. Gibson (Helena), Curtis W. Bates (Custer), and Tom Kovalicky (Nez Perce). Many foresters and staff in the visited ranger districts provided their time and assistance, and the authors are truly grateful. Dr. Will Clark is particularly appreciated; he loaned the authors original source materials from the Custer National Forest library.

Major research collections used include the Federal Records Center collections and the National Archives Collections in Seattle, the Montana Historical Library in Helena, the University of Montana Mansfield Library in Missoula, and the University of Idaho Library in Moscow. The forestry collections at Stephen F. Austin State University in Nacogdoches, Texas, and the documentary and secondary resources of the Texas A&M University Library provided essential reference and documentary sources. Professor Dale Johnson, archivist at the Mansfield Library, has kindly consented to house the materials collected in the course of this study.

There are many others, unnamed here, who have the authors' heartfelt thanks for the assistance they provided. Especially appreciated is the response from the many retirees who agreed to provide anecdotes and experiences from their careers in the Region. Not all of these have been used in the manuscript, but they have

been preserved in the University of Montana archives. They have been acknowledged in the reference notes and in the bibliography.

The authors would also like to thank Regional Forester James C. Overbay (now Deputy Chief, USDA Forest Service) and former Regional Forester John W. Mumma as facilitators of this work. Last, but not least, the authors thank former Forest Service historian Dr. Dennis M. Roth for his critical review of the manuscript and his willing responses to questions or problems and his successor Dr. Terry West, who, near the close of the project, provided advice and assistance and faced some difficult editorial and policy decisions.

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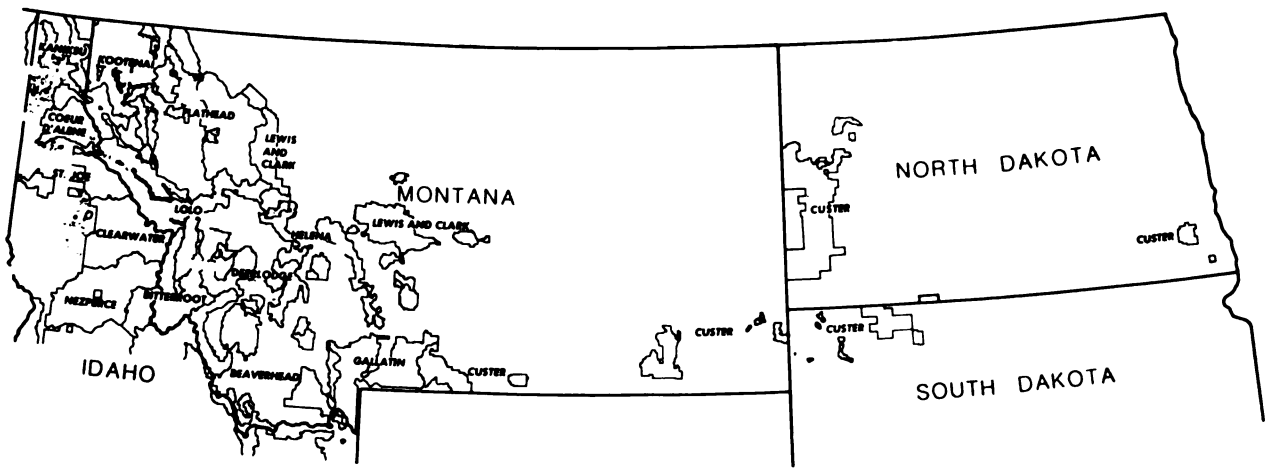

Chapter 1

The Northern Rocky Mountains: The Land and People

Perhaps more so than in other parts of the United States, the Forest Service and forest resources permeate the lives of the people who live in the States served by the Northern Region—Montana, Idaho, North Dakota, South Dakota, and Wyoming. The Northern Region manages approximately 25 million acres of public lands in these five States. This land contains national forests and national grasslands in the northern Rocky Mountains and Great Plains, from the Idaho-Washington border eastward to the Dakotas and southward to central Idaho's Salmon River in the west and to the northwest corner of Wyoming in the east. [1]

The climate in the area varies in temperature; it is more severe in the eastern portion, where cold and dry continental air dominates. (Granite Peak, at 12,799 feet, in the Absaroka--Beartooth Wilderness of the Custer National Forest is the highest elevation in the Northern Rockies.) The western section enjoys somewhat milder temperatures because of the moderating influence of air from the Pacific Ocean. This eastern-western difference and the varying elevation and geology throughout the region result in a wide range of environments, ecosystems, and resources.

Long ago, geological forces pushed the Rocky Mountains upwards, giving the adjacent Great Plains a downward slant toward the east. The rivers draining from the Rocky Mountains into the Mississippi River subsequently deposited sediment onto the plains in a process known as aggradation. Over time, deep soils were formed. The rivers periodically changed course, slicing and cutting through the plains, until the terrain took on its present appearance of mostly flat land or rolling hills with occasional mesas, buttes, and badlands. [2]

The Rocky Mountains block moist air masses that flow from the Pacific Ocean toward the region. This forces most of the available precipitation to drop over the mountainous western portions, rather than over the plains to the east. Annual moisture totals in the plains stand at near-desert levels—about 10 inches annually—close to the foothills of the mountains, but the totals slowly rise toward the east—about 15 inches—in the western Dakotas. [3]

Some river valleys and small outcroppings of volcanic mountains in the plains have sufficient precipitation to support tree growth, but many areas do not. Most ecosystems on the plains are dominated by a variety of grasses that thrive under drier conditions. Plains grasses are divided into short (grama, buffalo) and tall (western wheat) types; the latter require more moisture. The more humid eastern edge of the plains lies in a transitional zone in which both short and tall grasses can be found. As precipitation levels fall off toward the west, however, the mixture gives way to predominantly short grasses. [4]

Harsh weather conditions on the plains ensure survival for only the most hardy forms of life. Strong winds, heat, drought, and fires ignited by thunderstorm lightning are constant summer threats; winters are typically long and cold, with occasional blizzards and subzero temperatures. As a result, the equilibrium of plant and animal life is frequently upset, and ecosystems experience wild swings in the cycles of death and regeneration. [5]

The mountainous portions of the Northern Region consist of rugged ranges, usually running on a north-south axis and broken by broad, flat valley floors and foothills. Peaks average 5,000 to 8,000 feet, with many 11,000 to 12,000 feet. Correspondingly, precipitation levels vary greatly, resulting in diverse vegetation and ecosystems. [6]

Conditions in the western mountains generally become more moist in higher altitudes and toward the west and northwest. In drier areas, grasslands and meadows rich in flowers and shrubs adjoin forests dominated by several types of pine trees, juniper, and Douglas-fir. Patches of aspen may appear in some places; occasional shrubs, such as snowberry or ninebark, may grow beneath the taller trees. The wetter forests support a greater variety of plant life, with such trees as spruce, cedar, larch, and hemlock and such shrubs or low trees as paper birch, Pacific yew, willow, mountain ash, thimbleberry, and huckleberry. The forest eventually thins near the timberline, and trees give way to an alpine ecosystem of grasses, sedges, and wildflowers. [7]

The Region's First Humans

The best archaeological evidence indicates that human use of the Northern Region began about 12,000 to 10,000 B.C.; however, archaeological data are more rare for this area than for other parts of the country, which in itself suggests late or little use by early humans. The first Native Americans in the area hunted now-extinct animals, such as mammoths, giant bison, and giant moose. Because winds blowing across the receding glaciers of the last ice age provided heavier precipitation, vegetation at that time was very lush, thus supporting the huge herds of big-game mammals that early nomadic predators followed. [8]

Between 5,000 to 4,000 B.C., a climate change brought drier conditions to the Northern Region, and many of the largest animals died out. As a result, a new type of prehistoric people evolved. Some evidence suggests that they may have migrated from the Southwest. Archaeological finds, such as grinding stones, pestles, and a variety of plant-processing tools, reveal the use of a greater diversity of the region's resources. A lifestyle developed that revolved around many plant products gathered from the forests, in addition to several types of smaller game animals. [9]

About 5,000 years later, yet another new group appeared—the direct ancestors of many of the groups that Europeans would later encounter in the region. Their lifestyle was similar to the people before them, except they eventually developed the bow and arrow and would increasingly rely on the bison. Improved technology allowed them to better exploit the hoofed resources that thrived on the region's nutritious grasses. [10]

These newest arrivals penetrated from the North and the Northwest into the region's western mountains. They developed a foraging lifestyle, relying on a wide range of available resources. Double lean-to long houses were made of wood and brush. The men hunted small game (and an occasional elk or bison), either individually or communally, and the women searched for berries, roots, nuts, and other edibles. [11]

Several important root crops were diet staples of all of the plateau cultures in the area. Bitterroot, for example, was ready for harvest sometime in May. The camas plant played an even more central role in the Native American economy. It grows in great abundance in mountain meadows with rich soils and beautifies the landscape in mid-summer with bluish-purple flowers. The Native Americans dug up the nutritious bulbs and prepared them in many different ways, drying many of them for long-term storage. [12]

The Kootenai

The first group to migrate into the region from the North was the Kootenai, who settled in the humid forests and rugged mountains of Montana and northern Idaho along the river that bears their name. Some scholars have argued that their language is distantly related to Algonkian. In addition to bitterroot and camas, the Kootenai gathered wild onions, huckleberries, blackberries, chokeberries, gooseberries, strawberries, and tree "moss" (actually lichens). In the spring, when tree sap was running, they sometimes stripped he bark off western yellow pine, western white pine, or quaking aspen to obtain the sweet, tender, edible inner layer—the cambium. [13]

The Kootenai were divided into subgroups, known as Upper and Lower (a reference to their location along the Kootenai River). Both fished for trout, whitefish, salmon, and sturgeon and hunted mountain sheep, bear, moose, elk, and deer. The Upper Kootenai incorporated aspects of plains culture into their lifestyle, traveling eastward into the grasslands every year to hunt bison. The Lower Kootenai were well known for their elaborate communal hunts of ducks, geese, and deer. [14]

The Salishan and Shaptin Peoples: The Kalispel, Coeur d'Alene, Nez Perce, and Flatheads

Two closely related Salish-speaking groups migrated into the area just south of the Kootenai. The Kalispel settled along the Pend Oreille River in Idaho and eastward into Montana, while the Coeur d'Alene occupied the Spokane River valley south of the Kalispel. Their subsistence patterns in many ways resembled the Kootenai, with the addition of a few local plants, such as thimbleberries, currants, and hazelnuts. Fish was an important source of protein for both groups, but only the Kalispel followed the salmon runs that supported so many Native Americans in the Columbia River basin. [15]

A Shaptin-speaking group, the Nez Perce, claimed the land below the Coeur d'Alene in what is now central Idaho. Their economic base was typical of Native American plateau cultures, although they also hunted bison periodically and possessed more plains culture than any other tribe west of the Continental Divide. The Nez Perce created their material needs directly out of local resources, fashioning clothes and furniture out of animal skins and using sheep horns for cups, bowls, and spoons. Women made wallets and bags out of Indian hemp, wove baskets out of cedar root, and prized elk's teeth as ornamentation. [16]

The easternmost of all the Salishan peoples were the Flatheads, whose name originated from the particular gesture used to indicate their name in local sign language. Before about 1600, the Flatheads lived in the Three Forks area in southwestern Montana, subsisting on roots, berries, fish, and small game for most of the year. Similar to their close allies, the Nez Perce, they incorporated aspects of plains culture into their economy and sometimes migrated as far east as the Big Horn Mountains in pursuit of bison. After the Shoshonis and, later, the Blackfeet moved into the area, however, the Flatheads retreated into the mountains and resided in the Bitterroot Valley of west-central Montana. [17]

The Flatheads continued to journey occasionally to the plains for bison until the mid-1800's, but the threat of enemies forced them to stay in the mountains more and rely increasingly on a foraging economy. In addition to the root gathering typical of neighboring groups, women dug sunflower roots and collected sunflower seeds. Men hunted deer and elk and trapped many smaller animals, including otter, lynx, marten, muskrat, and marmot. They also caught many fish using hooks made from bone. [18]

The Uto-Aztecan

Further south, beyond the Salishan peoples, three Uto-Aztecan—speaking groups dominated southern Idaho and southwest Montana. The Sheepeaters, or Mountain Snakes, for example, were Shoshonean people who preyed primarily on mountain sheep during the summer and descended into the milder valley of the Lemhi River or into smaller valleys nearby to spend the winter. Their isolated existence in remote high-altitude areas made them among the most seldom-encountered groups by Europeans. [19]

The Snake River Shoshonis, or Snakes, and the Bannocks were originally distinct groups speaking different Uto-Aztecan dialects. After the early 1700's, they became closely linked and were usually found together. Their economy represented an adaptation of a plateau lifestyle to the drier climate in the northern fringes of the Great Basin. They shared some characteristics with their Salishan neighbors to the north. Camas roots, sunflower seeds, chokecherries, and serviceberries were important vegetable staples, along with deer, elk, antelope, and salmon for meat. [20]

The Snake River Shoshonis and the Bannocks relied less on larger game and more on smaller animals plentiful in their environment, including rabbits, prairie dogs, sage hens, groundhogs, and badgers. Snakes, lizards, grass-hoppers, mice, crickets, ants, and insect larvae also were occasionally eaten. They also took advantage of several plant food sources unique to the Great Basin, including *yampa* and a variety of grass seeds. Whites later referred to these peoples as "digger" Indians because they literally seemed to dig much of their food supply from desert hiding places. [21]

In the early 1600's, the Shoshonis began moving northeasterly across the mountains of Montana and onto the plains, where they slowly developed new patterns of resource use, concentrating more on bison, antelope, and elk. Sometime shortly before the turn of the next century, they acquired horses from the Utes to the south. Before long, the Shoshonis began trading horses to the Bannocks when that group turned to a lifestyle revolving around hunting bison on horseback. The two groups quickly moved further onto the plains and eventually dominated the area. Some Salishan tribes retreated further into the mountains, while others, such as the Flatheads and Kootenai, occasionally formed alliances with the Shoshonis and Bannocks and were able to continue using plains resources for awhile—at least until the Blackfeet arrived. [22]

The Changing Native American Culture

Shoshoni and Bannock rule on the northern plains was relatively short lived. By the early 1700's, many tribes had begun migrating onto the grasslands from the east. Former agricultural peoples and foragers were being driven out of the Upper Midwest by the ripple effect of the European fur trade to the east. Some tribes traded for guns and used them against enemies to dominate rich fur-producing areas in the West.

At the same time, the acquisition of horses and guns was enabling the Shoshonis and Bannocks to use plains resources on a more permanent basis. Previously, few groups actually lived on the plains. Most of those who traveled to the plains to hunt bison did so only temporarily, then returned to their homes in the Rocky Mountains or in the valleys of some of the tributaries of the Mississippi River. However, virtually all groups had horses by about the 1730's, which, with the gun, greatly improved their mobility and allowed them to hunt bison successfully on a year-round basis. [23]

In effect, improved technology and mobility allowed the development of a distinctive plains culture and economy based on modified forms of resource use. Native Americans lived in a symbiotic relationship with the huge herds of big-game animals. They occasionally set fire to the grasses on the plains, which encouraged the growth of new grasses on which bison, antelope, and elk thrived. Plains tribes extended some of their traditional woodlands lifestyle into the grasslands; they typically lived in timbered river valleys and ventured onto the plains to hunt. Bison were always favored when available, but deer, elk, antelope, bear, and mountain sheep also were pursued. [24]

Plains life supported a higher standard of living for most groups, including a certain level of surplus at times. Bison were most central to the plains economy. The meat was dried and sometimes mixed with dried berries to form pemmican, which could be stored for considerable lengths of time. Hide was used to cover lodges and to make everything from riding gear to weapons and containers. Bones were fashioned into tools, hair was used to make paint brushes, and sinew was turned into string or boiled into a type of glue. Women even powdered babies with pulverized bison dung. Smaller animals, such as beaver, mink, otter, wolves, and foxes, were trapped and their fur used for clothing, which was frequently ornamented with claws, teeth, or feathers. Most Native Americans on the plains did not engage in agriculture, but the women gathered plant products such as chokeberries, serviceberries, wild carrots, and wild turnips. These foods, however, were secondary in a diet otherwise dominated by meat. [25]

Native Americans lived in a symbiotic relationship with a huge herd of big-game animals.

About four centuries before the emergence of the plains culture, a Siouan-speaking group known as the Mandan established a village on the Missouri River in what is now North Dakota. In a pattern typical of the time, the Mandans supplemented their corn production by hunting bison in a range westward to the eastern edges of what is now the Northern Region. Sometime in the early 1600's, they were joined by another Siouan-speaking tribe, the Hidatsa, who had broken away from the Dakota Sioux in northern Minnesota. A faction within the Hidatsa split before long and moved further west into south-central and southeastern Montana. This faction began to turn increasingly to the bison as a primary food source. Except for a period when they continued to grow corn in the Yellowstone River Valley, they adapted a plains lifestyle—especially after acquiring horses in the early 1700's. They would later be called the Crows and would further divide into two subgroups—the River Crows who lived north of the Yellowstone and the Mountain Crows who resided in the Absoroka and Big Horn ranges. [26]

Eventually, Upper Midwest tribes from the east who were being displaced by the European fur trade began to put pressure on the Crows. The Cheyennes, an Algonkian-speaking people from Minnesota, came first. By the early 1700's, the Cheyennes had migrated as far west as the Black Hills of eastern South Dakota, where they acquired horses and guns, turned to a plains lifestyle, and started ranging further west to hunt bison. [27]

Pushing the Cheyennes for a time, but later allied with them, were the powerful western divisions of the Dakotas, or Sioux, consisting of the Yanktons, the Yanktonais, and the Tetons. From the headwaters of the Mississippi, these Siouan-speaking peoples migrated southwesterly in retreat from their enemies, the Chippewas, who had acquired guns before them. By about 1775, the Dakotas had penetrated the grasslands, ridden on horseback gained access to guns of their own, and joined the emerging plains culture. [28]

The western Dakota continued moving in response to pressing white settlement. The Tetons eventually joined the Cheyennes, dominating as far as southeastern Montana. The Yankton and Yanktonais claimed the area just to the east in the Dakotas. A faction that had splintered off from the Yanktonais, the Assiniboines, migrated onto the plains of east-central Montana and ranged from the Missouri River in the south to Canada in the north. [29]

The European Entry Into the Region

At the same time, another wave of Algonkian-speaking groups was leaving homelands in Canada and becoming part of the plains culture- in portions of what is now the Northern Region. The Piegans, one of the principal divisions of the Blackfeet, moved to the foothills of the Rocky Mountains in Montana and hunted at least as far south as the Three Forks area. Another group, the Atsinas (or Montana Gros Ventres), which had at one time been part of the Arapaho tribe, allied with the Blackfeet and lived just to the east of the Piegans and to the west of the Assiniboines. Together, the Blackfeet and the Atsinas played a major role in driving the Shoshonis from the plains of Montana. [30]

The same European expansionist pressures that had forced many Native Americans onto the plans would also eventually bring Europeans themselves into the Northern Region. Spain first directed Europe's attention toward America after Christopher Columbus' explorations at the end of the 15th century. Spaniards began forging an empire based in Central and South America; then they pushed northward through Mexico into what is now the Southwest United States. [31]

France did not lag far behind Spain in expoliting New World opportunities. The Franch set up colonies along the St. Lawrence River in the 1530's and quickly began trading with nearby Native Americans to obtain furs, which brought a high price in Europe.

England stepped in by the turn of the next century, concentrating most of its efforts along the Atlantic seaboard to the south of the French and in the Hudson Bay area to the north of the French. The English also established trade relations with Native Americans, and the two nations thus became rivals for the loyalties of various surrounding tribes. [32]

In 1670, England's Hudson Bay Company received a crown charter, which conferred exclusive rights to all fur-bearing animals on lands that drained into Hudson Bay. The company's success represented a challenge to French traders, who began moving westward and northward into the interior of Canada in an attempt to beat the English to virgin lands. The competition between the two countries, however, involved more than just the fur trade; both sides hoped to find the elusive Northwest Passage - the fabled water route allegedly linking the interior of the continent to the Pacific Ocean. The possessor of the passage supposedly would dominate the lucrative trade with the Orient for profitable luxury items such as spices, silk, and precious gems. [33]

The French sponsored expeditions into the West beginning in the late 1730's to investigate the potential for fur operations and to lay claim to the Northwest Passage. Led by Pierre Gaultier de Varennes (better known as the Sierur de La Verendrye), a retired soldier and fur trader, the first exploration set out from Lake Winnipeg in Canada but made it only as far as the Mandan villages. Unable to try again himself, La Verendrye sent his two sons, Francois and Louis-Joseph, on a second expedition in 1742. There is disagreement over how far the La Verendry brothers traveled. The evidence is sketchy, but apparently they came within view of either the Big Horn Mountains or the Black Hills. They may have actually entered the Northern Region, or stopped just short of it. [34]

The rivalry between the two European superpowers eventually erupted into a series of conflicts referred to as the "Wars for Empire." The last in the sequence, the French and Indian War, ended in 1763 with the Treaty of Paris and confirmed British dominance in North America. France had to surrender almost all of its New World territories. Although now under English control, several French fur companies in southern Canada continued to compete with the Hudson Bay Company. In the 1780's, these companies combined to create the North West Company. The Hudson Bay Company and the North West Company pushed the British Canadian frontier further westward; by 1800, both were situated just north of what is now the Northern Region. [35]

Spain was by this time an empire in decline, but it made one last effort to compete for control of the northern territories. In 1762, Spain had acquired from France the land later known as the Louisiana Territory, including the portion of the Northern Region east of the Continental Divide, before France conceded its other North American territories to England in the Treaty of Paris. The Spanish also claimed the Pacific Northwest, including the portion of the Northern Region west of the Continental Divide, but so did England, Russia, and the United States. In 1792, Spain tried to establish a presence within the upper Missouri country (the eastern portion of the region) by hiring a French fur trader, Jacque D'Englise, to head an expedition into the area. He and his crew made it only to the Mandan villages before having to return with the bad news that the British were making inroads into the area. [36]

Spain responded to the British presence by forming the Missouri Company to win control of the fur trade in the upper Missouri country and thus ensure that profits from it would flow to Spain instead of Britain. But the Missouri Company

encountered stiff resistance from tribes further south that desperately wanted to prevent Native Americans in the Northern Region from getting guns and trade goods. The Spanish retreated to their base in St. Louis shortly before 1800 and probably never ventured much beyond the Mandan villages. They may not have actually penetrated the region, but they brought back to European settlements some of the first reports of its geography, its native peoples, and its resources. [37]

The Lewis and Clark Expedition

In 1801, Thomas Jefferson became president. The United States by then had become a serious contender in the international competition for the control of the Northwest Territory. For many years, Jefferson had been interested in the West, both as an object of his scientific curiosity and as a likely outlet for his dreams of national expansion. He began planning an exploratory journey to the Pacific Ocean shortly after his inauguration. Because it was 2 years before the United States owned the Louisiana territory, Jefferson tried to keep the mission a secret to avoid trouble with Spain. He wanted to confirm U.S. claims to the Pacific Northwest and to investigate the presence of European rivals throughout the West. He also was interested in learning about resources, especially beaver populations. Beavers were quickly becoming the mainstay of the fur trade because of their fur's popularity among the more affluent Europeans. [38]

President Jefferson asked his private secretary and fellow Virginian, Meriwether Lewis, to lead the undertaking. Lewis agreed, but he insisted that William Clark, the youngest brother of the Revolutionary War hero George Rogers Clark, be appointed cocaptain and share authority equally. Lewis, Clark, a regular crew of 30, and an auxiliary crew of 16 trained for the journey in the winter of 1803—4. By this time, American claims to the Pacific Northwest had been substantially improved by the Louisiana Purchase of 1803. Lewis and Clark departed from St. Louis in the spring of 1804, rowing, poling, and pulling a 50-foot keelboat and two smaller pirogues about 10 miles a day up the Missouri River. [39]

The explorers spent the first winter at the Mandan villages. When western Native Americans came to trade with the Mandans, Lewis and Clark questioned them carefully about the geography that lay ahead. They also spent considerable time trying to discourage warfare among the tribes in the upper Missouri country to ensure the peaceful passage of the vessels up and down the Missouri for the fur trade they hoped would follow. Toussaint Charbonneau of France was hired to serve as an interpreter to help deal with the Native Americans they would encounter. Charbonneau's Shoshoni wife, Sacajawea, later proved invaluable to the expedition as a guide and as a mediator with her people. [40]

When spring arrived, the auxiliary crew, having transported supplies only as far as the Mandan villages, floated the keelboat back to St. Louis. The rest headed upstream to complete the most difficult and unfamiliar part of the voyage. Within several weeks, the expedition reached the eastern edge of the Northern Region. In early June, Lewis and Clark noticed a major river entering the Missouri. They had arrived at the mouth of the Marias River; it was so full of spring runoff that it was difficult to determine which was the tributary and which was the Missouri. After several days of investigation, Lewis and Clark correctly chose the Missouri and thus avoided spending the winter in unfamiliar mountains. [41]

Continuing up the Missouri, the explorers eventually encountered Great Falls, where the city by that name now stands. It took a month of hard labor to portage around the falls before they finally entered the foothills of the Rocky Mountains. At this point, Lewis and Clark desperately hoped to find the Shoshonis to trade for horses to carry themselves and their cargo across the mountains. Near the end of July 1805, they came to the Three Forks area, where the Jefferson, Madison, and Gallatin Rivers join to create the Missouri. They then headed up the Jefferson, crossing the Continental Divide in mid-August. [42]

Once on the western side of the mountains, the party followed the Lemhi River downstream and finally located the Shoshonis. After a joyful reunion between Sacajawea and her family, Lewis and Clark obtained the needed horses. The Shoshonis directed the expedition northward into Montana's Bitterroot Valley. There they encountered cooperative Flatheads, who advised the expedition on how to get through the mountains ahead. The route suggested by the Flatheads followed the Bitterroot River to where Lolo Creek enters it and then crossed the rugged Bitterroot Mountains through Lolo Pass. [43]

The scarcity of game and the rush to beat the winter snows made this the most difficult stretch of the journey. The expedition reached the Clearwater River Valley in late September and met some friendly Nez Perce, who helped build boats for the remainder of the trip and kept the expedition's horses until its return. The explorers then floated down the Clearwater, into the Snake, and finally into the Columbia River, arriving at the Pacific coast in November 1805. [44]

The joyous crew built several cabins along the Columbia, a little inland from the ocean, and spent a long, wet winter. Near the end of March 1806, they headed home, retracing their original route to near the juncture of Lolo Creek and the Bitterroot River. Lewis and Clark then split their command to explore more of the upper Missouri country. Lewis and a small group went northward down the Bitterroot, crossed the mountains through Lewis and Clark Pass, and descended the Sun River to Great Falls. At that point, Lewis headed north with a few men to investigate the Marias River. But when two Blackfeet were killed in a brief skirmish over some stolen horses, the men quickly rushed back to the safety of the Missouri. [45]

Meanwhile, Clark continued to retrace the expedition's original route, back across the Continental Divide and into the Three Forks area. He sent 10 men down the Missouri to rendezvous with Lewis at Great Falls. The rest of that party crossed the Gallatin Valley and eventually entered the upper Yellowstone River through Bozeman Pass. They floated down the Yellowstone to where it enters the Missouri, where they awaited the arrival of the rest of the crew. The entire party was reunited in mid- August and arrived in St. Louis on September 23, 1806. [46]

The Historical Significance of the Expedition

The expedition route passed through what are now six Northern Region National Forests: the Lolo, Helena, Bitterroot, Beaverhead, Clearwater, and Nez Perce. The expedition was important to the development of the region for a number of reasons. It helped ensure American control of the entire area by confirming U.S. claims to the Pacific Northwest and by establishing relations with many powerful Native American tribes. The expedition also ended speculation about a Northwest Passage. As a result, Americans began to view the West as much more than an avenue to the Orient, and their attention focused on what seemed to be the endless potential for resource development. [47]

Lewis and Clark advertised the splendor and economic value of the lands they crossed. President Jefferson had instructed them to record their observations, and they filled more than a dozen notebooks with descriptions of everything from terrain to weather conditions to flora and fauna. They collected hundreds of plant and animal specimens, adding more than 200 species to the world's list of known types. Perhaps most important for the immediate future were the reports about beaver in the region. The expedition confirmed speculation that the area indeed had an ample supply, and traders wasted little time in taking advantage of the situation. [48]

While Lewis and Clark's work may have contributed to the region ultimately becoming American, in the short term it prodded the British into redoubling their own efforts to control the northwestern frontier. In the winter of 1804—05, for example, Lewis and Clark encountered a North West Company trader named Francois Larocque in the Mandan villages. Larocque tried to convince them to let him join the expedition to the Pacific, but Lewis and Clark were suspicious of any competition. Not wanting to be beaten by the upstart Americans, in 1805 the North West Company sent Larocque exploring into southeastern and south-central Montana. Starting out from the Assiniboine River in Canada, Larocque and his men crossed the Dakotas in a southwesterly direction until they reached the Yellowstone River. They continued upstream and investigated the Tongue and Big Horn drainages before heading home. Although Larocque returned with optimistic reports about an abundance of beaver in the area, the North West Company never followed through—at least not in that portion of the Northern Region. [49]

By the early 19th century the introduction of horses and guns by explorers had changed the native economy and society. Greater changes were on the horizon. Early explorers such as Lewis and Clark represented the cutting edge of an expansive culture with a much more advanced level of technology and a different set of attitudes and values about the physical environment and peoples' places within it. The Anglo-American culture would soon displace the traditional Native American methods of resource use and would dramatically change the relationship between humans and the environment.

By the end of the 19th century, mining, logging, cattle-raising, homesteading, railroads, and the appurtenances of modern American life transformed the wildernesses of the Northern Region into States of the Nation. The Forest reserves and then the national forests, under the management of the USDA Forest Service, were established to protect, preserve, and manage the forest resources of what would become the Northern Region. The purpose was to ensure that those resources continue to be used by humans as they had been for thousands of years.

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Chapter 2

Settlement and Development

The entry of European and Anglo-American settlers into the northern Rocky Mountain region altered traditional resource-use patterns. Native Americans living in the region at the time of the first European penetration comprised a wide variety of cultures and corresponding resource-use patterns. Yet all shared a similar world view and a level of technology that helped define their place within the natural world and that dictated limits to their effect on the environment.

Native Americans' lives were closely attuned to the physical world. They saw themselves as physically and spiritually linked with the rest of nature. Their system of land tenure was communal, with no concept of dividing the Earth into individually owned plots. Aspects of their material culture arose directly from the resources of their surrounding environment. Some activities, such as bark stripping or fire setting on the plains or in forests, altered natural life cycles, but nature could always readjust and incorporate the limited destruction into its cycles. [1]

Europeans brought a very different set of values to the Northern Region. Their intellectual heritage separated humans from nature. Many ancient European folk legends identified wilderness with monstrous, supernatural creatures and threats to security. Nature was for most Europeans something against which to do battle—to tame, to civilize, and ultimately to conquer. [2] Europeans also had a much more sophisticated level of technology and a complicated market economy. Their ability to produce and their capacity to consume goods, therefore, far surpassed that of Native American societies. This would result in tremendous growth in the demand for resources. The fur trade, then mining, and, by the end of the 19th century, the railroad significantly altered traditional patterns of resource use.

The Fur Trade

The British North West Company brought into the region the first Europeans whose goal was to exploit valuable commodities. Prodded by news of the Lewis and Clark expedition, the company put David Thompson, a talented surveyor and geographer, in charge of opening a fur trade in the area of the headwaters of the west-flowing Columbia, Kootenai, and Clark Fork Rivers. A crew under Thompson entered into what is now Idaho in the spring of 1808 and set up a trading house near Bonners Ferry. [3]

The following fall, Thompson sent Finan McDonald to a site near present-day Libby, Montana, where he and his men constructed Kootenai Post. Thompson and a team of employees then built Kullyspell House on the eastern shore of Pend Oreille Lake in the summer of 1809; later that fall, they established the Saleesh House on the Clark Fork, close to the present-day town of Thompson Falls. Although Thompson left the area shortly thereafter, he had strengthened Britain's presence in the western portion of the region by initiating a brisk trade with the Kootenai and with several of the nearby Salishan tribes. [4]

Meanwhile, American traders in St. Louis, excited by Lewis and Clark's reports hurriedly made plans to tap the fur wealth in the eastern portion of the region (sometimes called the upper Missouri country). One of them, Manuel Lisa, recruited George Drouillard and John Colter of the Lewis and Clark expedition immediately after their return and ventured back up the Missouri River in the spring. Lisa and his men set up a post at the mouth of the Yellowstone River in the fall of 1808; the following autumn, Lisa sent Drouillard to look for beaver and encourage trade with Native Americans. Drouillard journeyed east across the Little Big Horn and Rosebud Rivers to the Tongue River, where he encountered several Crow encampments. Eventually, he produced the first maps of the Tongue River area. [5]

Lisa spent the winter of 1808-09 organizing St. Louis businessmen into the Missouri Fur Company to finance his operations. The new firm quickly established trade relations with the Crows. However, similar relations with the Blackfeet were unsuccessful because of failure to take into account the situation's volatile politics. The Blackfeet not only had trading ties with the British in Canada, but were also enemies of the Crows. Company men under Andrew Henry and Pierre Menard constructed a post at Three Forks in Blackfeet country, but the Blackfeet constantly besieged it, eventually killing eight employees and destroying much equipment. The Missouri Fur Company abandoned the Three Forks venture in 1810. Fires ruined more than $20,000 worth of furs the next year; this, coupled with the threat of a looming war between Britain and the United States that would disrupt international trade, convinced the company to vacate the entire upper Missouri country for a time. [6]

Lisa reorganized the Missouri Fur Company in 1818 to make another attempt at the area, but he died before a post could be established. A trader named Joshua Pilcher gained control of the firm; 2 years later, he built Fort Benton on the Yellowstone River in Crow territory. In 1823, Pilcher sent some of his best men to initiate trade with the Blackfeet. They erected a small post below

the Great Falls of the Missouri River. Within 2 weeks, the Blackfeet ambushed the trappers, killing 5 and destroying $15,000 worth of furs and equipment. Once again, the Missouri Fur Company was forced to leave the area; thereafter it focused its activities on the lower reaches of the Missouri. [7]

Almost simultaneously, a prominent Missouri politician formed a new American business to try once again to open a trading post for the Blackfeet. William Ashley's Rocky Mountain Fur Company (the name was not officially assigned until 1830) not only experienced the by-now predictable trouble with the Blackfeet, but an expedition also encountered devastating attacks by the Arikara along the lower Missouri on their way up river. The company then scuttled plans for setting up trading posts among the Native Americans in the usual fashion. [8]

Instead, Ashley devised a new type of fur operation, known as the rendezvous system. Company men, later referred to as mountain men or free trappers, gathered and dressed beaver pelts during the fall and spring. Each summer, company representatives met trappers at a prearranged time and place to give them guns, alcohol, and other goods unobtainable in the wilderness in return for their furs. The Rocky Mountain Fur Company tried to adapt the rendezvous system to the upper Missouri country; however, Native American resistance again proved overwhelming. The company then completely withdrew from the region and concentrated on the central Rocky Mountains. [9]

The British had dominated the fur trade in the western portion of the region since the War of 1812. John Jacob Astor, an American who owned a fur empire in the East, tried to control the Columbia River and its tributaries by setting up Fort Astoria at the mouth of the Columbia in 1811. Little trading took place, however, and when war broke out the next year between Britain and the United States, the stronger British presence in the area allowed the North West Company to drive out the Americans and take over the post. [10]

Trade was at first very slow because the British were unable to convince the tribes that they should trap animals. To overcome that problem and to avoid having to construct expensive posts, the North West Company revised its methods in 1815 and initiated a brigade system of trapping. Company personnel were sent out in groups of 50 to several hundred men to trap entire areas. This proved effective and resulted in increased profits. Within the region, Donald Mackenzie, a North West Company employee who had been part of Astor's crew, led three large brigades into Snake River country over a several-year period and trapped nearly all of that river's tributaries. [11]

In 1821, Hudson's Bay Company absorbed the North West Company, and the old rivalry between the two ended. Hudson's Bay turned its attention to American competition, not only for the fur trade itself, but also for national control of the Pacific Northwest. It therefore devised a strategy to discourage American intrusion into the area. The brigade system was expanded in the northern Rocky Mountains to create a buffer zone free of beavers that might attract unwanted Americans. Within less than a decade, most accessible streams in Idaho had been virtually cleared of beavers. [12]

East of the Continental Divide, an ambitious upstart American company was quickly filling the vacuum left by Pilcher and Ashley. The Columbia Fur Company had the upper Missouri country almost to itself. For several years, it sent expeditions to the Powder, Tongue, and Big Horn Rivers to trade with Crows, the Assiniboines, and occasionally the Blackfeet. [13]

In the end, however, it was Astor's American Fur Company that ruled the entire region. The company created a Western Department in 1822 but did little with it until the success of the Columbia Fur Company threatened its plans in the area. Astor then bought out the smaller firm and turned it into the Upper Missouri Outfit of his Western Department. [14]

The American Fur Company tightened its grip on the region's trade by setting up a string of posts. In 1828, Kenneth McKenzie, head of the Upper Missouri Outfit, sent James Kipp to erect a large fort at the mouth of the Yellowstone River, near the present border between Montana and North Dakota. First known as Fort Floyd, its name was soon changed to Fort Union, and it became one of the major forts in the American West. [15]

The American Fur Company next waged war with the Rocky Mountain Fur Company. Beginning in 1829, it sent representatives to the annual rendezvous in an attempt to outbid its rival for the pelts of free trappers; it could easily afford to pay higher prices temporarily. Eventually, the larger business crushed the smaller one.

In 1832, the American Fur Company gained another important advantage when it began sending steamboats, which could carry much more cargo than keelboats, to Fort Union on a regular basis. McKenzie also secretly kept a small distillery at the fort. While most people in the business routinely ignored bans on trading alcohol to Native Americans, only the American Fur Company could cheaply produce ample quantities of its own, thereby not having to evade the inevitable Government inspectors along the rivers en route to the upper Missouri. [16]

In addition, Astor's men succeeded where others had failed by opening trade with the troublesome Blackfeet. James Berger, a former Hudson Bay Company employee who knew many Blackfeet, convinced members of the tribe to meet with McKenzie at Fort Union in 1830. After winning an agreement, James Kipp and 25 men constructed Fort Piegan near the mouth of the Marias River. It was abandoned temporarily; however, another of McKenzie's men, David D. Mitchell, returned in 1832 and set up Fort McKenzie a few miles upstream from Fort Piegan. [17]

By the mid-1830's, the American Fur Company had overwhelmed its competition east of the Continental Divide. The Hudson Bay Company continued operations west of the divide, but activity slowed to a trickle as profits declined in the early 1840's. It finally withdrew from the region in 1846, when its government signed a treaty with the United States establishing the 49th parallel as the boundary between Canada and the United States. Some of Hudson Bay's posts, such as Fort Hall and Fort Boise in Idaho, subsequently were converted to way stations to serve the steady stream of American settlers moving to the West along the Oregon trail. [18]

The fur trade continued over the next few decades, but deer, muskrats, otters, and eventually buffalo replaced beavers in importance after the beaver hat fell out of fashion in Europe. The fur trade had produced little permanent development in the region thus far, but it still proved to be important in the long term. Extensive exploration by countless trappers had broadened the Nation's knowledge of the area's geography and whetted the appetites of the curious. Beaver populations were decimated and their central role in stream ecology disrupted; however, the impact was temporary, as the rodents had recovered by the mid-1850's. [19]

Perhaps the fur trade's most lasting legacy was its disastrous effect on native peoples. Alcohol was previously unknown to Native Americans, and its introduction without cultural mores to govern its consumption not only devastated the lives of many individuals, but also sometimes disrupted traditional social structures. Trappers brought diseases such as smallpox, which dramatically reduced native populations. In short, fur operations contributed to the destruction of some of the region's residents and paved the way for their displacement by others. [20]

The Missionaries

The next significant group to enter the region was searching for souls rather than pelts. Missionaries played a role in the development of the area that was disproportional to their actual numbers. They were the first to practice agriculture, and their promotional activities encouraged later settlement. In 1836, the Methodists sent Henry and Eliza Spalding to proselytize among Native Americans. The husband-and-wife team set up a school and mission at Lapwai in Nez Perce country, 10 miles above the confluence of the Snake and Clearwater Rivers. [21]

Several years later, the Jesuits joined the effort; Bishop Rosati of St. Louis sent Belgian-born Father Pierre-Jean DeSmet into the West. Father DeSmet accompanied an American Fur Company caravan to the 1840 rendezvous. A delegation of Flatheads and Nez Perce met him there and took him into the Three Forks area. That winter, Father DeSmet returned to the East to raise funds, but he returned to the Rocky Mountains in the spring of 1841 to establish St. Mary's Mission in the Bitterroot Valley. The following year, another Jesuit, Father Nicholas Point, set up a mission on the St. Joe River near St. Maries, Idaho. [22] In the mid-1850's, Mormon settlers from Utah started expanding northward into the upper Snake Valley. [23]

The Mining Boom

It was the lure of precious minerals that enticed the next big wave of settlement into the region. The West's first major gold strike in California in the late 1840's suggested that there might be gold throughout the Rocky Mountains. After the best finds of the California rush had played out, many prospectors, sometimes called "rainbow chasers" moved on and searched ranges throughout the West in pursuit of the valuable yellow metal. [24]

In the late 1840's and throughout the 1850's, rumors of gold finds by Father DeSmet and by fur trappers, such as John Silverthorne and Francois Finlay, circulated within parts of the region. But the first documented discovery in the region was by James Stuart, his brother Granville, and Reece Anderson. While the trio was returning from prospecting in California, Granville became very ill, and the men had to stop for a time. While waiting for Granville's recovery, Reece and James prospected Gold Creek in Deer Lodge Valley and, on May 2, 1858, found about 10 cents worth of gold. After a slow start, the Stuarts and a few others began working the area in 1862. A small settlement, American Fork, grew up around the diggings, but success was limited. [25]

The first "rush" to the region came in 1860. A party of about a dozen miners led by Elias Davidson Pierce, a former trader to the Nez Perce at Lapwai, found gold approximately 25 miles from the mouth of the Clearwater River. Wilbur Fisk Bassett made the initial discovery around October 1, in Canal Gulch, just above its confluence with Orofino Creek. A stampede of prospectors had descended on the area by the following spring, with camps appearing in places such as Orofino and Pierce City. Before long, the Clearwater mines were sending out $100,000 in gold every month. [26]

After the best Clearwater sites were preempted, many prospectors scattered out to promising streams nearby. One party moved south to the upper south fork of the Clearwater. There, they found a large and rich deposit of gold at a depth of 2 to 3 feet, and a camp named Elk City was soon laid out close to the diggings. Others departing the Clearwater mines ended up approximately 110 miles southeast of Lewiston, Idaho, where they discovered gold in the Salmon River Valley. Deposits proved especially valuable, and before long, the new town of Florence had a surplus of miners. [27]

Some prospectors drifted far to the south into the Boise River Valley. Moses Splawn, for example, had heard from a Native American in the Clearwater and Salmon River mines about gold deposits in a basin to the south. He led a group into the area, and one member, Dave Fogus, struck color in the fall of 1862. The rush was in full swing by the following year, and the settlements of Idaho City (first called Bannock), Placerville, Hogem (first called Pioneer), Centerville, and Buena Vista, Idaho, emerged. [28]

The discovery of gold in the Beaverhead River Valley in 1862 extended the mining frontier into Montana. John White was leading a group of Idaho-bound prospectors in search of a route through the rugged Bitterroot Mountains when he struck pay dirt near Grasshopper Creek on July 28. Soon, 500 people flooded into a rough new settlement named Bannock City and staked out claims before snow fell that winter. Silver was also unearthed, and soon a smelter was in operation.[29] The best gold claims in Bannock City were soon taken, and miners fanned out in several directions. For example, clusters of diggings appeared along Horse Prairie Creek, 15 miles west of Bannock City, and along Prickly Pear Creek to the north.

Those deposits, however, paled before the strikes in May 1863, 70 miles east of Bannock City at Alder Gulch. A party under the leadership of James Stuart had set out to investigate mining possibilities in the Yellowstone Valley. Several members,

however, missed a rendezvous with the main group and were turned back by Crows. [30] The discouraged men had little choice but to return to Bannock City. On their way, in late May 1863, they passed through the Gallatin and Madison Valleys and prospected while encamped near the Madison-Jefferson divide. The first pan brought in $2.40 worth of gold, and the men realized that they had uncovered a major strike. Soon, more than 10,000 people populated mining districts such as Summit, Highland, Junction, Fairweather, and Pine Grove. Alder Gulch eventually became one of the West's most valuable and colorful gold camps. [31]

Elk City, Idaho mining camp during the gold rush of the 1880's.

Like most other rushes, more miners arrived in Alder Gulch than could be accommodated, so many ventured out in search of new bonanzas. One group, sometimes called the Four Georgians, first tried the Kootenai River area. After failing there, they drifted north, but still had no luck. Finally, in July 1864, they unearthed significant deposits at a place they appropriately named Last Chance Gulch. It ultimately became the most lucrative mining district in Montana aside from Alder Gulch, producing more than $19 million in gold over its first 4 years of operation. A lively mining camp named Helena emerged around the diggings and later became a commercial center and the capital of Montana. [32] A short time later, the third most important mining district in Montana was born. Late in the summer of 1864, prospectors struck pay dirt in the Big Belt Mountains east of Helena. A rush ensued in 1865 into what was named Confederate Gulch. Diamond City arose near the mines and, for a time, became perhaps Montana's most spectacular boomtown. [33]

The last major rush occurred in the Black Hills of western South Dakota. Rumors of gold finds in the area had abounded for years, but most prospectors chose to work other fields in the west of the State because the Dakota Sioux, who controlled the Black Hills by treaty, successfully kept most intruders out until about the mid-1870's. By that time, however, most rushes had ventured out and mines had come under the control of eastern venture capitalists, leaving little opportunity for the rainbow chasers. Thousands of prospectors thus turned to the Black Hills in hopes of realizing the dreams of riches that had so far eluded them. [34]

Finding it increasingly difficult to contain the miners and hoping to disprove rumors of gold, the military in 1874 send an expedition under General George A. Custer to investigate. The soldiers confirmed the presence of gold, and the invasion of prospectors intensified. Throughout the summer of 1875, troops removed violators, but more always moved in. Eventually, the military gave up trying to control the miners, and the Government, instead, removed the Sioux and tried to buy the Black Hills from them. By the fall, approximately 15,000 people had arrived, mostly concentrated in the French Creek area and in a new settlement named Custer City. Additional discoveries that winter sent many streaming north into Deadwood Gulch, where the West's most unrestrained frontier town, Deadwood, came to life in 1876. [35]

Although few people exploited them until at least a decade later, other metals such as silver, copper, lead, and zinc also were found frequently in the mountainous portions of the region. Silver appeared as early as 1862, but the first major discovery of silver-bearing quartz ledges was in the fall of 1863 by R.H. Wade in Idaho's Whiskey Gulch. The diggings proved substantial enough that Silver City soon emerged to serve mines in the War Eagle and Florida Mountains. [36] A second big silver lode was uncovered at Argenta, Montana, in 1864. Two years later, Samuel Hauser of Helena invested in the area's first smelter to process the silver ore. [37]

In subsequent years, mining in the region continued to grow and expand, and a wide variety of metals were found and used. The Philipsburg, Montana, area, for example, witnessed the production not only of gold and silver, but also of lead and manganese in the Cable, Southern Cross, Black Pine, and Granite Mountain mines. A number of gold-silver-lead communities appeared; copper eventually provided the fortunes behind the famous wars among Montana's "Copper Kings" William Clark, Marcus Daley, and F. Augustus Heinz. [38]

Mining techniques, and mining's impact on the environment, changed over the years. Simple placer mining dominated gold

diggings at first. Individually or in partnerships, prospectors worked streams for the small gold nuggets that had eroded down the mountainsides after veins containing the mineral had been exposed to the elements. Panning was the most basic method of extraction; scooping gravel and water from the streambed into a pan and shaking it were all that was required to separate the heavier gold. Other devices, such as cradles, rockers, long toms, and sluice boxes, operated on the same general principle; they could handle far more volume and were thus frequently used by teams of miners. [39]

When confronted with gold deposits in beds without running water, miners sometimes diverted streams or used hydraulic pumps to transfer water to where it was needed. Eventually, companies backed with eastern capital began investing in sophisticated equipment. In the most elaborate form of placer mining, for example, hydraulic pumps shot water through high-pressure hoses at streambanks or hillsides. The earth-and-water mixture was then run through a complicated series of sluices to separate the gold. [40]

Other companies turned to even more complex forms of quartz mining. Veins of gold were sought out by sinking shafts into the mountainsides. Once found, the rich ore was extracted by breaking the auriferous vein out of its solid rock encasement. It was then crushed in stamp mills and the gold removed with quicksilver (mercury), which attracted the valuable mineral. Smelters later processed an even greater volume of gold-bearing ore. [41]

Mining's impact on the region's environment intensified as methods became more complicated. Hydraulic pumping tore up gulches, stripped hillsides of vegetation, and flushed tons of sediment into streams. Quartz mining and the processes in mining and smelting silver and other metals resulted in mountains honeycombed with tunnels, high piles of tailings, and smoke-belching factories. [42]

The smelters of Butte and Anaconda brought problems along with prosperity. "In the late 1880s," the Montana Standard reminisced 100 years later, "smoke from seven Butte smelters showed that the copper mining business was doing well. But that same smoke also made it necessary for streetlights to be turned on at mid-day." In 1902, farmers in the Deer Lodge Valley noticed that their livestock were dying, and they blamed the Anaconda Company, which operated the mines and smelters. Court battles ensued, lasting until 1911, when the Anaconda Company won the final appeal in the circuit courts.

The company subsequently bought the lands of most of the surrounding ranchers and operated them as one gigantic ranch. Poisonous smelter emissions wiped out thousands of acres of timber and much of the vegetative cover. Although land exchanges and emission controls, as well as the closing of many of the mining operations in later years, eased environmental pollution, the Environmental Protection Agency and the Forest Service today are still concerned with rehabilitating the lands damaged around the turn of the 20th century. [43]

"Boasts about Butte's health and prosperity ignored the environmental atrocities," one author said of this period. "Sulfur, copper and arsenic fumes killed grass, flowers and trees; and cats who licked the grime off their whiskers risked arsenic poisoning. [44]

Powerful pump used in hydraulic mining in Idaho during last decades of the 19th century.

The Developing Regional Economy

Mining dramatically hastened the pace of the overall development within the region. While many mining camps became ghost towns, those that survived frequently evolved into cities that served the supply needs of surrounding diggings and communities. Lewiston became the headquarters for most mineral activity in northern Idaho. Boise and Idaho City emerged as major commercial and industrial centers in the Boise Basin. In Montana, Helena, Virginia City, and Butte came to fulfill a similar function. Mining, in effect, propelled parts of the region from a pre-agricultural economy into a commercial, urban economy almost overnight. [45] Perhaps most significantly, unlike the fur trade, mining fostered sizable population increases and consequential increases in demands for consumer goods, transportation, and timber resources -thus stimulating the develop- ment of a permanent economic infrastructure.

Ancillary industries and services were established to serve the needs of increasingly complex communities. Timber operations, for example, soon developed to meet the demand for mine shafts, fuel, and housing-and soon for railroad ties and trestles. Regional timber then expanded to supply the larger lumber markets of the East. [46] Many original prospectors were formerly merchants and in some cases loggers from the East. After failing to strike it rich searching for gold, some of them naturally returned to what they knew best. [47]

Many miners had been farmers; several quickly found they could make much more money by putting their old skills to use to take advantage of the typically exorbitant prices for scarce food commodities in remote and isolated mining camps. Farms and ranches usually began to dot the fertile valleys near mining areas not too long after the original gold strikes. [48] Cattle raising and staple crops such as grains and potatoes were most common at first; then fruit growing became popular in some areas, especially Idaho. [49]

The Road to Statehood

As populations expanded, efforts to give the Northern Region a political identity (statehood) intensified. In the Northwest Ordinance of 1787, Congress established procedures governing territorial expansion and the incorporation of new frontiers into the United States. Areas moved through a series of three phases as populations increased. At first, they enjoyed little self-rule and were administered largely by the Federal Government. The president, for example, appointed the territorial governor and the chief justice of the court system. Local governance increased at each step, until an area finally became eligible for statehood and thus received equal status within the Union. Upon reaching a population of 60,000, a territory could draw up a constitution and then petition Congress for acceptance into the Union. [50]

The process began for the western part of the region first, largely because of an earlier surge of settlement into the Willamette Valley of Oregon. Idaho and Montana were included in Oregon Territory, which Congress created in 1848. In 1853, the territory was split, with Idaho and western Montana becoming part of the new Washington Territory.

At the other end of the region, settlement had extended into the eastern Dakotas. Congress responded in 1861 by organizing Dakota Territory, which embraced not only the Dakotas, but also Montana and part of Idaho after they were removed from Washington Territory. [51]

Almost simultaneously, the mining rushes began attracting an almost instant population into the mountains of Idaho and Montana. Leaders in established communities within both Washington and Dakota Territories feared being politically outnumbered by miners and lobbied Congress in 1863 to create a new Idaho Territory (including Montana) out of the vast area between the two established territories. [52]

Idaho Territory was too large to govern from the start. Many of its miners were already moving east to the gold rushes in Montana. They concluded that the capital of Lewiston was too far away. They contacted Sidney Edgerton, a former Ohio congressman who had recently been appointed chief justice of Idaho Territory, to lead a campaign to carve Montana out as a distinct territory. [53]

Congress was willing to consider the idea, largely because the Idaho Territorial Legislature was lobbying for something similar—to split at the Continental Divide, with statehood granted to the western portion (to be called Jefferson in the proposal) and separate territorial status for the eastern portion. Edgerton's political muscle proved most effective. Idaho lost its bid for statehood, but Congress did designate a Montana Territory in 1864, with a western boundary of the Bitterroot Mountains, considerably west of the divide. [54]

For the next couple of decades, the region existed as a sort of colonial appendage of the United States. Politics revolved around a number of local interests and issues, but the lack of local control was clearly the overriding political concern. Residents resented that outsiders with little real interest or familiarity with the area were making most of the important decisions. Statehood, therefore, became a treasured political goal. [55]

Montana also launched a premature and ill-fated attempt at statehood in the 1860's. It was not until the 1880's, after further economic diversification and population growth, that campaigns with serious chances of success began. In 1883, the Montana Territorial Legislature called a special election to choose delegates to draft a constitution. The next year, voters approved the constitution and sent it to Congress for consideration. [56]

Dakota Territory undertook a similar effort at about the same time. In 1882, a group of Republicans from the southeastern corner of the territory formed the Dakota Citizen's League, which called for a convention the next year. Delegates met in Sioux Falls and drew up a constitution, revising it again 2 years later. Thus, by the mid-1880's, both Montana and Dakota Territories stood poised and ready for congressional action. National politics, however, would force them to wait a few more years. [57]

Democrats controlled the House of Representatives and the White House under President Grover Cleveland. They favored granting statehood to Montana Territory, because its population was seen as slightly Democratic, but they opposed the same for Republican-leaning Dakota. The Republicans held a majority in the Senate and, predictably, preferred just the opposite. The resulting stalemate was not broken until the next election. [58]

In 1888, the Republicans took the presidency with Benjamin Harrison and secured majorities in both houses of Congress. Knowing that it would be only a delaying tactic to oppose statehood, the "lame duck" Democratic majority in the House consented to advancing statehood for Dakota, Washington, and Montana. Montana was becoming increasingly Republican because of more migration from northern States after the Civil War. Democrats and Republicans also agreed to split the Dakota Territory into two States. Thus, on February 22, 1889, President Harrison signed an omnibus bill that, in effect, authorized and invited the four prospective States to submit constitutions. [59]

Idaho lagged behind in the statehood process, having spent much of the 1880's in turmoil over hostility toward its Mormon population and over moves in northern Idaho to secede and merge with Washington Territory. Finally, in 1890, Democratic Territorial Governor George L. Shoup organized a bipartisan constitutional convention. Voters overwhelmingly approved the results, and the Republican Congress quickly accepted the new, and safely Republican, State of Idaho into the Union. President Harrison made it official with his signature on July 3, 1890. [60]

The region was now fully incorporated into the United States. For the foreseeable future, American political institutions and attitudes toward resource development would govern the region and determine its fate. As these Northwest States entered the Union, Americans began to realize that the great frontier had ceased to exist. The minerals, timber, wildlife, waterways, and virgin lands that the frontier had always held in a seemingly unlimited supply were being rapidly depleted. This new consciousness impelled Congress to enact the Forest Reserve Act in 1891, the year after the admission of Montana, Idaho, and the Dakotas as States of the Union. Although they did not know it at the time, the Forest Reserve Act would affect the future of Northern Region citizens almost as much as would statehood.

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Chapter 3

Forests and Forestry in the Northern Region

Early travelers in the northern Rocky Mountains encountered great forests of conifers as they probed the headwaters of the Missouri River and sought usable passes across the Continental Divide to the Columbia River system. In the canyons and on the mountain slopes, old-growth white pine, Englemann spruce, Douglas-fir, ponderosa pine, larch, and cedar grew in fine stands of commercial quantity and quality. Indeed, the western third of the region that was to become Montana and the northern part of Idaho abounded in these choice species. But this area was remote, isolated, and largely unsettled, with no roads and few trails. The northern winters were long and severe, making survival difficult. Periodic destructive fires seemed to be a regular feature of the forests, and the region was home to numerous well-organized Indian tribes, including the warlike and powerful Sioux. [1]

Golden Harvest

Wandering prospectors discovered gold in western Montana's Alder Gulch in 1863. The yellow metal has a way of attracting people, and soon the territory was teeming with gold-seekers and others who were certain they would become rich. By 1865, 10,000 people lived or camped in Virginia City, and miners produced about $30 million in Alder Gulch alone during the first 3 years. Prospectors reported rich finds in other streams and canyons, and as a result the population boomed and new towns appeared almost overnight. Montana City, Jefferson City, and Helena (site of Last Chance Gulch) all were important boomtowns. [2]

This sudden population growth led to a great demand for timber and lumber of all types. A.M. Holter, from the Pike's Peak area in Colorado, was among the first on the scene to help meet the great demand for lumber—and to make handsome profits for himself. He and a partner bought a secondhand sawmill and arrived in Virginia City in December 1863. [3]

While assembling the mill, Holter discovered that several parts were missing, especially belting and gears. To compensate, he constructed a device for moving the log carriage back and forth, later known as a "rope feed," and made belts out of untanned ox hide and later from canvas. Despite his difficulties, Holter completed the mill and began production in the spring of 1864.

The mill was initially a water-powered, sash-saw outfit that cut about 5,000 board feet per day. Once the mill was operating smoothly, Holter opened a lumber yard in Nevada City, where he sold flume lumber for $140 per thousand board feet and building lumber for $125. Later, he opened a yard in Helena; here, too, the demand was greater than the supply, and

$150 per thousand was not an unusual price to pay. So great was the demand that some of the larger companies sent men to waylay the wagons from the mill, take the lumber, and then have a man with a gold bag go to the yard and explain to Holter what they had done and pay for the lumber plus a premium for their purchase.

Holter later brought in a steam boiler and a small circular saw. He eventually established mills at six additional locations. All of the mills cut for the gold camps, with Helena becoming the principal market. Holter's sawmills prospered better than most of the prospectors in Montana Territory during the 1860's. [4]

In like manner, the discovery of gold in northern Idaho along the Orofino Creek and its tributaries led to a rush of settlers and prospectors to that area. Captain E.D. Pierce, one of the first discoverers, spent the summer of 1860 whip-sawing lumber for sluice boxes and cabins. To meet the demand for lumber, two small water-powered sash mills were constructed in 1861 near Pierce, which enjoyed boomtown status as 5,000 people rushed into the diggings. These apparently were the first commercial sawmills in northern Idaho. Two years later, new gold discoveries near Elk City led to the building of a somewhat larger mill powered by a turbine waterwheel that cut lumber for flume construction. [5]

All of these early sawmills sold only rough lumber to the local market. Transportation by water was precarious, and travel by road was almost impossible. (Mullan's Road, built in the 1860's by the Army to connect the headwaters of the Missouri with the Columbia River system, was the only wagon road in the region.) One of Holter's mills near Helena shipped lumber on the upper Missouri as far as Ft. Benton, but that was a rare exception. Although the canyons and slopes of the northern Rocky Mountains held magnificent stands of valuable conifers, entrepreneurs waited restlessly for railroad transportation to become available before building larger mills in the "Inland Empire." [6]

The Transcontinental Railroads

To provide three transcontinental routes to the west coast, following the chartering of the Union Pacific-Central Pacific Railroad, Congress passed the 1864 Act, which directed the Northern Pacific Railroad route from Lake Superior to Puget Sound and/or Portland, Oregon. The proposed route was largely unsettled country, with mountain ranges, severe winter snowstorms, and home to large and well-organized hostile Indian tribes—so Congress made the land grant doubly attractive. In addition to 20 sections of land for each mile of track built in the two States (Minnesota and Oregon), the act offered 40 sections per mile through the territories.

As in earlier grants, the land was to be surveyed, with alternate sections (checkerboard fashion) going to the Northern Pacific and the other sections being retained by the Government. To compensate for land previously homesteaded, preempted, or in Indian reservations, Congress set aside an additional 10 miles on each side of the right-of-way for the Northern Pacific. Still later, Congress authorized more "in lieu" land certificates, which enabled the railroad to acquire lands beyond even these princely boundaries. Eventually, the Northern Pacific acquired about 44 million acres of land, of which 17 million lay in Montana Territory and perhaps 3 million in northern Idaho. [7]

But the proposed transcontinental was slow in becoming reality. Graft and internal rivalry delayed the initial construction, and the Panic of 1873 forced the banking firm of Jay Cooke (which had become the principal owner) and the Northern Pacific into bankruptcy. Not until after its reorganization in 1875 did the Northern Pacific resume building the mainline westward under the leadership of Frederick Billings, the president of the railroad. In 1881, Henry Villard, who had large interests in the Pacific Northwest, displaced Billings as president and pushed construction rapidly from both east and west until the line was completed. The last spike was driven in September 1883 at Gold Gulch, Montana. What was to become Region 1 had its first transcontinental railroad. [8]

During the same years, a group of Mormon investors headed by a son of Brigham Young organized the Utah and Northern Railroad to connect Ogden, on the Union Pacific, with the gold field near Butte, Montana. It was initially a 3- foot, narrow-gauge line, which struggled northward slowly, but construction ceased during the Panic of 1873, to be reorganized later by Union Pacific investors. The Utah and Northern built across eastern Idaho and reached Butte in December 1881. A short line from Garrison to Butte provided a connection with the Northern Pacific and an alternate route for shippers. [9]

A second transcontinental line went through the northern Rocky Mountains just south of the Canadian border. In St. Paul, Minnesota, James J. Hill and associates acquired the St. Paul and Pacific Railroad, which was described as "two streaks of rust and a land grant." Hill reorganized the St. Paul and Pacific and formed a new corporation—the St. Paul, Minneapolis and Manitoba Railroad, known as the "Manitoba." He pushed construction north and west, reaching the Canadian border with one branch and thrusting through Dakota Territory via Devil's Lake and Minot on what was to become the main line. Consolidating his holdings into the Great Northern Railway in 1889, Hill

built rapidly into Montana, keeping well to the north of the Northern Pacific. The discovery of Marias Pass (just south of present-day Glacier National Park) at an elevation of only 5,200 feet allowed for a direct route to Puget Sound at Everett, Washington, via Kalispell, Bonner's Ferry, and Spokane. Hill also constructed a branch line (the Montana Central) from Assiniboine through Great Falls to Helena and Butte.

The Great Northern was a well-constructed and well-run railroad; at once, it offered serious competition to the Northern Pacific. Known as the "Empire Builder," Hill was an aggressive and hard-driving executive who, according to contemporaries, "hated the sight of an empty freight car." To encourage industry and farming, he reduced rates on eastbound traffic, which forced the Northern Pacific to follow suit. The completion of the railroad network in the late 19th century provided the transportation and communication facilities needed for the forest products industry in the northern Rocky Mountains to thrive and grow. [10]

The transcontinentals opened up the region for new and experienced lumber operators. Branch lines brought logs to the mills by rail, and the finished lumber could be shipped both east and west on the Northern Pacific and the Great Northern. The railroads also were great consumers of forest products. The need for ties, timbers, pilings, and lumber for constructing company structures, in addition to thousands of cords of wood to fuel the locomotives, caused many small sawmills to spring up along the route to supply the rail giants. Some sawmill owners negotiated contracts with the Northern Pacific or Great Northern and concentrated on making ties alone. It was estimated that the original 4,000 miles of construction had required more than 10 million ties. Thus the railroads alone provided a never-ending demand for timber and lumber of all types. [11]

Early Sawmills and Lumber Entrepreneurs

Col. Henry C. Merriam built one of the earliest commercial-type sawmills at Ft. Sherman (first called Coeur d'Alene) in 1878. It was described as a small circular saw outfit with a steam powerplant. The mill cut lumber for Army barracks, assembly and mess halls, a steamboat, and at least one school in the area. The commanding officer later added a shingle mill and a planing mill to make the Ft. Sherman mill a complete finished-lumber manufacturing plant. [12]

Two years later, Frederick W. Post built the first general-purpose sawmill at Post Falls, Idaho. This was a water-powered mill with a sash saw operating in a wooden frame. Post later replaced this with a circular saw and a steam powerplant. Shortly afterward, his nephew built a second mill at Rathdrum, and Glassford T. Hawley built a steam-driven mill at Coeur d'Alene.

The discovery of gold on Prichard Creek brought several short-lived boomtowns and new sawmills into operation. From 1880 to 1900, some 79 sawmills cut lumber for varying lengths of time, some for only a few months. The Ft. Sherman mill ran continuously until the fort was decommissioned in 1898. The Post Falls mill continued to operate until after the turn of the century. [13]

In Montana, successors to the pioneering Holter built steam-powered mills equipped with circular saws to supply the growing needs of Helena, Butte, and Missoula. Around 1881, the firm of, Eddy, Hammond and Company built or bought a number of small, sawmills strategically located to meet the lumber needs of the Northern Pacific as it built through western Montana. This company secured an agreement with the railroad to supply it with all sorts of provisions, including clothing, blankets, and food staples, as well as ties, timbers, and building lumber. According to one writer, the company did about $180,000 of business in 1880, and 2 years later, the gross income rose to $450,000. In 1884, the company built a new and larger mill at Bonner (just east of Missoula) and consolidated its holdings under the name of the Montana Improvement Company. This became the largest sawmill operation in the territory. [14]

The history of sawmilling throughout much of the United States has been that smaller mills gave way to larger mills, and then great entrepreneurs consolidated their holdings into diversified corporations. The lumber story in Idaho and Montana followed this pattern. In 1900, Frederick Weyerhaeuser became interested in the white pine, spruce, and Douglas-fir in northern Idaho. Weyerhaeuser, who was already the largest lumber manufacturer in Minnesota, had startled the lumber world with the purchase of 900,000 acres of timberland in the Washington-Oregon region using Northern Pacific script. In the same year, again using Northern Pacific script, he had agents survey and file for 40,000 acres of white pine lands on the upper reaches of the Clearwater River. Farther north, Weyerhaeuser and associates purchased lands in the Pend Oreille-Kootenai area and on the headwaters of the St. Joe River. On these holdings, the group organized the Edward Rutledge Timber Company, the Clearwater Timber Company, the Potlatch Lumber Company, the Bonner's Ferry Lumber Company, and the Humbird Lumber Company. Each of these was among the larger lumber manufacturers in Idaho, capable of producing 50 to 70 million board feet of finished lumber per year. Later (around 1930), Weyerhaeuser and his associates merged their holdings into a single corporation, Potlatch Forests, Inc. Thus consolidated, the Weyerhaeuser interests were by far the largest lumber manufacturers in Idaho. [15]

In Montana, large and small sawmillers had supplied the Anaconda Copper Mining Company with great quantities of fuel wood for the smelters and timber for the mines. About 1900, Marcus Daly, Anaconda president, began to buy large tracts of timberland until the company owned more than 1.1 million acres. Then, in 1905, he purchased the Montana Improvement Company with all of its lands and resources and organized it as the "lumber division" of the Anaconda Corporation. In the next decade, Anaconda cut nearly one-half of the total timber cut in Montana. [16]

Harvesting the Timber

Most lumber entrepreneurs came to the Northern Region from the East and the Lake States, they sought to use the streams and the rivers in the same way they used them in the East. The streams in Idaho and western Montana were too swift and the course of the water too precipitous and violent for such use. Logs sent down the creeks smashed against rocks and each other, producing a "brooming effect" that greatly reduced the value of the logs and resulting lumber. The terrain was often too steep for railroads, and a horse or mule was soon worn out dragging logs up and down the mountainous slopes. [17]

To get the valuable white pine and other desired species out of the forests, loggers developed chutes and flumes to carry the logs down the mountainside. A chute was a trough made of timbers (usually of cheaper wood) in a shallow —V— shape. Side chutes extended like fingers to each cutting area and ran into the main chute, where workers rolled or skidded the logs into line. Workers used grease to speed the logs and sand to slow them down. On portions of the chute, such "gravity" was not sufficient to keep the logs moving, so horses or mules on a towpath pulled the logs along. At the end of the chute was a landing where the logs were yarded for loading on logging train flatcars or were made into rafts and sent down a navigable river. Sometimes a chute met a flume.

Worker greasing the log chute, Meadow Creek, Pend Oreille National Forest (Idaho) in 1923.

Chuting was an uncertain and dangerous operation. Runaway logs might jump the chute and kill or injure the workers alongside. There were several hundred miles of chutes in the Coeur d'Alene area alone, and other companies in Idaho and western Montana used the same techniques. [18]

A flume was a larger, more elaborate structure and required a head of water. The flume was also in a —V— shape but was larger and deeper, with 1-inch boards forming the inner facing and overlapping to hold water. A dam would be constructed at the head of the flume and often an auxiliary dam along its course. Apparently, flumes generally followed the route of a creek and emptied into a larger river or stream. Workers assembled the logs

and opened the gates of the dam, and down the mountainside went the logs, with a great rush of water and anything that got in the path. When the water ran out, they closed the gates, and no more logs were put into the flume at that time. Stories were told of men and animals going down the flume, but it was always a risky and dangerous stunt. One worker recalled that an escaped convict who had been hiding in a logging camp was recaptured but escaped again by leaping into the flume and going downstream on a crest of water. Apparently, he made his escape. [19]

The Beaver Creek Flume was a late (1930) addition to the logging resources of Potlatch Forest, Inc. It was similar to flumes built soon after the turn of the century. It was about 20 miles in length and emptied into the North Fork of the Clearwater River. In its 15 years of use, the Beaver Creek Flume carried more than 170 million feet of logs (mostly white pine) down to the mill. [20]

Where they could be operated profitably, mill owners built logging railroads that connected with the transcontinentals or their branches. The Weyerhaeuser interests built a shortline railway called the Washington, Idaho and Montana (WIM), which ran from just inside the Washington State boundary to Potlatch and Bovil, passing a number of way stations bearing such academic names as Harvard, Yale, Princeton, and other colleges. The WIM doubled as a logging road, bringing logs to the Potlatch mills and transporting finished lumber to the transcontinental terminals. [21]

Most of the larger lumber companies had logging railroads, some of which held charters as common carriers. The Anaconda Copper Mining Company ran the Big Blackfoot Midland Railroad west from Anaconda and also a logging road out of Bonner. The Edward Rutledge Timber Company built an "Incline Railroad" in the St. Maries River area, which rose about 1,000 feet on a 70-percent grade with compensating engines. With this unusual transportation, the company was able to harvest more than 200 million feet of lumber damaged by fire. The Ohio Match Company built the "Burnt Cabin Railroad," which ran over a spectacular mountain range to transport timber purchased from the Coeur d'Alene National Forest. Most of these roads used small-geared locomotives, such as the Shay or Heisler, which could thresh their way up a steep grade—slowly and noisily—but economically and dependably. [22]

As in other new timber-rich territories, veterans from older lumber centers rushed to the area to exploit the virgin white pine, spruce, and Douglas-fir that were in short supply in the East. Frank Blackwell came from Pennsylvania, Frank Herrick from Wisconsin, Frederick Post from Germany, Marcus "Dick" Wright from Kentucky, Marcus Daly from Ireland, and A.B. Hammond from Canada. Weyerhaeuser, as well as many of his associates, came from Minnesota. [23]

Production figures trace the course of the early lumber boom from its rise to the Depression decline. In 1879, the two territories reported only 40 million feet harvested. By 1899 (after the completion of the Northern Pacific and Great Northern with branches), the reported cut jumped to 320 million feet.

In 1910, production reached 1 billion feet. The cut continued above 1 billion for most of the next two decades, reaching a peak of 1.5 billion feet in 1925. Then production declined, mills closed, and mill towns became ghost towns. In 1932, in the depths of the Great Depression, the cut fell to 360 million feet, the lowest production of the 20th century. [24]

During the period from 1880 to 1930, loggers were not particularly careful or mindful of the forest. Most preferred to clearcut as they went, and they carelessly damaged much young timber. Because the entire region was still raw and sparsely populated, there was little public outcry at these cutting practices. As most companies harvested, at least in part from Federal reserves, they also were often careless about the limits of the agreed-on cutting areas. [25]

Empty log cars on narrow gauge railroad. Photo by K.D. Swan.

When Congress created the territories of Idaho and Montana (1863—4), the Federal Government held title to all of the land. The General Land Office (GLO) in the Department of the Interior administered these lands with the long-range purpose of transferring them to private ownership. The Preemption law, the Homestead Act, the Timber Culture Act, the Timber Cutting Act, and the Timber and Stone Act all were enacted to facilitate and hasten this process. The Federal land grants to the Northern Pacific Railroad cut an enormous swath through the territories. In Montana and Idaho alone, the railroad held about 20 million acres, making the Northern Pacific the largest landowner in the territories next to the Federal Government itself. [26] These grants would later greatly affect the protection and management of the national forests in the region.

Forest Reserves and the Forest Service

The subsequent assault on the valuable timber on the slopes and watersheds of the mountains brought the realization that many regions of the West and Northwest should be kept in the hands of the Federal Government. To achieve this, Congress in 1891 passed the Forest Reserve Act as an amendment to the General Revision Act. Using this authority in 1897, President Grover Cleveland set aside, in what was to be Region 1, the Bitterroot, Lewis and Clark, Black Hills, Priest River, and Flathead Reserves. The present-day Lolo and Flathead National Forests and Glacier National Park stem from some of these early reserve lands. [27]

Hall's sawmill following a fire, Sioux National Forest, Montana, 1907. (Coster National Forest)

The director of GLO appointed J.B. Collins as superintendent, with headquarters in Missoula. There were four rangers under Collins, with four more appointed in 1899. GLO rangers earned $60 per month and supplied their own horses, clothing, bedrolls, and food. They frequently were gone from headquarters for weeks at a time because they patrolled such a large area for fires and marked trails. In 1903, Major F.A. Fenn replaced Collins as superintendent of the forest reserves in Montana and Idaho. [28]

Among the early forest supervisors was Captain Seth Bullock, who (from 1903 to 1906) was responsible for the area that later consolidated as the Custer National Forest. He was a big-game hunter and a friend of President Theodore Roosevelt. Later he was a U.S. marshal at Deadwood, South Dakota. [29]

The period from 1898 to 1906 was important; the forest reserves were reorganized and professional forestry made impressive advances. In 1898, President William McKinley appointed Gifford Pinchot (the first American professional forester) head of the Division of Forestry in the Department of Agriculture. Although Pinchot had no forests to supervise (the forest reserves were then under the Department of the Interior), he at once sent young professional foresters to cruise and map the Federal timberlands in the West.

Pinchot had the wholehearted support of Theodore Roosevelt, who succeeded McKinley after his assassination in 1901. Roosevelt used the Forest Reserve Act to set aside more than 140 million acres of western forests as new reserves. Five of these new reserves were in Idaho and Montana. Then, in 1905, Roosevelt transferred the forest reserves from the Department of the Interior to the Department of Agriculture and placed them under the supervision of Pinchot, who was named Chief Forester of an enlarged Forest Service. Many of the old GLO personnel transferred to the Forest Service, where some continued successful careers. Others were weeded out as the Forest Service established higher professional standards and placed all positions under civil service [30]

One professional forester who participated in the reorganization and expansion was Elers Koch. He grew up in frontier Montana, where he learned to shoot, hunt, track, and manage a string of packhorses on long treks. He attended the State College at Bozeman and then earned a master's degree in forestry at Yale in 1903. There he met Pinchot, Henry S. Graves, J. Garvin Peters, and others who later held important positions in the Forest Service. He took the civil service exam and, after a brief orientation in Washington, DC, went west to

inspect, map, and report on the forests that should be added to the reserves rather than be cut by the advancing loggers.

Koch first worked in California, where he mapped the Mt. Shasta area and turned over the reports and maps to Pinchot, who then urged the President to add that acreage to the forest reserves. He later cruised Montana and Idaho, administered the first ranger and supervisor exams in Missoula, and, in 1906, became supervisor of the Lolo forest reserves.

The next year (1907), Congress changed the term forest reserves to national forests. In 1908, Pinchot announced a general reorganization and decentralization of the Forest Service. [31] This reorganization placed northern Idaho and Montana with portions of North and South Dakota in Region 1 (District 1 until 1933) of the Forest Service.

Pinchot picked William B. Greeley as the first regional forester and sent him west to Missoula. Greeley, a New England Puritan by birth, had grown up in California amid the forests and the Sierra, Nevada. He had graduated from the University of California, Berkeley, and then proceeded to Yale, where he completed his master's degree in forestry in 1904. [32] As with other first-generation Yale Forestry School graduates, Greeley became one of "Gifford Pinchot's Boys," but unlike some he differed with Pinchot on many issues.

In later years, Greeley doubted whether Federal regulation of private forests would be the best course to pursue in protecting the forests and ensuring an ongoing supply of forest products for future generations. He had known many loggers in California and elsewhere; he found it difficult to equate the epithet of "land skinner" with many of the men he knew. He thought that a policy of mutual cooperation and education that would demonstrate that "good forestry was also good business" would produce better results. Though somewhat opinionated, Greeley was an effective speaker, worked well with groups, and set high standards for his fellow workers. He also was a rugged individual who enjoyed nothing more than hiking and camping in the remote wilds. [33]

The men who Greeley gathered around him as the initial headquarters team for Region 1 were an interesting group and included Ferdinand A. Silcox (Assistant Forester), R.H. Rutledge (Chief, Operations), Robert Y. Stuart (Assistant Chief, Operations), A.W. Cooper (Chief, Silviculture), David T. Mason (Assistant Chief, Silviculture), and CH. Adams (Chief, Grazing). The clerical staff for Region 1 had moved from Washington to Missoula and were joined by local personnel. By 1910, there were 50 people employed in the Missoula office; 15 years later there were 75. [34]

This was an unusually able staff. From the headquarters team at Missoula, Greeley, Silcox, and Stuart rose to become Chiefs of the Forest Service. Rutledge became head of the Grazing Service of the Department of the Interior in Washington. Mason became a nationally known authority on sustained-yield management of privately owned forest land and held a variety of important positions—professor of forestry at the University of California, Berkeley, manager of the Western Pine Association, and a member of Franklin Delano Roosevelt's governmental family as lumber code administrator with the National Recovery Administration. [35]

Under the regional forester were the supervisors of the 17 or so national forests (the number changed with consolidations and realignments). Among the men who served under Greeley were F.A. Fenn, Charles A. Fisher, Wilfred White, Glen A. Smith, C.C. Hall, Charles Ballinger, and Elers Koch. Under the supervisors were rangers, assistant rangers, forest guards, various forest workers, and clerical personnel.

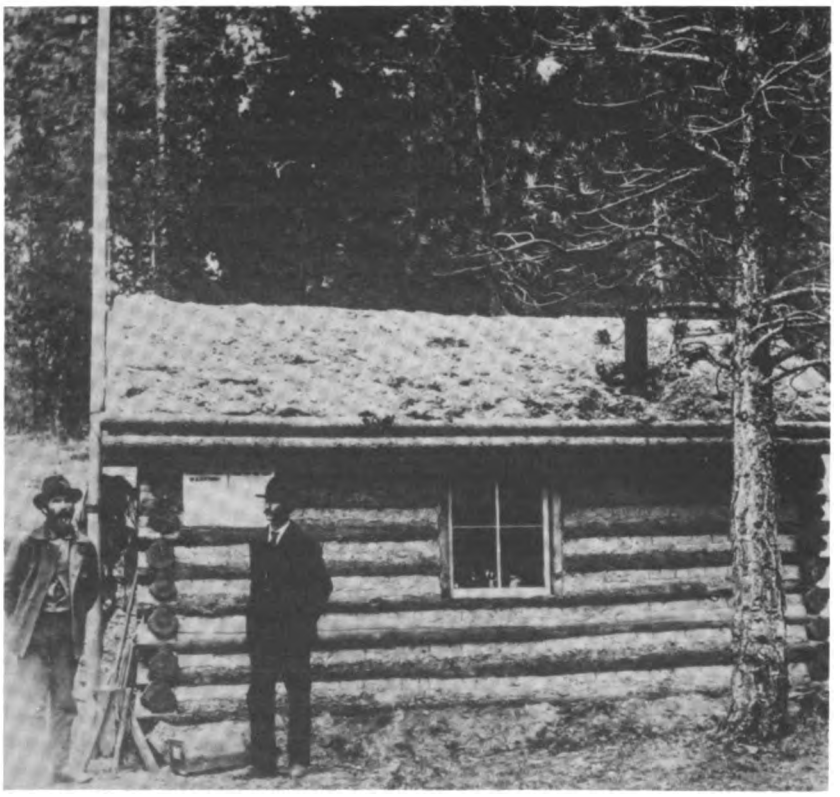
The position of supervisor of a forest was important and much sought after. These individuals were on the land—in touch with conditions and with people who wished to buy timber or graze animals on the respective national forests. If the supervisors enjoyed the outdoors, the streams, the mountains, and wildlife (and if they entered the Forest Service for a career, they probably did), the post of supervisor gave them authority over local matters, independence, and freedom to improve their forests under their direction—and to watch the growth and development.

With the position also went responsibility. As David Mason, who for a time was supervisor of the Deerlodge National Forest, recalled, the duties included directing the personnel and managing the finances of the forest, organizing a fire protection program, appraising standing timber, arranging timber sales and preparing contracts, overseeing logging operations, leasing grazing privileges for about 50,000 head of livestock, and supervising the construction and maintenance of forest improvements such as telephone lines, lookout towers, trails, and the like. Many foresters, from Aldo Leopold and Elers Koch to their contemporaries in Region 1, have evidenced the delight and pleasure of being supervisor of "their own" national forest. Many have looked back at their time as supervisor and concluded that it was the very best job in the entire Forest Service. [36]

The forest ranger's job also was attractive to many outdoor-minded individuals. Here the representative of the Forest Service met the public on a one-to-one basis, and to many local citizens, the ranger was the Forest Service. It was the ranger who had to

sell the Forest Service to a sometimes suspicious and hostile public—one distrustful of the whole idea of forest reserves and of a Federal Government presence in the local community. Yet, with tact and diplomacy plus hard work during its first decade, Forest Service personnel changed most of these attitudes to a positive appreciation for the work being done. Many ranchers and loggers who had been outspoken critics became staunch supporters of the Forest Service and its programs. Perhaps one of the most important achievements of the Forest Service during its first decade was the recognition of it and its personnel as members of the community. [37]

There were also important physical accomplishments during these early years. Rangers built cabins and lookout towers, cleared forest trails, and strung telephone wire. They also reviewed timber claims and were the contacts who prevented timber or grazing trespass. At the same time, the rangers were expected to use common sense and tact. As Pinchot wrote to Ranger J.B. Seeley, "[I]f you are out on the forest and come across a man who has broken his wagon tongue and cut a fir sapling to fix it, don't prosecute him for timber trespass, but get off your horse and help him fix it." [38]



The Alta Ranger Station on the Bitterroot National Forest in Montana, built in 1899, is the first/oldest in the Northern Region. Photo by USDA Photo Service.

In the winter, a ranger's work in the Northern Region seemed twice as hard, trips were twice as long, and the danger of injury or even loss of life was twice as great. As Elers Koch explained, in the summer, 15 or even 20 miles from a road or railroad was not a matter of concern; an easy half-day's hike or ride would take you back to civilization. But with below-zero temperatures and 4 or 5 feet of snow on the ground, 10 miles was a long way from anywhere. A broken leg, sprained ankle, or even a broken snowshoe might prove disastrous or even fatal. A man was much closer to the primitive life in winter than he would be in the same country in summer. Yet the forest ranger and even the supervisor were constantly on the go all year. The ranger became adept with snowshoes and later cross-country skis, which were often needed to patrol a district. Many rangers had stories to tell of accidents, avalanches, blizzards, or encounters with hungry bears and the like. [39]

Despite the hard work, responsibilities, and frequent dangers, the salaries in the Forest Service remained very low. Forest supervisors received $1,500 to $2,000 per year. A ranger's pay ran from $900 to $1,400. The fact that Chief Pinchot in Washington had an annual salary of only $3,600—he made no effort to have it increased, being independently wealthy, and each year he gave away to charity and foundations more than his forester's salary—effectively put a lid on the Forest Service payroll from the top down. Yet there were other compensations. Many rangers put in entire careers with the Forest Service in one place or in the same region. For example, N.E. "Than" Wilkerson joined the Bitterroot Forest Reserve as a ranger in 1899 (under the Department of the Interior), continued in the service until retirement, and later recalled with pleasure his adventures and experiences as a forest ranger in the Northern Region. [40]

The year of a forester was divided into two parts—the fire season and the rest of the year. [41] In a bad year, the forester could expect nothing but fire, and more fire from June until the September rains came. Then the balance of the fall until the next spring would be spent making plans for the next fire season. There were bad fire years in 1902 and 1905. The year 1908 was troublesome along the route of the Milwaukee Road, which was building westward through the central part of western Montana.

The 1910 Fire

These experiences were but a prelude to the great "blowout" of 1910. According to the reports of the forest rangers, the spring of 1910 was unusually dry and the month of July intensely hot. Fires had broken out in many parts of the region, but forest rangers plus some 3,000 additional firefighters had contained

and extinguished them by prompt action. The situation was potentially so dangerous that President William Howard Taft had authorized the use of the Army as firefighters in the northern Rocky Mountains. Then on August 20, the wind rose to gale strength and little fires turned into big ones:

> For two days the wind blew a gale from the southwest. All along the line, from north of the Canadian boundary south to the Salmon, the gale blew. Little fires picked up into big ones. Fire lines which had been held for days melted away under the fierce blast. The sky turned a ghastly yellow, and at four o'clock it was black dark ahead of the advancing flames. . . . [T]he air felt electric as though the whole world was ready to go up on spontaneous combustion. The heat of the fire and the great masses of flaming gas created great whirlwinds which mowed down swaths of trees in advance of the flames [42]

Firefighting brigades found themselves surrounded and sometimes overwhelmed. So great was the disaster that trains were crowded with refugees fleeing the region. The fires continued until a general rain on August 31 brought the situation under control. An accounting showed that 80 firefighters and dozens of settlers died as victims of the rampaging flames. More than 3 million acres of timber were destroyed, and smoke had darkened the skies as far away as Denver and Kansas City. The fire had burned out many sawmills and villages and destroyed about one-half of the town of Wallace. Scars of the 1910 fire remained visible a generation later.[43]

Greeley himself spent many days on the fire line, plugging weak spots and arranging relief for exhausted rangers. With approval from the executive officers, Greeley even pressed men from the construction crews of the Northern Pacific and Great Northern into the struggle to contain the holocaust.[44]

The 1910 fire hastened steps to coordinate and expand the fire prevention facilities of the region. Greeley actively encouraged timber owners to organize a formal body, and they established the Northern Montana Forestry Association to provide protection for more than a million acres of industrial timberland outside the national forests. The State of Montana had created a State Forestry Board in 1908 and appointed Charles W. Juneberg as the State Forester. He supervised some 200,000 acres of State land and was directed to cooperate with the Forest Service and private landowners. In Idaho, timber owners organized the Western Forestry and Conservation Association in 1909. The 1910 fire generated new members

and new funds for these organizations and associations. One lumber company official explained the necessity for cooperation succinctly and simply: "[I]f the fire wasn't on my land it soon would be if I didn't put it out." [45]

The next year, Congress passed the Weeks Law, which provided Federal matching funds for States that established effective State organizations to protect their forests from fire. The great fire of 1910 provided an imperative incentive for Federal, State, and industry agencies to band together to fight the constant fire menace in the Northwest. [46]

The famous Ballinger-Pinchot controversy in Washington, D.C., resulted in the removal (1910) of Pinchot as Chief of the Forest Service and the appointment of Henry S. Graves, Dean of the Yale Forestry School, as his successor. Graves supported the first Chief's position favoring Federal regulation of the cutting practices on industrial forest land. But Graves was not a crusader like Pinchot; he pursued his goals in a more quiet and diplomatic way. In 1911, Graves brought Bill Greeley from the Northern Region to Washington to be his assistant and serve as the head of the Office of Forest Management. Here Greeley had charge of the administration of the Weeks Law (which he helped push to enactment) and could test his own belief that cooperation and education would produce more and better forests than strong-armed Federal regulation. [47]

Burned-over area, St. Joe National Forest. Photo by J. B. Halm (Idaho Panhandle National Forest).

Reference Notes

1. Michael P. Malone and Richard B. Roeder, Montana: A History of Two Centuries (Seattle: University of Washington Press, 1976), passim.

2. Ibid, pp. 50—55.

3. For the record, the first sawmill in the Northern Region was the work of a missionary, the Rev. Henry H. Spalding, who built a small waterpowered mill on Clearwater River (Idaho) in 1840. Five years later, Father Anthony Ravalli built a similar mill in the Bitterroot Valley of Montana Territory. Both of these were small, largely homemade outfits whose sash saws produced boards only a little more quickly than the old whip saw method. Both of these pioneer mills disappeared long before the gold rush of 1863. See Bob Hewitt, "Early History of Montana's Lumber Industry," historical files, Region 1, Missoula; and S. Blair Hutchinson, "A Century of Lumbering in Northern Idaho," The Timberman 39 (August 1938): 30.

4. E.F. Rapraeger, "Frontier Sawmill," The Timberman 42 (May 1941): 14—5, 36.

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11. Clarence C. Strong and Clyde S. Webb, White Pine: King of Many Waters (Missoula: Mountain Press, 1970), pp. 21—22.

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14. Shirley Jay Coon, "Economic Development of Missoula, Montana," unpublished doctoral dissertation, University of Chicago, 1926, pp. 99—103; Hewitt, "Early History".

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16. Hewitt, "Early History of Montana's Lumber Industry," historical files, Nine Mile Ranger Station, Lolo National Forest, Missoula; Malone and Roeder, Montana, pp. 253—254.

17. Strong and Webb, White Pine, pp. 103—110.

18. Hewitt, "Early History"; Strong and Webb, White Pine, pp. 111—115.

19. Strong and Webb, White Pine, pp. 115—119.

20. Gerald C. Franc, "The Beaver Creek Flume," Clearwater National Forest, Forest Service (n.d.). Note: Potlatch employee Al Roeben supervised the construction of the Beaver Creek Flume and provided most of the information for this account.

21. Hidy et al., Timber and Men, pp. 257—258.

22. Michael Koch, Steam and Thunder in the Timber: Saga of the Forest Railroads (Denver: World Press, 1979), pp. 388—393; Strong and Webb, White Pine, pp. 121—125.

23. Strong and Webb, White Pine, pp. 133—158.

24. Henry B. Steer, Lumber Production in the United States, 1799—1946 (Washington: USDA Forest Service, 1948), pp.

1—16. For a comparison with leading lumber-producing States for the selected years, the figures are as follows: Michigan—4,178,610,000 in 1879; Wisconsin—3,389,166,000 in 1899; Washington—4,097,492,000 in 1910; and Washington—7,027,323,000 in 1925. The U.S. total ranged from 35 to 40 billion board feet for most years between 1899 and 1929. *Note*: Northern Idaho produced about one-half of Idaho's reported cut.

25. Hidy et al., Timber and Men, pp. 388—392; Strong and Webb, White Pine, pp. 25—32.

26. Malone and Roeder, Montana, pp. 129—151; Strong and Webb, White Pine, pp. 25—34.

27. See Elers Koch," Early History of the Forest Service in Western Montana," typescript, historical files, Region 1.

28. Ibid.

29. "Early History of the Custer National Forest," historical files, Custer National Forest, Billings, Montana.

30. Harold K. Steen, The Forest Service (Seattle: University of Washington Press, 1976), pp. 52—102; Thomas R. Cox, Robert S. Maxwell, Phillip Drennon Thomas, and Joseph J. Malone, This Well-Wooded Land (Lincoln: University of Nebraska Press, 1985), pp. 183—188.

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33. Morgan, Greeley, pp. 14—17; Greeley, Forests and Men, pp. 73—81.

34. Koch, "The Forest Service in Western Montana"; Coon, "Economic Development of Missoula," p. 166.

35. See Steen, The Forest Service, passim; Rodney C. Loehr, Forests for the Future (St. Paul: Forest History Society and Forest Products History Foundation, 1952), p. 23.

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37. N.E. Wilkerson, "Historical Material: Bitterroot National Forest," historical files, Region 1.

38. Koch, "Forty Years a Forester."

39. Ibid., pp. 115—121.

40. Ibid.; Wilkerson, "Historical Material: Bitterroot National Forest."

41. Koch, "Forty Years a Forester," p. 68.

42. Elers Koch, When the Mountains Roared, Stories of the 1910 Fire (Coeur d'Alene, ID: Idaho Panhandle National Forest, n.d.), p. 3.

43. Ibid., pp. 1—37; Ralph R. Widner, Forests and Forestry in the American States (Washington, D.C.: Association of State Foresters, 1968), pp. 178—79, 255.

44. Greeley, Forests and Men, pp. 16—26.

45. Widner, Forests and Forestry, p. 256.

46. Ibid., pp. 179, 253—56. Unfortunately, the two States did not take full advantage of the Federal program until after the passage of the Clarke-McNary Act in 1924 (pp. 261—62, 294).

47. Morgan, William B. Greeley, pp. 30—31.

Chapter 4

Early Resource Management

The early Forest Service consisted of college-trained individuals from the East and practical "westerners" when the forest reserves were formed. Region 1's first "District" Forester, William B. Greeley, marveled at how these two diverse elements (easterners and westerners) became "integral parts of the whole," providing the base for the development of a truly unique organization. Greeley delivered three informal lectures at the University of Montana in 1908 and 1909—The Development of Forestry in the United States," The Administration of the National Forests," and "The Organization of the Forest Service, Its Requirements and Opportunities." [1] These lectures explained the philosophy on which the Forest Service was conceived and provided a portent of the role the agency was to play in the Northern Region.

Greeley, as did Chief Forester Gifford Pinchot, espoused a concern for the wise use of the national forest resources. He explicitly believed that the Forest Service should control timber resources as a mechanism to stabilize and protect the timber industry and to ensure a permanent timber supply. He also felt that promotion and salary within the Forest Service should rest entirely on merit rather than on seniority, as was traditional in most Government agencies. Greeley's administration set the style and tone of the Forest Service in the northern Rocky Mountains—to wisely manage the public's national forest resources. [2] Major programs of foresters in those early years involved inventorying the timber, organizing the forests for orderly use, reseeding or replanting timber already cut, managing the grazing resources, and protecting the forests from fire, insects, and disease. Although the mission has grown more diverse and the technology more sophisticated, the essential mission of the Forest Service in the Northern Region has remained consistent from that time to the present.

The Deteriorated Forests

The deteriorating condition of particular areas of the public forests and ranges in Montana and northern Idaho was clearly evident by the latter part of the 19th century. An 1888 report on forest conditions in the Rocky Mountains noted that the forests were being reduced by railroad use, lumbering, mining, and fire. An 1897 survey in northern Idaho indicated that on 4 million acres of public domain not yet in forest reserves, 85 billion board feet of timber remained, but an estimated 8 billion had been cut and 43 billion had been destroyed by fire. [3]

The 1907 Yearbook of Agriculture contains a graphic illustration of the destructive cutting that was occurring in Montana. The following statement is central to the perception of the mission of the Forest Service in the region at that time:

> The consequences of destructive cuttings are to be seen everywhere through the National Forests, but especially in the lodgepole pine region of the middle Rocky Mountains, where the demand for timber was great. Thus around some of the mining centers near Butte, Mont., large areas were cut over under real or pretended compliance with the provisions of the act of June 3, 1878. Smelters were established in Butte in the early eighties, and as coal was not then available, wood was used for fuel. This, together with the immense quantities used for mining timber, has been a great drain on the forest resources of the region. Wood of all sizes was utilized, and in tall, dense stands of lodge pole pine on the rounded hills and slopes of this region, clear cutting was the rule. On what is now the Helena National Forest it is estimated that 140,000 acres (218 square miles) were cut over and 3,000,000 cords taken out before the creation of the reserve. Most of this cutting was done before 1897, and in the vicinity of Butte a great deal was done before 1877. No limit except hauling distance was placed on the size of the areas to be cut clear. Along all the principal streams and creeks clear cuttings extend back from one to three miles. In some places spurs were run out from the railroads. On Mike Renig Creek, for instance, a spur track was built up the creek seven miles and the slopes were stripped clear for from half a mile to two miles on each side. ◂

Thus, the mission of the Forest Service in the region was not only conservation and preservation, but replenishment of both the timber and wildlife resources.

Inventory: A Prelude to Management

The first step in effective management was the not-so-simple inventory of the renewable and nonrenewable resources within the region. It was bad enough that forest fires, timber cutting, overgrazing, and trapping had depleted timber and wildlife resources in the past. When the Forest Service assumed control of the Federal forest reserves in 1905, wildfire swept through much of the region, causing additional damage to millions of acres of timber, wildlife habitat, and drainage systems. Many of the older inventories had been sketchy at best; some forests had never been inventoried, and conditions on all the forests had changed over the decade preceding the creation of the Forest Service.

President Grover Cleveland's proclamations establishing the forest reserves predated management plans for those reserves. Many of the parcels of land recommended for the reserves were assumed to be worthy of inclusion, without any knowledge of their actual conditions. Gifford Pinchot and his young foresters wished to absorb as much of the public domain into the forest reserve system in as short a time as possible, but they often had extremely meager information. The potential the lands had for timber production and livestock grazing was one consideration for inclusion within the forest reserves. Other factors, such as watershed protection, also were in the inclusion criteria. However, making an informed decision based on the available inventory data was almost impossible.

The earliest survey efforts, beginning in July 1897, were led by the U.S. Geological Survey and organized by the chiefs of the Rocky Mountain and Pacific sections of the forest reserves under the direction of Henry Gannett. The surveys were actually conducted by foresters borrowed from the USDA Division of Forestry, and they were extensive (rather than intensive) in nature. The reports of these inventories (called forest surveys) were titled "Forest Conditions in the (name of reserve)" and included information on the distribution and character of forests and woodlands, the amount of forest fire damage and dead timber, where timber had been cut, and the effects of grazing on the forests. [5]

The first surveys in the northern Rocky Mountains were made on the Lewis and Clark, Flathead, Bitterroot, and Priest River Reserves in 1897-1898. These reserves were established by the proclamation of February 22, 1897, to be effective March 1, 1898. By July 1, 1890, the following reserves had been established in what was to become the Northern Region. [6]

Reserve	Location	Acreage
Bitterroot	Idaho and Montana	4,147,200
Black Hills	South Dakota	967,680
Flathead	Montana	1,382,400
Gallatin	Montana	40,320
Lewis and Clark	Montana	2,926,000
Priest River	Idaho and Washington	645,120

Reports on forest conditions of the Absaroka Division of the Yellowstone Forest Reserve (proclaimed on September 4, 1902, as the Absaroka Forest Reserve and transferred to the Yellowstone on January 29, 1903) and of the Little Belt Mountains Forest Reserve (proclaimed August 16, 1902) in Montana were

published in 1904. Although the original survey appropriations for fiscal year 1897—98 had been $150,000, these later surveys were conducted on a total allotment of $25,000. They necessarily provided little hard data and a broadly conceived evaluation of the forest resources. [7]

By 1907, there were nearly 30 million acres on the national forests of the Northern District (later Region). During the next decade, many of these acquired lands were surveyed and reviewed for the first time, and some lands were subsequently excluded from the National Forest System. Some lands were dropped because they were missurveyed, others because they were submarginal in timber growth potential, and others because they were agricultural in nature and claimed for farming under the Homestead Acts of 1906 and 1912. More than 100 farmers in the Kootenai Valley, Montana, petitioned to keep their sections of land, which were within national forest boundaries. Thus the narrow valleys at the confluence of streams on the Kootenai River were zoned agricultural; on the Fortine Creek of the Blackfeet National Forest in northern Montana, a valley almost 3 miles in width was zoned agricultural. [8] By 1919, the total area of the Northern Region had been cut to approximately 22.5 million acres. Fire control and management problems were compounded by the private holdings within forest boundaries.

Only by the end of the 1920's had the general land designations been stabilized. Additions and deletions have occurred annually since that time, but the total area of the region has remained more or less constant. The total acreage of the region at key dates in its early history are as follows: [9]

Date	Acreage
April 1, 1907	29,624,425
June 30, 1909	28,840,384
June 30, 1914	26,166,122
June 30, 1919	22,480,180
June 30, 1924	22,397,779
June 30, 1929	22,281,881
September 30, 1987	24,053,305*

(*Includes the national grasslands added in 1954.)

Even in the early days, many raised questions about the productivity of some of the land to be included in the Northern Region. In 1904, Forester R.E. Benedict prepared a comprehensive report for the Bureau of Forestry on a proposal to add large and often inaccessible tracts of land to the Bitterroot Forest Reserve. He alluded to the necessity of making below-cost timber sales in the

tract, a matter of concern many decades later. His management analyses of the proposed 3-million-acre addition of lands on the watersheds of the Payette, Salmon, and Clearwater Rivers resulted in the proposal being withdrawn because the entire acreage would be too large to administer as a single unit. Instead, the addition of 452,357 acres north of the Salmon and adjoining the west boundary of the Bitterroot Reserve was recommended. [10]

Such decisions, however, required "hard" information about the acreage under consideration, and that information was most often lacking or deficient. The 1907 edition of "The Use Book" (The Use of the National Forests) addressed the need for better inventories:

> At first a great many of the National Forests were made without knowing exactly where the boundary lines should run. This was unfortunate; because some agricultural lands which should have been excluded were taken in, and a good deal of timber land which should have been included was left out. This could have been avoided by making examinations on the ground, but there was no money for the work, and so the boundaries had to be drawn very roughly. Since 1900, however, men and money have been available for field examinations, and rough and inaccurate work has been done away with entirely. The old and carelessly made National Forests have been surveyed and mapped, and the President has put back into the public domain those lands which should not have been included. Now, before new forests or additions to the old ones are made, all the lands are examined on the ground. [11]

The Early Forest Surveys

Forester David T. Mason, who later gained fame as the standard-bearer for the "sustained-yield" concept, provided much of the initial planning for the inventorying and early harvesting programs of the region. His first job, beginning July 1, 1907, brought him to the Montezuma National Forest in southwestern Colorado as a technical assistant in charge of timber surveys, timber appraisals, and the preparation of forest plans. He moved to Washington, D.C., the following May, but he transferred to Region 1, with headquarters at Missoula, Montana, when the Forest Service organized the Northern Region on December 1, 1908. In preparation for the transfer, Mason had inspected a timber sale on the Kaniksu National Forest and had examined fire-damaged timber on the Coeur d'Alene Indian Reservation. At the District (Regional) office, he served as assistant chief of silviculture, "responsible for all technical work relating to timber

surveys, appraisals, and sales and for the supervision of cutting operations, forest management plans . . . (etc.)." [12]

In June 1910, Mason became supervisor of the Deerlodge National Forest, which then had the largest timber sales program of any national forest. He "began a working plan for the management of the Deerlodge" before being assigned as assistant district forester for District 1, which at the time made 40 percent of all timber sales in the Forest Service. He noted in his diary on October 18, 1913: "We figured out a fine way for the Service to start logging insect-infested timber —an operation paying costs." [13] The problem of harvesting insect-infested timber never abated, however, and solutions remained imperfect and timber reconnaissance an eternal necessity.

In July 1909, John S. Baird organized a reconnaissance crew on the Deerlodge National Forest. The timber there was being killed by smelter fumes. Everything affected had to be cruised and sold. Baird made a timber estimate by 40-acre sections and a topographic-and-forest-type map. Because most of the area was unsurveyed, a skeleton survey in each drainage had to be made by putting in temporary section corners. Thus, reconnaissance and survey, as Hartley A. Calkins commented, was a very inexact business. Base lines for timber reconnaissance and range surveys were conducted by transit survey. Route surveying for the construction of forest roads was necessary; it was usually conducted by compass and (abney) level. In June 1910, Baird moved to the Helena National Forest to begin similar surveys. [14]

The cursory timber inventories conducted before and after the forest reserves were proclaimed were becoming more formalized as the fledgling Forest Service began its operations in the northern Rocky Mountains. Beginning in 1908, the region issued instructions for reconnaissance and timber work and called for the examination of Northern Pacific Railroad lands. William B. Greeley, Ferdinand A. Silcox, and others developed these instructions. Adjustments and additions were made to the instructions each year until 1914, when the complete "Manual of Timber Reconnaissance, 1914" was issued. [15]

William W. Morris recalls the rough reconnaissance work he did during the summer of 1909 on the Coeur d'Alene National Forest. His first job was to prepare a map of the "watershed of timber" in colors to indicate areas timbered, burned, or bare and those that could be planted and restocked. From this map, a working plan for the national forest was developed. Morris explained, "a working plan is a detailed plan of running a

forest. In the plan a certain amount of timber is allotted to be cut each year on a certain area, or during a certain period, so arranged that the forest will not be overcut. The plans also show the areas to be restocked, and the improvements to be made." [16]

Foresters made two types of reconnaissances in the region during the early years. An extensive reconnaissance (1- to 5-percent samples) helped select areas for logging units and roughly calculate growth. An intensive reconnaissance (5- to 10-percent samples) provided data for future timber sales and working plans. In 1926, the forest survey status of the national forests in the region showed that almost 40 percent of the land area still had not been inventoried (see Figure 4.1). [17]

Land classification, both intensive and extensive, supplemented the reconnaissance. Clarence B. Swim remembers being placed in charge of this activity in the District office in 1913. Intensive classification projects were scattered from the Kaniksu to the Custer National Forest. "Each forest," he said, "made a large bulky report on atlas-sized paper, that is, 18 by 22 inches, covering the entire forest, and dividing the total land acreage into two general classes—land entirely non- agricultural, and land agricultural or possibly agricultural in character." Forest classification was a huge job, sometimes requiring 7 years to complete. [18]

Early reconnaissance and classification foresters in the region included John F. Preston, David Mason, James Walter Girard, and Elers Koch. Preston was assigned to the region in 1908, but he spent much of his time working as a traveling representative in the Pryor Mountains of Montana. [19] While in Missoula, Mason's job was to supervise timber reconnaissance and mapping. He prepared the "Manual of Timber Reconnaissance, 1914," which was "considered the best of its kind at the time." Mason joined the faculty of the University of California in 1915, having gained some of his teaching experience through 3-month lecture courses on forestry at the University of Montana in 1911 and 1912. [20] Another pioneer in developing timber reconnaissance and appraisal techniques was Girard, who became legendary as a timber cruise (see discussion under "The Sale and Free Use of Timber" later in this chapter). [21]

Elers Koch spent much of his early career in the region on boundary work. He once said about such work, "There was no great amount of burdensome detail, the country was mapped by traverse and from high points, sketching in the various

timber types, grass land, barren and brush. We figured on covering half a township to a township (36 square miles) a day, and that is a lot of country." In 1904, he made boundary surveys in Montana and Wyoming, and he covered his home area, the Gallatin Forest Reserve. Gifford Pinchot made Koch a forest inspector for Montana and Wyoming in 1905. [22]

In 1907, Koch became "supervisor" of the Montana division of the Bitterroot National Forest, the newly created Lolo National Forest, a portion of the new Hellgate National Forest, and the recently established Missoula National Forest. Much of the land in these forests was unmapped and largely unexplored. Koch assigned his foresters, such as John D. Jones, a graduate of the University of Montana, to the Lolo National Forest to "locate timber trespass, check on fraudulent claims, make some timber sales where needed, and generally find out what was going on." His assistant supervisor, Willard W. White, a graduate of Cornell University, was responsible for "timber work, cruising and looking after the sale of timber." [23]

Thus in the early days, a major effort of the Forest Service in the Northern Region was simply to find out what was there. Reconnaissance, inventory, and classification were essential to planning for effective management. In 1909, the resurvey of the national forest boundaries within the region was completed, and serious planning could begin. [24]

Planning for Management

Because inventories took so long to complete in the Northern Region, working plans, timber management plans, silvicultural plans, and other management plans were still being produced during the second and third decades of the region's existence. Samples taken from forest working plans, statements of policy, and management plans from the archives of the region include the following: [25]

National Forest	Title of Plan	Date
Beaverhead	Outline of Forest Working Plan	Feb 20, 1913
Bitterroot	Preliminary Statement of Policy	July 1, 1921
Coeur d'Alene	Statement of Policy	April 19, 1924
Deerlodge	Outline for Timber Management Working Plan	July 1, 1921
Flathead	Preliminary Statement of Policy	March 2, 1921
Jefferson	Preliminary Statement of Policy	May 12, 1922
St. Joe	Preliminary Working Plan	April 10, 1923
St. Joe	Management Plan and Policy	1927

The working plans were relatively simple documents; they included general outlines of the forest's history, topography, climate, geology, soils, land classification, transportation, settlements, industries, ranching and grazing, and lumbering. The Bitterroot preliminary statement of policy was a brief 4-page statement containing information on "working circles," or areas of timber stands for future harvesting. The booklet covered estimates of timber volume, the limitation of the annual cut, the objective of management, the policy on selling timber, the probable demand, the working plans needed, and the sequence of cutting. [26]

The Deerlodge plan of 1921 was prepared in three parts with an appendix. Part I, the preface, included sections on the limitation of cut, working circles, rotation, cutting cycles, and sales; Part II contained the theory of regulation and listed technical and administrative needs to prepare schedules for harvest, silviculture, and regeneration; Part III included descriptions, recommendations, maps of the forest that displayed merchantable timber stands; overmature, overdense, diseased, and dead timber; and other sites, stands, cutting areas, and special work areas. The appendix contained reference sheets for the supervisor and district rangers, along with special records. [27]

To ensure that national forest timber would be perpetuating, the region devised timber marking rules to obtain another crop when the overstory timber was removed. One of the means for determining how to cut was to major forest type within the Northern District (Region). Methods-of-cutting studies were among the scenarios. Forest examiner C.K. McHarg, after studying how western white pine stands on the Coeur d'Alene National Forest had been cut for 2 years, concluded that the previous marking rules were too rigid. He proposed a revised marking standard, thus indicating that onsite study and observation had a place in developing the best way to manage the timber stands in the region. [28]

The Sale and Free Use of Timber

From the beginning, the young foresters in the Forest Service believed, as did Gifford Pinchot, that the forest resources were for use. Therefore, policies to sell timber to commercial interests and to furnish small amounts for "free use" (actually at the cost of making the sale) for local residents were quickly adopted. In a letter dated August 4, 1908, to E.A. Sherman, the Washington Office associate forester recommended that a general timber sale policy could not be promulgated for each national forest, but rather should apply to groups of forests. Region 1 announced its timber sale policy in a memorandum effective July 1, 1908, and

Forest Service scalers, Kaniksu National Forest, 1923 (Idaho Panhandle National Forest).

each administrative unit (national forest) subsequently adopted its own general sale policy. On no national forest was the cut estimated to exceed 1 percent of the total amount of standing timber.[29]

The region, notwithstanding cutting constraints, was a leading provider of national forest timber. In the fiscal year starting July 1, 1905, the State of Montana ranked third in sales with 53 million board feet; Idaho sold more than 9 million board feet. Records for the fiscal year starting July 1, 1906, indicate that as high as 3.98 percent of the volume standing was cut on one national forest (Bitterroot) and less than 1 percent on the Coeur d'Alene. From 1914 through 1922, the timber sales volume for the region was erratic, with large volumes sold one year and smaller volumes the next (see Figure 4.2). The region ranked high in sales when compared with the National Forest System total during the early years, but sales declined as production in Districts (Regions) 5 and 6 increased.[30]

William Greeley, in charge of silviculture, prepared a comprehensive report in 1912 on the nature of timber sales to large and small operators on the Deerlodge National Forest. He stated that the forest supplied 119 timber operators, one of which was a large operator logging in the high country near the Continental Divide and investing large amounts in flumes, roads, and equipment. The smaller operators, with more limited capital, worked the lower, more accessible areas of the forest. Most of the timber, when converted into lumber products, was used in the copper mines near Butte, Montana. [31]

The salvage of dead timber was an important element of the "wise use" concept. Following the devastating fires of 1910, the Senate Committee on Public Lands, in 1912, authorized the "Sale of Burnt Timber on Public Lands," through H.R. 9845. The report specifically cited the large areas of land in Minnesota, Idaho, Washington, and other Western States that had burned in 1910; it authorized the Government to cut and dispose of the burnt timber [32]

The salvage of dead timber was an important element of the "wise use" concept

The opportunity to obtain timber for free use was especially welcome to local farmers and residents. Many national forests, especially in sparsely forested areas, served as community woodlots. The Sioux National Forest, located on the Dakota-Montana line, for example, served 1,200 to 1,500 farmers. Chief Forester Graves listed the following uses of national forest timber by farmers: cordwood, fence posts, derrick poles for stacking hay, corral poles, barn rafters, and lumber for buildings. [33]

Greeley cited several illustrations of national forest timber sale policies in the Northern Region in the 1912 Yearbook of Agriculture. He indicated that the primary consideration in setting annual timber harvest for a national forest is the needs of the local community; no sales were to be made to outside markets unless the growth on the national forest exceeded local demand. For example, the Sioux in South Dakota and the Madison in Montana were forests that sold all the allowable cut locally. Timber sales from the northern Idaho forests went to national markets because local needs were minimal. The Madison National Forest supplied timber for nine operators. Five small mills drew from the timber stands of the Helena National Forest.

In some regions, national forest timber supplied the Beartooth National Forest, for example, supplied more than 100,000 round mine props annually for mine operators. Montana forests also produced an average of 120,000 railroad ties annually. Large and small operators in Montana and northern Idaho found log

markets at the downstream end of river log drives. These special conditions occurred on such forests as the Kootenai, Priest River, St. Joe, and Pend Oreille. [34]

Provisions for administering timber sales and free use on the Clearwater National Forest for the fiscal year ending June 30, 1913, included an allowable cut approximately equal to the annual yield. However, because the forest was inaccessible to the general market until rail or roads could be built administrators anticipated that this cut would not be reached. Although free use was set at 100,000 board feet, there was little demand even for that. Maximum stumpage prices were $4 and $2 per million board feet, respectively, for green and dead white pine and $2 and $1 per million board feet, respectively, for green and dead mixed sawtimber. [35]

Before national forest timber could be sold, an appraisal was needed. This policy predated the Forest Service, having been mandated by the Sundry Civil Appropriations Act, which was approved June 4, 1897. Timber sales with appraisals were conducted by the U.S. Geological Survey under this act, before any of the national forests were created. [36] The appraisal report prepared for a proposed timber sale on Four Mile Creek on the Lolo national Forest by Jim Girard and others and dated December 28, 1915, offers a good insight into the nature of such appraisals. The 13-page document, covering a 2,400-acre tract composed of 62 percent yellow pine, 24 percent Douglas-fir, 11 percent larch, and 3 percent mixed species provided detail estimates of logging and miling costs. At current stumpage prices in the area, according to the appraisal, the logging costs would not allow any appreciable margin for profit and risk. It was recommended that the cut be withheld until lumber or log prices increased.

Girard, who supervised this appraisal, was one of the most proficient timber cruisers of all time. He began his working career piling brush for the Burlington Railroad. He then worked for a small lumber company in Coeur d'Alene, Idaho, falling timber, bucking logs, and piling the inevitable brush. In the spring of 1907, he was employed by the Anaconda Copper Mining Company and joined the Forest Service on February 1, 1908, as a forest guard. Girard took correspondence courses in English, engineering, business administration, and cost accounting. From 1908 to 1910, he worked on a large timber sale to Anaconda and trained college graduates in cruising and log scaling. In 1909, he was placed in charge of the 50-million-board-foot Big Blackfoot Milling Company sale at Seeley Lake. He passed the scaler's examination in 1912 and the lumberman's examination in 1915, when he was appointed logging engineer for the Coeur d'Alene. He was a living legend by the mid-1920's. [37]

The need for sound timber marking rules for each forest type within the Northern Region affected how timber appraisals were prepared and whether a positive appraised price was justified. A timber appraisal study by Albert Wiener (1982) recited the example from Region 1 set by forest examiner Donald R. Brewster in 1915. Brewster recommended that white pine be clearcut in mature stands and shelterwood cut in immature stands. The average logging costs for this type in that year were $6.44 per thousand board feet. The larch/Douglas-fir type averaged $4.33 per thousand board feet. [38] Given an average stumpage price of $1.83 per thousand board feet in the region that year, the logger would have lost $2.11 per thousand on the harvest.

Elers Koch made his first timber sale on the Bitterroot to an Idaho outfit competing with the Anaconda Copper Mining Company, (but soon bought out by Anaconda). The timber was marked by the selection method; the mature ponderosa pines—the ones with the wide bark plates and the thinning crowns—were selected, and the thrifty growing trees (that is, those with the black bark and the thick crowns) were saved for a later harvest. Despite the purchasers' dislike for the practice, timber cuts required that slash be piled and burned. Koch visited the sale area 45 years later and the stand there indicated that the original timber marking was wisely done. [39] He said:

> I always figured that if the Forest Service did a good job without fear or favor, opened up the country with trails, administered our timber sales and grazing permits fairly, kept down the forest fires, and made a good showing in efficiency and economy, the works would speak for themselves [40]

Other Tasks of Resource Management

In 1907 and 1908, the Milwaukee Railroad was being built through the Lolo National Forest, requiring rights-of-way, permits for building construction, timber sales, and other activities. The fires associated with the right-of-way clearing became a greater hazard in 1908 because of considerably reduced rainfall. Firefighting thus became a larger task for the Forest Service.

Reforestation by tree planting was always a minor activity, for most stands were reforested by natural seeding following selective cutting. Planting did become important, however. Koch established Savenac Nursery at Haugen, Montana, while he was supervisor of the Lolo National Forest. For a time, Savenac was the largest Forest Service nursery in operation. It produced from 2 to 7 million seedlings a year for more than 35 years. [41]

Artificial reforestation in the Northern Region was generally unsuccessful during this period. For example, on one district of the Gallatin National Forest, a ponderosa pine plantation, a Douglas-fir plantation, and a Douglas-fir/ponderosa pine mixed plantation were all seeded in 1913, but there were negative results because of poor seed stock, shallow soil, and inappropriate elevation. The Gallatin did not attempt seeding again until 1935, when it experienced only modest results. [42]

During the early days of Region 1, there were also negligible results in insect and disease control. Koch recalled an incident in which an infestation of bark beetles in central Montana was fought by removing and burning the dead trees. When Koch realized they were losing the battle against the beetle, the Forest Service withdrew from the field and let the infestation run its course.

Controlling Wildfire

The historical records of Montana and northern Idaho are replete with references to large and damaging fires. Lewis and Clark reported burned-over areas; they noted that the Native Americans sometimes set fire to tree crowns as "fireworks." Col. Edgar T. Ensign said, in his 1888 Report on the Forests of North America, that in the Montana Territory, "The destruction by forest fires is almost beyond computation. . . ." [43]

Although the "Use Book" of 1907 advised that less that one-third of 1 percent of the total area of the national forests had been burned over, events in the Northern Region disproved that vital statistic. According to Koch, there are two parts of the year for a forester on the national forests of western Montana and northern Idaho—the forest fire season (early July until September rains) and the rest of the year. The "really bad fire years" in the Northern Region were 1910, 1914, 1917, 1925, 1926, 1929, 1931, and 1934, according to Koch. For sheer destructiveness, the fires of 1910 were the worst—a"complete defeat for the newly organized Forest Service force." John F. Preston remembered that, as late as February 1911, he found snags still smoking, sticking up through 5 feet of snow on the Stillwater burn. The economic loss in Region 1 was staggering—estimated at 6 billion board feet of timber with a value of $20 million. [44]

Although stories of forest firefighting in the early days indicate that the work was all done with saw, pick, and shovel, this was not the case. Gasolin-fueled water pumps and hose were available and were used in certain situations. Getting a firefighting crew together was difficult. Streets, saloons, and freight trains were the sources of most of the firefighters, and "we always expected most of them to be drunk," said Koch. John S. Baird

recalled being pulled from timber reconnaissance in July 25, 1910, to head up a fire crew. He was laced in charge of 40 men to control a fire near Borax, on the Wallace branch of the Northern Pacific Railroad, but their best was not good enough, he said later. The supervisor's meeting in Missoula during the week of January 22, 1912, John F. Preston remembered, was devoted to fire protection. [45]

Fires continued to plague the region, with each forester having a "most memorable" fire. Koch (who was Assistant Regional Forester and Chief of the Division of Timber Management from 1921 until his retirement in 1943) remembers the Lochsa River Fire of 1929 as one of his longest, most hard fought campaigns in an inaccessible primitive region. Firefighters reached the site on August 2, when it covered only 3/4 acres. A wind arose in mid-afternoon and blew the fire across the line. A lookout called for reinforcements. By 7:00 a.m. the next day, 9 men were working the fire. By August 7, 50 had been called in, and by the 13th, the crew was forced to flee downstream to the fire camp at the mouth of Bald Mountain. No progress was made during the next week. By the 21st, fighters from the Lolo, Clearwater, and Selway had joined the fray. Not until September 8, with 95 miles of fire line and 480 men on the line, had the fire finally been contained. The ordeal lasted 33 days. [46]

Livestock Use: Encouraged, but Regulated

Cattle and sheep exploded onto the ranges of Montana during the last two decades of the 19th century. Cattle increased from 117,000 head in 1870 to 662,000 in 1880; by 1886, there were an estimated 1,050,000 cattle in the State. According to Paul Roberts, Montana's sheep herds grew from 260,000 head in 1891 to more than 6 million by 1900. Idaho ranges stocked more than 3 million head of sheep in 1900. [47] Thus strong pressure for new grazing lands coincided with the development of management plans for the newly created national forests.

The Northern Region Retirees History Advisory Committee claims, "prior to and during the Forest Reserve status of the public domain, there was utter chaos on the range lands." It was a matter of first come, first served, and unrestricted numbers of cattle ranged the forests as soon as the snows receded. "Needless to say the lands were severely overgrazed. There was little or no consideration for wildlife needs. Soil erosion and plant destruction were rampant." When the Forest Service attempted to impose controls on livestock grazing, it met resistance, animosity, and at times outright threats to individual rangers. [48]

One of the first controls imposed by the Forest Service was to charge for livestock use on the forests. John W. Lowell recalled a Western Slope Stock Growers Convention in the latter part of

1906, where Gifford Pinchot quietly addressed a hostile audience and succeeded in convincing many of the advantages of grazing regulations on the national forests. The Forest Service recognized the vital importance of the range resources to the area's farming and ranching industry.

Many of the region's forests were clearly unsuitable for extensive grazing. The Flathead, for example, held only 88 head of cattle in 1909, with its largest number, 2,000, grazing in 1953, according to Charlie Shaw in The Flathead Story. He reported that approximately 1,400 horses grazed in 1924 and around 3,200 in 1932. Grazing of sheep on the Flathead was never a large operation because of windfalls and the absence of desirable plants. In 1909, 250 head of sheep grazed; the number peaked at 18,000 in 1917. None were reported after 1943. [49]

Worried that grazing potential might not be adequately used, in 1913, the Forest Service issued a prospectus describing and locating unused rangeland on each national forest. Foresters estimated that the western part of the Northern Region could support approximately 400,000 sheep on summer range. Transportation systems, rail shipment, and eastern markets were reviewed. Subsequently, the number of sheep grazing on regional forests rose dramatically (see Figure 4.3). [50]

In some areas, however, there was more demand than forage. On the Custer National Forest, stock raising on a large scale succeeded the buffalo-hunting era. Sheepherders were discouraged from intruding on this cattle-grazing region and often had to fight for grazing rights. Although the advent of the Forest Service seemed to end the violence, the contention for grazing rights rose—with the Forest Service in the middle of the contenders. In 1918, for example, the grazing capacity of the entire Sioux Forest was set at 7,600 cattle and 2,800 sheep. Approximately 7,472 applications for grazing permits were approved and 2,533 rejected for lack of range. By 1920, the pressure eased somewhat, and only 900 permits were disapproved. The Long Pine Stock Association cooperated with the Forest Service in reducing grazing pressure in 1922 by placing salt blocks at least 1 mile from watering places and in areas where forage was more abundant. [51] Cooperation in range surveys and grazing research helped develop grazing seasons, and this, along with methods of use, led to better relations and the trust of the stockers, who began to realize that the control of livestock grazing helped everyone.

Range surveys, approved by the Secretary of Agriculture, provided the data for computing the number of allowable livestock on a range. In a letter dated January 8, 1916, C.H. Adams, acting district forester, authorized the Nez Perce National Forest to allow 10,000 head of cattle and horses and 50,000 head of sheep and goats, with head rates charged by the length of stay on the forest [52]

Each national forest prepared an annual grazing working plan. The plan for the Selway National Forest, dated November 25, 1916, was 12 pages and included information on general range conditions; range divisions; estimates of grazing capacity, distribution of stock, and grazing periods; permit allotments; enforcement of protective regulations; livestock associations; game protection; and summary recommendations, as prescribed by Forest Service Form 771 (revised July 1915). Each national forest notified stockers annually about deadlines for applying for grazing permits and grazing rates on a special form 152, posted as "Notice to Stockmen." [53]

Sheep grazing on the Clearwater National Forest occurred mainly on areas where grass cover followed heavy burns. The number of sheep on the forest peaked at 33,000 in 1933. Cattle grazing was negligible until the 1930's, when it was still light. [54] The Kootenai National Forest was much the same. The forest retained an open range until 1914, when permits were required. During the 1920's and 1930's, large bands of sheep moved into the forest from Oregon and Washington to feed on areas that had been burned over in the disastrous fires of 1910. On the Nez Perce, a cattle industry of sorts had developed as early as 1863, when ranchers drove their stock to the mining districts for sale.

The years 1904 to 1907 brought range wars between cattle- and sheepherders. Shooting sheep and cutting fences occurred; one sheepherder named Myers killed a cattleherder and was tried, found guilty, and hanged. These problems eventually declined.

A 1915 pamphlet noted that there were 9,000 cattle and horses and 35,000 sheep grazing on the Nez Perce. Cattle numbers peaked in 1919 and sheep in 1918, with counts of 13,992 cattle and over 70,000 sheep. [55] After an initial increase in the number of animals grazing on the national forests during the first few years of Forest Service administration, head counts generally remained stable through the 1920's, except for sharp increases during World War I (see Figure 4.4). That war produced some interesting changes in the lifestyle of foresters in Region 1.

From Mule to Model T

Transportation in the region was by horseback and mule for the first several decades of the Forest Service administration. The region bought its first automobile in 1917, a Model T touring car for the ranger of the Ekalaka division of the Custer National Forest. Shortly thereafter, Savenac Nursery purchased a Model T 1-ton truck, complete with solid rubber tires.

Road building by State and Federal authorities began in earnest. To publicize the opening of the road now designated the Yellowstone Trail, a Missoula man named Beck raced against time from Missoula to Wallace. After that, according to David S. Olson, automobiles appeared in ever-increasing numbers. [56]

Road building and automobiles soon became part of the timber industry. Perhaps anticipating the automobile in 1913, E.R. Johnson, a surveyor- draftsman who made a reconnaissance survey up the Coeur d'Alene River from Pritchard to "the Forks," a distance of 126 miles, recommended building a "wagon road" upriver from Pritchard along the east bank of the river. He believed that the cost would be justified by the ease of moving supplies in (he did not mention moving timber out) and that the timber companies would likely underwrite the cost by paying an additional 25 cents per thousand board feet of stumpage. The road also would provide "an excellent opportunity for automobile trips and camping, hunting and fishing." [57]

Thus the automobile age not only promised to improve logging and firefighting access, but it opened up a largely neglected resource of the national forests in the Northern Region—recreation. However, soon after the automobile was introduced into the hinterlands of the region, the airplane began to fly over those lands.

Roadway in the Mission Mountains, Flathead National Forest, Montana. 1920.

The Airplane

Region 1 was a pioneer in the use of aircraft for forestry work. Howard Flint, who entered the Forest Service in 1910, was instrumental in bringing the air age to the region as a timber cruiser on the Flathead in 1917. Assigned to fire control in the Regional Office in 1920, Flint began to seriously study the use of airplanes for scouting forest fires. He learned to fly and took his first flight on July 8, 1925. He began to experiment with aerial mapping and borrowed a camera from the Army in 1926. He published his findings extensively and stimulated widespread interest in aviation as a firefighting tool. In 1935, Flint was killed in a plane crash in the region. [58]

Another aviation pioneer in the region was Major Harold "Hap" Arnold, who flew reconnaissance flights in the 1930's before achieving fame as a general in command of the Army Air Corps during World War II. The Johnson Flying Service, discussed later, became synonymous with forest-related air operations in the Northern Region. [59]

The following is the region's chronology of its early flight experiments:

1919: The Potlatch Timber Protective Association of northern Idaho attempted an air patrol but abandoned it because of the lack of suitable equipment.

Howard Flint began to investigate the use of dirigibles for use in transporting men to fires.

1920: Discussions were held with Navy officials to test lighter-than-aircraft, but no tests were held

1921: Region 1 was represented at a conference at Mather Field, California

1924: Timber owners of northern Idaho contributed $1,000 to the Spokane airport for planes to be used for fire

1925: Region 1 received $10,000 for an air patrol.

Howard Flint organized the first air patrol at Spokane. Flint made the region's first attempt at aerial cartography.

1927: This marked the first year of seasonal flying contracts in Region 1.

By the close of the next decade, aerial operations in the region had progressed to the use of smokejumpers. [60]

The Beginnings of Research

Early Department of Agriculture foresters such as Bernard Fernow had organized information about timber species and their management even before the national forests came under the Department's jurisdiction. Species studies were begun as early as 1898, and information included species range; rate of growth; light, moisture, and soil requirements; method of reproduction, and behavior in either pure or mixed stands. This information, plus the various reports on forest conditions in the States and territories, formed a valuable reference on how to manage the national forests when it became the jurisdiction of the Department of Agriculture [61]

The Section of Silvics was established in the USDA Bureau of Forestry in 1903 so silviculture field work began early on. By the second decade of the 20th century, more advanced studies and investigations were possible on the national forests, including those of the Northern Region. H.E. Fegley, forest assistant on the Sioux National Forest, issued an annual silvicultural report in 1910, "The Natural Extension of Western Yellow Pine to Grassland Areas," with his conclusion that tree planting would be successful on these areas. In 1912, Kenneth D. Swan presented a silvicultural report on the Sioux that contained a list of trees and shrubs found on the forest and observations about the effect of forested stands on soil moisture. An early but undated report on the Coeur d'Alene National Forest in northern Idaho recommended the exclusion of fire from tree stands because seed stored in the duff might not germinate until the second year after seedfall. [62]

The Forest Service term for formal research was "investigative work." There were field research stations in nearly every region, including the Northern Region. The Priest River Experimental Station, on the Kaniksu, was the site of early research on silvicultural problems. Studies included seed extraction, seed testing, source of seed, nursery practice, experimental planting, methods of cutting, and regeneration on cutover areas. [63] During the winters of 1915 and 1916, rangers from the national forests of the region were assigned duty at Priest River Experimental Station. The district forester proposed this work during a visit to the station in 1913. The rangers also received instruction in topographic sketching and estimating. [64] For the most part, practical forestry and the necessities of the moment tended to preoccupy research in the region during its formative years.

Seemingly the Best of Times

The Forest Service achieved a positive "presence" in the northern Rocky Mountains during the first three decades of the 20th century. Controls were established, and the forests and ranges were being replenished from the earlier depredations. The national forests were a resource reservoir to supply many of the needs of local people and their communities—things for use and things for enjoyment. The stage had been set for better things to come.

But worse times came instead! The Great Depression offered a challenge that confronted the strength and wisdom of the men and women of the Forest Service. Fortunately, the principles of sound resource management developed between 1905 and 1929 would serve the region well during the depression. The forests offered order and security that the greater economic and financial world for a time seemed unable to provide.

**Northern Region Fire Warehouse,
Missoula, Montana, 1922.**

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2. Ibid.

3. USDA Forestry Division, Report on the Forest Conditions of the Rocky Mountains and Other Papers, Bulletin 2, (Washington, DC: USDA Forestry Division, 1888), pp. 1—220.

4. Yearbook of Agriculture (Washington, DC: Department of Agriculture, 1907), pp. 279—280.

5. USDI Geological Survey, Nineteenth Annual Report, 1897—1898, Part I, Report of the Director (Washington, DC: U.S. Department of the Interior, 1898), pp. 9—10, 19. For instance, the Flathead Forest Reserve was examined by H.B. Ayres, who devoted 4 months to the work. J.B. Leiberg spent an entire season, June through October, to the Idaho portion of the Bitterroot Reserve.

6. USDI Geological Survey, Twentieth Annual Report, 1898—1899, Part V, Forest Reserves: The Forests of the United States, pp. 1—2.

7. USDI Geological Survey, Nineteenth Annual Report, 1897—1898, Part I, Report of the Director, p. 29; Twenty-Second Annual Report, Part I, Report of the Director, p. 51.

8. Henry S. Graves, "The National Forests and the Farmer," Yearbook of Agriculture, 1914 (Washington, DC: Department of Agriculture, 1914), pp. 65-68.

9. See Annual Reports of the Secretary of Agriculture and the Yearbook of Agriculture for various years, Statistical Abstract of the United States, and Reports of the Chief of the Forest Service.

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11. USDA Forest Service, The Use of the National Forests (Washington, DC: USDA Forest Service, 1907), p. 8.

12. Rodney C. Loehr, Forests for the Future: The Story of Sustained Yield as Told in the Diaries and Papers of David T. Mason, 1907—1950 (St. Paul, MN: The Forest Products History Foundation and Minnesota Historical Society, 1952), p. 22. Incidentally, in Missoula, Mason worked with three foresters who would later become chief foresters of the Forest Service.

13. Ibid., pp. 24, 26, 27.

14. USDA Forest Service, Region 1, Early Days in the Forest Service, Vol. 1 (Missoula, MT: USDA Forest Service, Region 1, n.d.), p. 1.

15. Federal Records Center, Seattle, WA, 095—67A0136.

16. Early Days in the Forest Service, Vol. 1, pp. 158, 164.

17. Federal Records Center, Seattle, WA, 095—67A0136.

18. Early Days in the Forest Service, Vol. 1, pp. 197—198.

19. Ibid., Vol. 3, p. 187.

20. Loehr, Forests for the Future, pp. 13—14.

21. The author of this chapter would sit in disbelief during the years 1949—1951 as an upper-division forestry major, while more than one professor at the school of forestry, University of California—Berkeley, would tell of the exploits of Jim Girard. Students got to know him through his Form Class Volume Tables.

22. Elers Koch, Forty Years a Forester (Missoula, MT: USDA Forest Service, Region 1, n.d.), pp. 29, 1—173.

23. Ibid., pp. 43—44.

24. Early Days in the Forest Service, Vol. 3, p. 232.

25. Federal Records Center, Seattle, WA, 095—67A0136.

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27. F.G. Clark, "Outline for Timber Management Working Plan, Deerlodge National Forest," April 23, 1921, pp. 1—7, in Federal Records Center, Seattle, WA 095—67A0136.

28. C.K. McHarg, Jr., "Recent Progress in Methods of Cutting in the Western White Pine Type," April 1916, pp. 1—20, Federal Records Center, Seattle, WA, 095—77A0315.

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30. Annual Reports of the Department of Agriculture for the Fiscal Year Ended June 30, 1906 (Washington, DC: Department of Agriculture, 1907), p. 55. As indicated, 10.7 percent of standing volume was sold on the Shoshone National Park) in that year, but the operator wanted to cut only one-sixth of that amount.. See "Estimate of Timber Sale Policy Data, District 1," in Federal Records Center, Seattle, WA, 095—67A0136.

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Chapter 5

Wildlife and Fish

After the creation of the national forests of the Northern Region, foresters confronted many preexisting conditions that would affect management practices for much of the region's history. Indiscriminate timber harvest for railroads, mines, smelters, and lumber mills often inhibited natural reseeding and contributed to serious erosion. Smelter emissions and mining left many scars on the land. Overgrazing despoiled once-rich forage covers. Uncontrolled wildfire was an ancient and persistent nemesis of the Northern Region. Sporadic disease and insect infestations required constant vigilance, research, and countermeasures. Significantly, too, the diversity and number of wildlife in the region had been seriously depleted during the 100 years since Lewis and Clark explored the area.

The following historical survey of the wildlife and fish of the Northern Region indicates the dimensions of its wildlife management problem. The discussion on contemporary wildlife management approaches is intended to provide a better understanding of the natural history of the region through a before-and-after perspective.

Thousands of years before the Europeans arrived, aboriginal hunters roamed the northern territories. Their harvest had little effect on the supply or diversity of species. The hunts were seasonal, and game were insulated from attack by the cold and deep snow. Hunters, on foot, used spears or bows and arrows in the pursuit of game. The human population was sparse, and people entered many of the mountainous areas only during the warmer months. The introduction of the horse during the 18th century gave the Native Americans much greater mobility, but this affected their hunting strategy only on the plains, not in the mountains. Even then, their depletion of the buffalo was minimal.

The Lewis and Clark expedition into the northern territories first exposed animal life to the more deadly weapons that could kill at great distances and to the markets of America and Europe. The journals of Lewis and Clark vividly report the great variety of game that, in most cases, they easily shot.[1] The number and variety of animals killed by the expedition, often in excess of what they could possibly use, were indications of things to come. Americans at that time believed that the land and game were inexhaustible; they gave little thought to preservation or conservation.

The journal of Lewis records the plethora of animals everywhere in the area that is now western North Dakota and eastern Montana. He described the "immense herds of Buffaloe [sic], deer, Elk, and Antelopes which we saw in every direction feeding on the hills and plains." There also were two kinds of bears, bighorn sheep, felines, and wolves. In the high country, Lewis said, "game is very abundant; we can scarcely cast our eyes in any direction without perceiving deer, Elk, Buffaloe [sic], or Antelopes." [2] They carefully followed President Thomas Jefferson's instructions to describe and record all wildlife and return with as many specimens as possible.

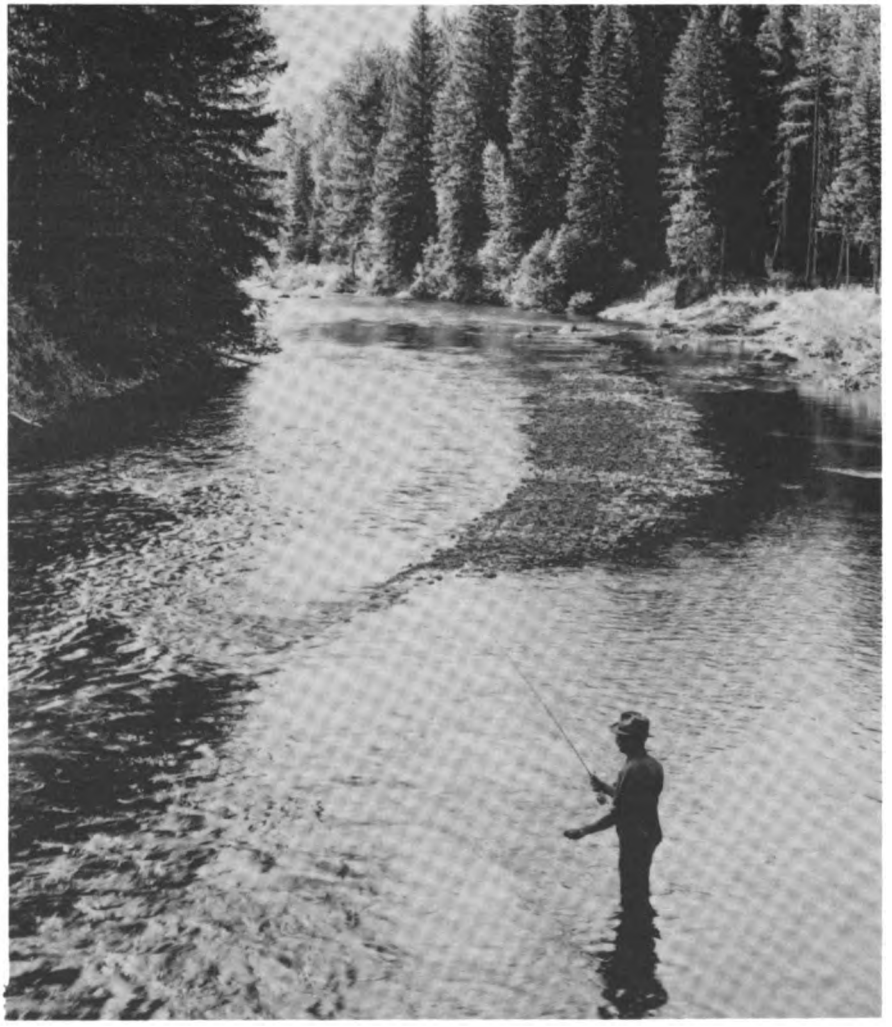
Wildlife in the area that became Region 1 of the Forest Service remained abundant throughout most of the 19th century. Mountaineers and Native American trappers did deplete the fur bearers such as beaver, fox, marten, otter, and mink in some areas, but they harvested few of the larger game animals. The discovery of gold led thousands of new miners and settlers into the area, and they began to consume large quantities of game" especially elk, bear, buffalo, and deer" for food and for sport. At the same time, the mines began consuming timber for charcoal and for smelters, thus depleting the natural habitat of the wildlife. The railroads brought more people into the area and carried lumber, ore, and minerals out. Hunters began to harvest large amounts of game to feed the miners, railroad gangs, lumberjacks, and the growing populations. Even the Native Americans, now confined to their reservations, began to intensify their harvest of wildlife. Thus, by the end of the 19th century, the pressures on wild animal populations had become critical.

Big-game animals were becoming scarce, and some had been driven completely from their traditional ranges. The depletion of their habitat and hunting pressures drove the survivors into the more remote and inaccessible corners of the area. This retreat, contemporary wildlife biologists note, indicates the adaptability of most wildlife species.

When the first forest reserves were established in the region, little thought was given to wildlife because watershed protection and timber production were major concerns. Most Americans—and foresters—believed that the wildlife would take care of itself as it always had. After Idaho and Montana became States, their authorities made little effort to conserve and protect wildlife. They did establish State game and fish departments, but the primary purpose of such departments (as it is in most States) was to facilitate the harvest of fish and game by the residents. Moreover, the agencies tended to be understaffed, with the

agents untrained. The public they served had little or no interest in protecting or preserving wild game; in fact, the public gave wholehearted approval to the destruction of such predators as the bear, mountain lion, and wolf. These species and the populations of elk, deer, bighorn sheep, and mountain goats declined to alarmingly low numbers by the turn of the 20th century.[3]

Few national forests in other Forest Service regions inherited the rich diversity of wildlife and fish as did those in the Northern Region. Thus, it is essential to identify and understand the wildlife and fish resources in the region when the Forest Service assumed responsibility for its natural resources so as to comprehend the management tasks and accomplishments of the agency. Contemporary wildlife and fish management practices are the product of eight decades of research, experimentation, and experience.



Fishing in Swan River near Salmon Prairie, 1938.

Mammals

Grizzly Bears

The grizzly bear is the largest and most dangerous carnivore in North America, and the last major concentration of this species is in the Northern Region. Meriwether Lewis reported the expedition's first encounter with this great bear on April 29, 1805:

> [W]e fell in with two brown or yellow bear; both of which we wounded; one of them made his escape, the other after my firing on him pursued me seventy or eighty yards, but fortunately had been so badly wounded that he was unable to pursue me so closely as to prevent my charging my gun; We again repeated our fire and killed him. [4]

A few days later, William Clark wrote, "we saw a Brown or Grisley beare [sic] on a sand beach . . . which was verry [sic] large and a turrible [sic] looking animal . . . we Shot ten Balls into him before we killed him" [5]

Grizzly bear. See Judson Moore, Forest Service (R1-PAO).

The grizzly bear was then common across the Northern Region, even at lower elevations, and especially eastward onto the Great Plains. Modern researchers agree that the grizzly was more common at lower elevations in times past. Some even feel that it was more of a plains than mountain animal and that the brownish yellow color is an indication of adaptation to the plains environment.

Lewis observed that before the horse, the Native American on foot with a bow and arrow would find the grizzly a formidable quarry indeed, but the animal was no match for "firearms of a reliable sort." [6] Once firearms became common in the area, especially with the entry of large numbers of whites after 1860, the grizzly was driven from the more accessible lands because of the relentless pressure from hunters, trappers, farmers, and ranchers. There can be little doubt that the 600 or so grizzly bears that now occupy some of the most rugged terrain in the United States do not do so by choice; they are a remnant of vast numbers driven into isolated areas for survival [7]

One can never know precisely how abundant the grizzly was, but if Lewis and Clark are to be believed and the accounts of "old-timers" in the region are accurate, they certainly must have numbered in the tens of thousands. Firearms and trappers took, their toll on the grizzly. Grizzly bear coats and rugs found a ready market; trappers could make $100 for a top-quality grizzly pelt. Moreover, grizzly bears are basically fearless, and trappers found them easier to trap than their smaller cousin, the black bear. Forest Service wildlife biologists now believe that there must have been more than 100,000 grizzly in the 19th century. This is in marked contrast to the modern perception of the grizzly as an irascible and solitary creature, ranging over vast tracts of wilderness. [8]

Yet no other animal in the United States excites the imagination as the grizzly bear does, and even its scientific name, *Ursus horribilis*, conjures up a sense of fear. People view the great carnivorous bear with curiosity, fear, excitement, and a touch of romanticism. By the early 1960's, the grizzly was nearing extinction, and the question was raised whether the grizzly could or even should survive within the continental United States. Charlie Shaw, one of the early foresters of the Northern Region, stated in 1967: "It is reasonable to predict that sometime in the future they will disappear as completely as have the saber-toothed tiger and other animals of the past." Shaw said that he will miss them, but that perhaps they have outlived their time. [9]

Grizzly-human conflicts increased in the late 1960's and 1970's in the Glacier and Yellowstone areas, and some began to call for the total eradication of the bear. A public scare resulted from articles describing the ferocious nature of the animal, and a television movie titled "Grizzly" depicted a giant bear coming out of the mountains to kill and devour people. Finally, in 1974, Congress placed the grizzly bear on the endangered species list, but protection has been difficult. [10]

Region 1 spearheaded a drive for a cooperative effort to protect and study the bear in its natural habitat. In 1983, Craig Rupp, then Regional Forester of the Rocky Mountain Region, suggested the formation of the Inter-Agency Grizzly Bear Committee. Surveys ascertained total numbers, mortality rate, breeding, diet, and prime habitat, and a program educated the general public about the grizzly. State-of-the-art research tools, such as stun guns, radio collars, aerial observation, and satellite data, were incorporated into the research effort. Potential bear-human conflicts were reduced by capturing troublesome animals, examining and gathering as much data as possible while the bears were comatose from drugs, collaring them if possible, and then transporting them into a more remote area. [11]

From the beginning, it was apparent that a substantial number of grizzlies were full- or part-time residents in the Northern Region. Most of the last remaining suitable grizzly habitat is on the national forest lands of the region. Questions that need to be solved relate to what constitutes the bear's diet during the year, what is required for a good habitat, and how to quiet people's fears. Prime grizzly habitat now includes more than 3.5 million acres, but the bears require even more territory. Public opposition has made it difficult to transplant surplus bear populations into such areas as the Cabinet Wilderness and the Flathead and Kootenai National Forests. [12]

The best estimates are that there are now probably fewer than 700 grizzly bears in the continental United States, a decrease from estimates of years past. Some Forest Service wildlife biologists, however, believe there has actually been an increase in the number because past estimates were inflated. Grizzly recovery is made more difficult by the 2- to 3-year gap between the birth of cubs, which have a very poor survival rate.

In 1988, the largest grizzly concentrations were on the Flathead (165), Lewis and Clark (85), Gallatin (42), and Kootenai (30) National Forests, with a dozen or so located on the Beaverhead, Helena, Idaho Panhandle, and Lolo National Forests. The greatest problem facing the Inter-Agency Grizzly Bear Committee is how to increase the bear population and yet reduce bear-human encounters. Unfortunately, the two largest concentrations of grizzly bears are in and around Glacier and Yellowstone National Parks, which dramatically increases the possibility of bear-human clashes. The bears do not help the situation when they leave the high country and enter the valleys, as they have been doing in eastern Montana in recent years. The long-range goal of transplanting bears to more remote areas, such as the Cabinet-Yaak Ecosystem, Bitterroot Ecosystem, and Selkirk Mountains is still under consideration. [13]

Public attitudes about the grizzly rise and fall in direct proportion to the number of bear attacks. Ranchers and farmers still take a dim view of stocking the grizzly in any part of the national forests of Region 1. In a spring of 1988 television documentary on CBS, local farmers and ranchers made it quite clear that they viewed the grizzly as a menace to their operations; they would not hesitate to protect their livestock from the bear. Thus, the grizzly continues to be an endangered species. The Forest Service, however, is providing every assistance to ensure its survival.

Black Bears

Numerous in the past and still so today, the black bear was hunted by Native Americans, early settlers, and contemporary big-game hunters. Smaller and less aggressive than the grizzly, they were relatively easier game, even for the bow and arrow. More gregarious and less selective in their habitat requirements, they are easier to manage and have increased in numbers in response to management and hunting restrictions. The public regards the black bear as a sort of "teddy bear" or "Smokey Bear," and farmers and ranchers do not feel as threatened by them as they do by the grizzly.

Black bears have remained stable in population in Region 1, at an estimated 21,128. Of these, the largest number reside on the Idaho Panhandle (4,275), Flathead (3,340), Kootenai (approximately 3,200), and Lolo (2,540) National Forests. The Idaho and Montana Departments of Fish and Wildlife together allow up to 2,500 animals to be harvested by hunters. [14]

Elk

The Northern Region takes great pride in the restoration of the elk to its former abundance. The Forest Service was a major participant in that successful program. Everyone views the elk as the primary big-game animal in the region, and with good reason. Not only is the elk a noble-looking animal, but it is very large and a difficult quarry. Lewis and Clark reported elk; they were constantly shooting them for meat from the time they left the big bend of the Missouri and crossed the plains of eastern Montana into the mountains. Elk were plentiful at lower elevations, but once in the high country, they were noticeably scarce. [15]

Within the century, the demand for sport and for meat to feed miners, railroad crews, lumber workers, and growing populations eradicated the animal from the more accessible areas at lower elevations. Farmers and ranchers shot the animals in their normal wintering grounds in the lower elevations for meat and because they competed with domestic livestock for forage. The remaining smaller herds were driven into the high country.

Bull elk on Gallatin National Forest
Photo by C.R. Joy, March 1962.

These small fugitive herds tended to concentrate around ancient salt licks and open areas in the high valleys. Unlike the woodland caribou, the elk cannot forage in deep snow and consequently are forced to move down the sides of the mountains, perhaps competing with domestic livestock. As they migrate between their summer and winter ranges, the elk are vulnerable to hunters' guns. State game laws in the past tended to be very permissive, allowing the harvest of game anywhere during the prescribed hunting season. During their migration in the late 19th century, elk herds had to literally run a gauntlet of hunters, a veritable "slaughter alley." Often, the hunting season was too long and during the time when the herd's general health was poor. [16]

The lowest point for the elk herds in the Northern Region seems to have occurred between 1890 and 1910. Population counts had clearly dwindled, and the Forest Service, on whose lands 80 percent of the elk lived, and local sportsmen became concerned. In 1912, in cooperation with the sportsmen, the Forest Service transplanted a small number of elk to the Cabinet Mountains, to help nature rebuild. The first reliable elk census was taken in 1920; 10,700 animals were recorded. By 1930, population counts reached 20,500.

Serious interest and efforts to study the diet, reproduction, diseases, and habitat requirements of the elk began among foresters in the 1920's. In 1923, the Flathead National Forest began a detailed study of wintering elk populations on the forest. Crews were sent in and spent up to 6 months in the backcountry, observing and gathering data. Harvest figures from the forest also revealed a slow but steady increase in the elk herd, from 140 in 1925 to 257 in 1935 to about 920 in 1953. Other studies conducted in the 1930's answered many of the basic questions about the elk's life cycle. Extensive trapping operations were carried out, and the animals were examined and marked before release. As one retired ranger said, "I trapped many an elk, and released him with his neck collar flapping as he ran." [17]

Public education and cooperation with State authorities eventually resulted in the establishment of restricted hunting seasons and harvest permits. There was no profit in protecting and nurturing herds on national forest lands if they were going to be indiscriminately shot on private or State lands. Today, State and Federal agencies and private organizations, such as the Rocky Mountain Elk Foundation, help ensure that there will be elk for today's hunter and to inspire the wonder of future generations. Stronger enforcement and other controls have been placed on hunting.

Summer and winter ranges are better managed and protected. Sanctuary zones have been established between hunting areas and such protected areas as Yellowstone National Park.

In 1984, the Northern Region reported a herd of 119,863 elk, second only to the size of the herd in Region 2. In that year, 18,955 elk were taken by hunters. The herds have remained reasonably stable over the past several years, and it is estimated that the herd has now attained its maximum population for the size and condition of the habitat. [18]

Explanations for the substantial increases in the size of the elk herds since 1910 are varied. The most common explanation is that the increase of forage and forest clearings caused by fire—and especially the 1910 fires—and the extensive lumbering since World War II have enabled population growth. Others argue that vast open grasslands within the forests were always there. Lewis and Clark, for example, crossed numerous meadows. Fire was a constant at any time. Thus, the 20th century fires are not the explanation. [19]

Modern wildlife management practices certainly have been a positive factor. One view, which does not deny the importance of open country for elk forage, stresses the removal of the predators that preyed on the elk, including grizzly bears, mountain lions, and wolves. Foresters and wildlife specialists are quick to point out that modern game management practices do work. The conservation of the elk enables the public, as a forester stated in the 1930's, to enjoy "considerable food in the form of meat, and its inspirational value [which] ranks highest." [20]

Woodland Caribou

Perhaps the most exotic large animal in the northern forests is the woodland caribou, an American-style reindeer found in the remote Selkirk Mountains of the Kaniksu National Forest (a unit of the Idaho Panhandle National Forests). So little was known about these shy animals, nicknamed "Big-Foot," that they long remained a mystery to the Idaho Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and the Forest Service in Region 1. Attempts to count the animals invariably ended in controversy, but all agreed that the caribou lived in small herds of only a dozen or so and had never been as numerous as elk or deer. Recent cooperative efforts between the State of Idaho and the Forest Service have resulted in the first reliable data on the animal in its natural habitat. The animals are shy, slow to reproduce, subject to many diseases and parasites, and vulnerable to predators. [21]

Until recently, their isolated ranges provided a degree of protection. Improved roadways constructed since World War II, however, have brought poachers into the protected ranges. Canada's completed Highway 3, which runs across prime caribou habitat just north of the American border, has cost the lives of many animals that have been lured onto the highway by the salt used to clear the ice, only to be struck by passing automobiles. In 1984, only 17 caribou were counted on the Kaniksu. Region 1 subsequently entered into a cooperative agreement, through the auspices of the Chief Forester, providing for the implanting of new caribou herds from Canadian or Alaskan stock. In 1987, a herd of a dozen woodland caribou from Canada were successfully implanted on the Kaniksu, and plans began to be developed for other movements. [22]

Wildlife biologists have discovered that many caribou characteristics are opposite to the elk. Instead of open grass prairies, the caribou requires a heavy growth of climax conifers to winter well. As the snow deepens during the winter, the caribou's splayed feet allow it to walk on the snow and eat the lichens on the trees higher and higher as the winter snow progresses. Forest Service botanists estimate that it takes 50 years for a tree to mature and rise above the snow line and another 50 years for a tree to support quality lichens.

Public awareness will play a major role in halting poaching, deliberate or accidental, and more careful driving in the forests will reduce losses from that source. Region 1 and the Forest Service have committed considerable time and resources to preserve the woodland caribou for future generations to enjoy. [23]

Deer

The plight of the mule deer and its much smaller cousin the whitetail, was much like that of the elk; there was little effort to protect and regulate hunting until the situation became critical. Lewis and Clark reported deer on a daily basis and shot them for meat. The much larger mule deer tended to occupy higher elevations, while the whitetail seemed to prefer lower country, especially open valleys. Studies of the deer populations by the foresters revealed much information about the life cycles and problems faced by the deer. [24]

Early reports conducted by rangers who spent many months in the field and in isolated winter cabins stressed two cardinal points. First, some sort of orderly management of the deer and regulation

Buck Antelope on
Gallatin National Forest
Photo by L.J. Prater, 1947.

of the hunter were needed. Second, predator control would be most helpful. One report, for example, with accompanying photo- graphs, estimated that one particular mountain lion that had been killed had been averaging three deer kills each week during the winter. [25]

After World War II, the adoption of State hunting regulations and predator control began to provide deer protection, and populations began to increase markedly. The Forest Service, often in cooperation with the U.S. Fish and Wildlife Service and the Idaho and Montana Departments of Fish and Wildlife, has produced numerous studies on deer management. The implementation of policies resulting from these studies seems to have produced significant results. Both the mule and white-tail deer are increasing faster than any other species of wildlife in the region; they have become a common sight. Only a few years ago, they did not exist. During the 1960's and 1970's, offroad vehicles became common, and some hunters used them to literally drive the deer. Road closures and new restrictions on such vehicles have helped solve most of those problems.

The latest deer census in 1984 listed 151,267 mule deer, placing the Northern Region in a tie for fifth among the national forests for mule deer population. The largest mule deer herd is on the Lewis and Clark National Forest (38,000), followed by the Gallatin (25,050), the Custer (17,505), and the Beaverhead and Lolo (14,000 each). However, there were only 77,024 whitetails counted. Whitetail deer are probably the most adaptable of all the larger game animals, and their continued increase in the region is expected. [26]

Bighorn Sheep

The first complete description of the Rocky Mountain bighorn sheep appears in the journals of Lewis and Clark. The bighorn was fairly common in the early 1800's, even in flat country. Clark reported that their meat was considered a delicacy, and they were frequently shot in preference to other animals. [27]

The public image of the bighorn today is that it is a denizen of lofty, craggy mountainsides where only they and mountain goats can survive. In reality, the bighorn prefers fairly rough lower mountainsides and protected valleys. For example, the open rolling wheat country of northern Idaho, between the Clearwater and Nez Perce National Forests, was at one time prime bighorn sheep habitat. Accessibility to such land by early settlers had entirely removed the sheep from the area by the late 19th century.

Through cooperative efforts between the U.S. Fish and Wildlife Service and State agencies, the bighorn has been successfully reintroduced into large areas of their former habitat. Once virtually gone from the Northern Region, they are now proliferating to the extent that they are a nuisance on some highways, and controlled hunting is allowed. [28]

Bighorn sheep.
Credit: Danny On, Forest Service.

The implantation of new herds has been a delicate process. In one case at Kemiah on the Clearwater National Forest, the death of one large buck brought the implantation experiment to an end. [29]

A major problem that has not been wholly resolved is that State and Federal game regulations do not apply to Native American Reservations. Most tribal organizations cooperate closely with the States and with the Forest Service in game management programs and hunting regulations, but one lone hunter can do irreparable damage to the best of management plans. Today, there are somewhat less than 5,000 bighorn sheep in the Northern Region, and almost 400 are harvested each year under the permit system. Bighorn are found in 10 of the 13 national forests of the region, with the largest concentrations occurring on the Lolo and the Lewis and Clark National Forests. [30]

The Mountain Goat

Lewis and Clark encountered the mountain goat only through secondhand information. The Shoshonis showed skins of the goat to the party, and Lewis and Clark commented on the beauty and softness of the hides and duly reported their existence.

The goat apparently had never been as numerous as the bighorn sheep, had always been shy, and had preferred the higher, more rugged elevations. As had the bighorn, the mountain goat dwindled to critically small numbers, but they also have been repopulated. They are still found only in the most isolated parts of the forests, but they do exist on each of the national forests of the Northern Region. They are less tolerant of civilization than the sheep. In 1984, there were 4,327 mountain goats, and 192 were harvested under controlled hunting programs. [31]

Moose

The moose is the largest mammal on the national forests of Region 1, excluding the relatively small number of buffalo (bison) located on the grasslands. At one time, the moose's survival was more threatened than that of the other large animals because of its unique and restrictive habitat requirements. Moose prefer the marshy borderlands of lakes and streams, where they browse on aquatic vegetation. Because of their huge size, they need such large areas for sustenance, and those habitats are relatively scarce. Known for their irritable nature and dangerous behavior, moose are usually left alone by all. Even though they are not known for their beauty or noble look, they awe those who happen to see one.

Moose have responded well to modern game management and are now stable in numbers. Census counts for 1984 place the moose population at 9,959, with 489 harvested under the permit system. Moose flourish in all of the northern forests, with the greatest concentration on the Kootenai (1,500) and the Gallatin (1,225) National Forests. [32]

Pronghorn Antelope

The pronghorn antelope was once much more numerous across the eastern portion of what is now the Northern Region. Lewis and Clark noted many sightings of pronghorn until reaching high country. Antelope are natural residents of flat, open country, where they rely on their keen eyesight and speed for survival. This habitat preference brought them into conflict with the farmers and ranchers who also preferred such terrain for their livestock operations. This competition for the range has driven the pronghorn into more isolated and protected grassy meadows within the national forests. [33] There are approximately 4,500 antelope in the region, and a harvest limit is placed at about 450. The great majority of the pronghorn range on the Custer National Forest meadows and grasslands, with scattering groups on the Beaverhead, Lewis and Clark, Helena, Deerlodge, and Gallatin National Forests. [33]

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American Buffalo
The American Buffalo, or technically the bison, is a minor inhabitant of the Northern Region. Only about two dozen roam the national forest lands. Buffalo were once common across most of the plains in the region and survived into the early 1880's, when the final great herds were slaughtered for their hides.

Increasing the number of buffalo on the national forests would not be a problem because this animal responds quite well to the management policies used in raising cattle. They are very hardy animals. As one of the early settlers in the area commented, "A buffalo is hard to freeze or starve to death." Most of the buffalo on forest lands are drifters from Yellowstone National Park or from other herds. At present, there are no plans to increase the small herd that ranges on the Gallatin National Forest [35]

Mountain Lions
The mountain lion, or cougar, was and still is the chief predator that confronts most of the game animals in the Northern Region. Once much more abundant than it is today, the lion was trapped and hunted for many years without any restrictions. Farmers and ranchers fought the lion at home and in the State legislatures because they threatened the safety of their livestock. Wildlife biologists for a time also believed that the mountain lion should be strictly controlled because it threatened the survival of large game herds. Rangers frequently reported hunters killing as many as a dozen cougars and several dozen coyotes in the 1920's and 1930's as the "fight" against predators continued. This view began to change in the 1930's. Wildlife biologists and others working with the herds of deer and elk in the region began to believe that predators were necessary in good game management because they "kill off the weak, crippled and diseased animals first, thereby keeping healthy, strong breeding stock in the deer herd." Despite the attacks by humans and the lack of positive "reinforcement" programs, the mountain lion has survived quite well and seems to have maintained a reasonably stable population of approximately 1,700 in the region. Mountain lions are present in all the forests in varying numbers; they range over extremely large territories. [36]

Wolves
Americans probably have a preoccupation with the wolf as much as they do with any other single large animal. All early travelers and settlers in the Northern area talked about the great packs of wolves" in most instances, the Rocky Mountain gray wolf--ranging from the plains into the mountains. Lewis and Clark wrote about how unafraid the wolves were, almost appearing as

tame as domestic dogs. Nearly all accounts from early settlers report how numerous wolves were and that they were a danger to livestock. No other animal in the United Sates has been so cursed and hounded to near oblivion as has the wolf. Moreover, wolf pelts brought good prices in the late 19th century. The territorial legislature facilitated the extermination of wolves by placing a bounty of $1 to $2 a head in the 1880's. The bounty was raised to $3 in 1895 and $15 in 1911—a very attractive figure and well in excess of average daily wages for the time. [37]

Clearly, the rapid decline of the wolf population derived from the combined efforts of the Government, hunters, farmers, and ranchers-all of whom regarded the wolf as a potential killer of livestock. Also contributing to that decline was the destruction of the wolves' food supplies, prominently the large-game animals such as the elk and deer. Many also believe that the introduction of the deadly poison strychnine about 100 years ago caused its rapid decimation even in relatively remote areas. [38]

Contemporary management decisions to reintroduce the wolf have raised controversies, much like those surrounding the protection of the grizzly. Conservationists would prefer to implant animals in suitable habitat on Federal lands, but local people are afraid that their domestic livestock will once again become the target of roaming bands of wolves.

The best estimates are that there may now be a dozen wolves on or near national forest lands. Foresters believe that the wolf is now naturally recolonizing in northwest Montana and should be allowed to continue to do so under protected conditions of the Threatened and Endangered Species Act. A wolf den, the first reported in more than 50 years, has been identified, and the Nez Perce National Forest reported a pack of six wolves in 1987. A radio-collared female wolf was detected on the Kootenai. Whether she was alone or had traveling companions is unknown. Regional Forester John W. Mumma indicated that while the Forest Service is taking no direct action in implantation or reintroduction, "its primary role . . . in wolf conservation is to provide suitable habitat." [39] After that, it is up to the wolf.

Coyotes

No discussion of animal life in America would be complete without mention of that wily hunter-singer-scavenger, the coyote. No other creature that has been so systematically slated for destruction has so successfully survived and thrived. There are several reasons for the coyote's successful adaptation to the modern era. First, as the larger and more powerful carnivores have been removed, the coyote has moved into the vacant niche.

Second, an intelligent, tough, and adaptable animal, the coyote seems to enjoy adversity and can live within or outside of civilization.

More than likely, there are more coyotes in Region 1 today than there were in the best times of the 19th century, but population figures are simply unknown. Coyotes are regarded as "varmints" and can be hunted and trapped all year long. How much damage they do to domestic livestock and game animals is debatable, but they tend to prey on the weak and old. [40]

Lesser Mammals

A large variety of smaller animals have played an important role in the history and economy of the region, and they continue to be important today. The first penetration of the region of a lasting nature came from the mountaineers and trappers in pursuit of the beaver and other fur-bearing animals, such as the fox, otter, marten, fisher, mink, and other members of the weasel family. The unrestricted hunting and trapping of fur bearers continued well into the 20th century, resulting in some parts of the country becoming denuded of fur bearers, and they remain so today.

The beaver has made a significant comeback; it is now a common sight along streams and ponds. Fishery biologists are more appreciative of how a beaver dam can improve fish habitat, and they are now using them as accomplices by stocking the beaver in remote areas to halt sediment buildup and provide new spawning beds. [41]

Many of the more important fur bearers were probably never abundant, and by the time the era of fur trapping ended, these animals existed only in isolated and secluded pockets and remain there today. Programs to establish new populations of marten and otter have been reasonably successful, and more are anticipated in the future. One animal on the threatened and endangered species list is the black-footed ferret. [42]

Northern woods folklore has depicted the porcupine as the friend of the person lost and starving in the wilderness because it was so easy to capture and kill. This imagery led to early protection being extended under State law. As the number of predators in the region declined, the porcupine flourished, with little to fear except the automobile. During the 1920's, regional silviculturists developed an extensive program to reforest conifers. Much to their dismay, they discovered that the harmless porcupine loved to dine on the tender terminal buds of the young trees. After considerable debate, which continues today, a program of porcupine control was instituted; it resulted in a substantial reduction of the porcupine population. [43]

Several kinds of squirrels, rabbits, and hares afford hunters sport and meat. Rodents such as the chipmunk, ground squirrel, and marmot give vacationing Americans many hours of amusement and provide essential food in the food chains of wildlife. While the wolverine, badger, bobcat, northern lynx, and polecat barely survive, the raccoon and skunk seem to flourish within the confines of civilization.

Fish and Fisheries

The fisheries of Region 1 have been important since aboriginal times. Fish were often a mainstay in the diet of some tribes. Lewis and Clark caught fresh trout and salmon and dried trout for future use. The people of the Northern Region take great pride in the quality of fishing and in the "blue ribbon" streams, such as the Clearwater, Gallatin, Madison, and Jefferson.

Although much of the region's fishing is not actually conducted on national forest lands, almost all the streams originate on national forest watersheds; thus the quality and flow of water depends on Forest Service watershed management. The acts establishing the first forest reserves stressed water conservation. Today, the region can boast of 22,500 miles of streams, including 2,600 miles of "nationally recognized blue ribbon waters" and 1,650 lakes containing 170,000 acres, with many alpine lakes nestled in the high country. [44]

A conservative estimate of the fish produced annually from regional waters is 9 million. The headwaters of the Columbia River Basin in Idaho provide 1,700 miles of habitat for anadromous chinook and steelhead (migratory fish), producing 1.3 million smolt yearly and 462,000 pounds of fish—with production increasing annually. The national forests of Montana do not have the anadromous fish found in Idaho (except for the Kokanee salmon, which is a form of anadromous fish). However, Montana does have outstanding fishing provided by westslope cutthroat, rainbow, bull (landlocked Dolly Varden), mountain whitefish, and arctic grayling, all native, as well as the introduced brook and brown trouts, to mention the more important species. [45]

Although consideration has long been given to water quality control, mining, lumbering, grazing, and road building have not been conducive to maintaining good water quality and favorable watersheds. In years past, many streams within the region were destroyed as fish habitat. Some streams were dredged for gold, and the resulting removal of sand and gravel, and the dump deposits along the banks, either silted the streams or stripped and increased the gradient. [46]

Lumbering activities often broke stream banks down by denuding them or causing erosion, which contributed to silting and greater water velocity. Livestock ate the riparian zone along the shore, broke down the banks, and in general caused a muddying of the stream. Fires could do the same kind of damage by burning away the cover along the banks, thus contributing to erosion and silting. [47]

Conservationists have strongly criticized road and dam construction within the region as endangering the fisheries. Studies of the Hungry Horse Dam on the Flathead River system, conducted by the Montana Department of Fish, Wildlife, and Parks and financed by the Bonneville Power Administration, while placing no blame, do note that a major problem above the dam is the streams' sedimentation. [48]

Public concern and more technically accurate procedures for gathering information have resulted in more careful monitoring of the impact of projects within the forests on water quality. Mining operations are more carefully controlled. Timber harvests are more closely monitored, and clearcutting is limited to only 40-acre tracts. Grazing lands are checked for signs of overgrazing. If road construction destroyed water quality in the past, the results were accidental rather than deliberate.

Current, more sophisticated engineering and ecological impact studies have enhanced construction techniques. Early ranger handbooks specifically required that roads be on grade and that consideration be given proper drainage, especially at stream crossings. "Old hands" quickly admit that mistakes were made. For example, although placing culverts in a fast-moving stream was recognized both as bad engineering and bad watershed management, culverts were (and are) used at times when no other alternative existed. [49]

Modern forest plans require that roads or other structures be built only on the basis of clearly defined objectives. Before a road can be built, there must be communication among road engineers, water quality engineers, archaeologists, landscape architects, and wildlife and fisheries biologists. Such consultation aims to perform a job with the least impact on the total environment. An environmental impact statement is required, and public comment is formally invited.

Inasmuch as the harvest of fish is regulated by a State, as is the harvest of animals, fisheries specialists in the region face the same confusing array of often-conflicting authorities and

interests as does the wildlife specialist. Much of the key habitat is under the authority of the Forest Service, but the product of that habitat is under the authority of the State and strongly influenced by the private sector. A fishing stream, for example, may traverse State-owned, private, corporate, national park, Native American, and Bureau of Land Management lands. Fisheries plans, programs, and policies must incorporate the collective interests of all parties. [50]

At one time, the western slope of the Continental Divide in Idaho was the spawning ground for a tremendous chinook salmon and steelhead trout fishery. These anadromous fish spent their first year in the cold mountain streams before traveling downstream to the Pacific Ocean, where they matured into adults, only to return to their birthplace to spawn and die. Over the years, dams were constructed downstream, which not only made it difficult, but often prevented the fish from completing their journey. A deterioration of water quality and growing fishing pressure contributed to a decline in the annual migration. [51] Programs, in cooperation with various agencies and authorities, were initiated in the 1950's to mitigate some of these problems. Fish ladders have been constructed around some of the dams to allow the fish to continue upstream, and smolts are captured above the dams and transported downstream to prevent their destruction in the turbines. [52]

The case of the Kokanee salmon has been similar to that of the steelhead trout. Flathead Lake, which is not on national forest land but is fed by streams originating from those forests, supports the Kokanee salmon. The Kokanee salmon was introduced into the lake in 1916 and at once made it home. The lake replaces the ocean in the fish's life cycle, and spawning takes place in those streams emptying into the lake. For many years, the Kokanee furnished anglers with spectacular fishing, but the catch has begun to decline since the 1970's. [53]

The introduction of the Mysid shrimp into Flathead Lake in 1980, ostensibly as a new food source for the Kokanee, is believed by some to have actually contributed to the decline of the Kokanee. The shrimp proved to be competitors with, rather than food for, the fish. Another major change in the lake environment occurred with the construction of Hungry Horse Dam in 1953, which blocked the ascent of some streams. Moreover, the uneven release of water from the dam results in sharp fluctuations of water levels in the streams and lake so as

to adversely affect the spawning beds. Fish redds along the edge of Flathead Lake and in the streams emptying into it below Hungry Horse Dam often suffer low-water periods, exposing eggs to desiccation or freezing. Although at this time no Kokanee spawn on any streams of the national forests, some fisheries biologists believe that with proper preparation, some of the streams on national forest lands could be developed into spawning areas for the Kokanee. [54]

The Northern Region is one of the most active regions in fish habitat improvement for both resident and anadromous fish. It has been a leader in researching and implementing habitat improvement techniques. Extensive research into sediment effect on the salmon in Idaho can apply to other fish species. The importance of beaver dams and ponds for fish production resulted in successful transplantings into parts of the Lolo and Beaverhead National Forests since 1983, and immediate improvement has been achieved. Experimentation with log and boulder weirs and the placement of tree snags and wire enclosed structures have produced good results on the Clearwater and Nez Perce Rivers. Cooperative studies, such as that conducted jointly in 1958 by the Forest Service, the U.S. Fish and Wildlife Service, and the Montana Department of Fish, Wildlife, and Parks on the effect of pesticides on trout streams, have produced measurable improvement in water quality and fisheries management practices. [55]

Adequate funding has been one of those inevitable constraints on fishery improvement programs. Recent congressional legislation, however, has helped alleviate some of those problems. In 1976, Congress passed the National Forest Management Act, which allowed the national forests to use funds derived from timber sales (under the 1930 Knutson-Vandenberg Act) to improve habitat within the boundaries of the sale. Many forest supervisors found it convenient to use these funds for fisheries improvement because streams in the cutover areas often suffered damage. In 1983, special funds from the Bonneville Power Administration also became available, and major beneficiaries have been the Clearwater and Nez Perce National Forests. The Nez Perce has been awarded more than $1.2 million over a 10-year period to improve chinook salmon and steelhead trout fisheries on the South Fork of the Clearwater. The Clearwater received (in 1988) more than $250,000 for similar improvements on tributaries of the Clearwater River, such as the Lochsa River and Lolo Creek. [56]

These supplemental funds have "allowed placement of 338 in-stream structures to enhance cover, spawning, and rearing habitat; [and] provided 25 acres of barrier removal and spawning

bed improvement." The use of snag trees, sediment removal, riparian zone improvements, and especially log and boulder weirs have reduced water velocity and created feeding, hiding, and resting sites for fish in many streams. [57]

Thomas J. Kovalicky, Supervisor of the Nez Perce National Forest, has been a leader in recent efforts by the region to improve fishing and fishery habitat. Since he became supervisor, forest budgets for fisheries projects rose from $22,600 in 1982 to $515,000 in 1988. "Kovalicky," the Lewiston, Idaho, Morning Tribute stated, "has carved himself out a niche among conservationists as a U.S. Forest Service line officer who champions anadromous fish, salmon and steelhead, as vigorously as the trees in the national forests." [58]

Birds

The forests of Region 1 support a variety of birds, including songbirds, birds of prey, waterfowl, shorebirds, and ground dwellers. The bald eagle, which is listed on the threatened and endangered list, nests in several forests. Conservation methods implemented over the past several years have resulted in stabilizing the eagle population, which now seems to be growing. The peregrine falcon, however, is faring less well. Its piercing cry was once heard over much of the region, but toxic material released into the environment, loss of habitat, and illegal killing and capture have reduced the bird to minimal populations all across the United States. Several years of surveying potential habitat and nesting sites for the peregrine falcon within the region's forests resulted in a successful hack (release) of peregrine on the Gallatin National Forest in 1984. This proved so successful that five additional hacks were conducted on the Nez Perce in 1987. [59]

Waterfowl are a major resource of the region. They nest where the habitat is suitable, and some stop to rest on their long flight south on the Central flyway and to a lesser extent on the Mississippi and Pacific flyways. Some waterfowl spend all year in areas of the region where enough open water remains through the winter. The most notable waterfowl in the region is the trumpeter swan, which is a resident. Although the Red Rock Preserve, its primary home, is not on national forest lands, the preserve is surrounded by forests used by the birds. Trumpeters declined to marginal numbers after World War II, but they have now rebounded to much larger populations. [60]

The giant Canada goose *(Branta canadensis maxima)* once thought to be extinct, has been found nesting on the national graslands of Custer National Park. During the last few decades, they have multiplied and divided into a number of new colonies. Geese and ducks find nesting throughout the national forests --particularly on the Custer National Forest, which contains thousands of prairie "potholes," both natural and human made. These potholes produce thousands of nesting sites when there has been adequate rainfall. The Forest Service cooperates with State agencies and such organizations as Ducks Unlimited to create and improve these nesting and rearing ponds. [61]

The Custer National Forest is unique for its variety of birds. At one time, the prairies and plains of the United States abounded in quail and partridge-type birds, as well as a number of different doves or pigeons. As the prairie sod was broken and plowed under for crops or overgrazed by livestock and as birds were hunted throughout the year, some species came close to extinction. When the Forest Service assumed administrative responsibility from the Soil Conservation Service for the national grasslands, it continued those policies already operating to stop erosion and to allow the land to revert to its natural state. Grazing is permitted in some areas and is used as a tool to improve the habitat, just as buffalo and other animals did before the Europeans arrived. Extensive oil and gas exploration and production have developed in parts of the national grasslands, but F/rest Service biologists do not feel that this has an adverse effect on wildlife when conducted under proper countrols. [62]

The thick grass cover that has developed encourages the ground-dwelling birds, and some have made dramatic recoveries. The greater prairie chicken is on the protected list, and its population fluctuates so much from year to year that biologists are concerned for its survival. On the other hand, the sharptailed grouse responds well to management; it has become so well established that there is now an open hunting season. Similarly, the introduced ring-necked pheasant and gray or Hungarian partridge have adapted well to the grasslands environment and provide excellent hunting. [63]

Birds that thrive (or survive) in the region range from the bald eagle to lesser raptors, such as the "sensitive-listed" smaller prairie falcon and merlin. There also are several kinds of owls and smaller birds, ranging from tiny hummingbirds, such as the blac-chinned and broad-tailed, to the beautiful western bluebird, the noisy gray and Steller's jays, and many varieties of sparrows, wrens, warblers, orioles, and tangers. [64]

Although the Forest Service is keenly aware that publicity on wildlife tends to center on those species that catch the public's attention, such as the grizzly bear and the bald eagle, many creatures depend on sound management of the national forests. They are not forgotten by the agency.

Wildlife Programs and Legislation

In 1899, Congress enacted legislation that recognized the recreational value of Federal lands and the integral role of wildlife. Shortly thereafter, when Theodore Roosevelt became President, a genuine concern for the protection of wildlife developed, but a system for extending that protection did not exist.

When the forest reserves were transferred to the newly created Forest Service in 1905, national forest lands had become a refuge for much of the big game in Region 1. Thus by default rather than by design, the Forest Service found itself responsible for the habitat of much of the wildlife of the region, but without control over the laws and practices affecting the harvest of the game and fish, which was the prerogative of the States. Initially, State agencies and the public harvest of game conflicted with the Forest Service's interest in conserving wildlife numbers. As the State agencies became more professional and the Forest Service became more oriented toward game management, cooperation in game management and protection began to develop. One of the first indicators was the deputizing of forest rangers as game wardens by the States to control poaching.

...a genuine concern for the protection of wildlife developed, but a system for extending that protection did not exist.

Although the rangers tended to vigorously enforce State game laws, the public was not always appreciative, and State-Federal conflicts erupted. Hunting clubs, outfitters, guides, and local residents tended to prefer free and unrestrained access to the wildlife. Even those who were not hunters tended to regard wildlife, and especially predators, as competitive creatures who should be destroyed, or at best ignored. The farming and ranching electorate of Montana, Idaho, and the Dakotas were keenly aware that large herds of deer and elk competed with sheep and cattle for grazing and that wolves and mountain lions destroyed lambs and calves. Thus, the realization that wildlife is a public asset to be protected has come slowly.

A milestone in the development of cooperation for game management and protection occurred with the creation of a Division of Wildlife Management within the Forest Service. Effective December 1, 1936, the Chief Forester's directive advised:

> In recognition of the growing importance of the preservation and management of the wildlife resources for the National Forests of the United States, and the increased public interest in these resources, the Secretary of Agriculture has created in the Forest Service a Division of Wildlife Management. [65]

At the time, Regional Forester Evan W. Kelley remarked that "Creating the Division of Wildlife Management is of great importance to Region One. Wildlife," he said, "is a crop of the national forests in the same sense as trees and grass are products of the land." [66]

The new focus on wildlife management required public education as well as scientific habitat and wildlife management programs. More study and research would be required in an area that had largely, as had wildlife, been "taken for granted." The Regional Office explained to the public, "Sound wildlife management demands scientific research and study involving little known biological factors, land economic influences, and relationship to other land issues." It had become clear "that pioneer conditions of wildlife cannot be restored. "[67] Yet in several contexts, the Forest Service has attempted to do just that—to restore conditions to their primitive or "original" condition as nearly as possible. The designated wilderness areas of the national forests within the region, as well as the national grasslands, seek to duplicate as nearly as possible those conditions that existed before the entry of humankind.

Not until 1960 did Congress spell out the importance of wildlife by declaring in the Multiple-Use Sustained-Yield Act that the national forests are to be administered for "outdoor recreation, range, timber, watershed, and wildlife and fish purposes." This act gave official sanction to practices long in use within the Forest Service and especially in Region 1. [68] Subsequently, the National Environmental Policy Act (1969) required alternative solutions to problems of a harmful nature to any aspect of the environment, and in 1973, the Endangered Species Act required the protection and conservation of "threatened and endangered fish, wildlife and plant species." All Federal agencies were directed to cooperate to further the purposes of the act. [69] The National Forest Management Act (1976) and the Pacific Northwest Power Planning Act provided a financial footing for wildlife protection in Region 1.

Speaking of the national forests in general, past conservation leader (and former Forest Service employee) Aldo Leopold's explanation of the work of national forest managers has special meaning to those who administer, labor, and live in the Northern Region:

> The administration of the National Forests of America has for its real purposes the perpetuation of life, human, plant, and animal life. Of first importance is human life, and so closely related is this to tree and plant life, so vital are the influences of the forest, that their problems have been fashioned into major problems of forest management and administration.
>
> Of next importance and ever increasing is the problem of animal and bird life. Driven from their once great range by civilization the wildlife that was at one time America's most picturesque heritage has found refuge in the National Forests. [70]

During the 20th century, forest and wildlife managers and the American public have a better understanding of the sometimes delicate associations among forest habitats, wildlife, and human use of the renewable and nonrenewable resources of the lands.

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Chapter 6

Generation of Change and Progress

The period from 1911 to the beginning of World War II was one of significant changes for the Northern Region. The Forest Service reorganized and consolidated the national forest entities. The lumber industry in the Region experienced a boom period, followed by a collapse during the Great Depression. The introduction of the Civilian Conservation Corps into the forests and grazing lands of the Region brought, for the first time, adequate labor to improve the valuable pine stands, cope with timber diseases, and fight the almost annually recurring forest fires.

Central to the planning and direction of these changes was the leadership contributed by the men who served as regional foresters for Region 1 during these years. They were Ferdinand A. Silcox, Richard H. Rutledge, Fred Morrell, and Evan W. Kelley. Each in turn left his personal stamp on Region 1.

The Silcox Years

Silcox became Regional Forester in 1911 when William Greeley left for the Washington Office. By this date, Silcox (or Gus or Sil as he was usually called by his friends) was already, at age 29, destined for greater honors and larger responsibilities. Born in Charleston, South Carolina, his grandfather had been a Confederate blockade runner during the Civil War. An honor student, he excelled at Charleston College and then at Yale, where he earned a master's degree in forestry in 1905. He attracted the personal attention of both Dean Henry S. Graves and Chief Forester Gifford Pinchot, who found him resourceful, courageous, endowed with both knowledge and common sense, and capable of inspiring confidence among his colleagues—a rare combination. In the summer of his junior year (1904), he cruised timber in the Hatfield-McCoy feud country of West Virginia, where he settled boundary disputes and impressed all sides with his knowledge, fairness, and athletic abilities.[1]

After graduation, the Forest Service sent him west to manage a new timber reserve and settle disputes between cattle and sheep owners over grazing rights. He surprised all parties by settling the controversy in person and on the ground, not back in his office with a map. It took several days, but when he finished, both sides acknowledged that they had gotten a "fair shake."

Colorado at that time was rife with timber frauds by alleged homesteaders, who filed claims and then planned to sell their 160 acres to a larger lumber company without either living on the claim or improving the property. Silcox would place a dated chunk of wood into the stove of the cabin where the

homesteader was supposed to spend the winter, and 2 or 3 years later, the claimant's case collapsed when the ranger opened the stove door and pulled out the same chunk of wood. This ingenuity, energy, and enthusiasm for his work, plus his demonstrated grasp of sound forestry principles, earned Silcox seven promotions in less than 3 years.[2]

As assistant forester of the Northern Region under Greeley, Silcox handled the logistics and supply problems arising from the great 1910 fire. He located and hired thousands, brought tons of supplies and equipment, and arranged to get both fighters and materials to the fire front, which enclosed approximately 26 million acres and stretched about 250 miles north and south and 200 miles east and west. He was commended for "most efficient service" and promoted to regional forester to succeed Greeley.

The Silcox team differed only slightly from those who had worked with Greeley. The headquarters group in 1911 included the following:

District Forester	F.A. Silcox
Assistant District Forester (Operations)	John A. Preston
Assistant District Forester (Timber Management)	David T. Mason
Assistant District Forester (Lands)	Richard H. Rutledge
Assistant District Forester (Grazing)	C.H. Adams

(plus clerical and secretarial personnel.)

Elers Koch was Supervisor of the Lolo National Forest and Charles Fisher, followed by W.B. Willey, directed the Clearwater National Forest. On the Custer and Sioux National Forests, a number of men served as supervisors during the decade, with J.C. Witham the first on the consolidated Custer National Forest.

Silcox believed strongly in decentralization and grassroots control. As he wrote, "Fundamentally, the ranger district is the basic unit of our organization." With competent rangers in charge of their districts and in communication with their public, the Supervisors could more effectively define needs and standards of work, carry out inspections, and determine priorities for the monies available.[3]

The checkerboard pattern of public land surveys and sales resulted in difficult-to-manage land blocks that plagued the State of South Dakota (and other Western States), ranchers, timber companies, and the Forest Service. The best solution for all parties in this situation was usually a mutually acceptable land exchange. Between 1910 and 1912, South Dakota and the Forest Service swapped approximately 60,000 acres of land in the Black Hills for a similar acreage in Harding and Custer Counties. South Dakota incorporated the new lands as Custer State Forest, and the additional forest lands became part of the Custer National Forest.[4]

An immediate problem for Silcox was the vast amount of fire-damaged pine left by the 1910 fire, most of which, if handled at once, could be salvaged. He energetically made contacts and arranged sales for approximately 100 million board feet of this timber. To speed the reforestation of the area, he established the Savenac tree nursery. While small at first, the nursery grew and developed until it became the largest in the country. Silcox also rushed the inventory of the region's resources, because intelligent planning could not be pursued until the amount, kind, and age of the timber were determined. He insisted that timber cruising be carried on in every ranger district, on a larger scale than had been done previously, until the entire region was mapped.

Silcox also took action against the widespread land frauds in northern Idaho. The pattern was familiar. Alleged homesteads filed claims to quarter-sections of land—too steep, rough, and completely unsuitable for farming, but heavily forested in white pine. These claims, when patented, could be sold to lumber companies for $10,000 to $25,000. The timber would be cut and the cutover lands abandoned. To Silcox, this action clearly defeated the purpose of the homestead laws and supported his contention that these lands should never have been opened for settlement. He collected data, sent out Forest Service personnel to identify specific persons involved, and wrote a report to Washington calling for action to stop these fraudulent patents.

There also were filings under the Forest Homestead Act of 1906; some applicants sought patents on lands that strategically controlled access to a much larger acreage of Federal lands, thus making these lands a private preserve because they were inaccessible to the public. Silcox and later regional foresters and their staffs sought to prevent such patents. In the summer of 1915, Secretary of Agriculture David F. Houston went with Silcox into the Idaho woods, and he found that Silcox's report

was accurate. On his return to Washington, Houston canceled a large number of pending claims. With the cooperation of Secretary of the Interior Franklin K. Lane, he arranged to have a person from the Forest Service take part in handling all future claims and patents from would-be homesteaders. [5]

The problems of delineation and administration of the Custer National Forest also required Silcox's attention. Unlike most of the national forests in Region 1, the Custer was scattered, sprawling, disjointed, and made up of many segments, which at one time stretched more than 600 miles. Much of the enclosed lands were not forested; they included grasslands and waste lands. Some politicians and ranchers proposed that these lands be removed from the National Forest System and returned to the General Land Office for private entry.

Consequently, Silcox undertook a study and survey of the entire forest. He recommended to the Chief of the Forest Service that the entire Ashland District, southeast of Billings, be transferred from the national forest and opened for entry. When news of this proposed change was made public, a number of the larger ranchers protested vigorously. They recognized that the Forest Service permit system to regulate the grazing allotments had brought much-needed order and reasonable division of the grazing areas. They feared that with no regulation, the range would soon be overgrazed and all ranchers would suffer. As a result, the Ashland District remained part of the Custer National Forest. However, in 1917, the agency (with Silcox's approval) abolished the more eastern Dakota National Forest through a presidential proclamation. [6]

Forest fires and their control continued to occupy much of Silcox's time. Both 1914 and 1917 were bad fire years, but the disaster of 1910 was not repeated because Silcox had established a central warehouse for emergency tools and supplies. The region standardized equipment units and adapted all loads for transportation by packhorse or mule. Silcox cooperated with State officials and leaders of the timber industry, especially the Western Forestry and Conservation Association. Employees of the large lumber companies would normally be enough manpower to fight forest fires, but in 1914, they were not available. In the Northwest from 1913 to 1919, there were violence, strikes, sabotage, and bitter recriminations between workers and management of both the mining and forest-products industries. The Industrial Workers of the World (IWW) attempted to organize the workers of both industries but were met by solid opposition from the owners. In 1914, unknown persons destroyed the Union Hall in Butte with dynamite, and in 1917, a lynch mob seized and hanged union leader Frank Little. IWW responded with sabotage, strikes, and a "slowdown" at work.

The list of workers' grievances was long and inclusive: poorly planned camps with bad drainage, overcrowded barracks, lice-infested bunks, poor food, a 10-hour workday, low wages (about $2.00 per day was standard), and the requirement of a "Rustling Card" for employment. The "Rustling Card" contained a complete record of the individual, past employment history, the reason for leaving the last job, and a statement that the person was not a member of IWW. Mill and mine owners demanded that the Forest Service deal only with them for firefighters and not with the union or its leaders; however, IWW had control of the workers, who ignored any orders from management.

To break the stalemate during the 1917 emergency, Silcox went directly to IWW headquarters and persuaded the workers that it was in their best interest to fight forest fires, especially on national forest land. He explained that the forests were publicly owned; everyone had a stake in them and their well-being. As a result, the union pledged its support and provided the needed personnel to fight the fires that summer. A little later, Silcox was similarly successful in Seattle.[7]

Throughout his tenure as Regional Forester, Silcox was concerned about people, especially the people under his direction in the Forest Service. He pushed for more and better "on-the-job" training and opened up promotion possibilities to people who had previously been in "blind alley" jobs. Before he left the region, he had set up a promotion policy by which workers could qualify for better jobs simply by improving themselves, regardless of their earlier background.

The outbreak of World War I had a profound effect on all aspects of the Forest Service, the timber industry, and the States of Montana and Idaho. As relatively new members of the Union, with populations that included large numbers of recent immigrants, both States had numerous settlers (for example, Germans, Scandinavians, and Irish) who were reluctant to participate in the war effort. The existence of this "isolationist" bloc later attracted special attention from the internal security authorities in Washington. As early as March 1917 (after the break in diplomatic relations with Germany but before the declaration of war), Chief Henry S. Graves sent letters to all members of the Forest Service pointing out that they had an important public responsibility with regard to guarding public property, aiding critical industries, and protecting the public welfare. He emphasized that the agency was in a position to render other services to the authorities in Washington regarding information on men of military age, meat and

grain supplies, availability of minerals and timber, facilities for transport, and, if needed, patrol functions to protect lives and property in each region. In short, Graves felt that most men of military age could serve their country better by continuing their roles in the Forest Service than by volunteering for the Armed Forces. [8]

The United States entered the war on April 6, 1917. Just 2 days later, Silcox wrote a confidential letter to the forest supervisors in the region. Apparently acting on further instructions from Washington, he called on all forest officers to render service as an intelligence information force. They should report anything affecting the welfare of the Nation, including any possible danger from alien sympathizers. They should not overreact to mere rumors, but if a situation became serious, they should get in touch with local law enforcement officers. They should not attempt to make arrests themselves without further instructions. They also should complete and forward to headquarters the inventory of points that might need protection, such as bridges, trestles, tunnels, or other installations. [9]

The situation, however, changed rapidly after Congress passed the Selective Service Act to send approximately 2 million men abroad. The War Department determined that the expeditionary force would need a forestry regiment for service in France. Chief Graves alerted regional headquarters on May 4, 1917, that the Forest Service would raise such a regiment, led by competent foresters and equipped with portable saw mills and other logging machinery. The regiment must provide the Army with needed timber and lumber, while avoiding waste and leaving the forests, which had been under management by French foresters for a century, in good condition for future production. Among the first foresters chosen was former Regional Forester William B. Greeley, who was commissioned a major. Robert Y. Stuart, who had served under Greeley as head of operations, also accepted a commission and went overseas as a major. Graves also took leave from his duties and served on General Pershing's staff, mapping plans for the forest troops. [10]

Silcox distributed a brochure, "The Forestry Regiment, and How to Join It." The regiment was to consist of six companies of 164 men each, with the pay scale of $61.20 per month for overseas service. Silcox urged single men, not designated as part of the permanent skeleton organization, to join up at once. Every effort would be made to recruit a quota of at least 50 men in the service in the 10th Forestry Engineers. By late July, the regiment assembled in Washington, and in early October, it arrived in France. By this time, General Pershing (on the advice of

Major Graves) had determined that additional forestry personnel were needed and ordered the recruitment of the 20th Forestry Engineers. This was to be a much larger organization, including 10 battalions of 750 men each, a total of 7,500 men. Region 1 furnished its full quota of men for the regiments. According to forest historian Roger M. Peterson, 256 men from the Northern Region had applied for enlistment by early November. A month later, that figure had grown to 442. Still more enlisted in 1918. [11]

The war emergency soon brought an end to Silcox's time as head of Region 1. He was ordered to Washington, commissioned a captain, and directed to train the 10th Forestry Engineers for overseas duty. He never did go to France. The Secretary of Labor drafted him to be a "troubleshooter" for the U.S. Shipping Board in labor disputes on the west coast. Consequently, instead of embarking for France, he left for Seattle to again mediate among IWW, the Government, and employers over wages, working conditions, and benefits. He was generally successful, thanks to his earlier experiences at Missoula and Coeur d'Alene. He hammered out a general settlement between management and labor, which included Army standards for housing and food in lumber camps, an 8-hour workday, a 75-cents-per-hour wage, and no "Rustling Card." After the war, Silcox left the Forest Service for a decade. He would return as Chief in 1933 and work under President Franklin D. Roosevelt in fashioning the New Deal for the Forest Service and the forest-products industry. [12]

Region 1 During the War Years

With the departure of Ferdinand Silcox, Assistant Forester (Lands) Richard H. Rutledge became acting forester and later Regional Forester, serving in that capacity until 1920. He recruited additional men for the 20th Forestry Engineers and followed up on calls from the Department of Justice regarding stories of enemy alien activity. He urged personnel to turn into regional headquarters any reports of such activity within their forest areas. Such reports should be accompanied by witnesses' statements and not be overly influenced by rumors. As in other States, Montana and Idaho had a number of cases in which German-Americans were browbeaten and sometimes terrorized because of their pacifist views or simply because of their names. The Forest Service personnel exercised some moderating influence on the excessive zeal of self-appointed vigilantes. [13]

The Region 1 "family" remaining home made efforts to aid the war drive. The men of the skeleton force collected funds to

purchase an ambulance that would accompany the 10th Forestry Engineers to France. When the initial contributions fell short, the workers agreed to payroll deductions until the goal was reached. By late February 1918, the women of the region had knitted 99 sweaters, 115 pairs of socks, and 31 wristlets, which were forwarded to Washington for the men in service. As in other parts of the United States, families in Region 1 observed meatless, wheatless, and sugarless days for the duration of the war. [14]

Not all of the foresters' time was spent organizing the war effort, fighting forest fires, or apprehending forest thieves. Most of the days and months were routine. Forest Service personnel cruised timber, arranged sales to lumber companies, issued grazing permits, collected fees, and patrolled their assigned areas of the region. There also was time to become acquainted with the local farmers and ranchers, assist in a variety of tasks, and participate in social gatherings. K.D. Swan recalled that he and Ranger Ralph Sheriff hosted a community dance one summer at the ranger station located on a tributary of the Little Missouri River:

> Late in the afternoon Sheriff and I hitched up the team and drove to a ranch ten or twelve miles away where we picked up a small organ which was always available for affairs of this nature. Guests from all directions began to arrive at the station about dark. Some were on horseback, some rode in buggies or wagons. It was before the days of baby sitters. All the babies and children came with their parents
>
> Stout hands moved the stove out into the yard and put the other furnishings on the porch. The organ was moved in and a chair was placed for a fiddler who showed up from somewhere. Children were eventually put to bed on the cots out on the porch or in the wagon boxes. Riding stock was unsaddled and tied about the yard or turned into the corral out by the barn. Teams were unhitched and given hay to munch during the long wait. The moon was nearly full, making it almost as light outside as it was inside the station. The crowded room would not accommodate all the dancers at one time which made for a lot of social activity in the yard where little groups stood around and discussed the coming presidential election, the hay crop, and neighborhood matters in general. Just after midnight, lunch was served by the women. Coffee was made on the stove to which a couple of lengths of stovepipe had been attached. I remember well the picture made by the sparks and bil lows of black smoke from fat pine surging upward in the moonlight. All in all, it was a night one could not easily forget.

> As dawn reddened the east, some of the women got breakfast, frying bacon, eggs and potatoes which, with bread and coffee, would fortify the men and boys who had to return to a day's work in the hayfields. And so they rode away, this group of friendly people, each feeling I am sure, a little happier and thankful for this social contact with good neighbors. [15]

There was often time to hunt, check on game, and explore the rugged mountains and canyons that made up much of Region 1. One of the favorite areas was the Beartooth range on the Custer National Forest, just north of Yellowstone National Park. There, the ranger would find moose, elk, deer, bears, bighorn sheep, mountain lions, wolves, and coyotes. During the summer of 1920, Forest Service personnel joined ranchers on the eastern part of the Custer in a big wolf hunt. The ranchers claimed that wolves had become a serious menace to the livestock industry and aimed to eliminate these predators entirely from this section of the range. Only slowly did Forest Service personnel and ranchers come to understand and accept the inherent interdependence of all life in maintaining an ecological balance. Such a doctrine of a "land ethic" was later articulated and popularized by Aldo Leopold in his writings, but many early foresters contributed to the concept.

Many foresters enjoyed climbing and exploring Grasshopper Glacier. There, millions of locusts had been entombed in the ice at the 11,000-foot elevation. When the glacier receded in the early 20th century, the insects were exposed to the air causing the area to reek on warm days. Just when these insects were frozen is a question for discussion. Some geologists assign a date as recent as the 18th century, but others say it was thousands of years ago. There were other glaciers "Castle Rock, Thunder Mountain, and Windy Gap" that could be climbed, and each demonstrated the progression and recession of the glacier as the weather cycles changed. The accumulated rocks and boulders beyond the current edge of the glacier ice have prompted questions and often humorous retorts from the ranger. The following was typical:

> Tourist: Where did all these big rocks come from?
> Ranger: The glacier brought them down.
> Tourist: Where is the glacier now?
> Ranger: Gone back for more rocks. [16]

A more formidable challenge was Granite Peak. This imposing mountain is the highest land mass (12,799 feet) in Region 1.

Rangers and mountaineers had made repeated attempts to scale the peak, but the difficult surrounding country and its sheer sides defeated all efforts until after World War I. Elers Koch, former Supervisor of the Lolo National Forest and in 1923 Assistant Regional Forester (Timber Management), was an avid mountain climber and for years had a special interest in climbing Granite Peak.

During the summer of 1923, he gathered a party of climbers, including Forest Service veterans J.C. Witham and R.T. Ferguson, to make a concentrated assault on the last "virgin peak" in the region. They were joined by another group of climbers, and they made their way together to about the 10,000-foot level. Koch, Witham, and Ferguson chose the eastern ridge and successfully reached the summit on the morning of August 30. The others in the party chose the southwestern face but were forced to turn back a few hundred feet below the summit. It was a triumphant and exhilarating feeling for the three friends as they planted a staff and an American flag on the top of the granite mass. Although the peak has been climbed many times since, it is still regarded as a major challenge to any mountaineer. Koch recalled it as one of his most satisfying achievements. [17]

Granite Peak - highest mass in Region 1 (12,799 feet).

Rutledge continued to serve as Regional Forester until 1920. A difficult period of readjustment followed the end of the war. Rutledge was an expert on range and grazing and strongly pushed the concept that grazing fees should be increased to a realistic level and grazing use should be limited to preserve the range. He also was a careful administrator and systematic planner, unafraid to support his beliefs in the face of opposition. In 1920, he transferred to the Intermountain Region in Ogden, Utah, where he labored for almost two decades to develop a sound range policy. In 1939, Rutledge moved to the Washington Office of the Department of the Interior, where he became Secretary Harold Ickes' spokesperson on public land use. He engaged in a series of well-publicized confrontations with western congressmen and senators and their rancher friends. He retired from public life in 1944. [18]

Fred Morrell

Fred W. Morrell succeeded Rutledge. Born in Nebraska in 1880, Morrell attended the University of Nebraska and Iowa State College, where he earned a master's degree in forestry in 1906. He joined the Forest Service that year and was sent to Colorado. There, he advanced through the grades and gained experience in a variety of assignments. He moved to Missoula in 1920 as Assistant Forester and advanced to Regional Forester upon Rutledge's departure.

Morrell was a friend of William Greeley and agreed with Greeley that the best course for sound forestry practice and increased production was to encourage Federal-State-private cooperation. He supported the Clarke-McNary Act and sought to extend fire protection over the entire forested areas of Region 1 under its terms. As for Federal regulation of cutting practices on private lands (favored by Pinchot, Graves, and Silcox), Morrell pointed out that the people and hence the legislators had repeatedly voted against it. Therefore, the public did not want Federal control, and the Forest Service should not try to "cram it down their throats." [19]

The Morrell years marked the peak of timber production in Region 1, both on the national forests and on private lands. According to the compilations of Henry Steer, which included all of Idaho and Montana, each year in the 1920's (except for the postwar depression year of 1921), the Northern Region reported an average cut of more than 1.3 billion board feet and on two occasions more than 1.5 billion. This cut was divided among white pine, ponderosa pine, larch, and Douglas-fir, with white pine, mostly from northern Idaho, being the most valuable. [20]

Bob Marshall on a hike in 1935.

Bob Marshall

In the summer of 1925, a new character appeared in Missoula, one who was to greatly influence the role of forests in Region 1. At this time, Robert Marshall was only 24 years old, but he was already known as an author, conservationist, avid hiker, armchair socialist, and genial eccentric. Armed with two degrees in forestry, he brought adequate theoretical but little practical knowledge of the work of the professional forester. He was assigned to the Northern Rocky Mountain Forest and Range Experiment Station, and between assignments and on weekends, he explored Montana and northern Idaho, roaming the wild areas that were far from roads or railroads. In the Forest Service family, he became famous for his Sunday 40-mile hikes, which were his normal recreation.

Soon after Marshall's arrival, Regional Forester Morrell assigned him to handle the supply and transportation problems during a major fire on the Kaniksu National Forest. In addition to ensuring that equipment, personnel, and food were dispatched to the camp at the fire front, Marshall regularly walked around the fire line, talked with the firefighters, and recognized them all by name. Many of these men, recruited from the slums and riverfront of Spokane, had surprising backgrounds and soon responded to Marshall's sincere interest. As he said, collectively they were an unsavory bunch, but individually there were a number of superior types. With a keen sense of humor, Marshall also noted the camp food and the time spent by the men in eating their daily meals. On another occasion, he quietly tabulated their camp conversations, which consisted mostly of profanities, sex references, and remarks on bodily functions. Marshall wove these anecdotes together in an article titled "Contributions to the Life History of the Northwestern Lumberjack," which he published in Social Forces in 1929. [21]

Having helped defend the New York State Forest Preserve, Marshall became increasingly interested in preserving wilderness areas that still existed in the West. Taking a cue from Forest Service employee Aldo Leopold, who in 1924 had been instrumental in setting aside the Gila Wilderness in New Mexico, Marshall wrote an article for the Service Bulletin advocating wilderness preservation in the Northern Region and urging that the Forest Service refrain from road building in these primitive areas. He defined a suitable wilderness area as at least 200,000 acres with no permanent inhabitants and no access for mechanical transportation. When another forester, Manly Thompson, attacked the concept of wilderness and dismissed its need because it was used by only a small fraction of the population, Marshall responded, "Wilderness is a minority right! " [22]

Bob Marshall left the Northwest in 1928 to earn a doctorate in plant physiology at Johns Hopkins University. About 7 years later, he, Leopold, and others founded the Wilderness Society. After his death from a heart attack in 1939, the Forest Service designated a large area on the Flathead National Forest as the Bob Marshall Wilderness. It was an area he had repeatedly roamed during his years with the Northern Rocky Mountain Station. [23] .

In 1929, Fred Morrell also left the Region to work under his friend Robert Y. Stuart, who had succeeded Bill Greeley in Washington as Chief. Morrell took on the tasks of directing public relations and promoting State and private industry cooperation with the Forest Service. Later, he served as an assistant to the director of the Civilian Conservation Corps, representing the Department of Agriculture in planning corps activities. [24]

Evan W. Kelley
Photo by Judson Moore/FS (R1-PAO).

Evan Kelley

The next Regional Forester was Evan W. Kelley, who came to Region 1 from the Eastern Region and had no previous experience in Montana or Idaho. He served as Regional Forester from 1929 until his retirement in 1944. He made it "his region," and a generation of American foresters identified the Northern Region with "Major" Kelley. Unlike his predecessors, Kelley was not a college man and had no direct connection with Gifford Pinchot and his associates. Yet Kelley became a "forester's forester," popular with most of his associates and well-regarded by officials in Washington.

Kelley was born in 1882 in California and, after a common school education, went to work in the gold mines at the age of 14. Although the pay was good, it was backbreaking work "separating small grains of gold from large masses of earth." In 1904, he became a packer with a chain of 10 mules and a saddle horse, with which he carried supplies for several mines in the central Sierra country of California. He had heard about forest reserves and wrote asking how he could get a job with the Forest Service. While most miners and ranchers thought that the forest reserves would stagnate the economy, Kelley felt otherwise. In 1906, he worked as a forest guard. His initial pay was $60 a month, and he furnished his own saddle horse, pack animals, tools, and food for himself and the animals. He could have earned more at the mines, but he had a "conscious interest in the better treatment of the forests of the country." [25]

Kelley worked as a guard, assistant ranger, ranger, and acting supervisor before becoming Supervisor of the Eldorado National Forest in California. He transferred to San Francisco in 1914 as a national forest examiner. During World War I, Kelley went overseas as a captain with the 10th Forestry Engineers. Promoted to major, he commanded all saw milling, logging, and road construction operations for several departments in eastern France. His associates described him as athletic, compact, and "ramrod straight," either on foot or horseback. He retained his military rank after the war, always referred to as "Major," which rankled many of his associates who thought the title pretentious. [26]

After the war, Kelley returned to the Forest Service and was stationed in Washington as Inspector of Operations. While there, he compiled the first draft of the "Manual for Forest Development Roads," a new edition of the "Forest Service Trail Manual,' a manual on fire control, and also the "Glossary of Fire Control Terms." In 1925, he became Regional Forester of the Eastern Region, which stretched from New England to eastern Texas, but it had little national forest land. [27]

Because of his extensive experience with forest fires, Kelley was sent by Chief Robert Stuart to Missoula to "get a handle' on fire control in the region, at the time recognized as one of the most difficult fire areas in the country. Active, energetic, and personable, Kelley at once worked to "get on top" of the fire problem. He centralized control and supplies and established a remount depot, where a string of pack mules would be ready at a moment's notice. He began to use airplanes to spot fires and air-to-ground radio communication to coordinate work.

In 1931, the disastrous Freeman Lake Fire on the Kaniksu National Forest tested all of the region's innovations and planning. This fire covered approximately 24,000 acres, mostly of valuable white pine. In a few hours, about 1,500 firefighters constructed 75 miles of fire line to try to contain it. Kelley visited the fire line repeatedly, inspected the men's food and camp conditions, and conferred with his foremen. So serious was the fire that even Chief Stuart visited the fire front. [28]

The head of the fireline recalled Stuart's surprise visit:

> [O]ne evening on August 5 or 6, . . . an elderly man dressed in faded bib overalls, a cheap looking straw hat and smoking a corncob pipe arrived in camp. He followed me around, was rather inquisitive as to how things were going; I thought he was a native stump rancher and was

> rather annoyed. . . . He did not introduce himself, so I inquired if he lived in the area. He said, "No, I'm from Washington, D.C." That didn't ring a bell so I asked more questions and discovered he was Mr. R.Y. Stuart, Chief of the United States Forest Service, Washington, D.C. From then on he received more attention. [29]

One of the young men stationed as a lookout in the fire area was Hume Frayer, at that time a college student who was getting experience through a summer job. Remaining too long at the lookout post with a portable telephone, Frayer found himself cut off by the fire from the trail that was to be his escape route. He started down the hill through the brush, but the fire moved faster, and soon it was a "race against the fire." He plunged down the slope, abandoning the telephone en route and avoiding the tall snags crashing down around him. He finally reached a creek and ran along the other side. At last, he sighted a rancher's house; the rancher was digging a fire trench by his barn. At that time, Frayer fell unconscious on the creek bank, and when he awoke, he was in the back of a truck heading to the ranger station. His clothes were singed, and his shoes were almost burned off. After a short rest and a cup of coffee, Frayer insisted on returning to work and helped build a fireline to protect the ranger station. His narrow escape was a topic of conversation among the firefighters for weeks. [30]

The years 1934 and 1936 were also bad fire years, but the threats were handled more quickly and efficiently because of better coordination and improved equipment. In the summer of 1936, airplanes flew 50,000 miles scouting fires, transporting supplies and men, and taking aerial photographs. Kelley also took legal action against careless campers who left campfires that blazed up later and smokers who caused an estimated 63 fires that summer. In an effort to alert the public to the fire danger, Kelley used placards and slogans and even had movie houses urge hikers and campers to take care in the national forests. [31]

As could be expected, Kelley's work family changed and expanded during his long tenure as Regional Forester. Many men, however, served with him a decade or longer. As of October 1937, the Regional Office staff consisted of the following:

Regional Forester	Evan W. Kelley
Assistant (Operations)	C.C. Strong
Assistant (Timber Management)	Elers Koch
Assistant (Lands & Public Relations)	M.H. Wolff

In 1938, Kelley added Perry A. Thompson as Personnel Director. [32]

Within a year after Kelley took charge of the Northern Region, the Great Depression dealt all of the Rocky Mountain States a paralyzing blow. Mills closed, prices fell, and the lines of unemployed men grew ominously longer. In 1932, the wholesale price of lumber, including white pine, had fallen below the cost of production, and many larger mills quit cutting, awaiting an upturn in prices. The total reported cut for the northern Rocky Mountain States was only 359 million board feet, the lowest total since the turn of the century. In 2 years, the number of operatating sawmills dropped from 237 to 175.

Timber sales from the national forests also declined. Many large companies found themselves with thousands of cutover acres on which they were paying taxes and receiving no income. Consequently, some owners, including Potlatch, Anaconda, McGoldrick, and the Forest Development Company, donated these lands to the Forest Service" a total of about 500,000 acres added to the adjacent national forests or to primitive areas. This action was in marked contrast to the situation in the Southern States, where the Federal Government negotiated the purchase of cutover lands to form new national forests. [33]

The New Deal

The New Deal recovery program had a major effect on the forests, foresters, and the forest-products industry. As in other parts of the country, the Northern Region subscribed to the Lumber Code of the National Recovery Act, which attempted to revive the industry by reduced production quotas, higher wages, and a shorter work week. Also included in the Lumber Code was the conservation section, known as Article X, which prescribed sustained yield, a comprehensive fire prevention program, protection for young growth, and replanting after logging. Former Region 1 foresters Bill Greeley and David T. Mason, Chief Silcox, and Kelley were skeptical of the ability of the industry to police itself. Ultimately, the article became a model or guide for good forestry practices in the industry, even though the Supreme Court, after several controversial years, invalidated the entire National Industrial Recovery Act [34]

Of much more lasting importance was the creation of the Civilian Conservation Corps (CCC). The CCC, which attempted to bring unemployed young men and neglected land together, was a special project of the president, who had been a strong conservationist all his life. The CCC was a hybrid creature. The Department of Labor identified and enrolled the young men; the Army fed, events

housed and clothed them and managed the camps; and the Forest Service (or other Federal agencies such as the National Park Service) directed and supervised the work projects. The first Region 1 camps began operation in the spring of 1933, and by mid-summer, new companies of enrollees were arriving in Missoula every week.

The Army included Region 1 in its Ninth Corps Area, so it managed the camps from its headquarters in San Francisco. Initially, the camps provided tents as shelter, with temporary structures for mess halls and meeting rooms. The camps, thus, were summer camps only and had to be shut down during the severe winter months that characterized the northern region. The Forest Service assigned foresters, usually district rangers or other experienced woodspeople, to supervise the forest projects. Local experienced men were recruited to direct the work and serve as foremen for the several groups; these men were available because most lumber companies had shut down or were operating with reduced forces. During the first year, regular Army officers directed the camps, but by 1934, reserve officers assumed camp supervision. [35]

According to local CCC historian Bill Sharp, the first CCC camp were on the Beaverhead National Forest (F—1) and the Clearwater National Forest (F—2). By the end of the summer, 55 camps were scattered among the 17 national forests, plus 2 companies assigned to Glacier National Park and 2 to the State forestry departments. Much of 1933, by necessity, was spent getting organized, laying out projects, and "tooling up."

By 1934, permanent-type camps began to replace the tents. The first permanent camps were Camp Bungalow (F—193) and Camp North Fork (F—23), both on the Clearwater National Forest. Rapidly, permanent structures replaced temporary shelters so CCC companies could live and work through the winter months. Most camps were built for companies of 200, with 4 barracks for 50, a mess hall, a recreation and education building, an office, and a warehouse for supplies and storage. Eventually, these structures became standardized (pre-manufactured) so they could be shipped to the camp site.

A feature of all camps was the voluntary educational program, which enabled youths to complete high school requirements and even take some college-level work. Many Army officers, including General Douglas McArthur, proposed that the corps people be given military training, but this was vetoed by Washington at the top level. The CCC remained a voluntary and civilian enterprise from 1933 to 1942. [36]

The number of camps fluctuated during the life of the CCC. As projects were completed, some camps were closed and the companies moved to new locations. Sometimes camps were moved but kept the same number; other times they received a new number. Often, different companies occupied the same new number. Often, different companies occupied the same camp in different years. There were also "spike" camps, which were detached details working on temporary projects. Most, but not all, camps were under the supervision of the Forest Service. Some were on national parks, State parks, Native American reservations, and private lands. A representative count of CCC activity could be that of June 30, 1935, when Montana listed 32 camps and Idaho 82 (most of these were in northern Idaho). There also were 31 camps in South Dakota and 19 in North Dakota under Region 1 jurisdiction. In comparison, on the same date, California had 155 camps, Wyoming 20, and Washington 69. [37]

Though generally popular, the CCC had numerous problems and attracted some criticism. Some foremen thought that the whole project was a waste of time and money. At least one supervisor felt that all he wanted was for the "foreman to take these boys out in the woods and keep them and yourself out of trouble." Most citizens supported camps of local or regional boys but were critical of camps made up of easterners, especially if they were of recent immigrant stock. Many residents were uncomfortable with or even hostile to the few black companies that were sent to the region.

Elers Koch, an experienced woodsman and conservationist, was skeptical of the CCC program and critical of its performance. He thought the first 6 months of CCC activity were so confused and so lacking in planning that it boded ill if the Army ever had to raise a large force in a hurry. He saw Army officers scurrying around to arrange for buildings but with no knowledge of grades, types of lumber, specifications, or even tools. He also found the food poor. During the first 6 months, there were no expert cooks, there was no training of student cooks, and the enrollees were eating out of World War I mess kits. The Forest Service had to provide tools, cooking ranges, and crockery, some from shutdown logging operations. Koch was particularly critical of the initial practice of sending eastern city boys to the Montana and Idaho camps. He argued that

these youngsters had never learned to use forestry tools and had to be taught to perform even the simplest tasks. He also felt that they were largely responsible for the illnesses and injuries reported by the camps. [38]

By 1935, major permanent improvements could be noted in the comfort, food, and work of the CCC camps. The Army had made great strides in making the life of the enrollee more pleasant. Gone were the mattresses of wool sacks stuffed with straw, the double bunks, and the old Army mess kits. Athletic events and social functions were part of the weekly calendar; planned weekend trips were a regular part of the schedule. From a listing of quantities and varieties of food consumed, it was apparent that CCC employees enjoyed a nutritious and abundant diet. The entire organization had stabilized to the point that many supervisors had begun to plan long-term projects and make use of more heavy machinery than had been possible before. [39]

Civilian Conservation Corps Crew digging irrigation ditch for hay lands at Remount Depot, Lolo National Forest, 1934.

Despite the critics, the CCC youths learned to work and did work. In the white pine area, they fought blister rust, which had threatened to destroy the stands. They built roads and trails, put up signs and markers, and measured distances more accurately. They laid telephone lines and built lookout towers and other structures. They also built badly needed campgrounds, picnic sites, and recreation shelters, especially in the more open terrain east of the Continental Divide. Most of the summer, they fought forest fires. The conditions were right for 1936 to be a bad fire year, but because of the efforts of thousands of young and willing hands, the fires did far less damage than might have been expected.

The CCC reconstructed and enlarged the Savenac Nursery and rebuilt the buildings. On the 17 national forests and on private lands, they planted more than 8 million trees. Among the larger projects, the CCC workers punched through the side of a rocky limestone mountain to build a road to a new camp site. They built a bridge (still in use in 1988) over the West Gallatin River, constructed a pole-and-post treatment plant along Squaw Creek, and even built a new ranger station out of logs.

With any such large body of young men, working in unfamiliar surroundings, there were accidents, some of them fatal. Two World War I veterans drowned while attempting to cross the St. Joe River in December 1933. Lt. Robert Gilmore died from exposure, as did fire guard Harry Halvorsan while on a fire-fighting expedition. Three CCC men died while fighting the "Pete King" fire in 1934. One young CCC enrollee slipped and fell into the Clearwater River and drowned in 1936. One young man wandered away from camp and apparently became lost in a snowstorm. When search parties were unable to find his body, even after the spring thaw, the camp commander decided that he was most likely "absent without leave" and dropped his name from the rolls. A year later, blister rust control workers discovered the skeletal remains and clothing. As a result, camp officers reopened the case, held lengthy hearings, and declared the man legally dead. In all, there were about 12 reported fatalities from forest fires, at least 5 drownings, and several other accidental deaths among CCC men working in the Northern Region between 1934 and 1940. [40]

For others, the CCC experience opened the way for a successful career. One such example was Carl W. Wetterstrom. Young, school, and unable to find a job, Wetterstrom joined the CCC in 1933 in northwest Washington, where he worked on a grazing survey. After a year with the corps, he was employed by Region 1. The regional forester assigned him as assistant ranger and later foreman of a CCC camp on the Flathead National Forest. By 1941, he became District Ranger on the Flathead. After a stint with the military forces in the South Pacific, Wetterstromreturned to the Forest Service as District Ranger on the Deer-lodge. He eventually rose to become Assistant Forester,Division of Recreation and Lands, in the Regional Office at Missoula. He received a number of citations and awards for his work with water impoundment programs, especially Libby Dam and Dworshak Dam. He retired in 1973. John Breazeale, Tony Jinotti, Blaine Doyle, and W.E. "Curly" Steurwald were among the many other CCC enrollees who later joined the Forest Service and had successful careers in their chosen fields. [41]

During the depression, some were able to bypass the CCC and join the Forest Service directly out of school. One was Lester M. Williamson who, after weeks of waiting, worked as a temporary fire guard in 1935 on the Coeur d'Alene National Forest. He pleased his superiors by his eagerness, and he rose to be Fire Control Officer on the Clearwater National Forest. After a long career, he retired in 1972 with highest praise for his years with the Forest Service. [42]

Kelley summarized the many contributions of the CCC at a press conference in December 1940. Nearly 6.5 million person-days of labor had been expended in the Northern Region since 1933. "Not only have these boys contributed much to the improvement of the national forest," Kelly said, "but the enrollees themselves have received much valuable training of the national forests," Kelley said, "but the enrollees themselves have received much valuable training. Working with heavy mechanical equipment such as bulldozers, tractors and trucks has equipped these boys with a valuable asset in finding jobs after the loss of their enlistment period." [43]

Evan Kelley had managed Region 1 well during the difficult years of the Great Depression. In 1941, he reported that lumber sales from the national forests had returned to predepression levels and fire losses for the year were among the lowest in history. Less than 1,100 acres had been burned or scorched, thanks largely to the greatly improved efficiency of the CCC crews who had "come a long way" since the early days of 1933. The University of Montana, in recognition of his many achievements and outstanding leadership, awarded Kelley with an honorary master's degree in forest engineering. It was a fitting tribute to an outstanding forester. "

There were, during this difficult time in the Nation's history, important accomplishments in forestry in general. Region 1, in particular, helped weather the adversities of war and build a strong base for postwar progress.

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Chapter 7

Depression Era Protection and Management

The sharp decline in timber production in the Northern Region that occurred after 1929 forced the Forest Service to divert its energies to long-term protection and management goals. Fire control, insect and pathogen depredations, timber stand improvement, range restoration, and capital improvements, including road building, campgrounds, lookout towers, and water systems, occupied the foresters and the abundant labor crews provided under the Civilian Conservation Corps (CCC) programs. Out-of-work loggers and sawmill operators provided a reservoir of supervisory personnel to manage the enrollees in the emergency relief and CCC projects.

The Great Depression produced a significant increase in the work force on the national forests of the Northern Region, while the general economy suffered. According to Elers Koch, the region already had plans developed for needed improvements on the national forests when Franklin D. Roosevelt initiated the "New Deal," which brought money and people into Region 1. It also marked a time for progress in timber management, research, disease and insect control, fire protection, and silviculture practices.

The Copeland Report

A *National Plan for American Forestry,* better known as the *Copeland Report,* was a key planning and management document for the Forest Service during the depression era. It stressed public ownership of forest land and cooperation with private forest owners in the management of private lands. The report, prepared by Earle Clapp under the authority of the Chief of the Forest Service in 1932, reevaluated an earlier policy guideline known as the Capper Report (1920). The 1,677-page planning document went to the Senate in the spring of 1933 and proved instrumental in bringing about congressional budget increases for the Forest Service. It also forestalled the transfer of agency grazing areas into the Grazing Service of the Department of the Interior and aggravated administrative conflicts between the Departments of Agriculture and the Interior. [1]

The *Copeland Report* observed that "nearly all the conservation problems" were on private lands, and most of these lands were not susceptible to conservation practices. Cooperative management programs, however, could achieve effective conservation practices on the remainder of the private lands. Also, for conservation and efficiency in timber management one-half of the Nation's timber resources should "pass into federal ownership through massive expansions of the National Forest System." [2]

One section of the *Copeland Report,* "The National Forests," was authored by C.M. Granger, Director of the Forest Survey. Granger observed that "inferior" timber species, such as the Rocky Mountain type of Douglas-fir and larch, had no markets and that these uncut species resulted in mixed stands in regenerated forests. Cutover areas on national forests generally regenerated in 10 to 15 years to achieve 85 to 100 percent of their fully stocked condition. Regenerated stands of the Englemann spruce type in the Northern Region produced less than 50 percent of their fully stocked condition. [3]

Most Montana forests were described in a section titled the "Missouri River Basin," while the northern Idaho and northwestern Montana forests of Region 1 were included as portions of the "Columbia River Basin." Grazing on the Columbia Basin forests was negligible, but heavier on the Missouri Basin forests. Fire seemed unusually prevalent in both basins. A permissible burn was recognized at 7 percent of the forested area over a 10-year period, and both northern Idaho and the Montana forests exceeded that figure during most decades. One recommended fire deterrent was to pile and burn slash, particularly in areas of high fire hazard. According to the "Green Book," as foresters affectionately called the *Copeland Report,* fire protection and effective timber management in the Northern Region could best be accomplished by adding 946,000 acres of the public domain in Montana and 2.228 million acres in Idaho to the National Forest System. [4]

This, of course, did not occur, but it did provide inspiration and incentive for Forest Service activities in the Northern Region. What the *Copeland Report* did for forestry, the Senate Report titled *The Western Range* (1936) performed for grazing. Both positively affected the Forest Service.

The Western Range

The Secretary of Agriculture transmitted The Western Range to President Roosevelt on April 28, 1936. Compiled by the Senate Committee on Public Lands, the full title of the report, *The Western Range: A Great But Neglected National Resource,* indicated its contents. The advent of the range cattle industry in Montana and Idaho followed the discovery of gold in the northern Rocky Mountains. Small herds were first introduced into the area in the 1860's to feed the miners. Only a few hundred thousand head of cattle and sheep grazed the mountain ranges in

the 1880's, but the advent of the railroad transformed the industry overnight. Sheep counts, for example, soared from several hundred thousand to 2.6 million in Idaho and to 5.7 million in Montana in 1903. The ensuing pressure on forest ranges depleted the grazing lands, from which there had been no recovery even by the mid-1930's. [5]

This analysis amplified the concerns raised in the *Copeland Report.* According to William D. Rowley, author of *U.S. Forest Service Grazing and Rangelands: A History,* the *Copeland Report* stressed the need to rehabilitate the range and reverse the soil erosion caused by the overgrazing of the forest ranges. The report urged that grazing be made compatible with the "dominant uses of timber production and watershed protection," and it recognized the principle of multiple use. But these conservation concerns, Rowley admitted, confounded the realities of the depression. Livestock interests desperately sought new grazing opportunities and lower grazing fees, not higher fees and reduced allotments, which would be inspired both by the *Copeland Report* and *The Western Range.* [6]

Personnel in the Departments of Agriculture and the Interior differed sharply over the analysis and interpretation of both reports. Secretary of the Interior Harold Ickes responded to *The Western Range*, which strongly impugned Interior's handling of the western range under the provisions of the Taylor Grazing Act by seeking (unsuccessfully) to transfer the Forest Service from Agriculture to the Interior. [7] These legislative reports seem to have inspired a burst of long-range planning and policy initiatives by the Forest Service on both national and regional levels. One of those initiatives had to do with public regulation of private forestry.

Public Regulation of Private Forestry

During the 1930's, the Forest Service consistently decried the destructive logging practices on private timberlands. Forest Service spokespersons, in the Journal of Forestry and before the annual conventions of the Society of American Foresters, discussed the need to regulate private forest lands. In 1935, Chief Ferdinand A. Silcox proposed a six-point program of public regulation at the society's convention. The discourse between representatives of private forestry and the Forest Service continued throughout the decade. At a meeting of the National Lumber Manufacturers Association, Emanuel Fritz, then professor of forestry at the University of California and former editor of the *Journal of Forestry,* said that the Forest Service staff did not "give a damn for forestry, except the aggrandizement of the Bureau." Finally, on February 16,

1940, the Forest Service presented lengthy recommendations to the Joint Congressional Committee on Forestry that related to supporting public regulation of private forestry. [8] The Northern Region issued its own supporting document in December 1940.

Forest Economy for the Nation as Related to the Northern Region

The regional report began with the following observation (without mentioning Fritz): "The program recommended is not for the aggrandizement of the Forest Service." [9] The report stated that the Forest Service advised the Joint Congressional Committee on Forestry that there were two main "classes of remedies applicable to owned forest lands" that could be applied concurrently. The first remedy was public cooperation, and the second was public acquisition. [10] Thus, the Northern Region was drawn, or threw itself, into the swirling controversy over Government regulation of private forest lands.

The Northern Regions's report reviewed the problems confronting the national forests, as typified on the 17 national forests and 108 ranger districts then administered under its auspices. The report pointed out (correctly) that the only dependable backlog of timber lay on the national forests that were managed for sustained yield. Much more than 1 million acres of national forest timberlands were understocked because of repeated fires. Approximately a half million sheep and 100,000 head of cattle and horses grazed the forest ranges each season, divided among approximately 2,000 permittees. On two-thirds of the national forests, on lands unsuited for livestock grazing, wildlife abounded. Recreational campgrounds needed to be expanded to three times their current capacity. The appendix stated that more than 2 million acres of timberlands in the region had been treated for white pine blister rust through fiscal year 1941, but to complete that work by 1950, an additional appropriation of $10 million was required. Finally, 34.6 billion board feet of commercial timber, from the region's available 72.7 billion board feet, were on the national forests. [11]

The implication of the report was that the Forest Service could better plan and protect the interests of the people in the States it served than could the free market and private enterprise. During the depression years, that would seem to have been the case; the lumber industry declined, and the Forest Service became the employer of thousands of unemployed youth through such programs as the Civilian Conservation Corps (CCC).

The CCC and Public Works in Region 1

The CCC, described in Chapter 6, contributed greatly to the work of the Forest Service in Region 1 during the depression. Evan W. Kelly, Regional Forester at the time the CCC was organized, was brought to Washington, D.C., in 1933 to help establish Forest Service—related CCC programs and administrative structures. CCC camps designated for Montana, Idaho, and Washington were under the administrative authority of the Ninth Corps of the War Department, while the North Dakota camps belonged to the Seventh Corps. In Region 1, the Forest Service provided planning and technical management, while the Army offered supervision and authority. CCC labor quotas for 1933 were set at 1,500 enrollees for North Dakota, 5,800 for Montana, and 9,600 for Idaho (including southern Idaho administered by Region 4). By 1941, more than 100,000 young men had worked in CCC programs within Region 1. [12]

With this large labor pool, the region expanded its construction of roads and bridges, fire towers, trails, campgrounds, and recreation facilities. The region also used CCC crews for fire suppression, blister rust control, and the cleanup of burn areas.

These young enrollees, between the ages of 18 and 25, most often came from the cities and were totally unskilled in the use of basic tools. A few local or regional volunteers participated, but most were from the Eastern States. The CCC provided them with a place to "sleep and eat and become useful citizens." Many of the young men remained with the Forest Service, and the CCC became one of the primary recruiting grounds for many of the postwar era foresters and administrators. [13]

Through December 1940, the CCC in the Northern Region provided an estimated 6.5 million person-days of labor and employed about 105,000 youngsters. Eugene (Gene) R. Grush, who retired in 1952, provided technical assistance to a 200-person camp. The crews rebuilt roads and surfaced them (for the first time) with crushed rock. "They did good work," Grush said, "built a steel bridge across the Yaak below Sylvanite, several steel bridges across the creeks, some side roads and trails, and worked on fires and in other places where we could use them." [14]

There were so many CCC camps and so many men on so may national forests in Region 1 that many lives have been affected by that experience. Camp reunions, books, and reminiscences are all evidence of the personal impact of those days on so many people. [15] The Fort George Wright District of the CCC

was located west of the Fort Missoula District and was organized in May 1933. By summer, there were 45 companies of 200 persons each in a district that extended from Lake Chelan in Washington to Libby, Montana, and from the Canadian border to a line running just south of Moscow, Idaho. [16]

In the short time between April 5, 1933 and March 31, 1934, 51 Forest Service—operated CCC camps in Idaho contributed 28,750 person-days of fire suppression and 1,166 person-days of fire presuppression work. In addition, they constructed 48 miles of firebreak and 15 lookouts, cleared 427 miles of road and trail, worked on 3,683 fire hazard reduction projects, built 2 erosion control dams, cleared 100 square yards of riverbank in flood control projects, reconstructed 200 cubic yards of levees, and excavated 10 cubic yards of earth in channel enlargement. [17] Such levels of intensive activity were characteristic of the entire region throughout the 1930's.

Dean Harrington, then on the St. Joe National Forest, said that the forest's early CCC crews went to work on blister rust. He helped establish one CCC camp at Clarkia, on the Clarkia Ranger District. Deserted buildings from an old lumber town were used to house the encampment. A road was built to connect to Ranger Ralph Hand's district at Round Top. Another camp located at Emida provided crews for both Clarkia Ranger District and Palouse District. Harrington believed that the CCC was an undisguised blessing for the Forest Service. Besides providing these men work, the agency accomplished long-term improvements that would otherwise never have been made, such as fire lookout towers, telephone lines, timber stand improvement, blister rust control, and replanting. [18]

According to Charlie Shaw, the first CCC camp on the Flathead was set up in 1933 on Desert Mountain Road. The camp had 200 enrollees, plus the administrative staff. During its first summer of operation, the camp constructed a 12-mile road to Desert Mountain lookout. Crews, sometimes stationed in "spike" camps, maintained trails and constructed buildings, water systems, fences, and telephone lines. [19]

The work achieved by Company 530 on the Kootenai National Forest in 1937 was typical; many miles of roads, trails, and telephone lines were built. [20] Other crews specialized in "snag felling" that is, the removal of old burned treetops susceptible to lightning strikes.

In addition to protection, conservation, and construction work, CCC enrollees were involved in classwork and correspondence courses, ranging from the low primary grade levels through high school. One of the enrollees summed up the significance of the CCC experience:

> Most of these young men have learned to work, have built up their health and bodies, while improving their minds and searching out the type of work in which they find most interest. They have reached a place where they can prepare themselves for a useful life. Many know for the first time that there is some joy in living and working. [21]

Who then, he concluded, can deny the worth of the CCC? In terms of its impact on the lives of the individual and on the Forest Service in Region 1, the depression-era CCC marked one of the most catalytic moments in the history of the region. The CCC contributed immeasurably to physical improvements in the national forests that enhanced fire protection, conservation, and timber management.

Changes and Consolidations of the National Forests

Consolidations and boundary adjustments in the period between the two world wars changed, and most often improved, the administrative character of the individual forests. These consolidations often reflected the improvement of road, automobile, and communications facilities within the region. National forests inevitably contain land within their outer boundaries that is privately owned. In the early days, this was referred to as "alienated" land, which implied that it was not in correct ownership. In 1922, the General Exchange Act (42 Stat. 465) authorized the Forest Service to exchange national forest land and stumpage for privately owned land and stumpage of equal value.

Region 1 and the other regions worked rather intensively to "block up" or consolidate ownership of land within the outer boundaries. In the process, the term alienated lands disappeared from the forestry vocabulary, and exchanges became the common usage. Between 1922 and 1938, there were 248 exchanges within Region 1, with the value of land and timber exchanged in excess of $800,000. In Montana, 274,594 acres of private lands were added to the national forests, and 129,203 acres of national forest land was exchanged. In northern Idaho and northeastern Washington, 116,670 acres of private land were added and 2,750 acres of national forest land surrendered. [22]

Donated lands also provided a means for enlarging the national forests. During the depression years, lumber companies an individuals donated considerable timberland to the Forest Service. The land probably would have gone to the county for nonpayment of property taxes, but such donations were good for both parties. Although the timber was cut over, the influx of CCC and other workers enabled the Forest Service to provide protection and timber planting and improvement.

In Clearwater County, for example, large tracts of cutover timberlands were defaulted to the county by the failure to pay taxes. The county donated these lands to the Clearwater National Forest. The Clearwater Timber Company also had lands from which white pine timber had been removed and donated these lands to the forest. In 1937, Potlatch Forests, Inc., donated 4,300 acres of land in the county to the Forest Service, which was added to the Clearwater and St. Joe National Forests, bringing the total of the firm's donations to 148,000 acres. [23]

Other donations included 520 acres of cutover land in Boundary County, Idaho, deeded from the Bonners Ferry Lumber Company in 1936 to the Kaniksu National Forest. The next year, McGoldrick Lumber Company donated 4,828 acres in Pend Oreille County, Washington, which was also added to the Kaniksu. The total of land donations in northern Idaho by June 1936 totaled 186,000 acres. [24]

There were many consolidations and recombinations of national forests and ranger districts within the region. President Herbert Hoover's Executive Order of February 17, 1932, for example, consolidated the Beartooth and Old Custer Forest into a new Custer National Forest. Administratively, the merger actually occurred on July 1, 1931. The Custer had the Stillwater, Rock Creek, Pryor, Ashland, Twenty-Mile, Fort Howes, Sioux, and Short Pines Ranger Districts. Part of the Cooke Ranger District was moved to the Absaroka Forest, and some of the old Absaroka Forest was added to the Stillwater District. Additional districts were consolidated such that by 1943, the Twenty-Mile and Pryor Districts no longer existed.

The Blackfeet National Forest was eliminated in 1935, with most of it absorbed by the Flathead National Forest, while the Fortine District was reclassified as a part of the Kootenai National Forest. A tract of land was also withdrawn from the Flathead for the Coram Experimental Forest. [25] The Selway National Forest was eliminated in 1934, when its lands were distributed among the Bitterroot, Clearwater, Lolo, and Nez Perce National Forests. The new forest boundaries often related to fire protection requirements and capabilities.

Other modifications in forest boundaries occurred in almost every year of the depression era. Boundary adjustments were made on the Absaroka, Deerlodge, Gallatin, Helena, Missoula, and Shoshone in 1929; on the Custer and Helena in 1930; and on the Beaverhead, Bitterroot, Clearwater, Deerlodge, Gallatin, Helena, Lewis and Clark, Lolo, Madison, Missoula, Nez Perce, and Pend Oreille in 1931. The Jefferson National Forest ceased to exist in 1932, and the Gallatin and the Lewis and Clark, among others, were enlarged. Boundary changes were made on the Coeur d'Alene, Kaniksu, and Pend Oreille in 1933 and on the St. Joe the following year. The Clearwater, Flathead, and Lolo were altered in 1935, the Beaverhead and Kaniksu in 1939, and the Helena and Lolo in 1940. No changes occurred on the forest boundaries within the region in 1936, 1937, and 1941. [26] There were, however, some important redesignations of land areas within the region, which would become significant at a later date.

Designation of Wilderness and Primitive Areas

In the 1930's, Region 1 reclassified large tracts of land on the national forests and placed them in designated "primitive" or "wilderness" areas. This was done in response to internal Forest Service initiatives that had originated with the creation of the Gila Wilderness in the Southwestern Region in 1924. At the time, there was no congressional legislation or mandate to establish wilderness areas. To keep some national forests areas pristine, the primitive designation was used. There would be no roads and no cutting. Grazing was limited to the stock of outfitters, guides, or dude ranches and others using the areas for recreational purposes.

In the areas designated "primitive," improvements were limited to trails, telephone lines, and structures necessary for administrative purposes. No private developments were allowed. For example, Chief Robert Y. Stuart classified the Mission Mountains Primitive Area under the authority of Forest Service Regulation L—20 on October 31, 1931. In addition, the South Fork Primitive Area on the Flathead National Forest was established in 1931; it contained 584,000 acres. The region established the Pentagon Primitive Area with approximately 95,000 acres in 1933 and the Sun River Primitive Area with 240,000 acres in 1934. These primitive areas later became the core of the Bob Marshall Wilderness Area. [27]

In later times, "wilderness" became a terribly controversial subject within Region 1, as it did elsewhere. In some respects, this would be a paradoxical situation in view of the early Forest Service (and Region 1) commitment to wilderness preservation. As Dennis Roth observed:

Long before the legislative battle for wilderness began, the Forest Service had designated more than seventy areas within the western national forests for special wilderness management. As the federal agency with the largest percentage of potential wilderness in its jurisdiction, the Forest Service played a key role in forging the federal response to pressure for wilderness management. Moreover, the agency carried a broad multiple-use mandate, and its growing commitment to wilderness was subject to strong and varied interest-group pressures. Unlike the Park Service and the Fish and Wildlife Service, whose priorities were closely linked to traditional nonutilitarian preservation concepts, the Forest Service was involved in profound and controversial reassessments of its forest management philosophy throughout the various stages of the wilderness movement. [28]

Chinese Wall in Lewis and Clark National Forest (Montana), 1946.

"In Lieu" Lands and the Northern Pacific

Land classification and use have always been important in Region 1 activities. Ralph Space, for example, spent many years of his professional forestry career in the region working on the settlement of a land dispute involving the Northern Pacific Railroad. When the original grant to the Northern Pacific was made by Congress, the legislation recognized that some of the lands designated within the alternate sections granted had never been surveyed, that some would be Native American treaty land, and that others might have been homesteaded or claimed under various mineral acts.

To compensate for these lost lands, the railroad was allowed to select unoccupied land "in lieu" of the lost lands within a strip 20 miles wide on either side of the railroad right-of-way. The General Land Office later ruled that national forest land did not qualify as "in lieu" land. Yet in 1917, the Northern Pacific applied for an "in lieu" selection on the Gallatin National Forest, and through error, the Department of the Interior granted the patent. A suit was then filed to force the return of these lands to the Forest Service. The suit reached the Supreme Court in 1922, and the court ruled that if public domain lands would not satisfy the railroad's claim, then national forest lands could indeed be selected. [29]

Congress, however, passed a resolution preventing further selection of "in lieu" lands from national forests, but it allowed the railroads to seek damages for losses. The Northern Pacific then appealed to the Supreme Court, which endorsed the railroad's claim. As a result, the Northern Pacific proceeded to select 870,000 acres in Region 1, involving all the national forests except the Nez Perce. Even this transfer was finally avoided when, under the authority of the Transportation Act of 1941, the railroad agreed to drop all claims against the Government in return for which the Government agreed to pay the railroad at one-half the regular rate for all Government passengers and freight, rather than the no-cost schedules imposed by prior agreements. [30] In part, this problem had arisen because of the lack of adequate land surveys in the areas served by the Northern Pacific. Land surveying, in fact, required a continuing effort.

The National Forest Survey in Idaho and Montana

Congress authorized a nationwide survey of all forested areas, irrespective of ownership, through the McSweeney-McNary Act of 1928. The survey work, however, proceeded slowly. Timber surveys held little enthusiasm when the market for timber was virtually nonexistent. A committee met in 1930 to establish policy for the survey. Jim Girard from Region 1 was appointed to direct the survey. In fiscal year 1932, the Northern Rocky

Mountain Forest and Range Experiment Station received $20,000 for forest survey work within the region. The forest survey was begun in northern Idaho that year and was completed in 1937. During the survey work, private and public information on the condition, species, and volume of timber was checked and adjusted to conform to forest survey standards. Areas of merchantable timber for which information was unavailable were cruised by the line-plot method. The Montana inventory, including the collection of growth and drain information, began in 1934, and before its interruption by World War II, "the survey was completed for that part of the State west of the Continental Divide and in four counties east of the Divide". [31]

While the nationwide forest survey proceeded, independent forest surveys of all forest lands, commercial and noncommercial in all ownership classes, were conducted on the national forests to strengthen the data base for management planning. These surveys, however, were limited in scope because of a drastic reduction in funding for timber survey allotments. The entire region, for example, was allocated $5,100 to $5,700 for surveys during each fiscal year between 1929 and 1935. The work was usually done for the commercial portions of each national forest and proceeded by block, working circle, or some other geographic area. In 1930, a timber estimate and silvical description was made of the Spruce Lake unit on Keeler Creek of the Kootenai National Forest. The survey indicated that the merchantable portion was 1,481 acres, containing an estimated 26.3 million board feet of sawtimber, based on a 10-percent area sample. Timber cruises provided the necessary information for timber sales. [32]

A special survey of 3,890 acres by Thomas E. Rowland, for example, on Deer Creek of the Lolo National Forest indicated that mature, merchantable timber stood on approximately 2,573 acres. However, inasmuch as the Deer Creek drainage was in a working circle where there would be little commercial demand, Rowland proposed that this site be used to establish an experimental area for work on mensurational, silvicultural, and planting problems and to conduct physiological and pathological studies. From 1929 to 1938, timber surveys were conducted on most of the forests of the region, and in several, including the Deerlodge and the St. Joe, five surveys were made during an 8-year period. [33] These surveys facilitated the development of timber management plans and contributed to early attempts to develop sustained-yield programs.

Timber Management Plans and Sustained Yields

As of January 1, 1932, only 21 percent of the national forest timber was covered by detailed management plans. Management plans typically contained a description of the region and the forest, statements regarding the economic situation, silvicultural policy, administrative objectives, timber sale policy including allowable cuts and salvage, and a map of the national forest or of the working circle.

A sampling of many of the working circles of the Region 1 national forests (for example, the Salmon River, South Fork, and Middle Ford working circles of the Nez Perce; the Lincoln working circle of the Helena; and the Ashland working circle of the Custer) indicated that in 1941, few operated on the basis of timber management plans. An exception might have been the Beaverhead working circle on the Beaverhead National Forest, which operated on a timber management plan prepared in 1916. A plan for the entire St. Joe National Forest was prepared in 1941, as was a management plan for the Bitterroot working circle on the Bitterroot National Forest. The first timber management plan on the Gallatin was prepared in 1961 for the Big Timber working circle, although there was an older plan for that circle prepared when it was a part of the Absaroka National Forest. [34]

Sustained-yield management planning depended heavily on timber surveys and the development of timber management plans, but the definition of "sustained yield" changed over the years. Originally, the term meant "a botanically oriented yield-equals-growth policy." During the New Deal, the concept changed to "the need to coordinate public and private timber supplies to achieve a stable market." In the 1920's and 1930's, Region 1 was conscious of the idea that sustained-yield management was inextricably tied to the welfare of the local community and forest industries. Regional Forester Richard H. Rutledge was interested in sustained-yield management, as was David T. Mason, who formerly worked on timber survey and classification in Region 1 and now taught at the University of California School of Forestry. Mason indicated to Rutledge that Chief Greeley would be congenial to the use of national forest timber "to promote the general adoption of sustained yield by private owners but he is willing to do this only where public opinion would now permit." [35]

There is evidence that in Region 1, industry and the Forest Service did cooperate in promoting sustained-yield management. In 1928, K.A. Klehm of the lumber industry, for example, wrote the following to the regional forester and the supervisor of the Kootenai:

> If the proper study and arrangements are made on the Kootenai Forest we should be able to build up a management plan that will put one good sized mill on a sustained-yield basis. . . . There is sufficient timber including both private and Government-owned within Lincoln County to support a mill at Libby on a sustained-yield basis, and it seems the Government as the key owner of the timber stand within Lincoln County should try to develop and sustain such an industry if at all possible. [36]

A sustained-yield management plan was implemented and continued to guide timber policy on the Kootenai National Forest throughout the 1930's.

In 1933, Article X of the National Industrial Recovery Act (295 U.S. 495) contained minimum standards for logging performance prescribed by the Forest Service. Despite efforts by industry to soften the logging codes, strict controls were approved by Franklin Roosevelt, and the code became effective in June 1934, only to be invalidated with the National Industrial Recovery Act by the Supreme Court on May 27, 1935. Thereafter, the conservation and sustained-yield thrust of Article X was maintained under timber sale arrangements and through voluntary cooperation between industry and the Forest Service. [37]

Kootenai Supervisor C.S. Webb recommended in 1936 that the Forest Service do what it could to support the J. Neils lumber mill in Libby "as a measure of welfare to the National Forest and the Forest community." He believed that all available timber cuts from private lands and the allowable cut from the national forest would be required to sustain the plant. In 1937, the preliminary "Kootenai Unit Timber Management Plan" included a proposal for a long-term agreement between the forest and the J. Neils Lumber Company that a combined annual cut of 43 million board feet for the next 8 years be scheduled from both public and private land and that, at the end of 8 years, the company's entire cut would be from the National Forest unit. Anaconda Copper timber holdings on the Fisher River were also scheduled for J. Neils Lumber Company use, but future developments on private lands could not be clearly anticipated. [38] It was clear that both public and private interests believed that economic survival on some cooperation and degree of sustained-yield management

Commercial Timber Sales and Free Use

Commercial timber sales in Region 1 climbed sharply in the 1920's, reaching a peak of more than 117.5 million board feet in each of the years 1926 through 1928. Sales declined in 1929 and

continued to drop to 77.8 million board feet in 1931 and to 36.2 million in 1932. However, recovery began in 1933 as follows: [39]

	Harvest (mil board feet)	Percent Western White Pine
1933	42.2	63
1934	78.4	54
1935	101.8	52
1936	99.2	54
1937	105.6	45
1938	75.6	52
1939	115.4	60
1940	135.2	61
1941	111.8	37

World War II, of course, precipitated enormous new increases in timber production in the region. It is interesting, however, to note the dependence of the industry on white pine during the depression years.

The mechanics of the timber sale are worthy of note. Timber placed for sale must first be appraised by the Forest Service. An appraisal, under the residual method of calculating prices for raw materials, including timber, called for estimating the probable product grades (in the 1930's, primarily lumber) and their probable prices. From this estimate was subtracted an estimate of the logging and milling costs and an allowance for profit and risk. The remainder was called the "appraised price," from which the Forest Service would then advertise the sale, generally accepting the highest bid from a reputable operator at or above the appraised price. Often, on one-bidder sales, the contract would be awarded at the appraised price. [40]

The logging engineer on each national forest was responsible for the appraisal. A set of guidelines for the "stumpage appraisals" came from the Regional Office. For example, on April 23, 1930, Acting Regional Forester Theodore Shoemaker distributed information and tables for appraisals that included the current market value of lumber, manufacturing costs (including machine rates, wage rates, equipment depreciation, and shipment), and profit margins. [41]

Current logging and milling cost data came directly from operators or from controlled experiments on the national forests by which logs and boards were literally followed through co-operating mills from the forest floor. This was called a "millscale study." Such a study, for example, was conducted on a plot of western white pine in Clearwater

County near Orofino, Idaho, in 1935 and 1936 by I.V. Anderson and E.F. Rapraeger of the Forest Products Division of the Northern Rocky Mountain Forest and Range Experiment Station. Another, conducted by Philip Neff on manufacturing cost trends in the Inland Empire mills, concluded that "general manufacturing practice and efficiency of operation are higher in this region than elsewhere." [42]

The economic situation within the region would have been much worse had the white pine species not been protected somewhat through blister rust control programs. Not all economic relief, however, could be measured in terms of actual timber sales. Free use of timber resources also provided for the welfare of the people during these difficult years of depression.

The region encouraged people to take firewood, posts, and personal lumber needs from the forests during the depression. For the fiscal year ended June 30, 1936, 17,841 cases of free use (that is the taking of up to $100 worth of timber free) were recorded (how many were unrecorded?), totaling 43 million board feet of timber, or 30 percent of the annual harvest. Of the free use, 80 percent occurred on the 7 eastern national forests of Region 1: the Absaroka, Beaverhead, Custer, Deerlodge, Gallatin, Helena, and Lewis & Clark. Most of the timber taken was from dead and diseased trees, downed timber, and thinnings in areas of crowded timber sales. [43]

Grazing

Pressures for more grazing privileges also rose during the depression, at a time when carrying capacities were actually declining because of the regeneration of forests in old burn areas and an increase in wildlife. The region estimated that carrying capacities on Montana mountain valley and prairie grassland ranges had declined by almost 60 percent of their "original" capacity. Overgrazing tended to be prevalent. Some unofficial spokespersons for the region attributed the overgrazing primarily to "ignorance' and the "unwillingness to concede existence of such ignorance." Nevertheless, the conditions of depression and desperation, together with grasshoppers, fire, drought, and competition from growing herds of elk and deer, contributed to overgrazing and considerable difficulty by the region to improve range conditions. [44]

In the 1930's, the region experienced greater successes in reforestation and timber stand improvement than in range and grassland improvement. The depletion of rangelands in eastern Montana and the Dakotas led to the Federal Government purchasing these lands under the Bankhead-Jones Act of 1938.

These lands were entrusted to the care of the Department of Agriculture's Soil Conservation Service, which in turn transferred them to the Forest Service in 1954, as discussed in later chapters. Thus eventually, range and grassland management became an increasingly important aspect of the management planning of the region.

Reforestation and Timber Stand Improvement

The hundreds of thousands of trees planted in Region 1 during the depression came for the most part from the Savenac Nursery. D.S Olson, its director, was instrumental in improving the techniques and equipment of the nursery. As a result, the region was ready for the remarkable planting programs conducted by the CCC an blister rust control crews. [45]

Blister rust control crews usually worked through mid-September and then converted to tree planting until winter. George S. Haynes recalls that he and Paul E. Nelson trained the crew foremen and enrollees in good planting practices, inspected the work, ironed out problems, and "ramrodded" the job through to completion. Despite too little rain in the early weeks, followed by too much rain and snow later, their crews planted 515 acres of ponderosa pine in one season. [46]

Lloyd Donally began his tree planting work in the region on the St. Joe National Forest in 1927. He headed a 14-person crew in 1930 and a crew of 40 in the spring of 1931. The expected per person planting rate in the rough terrain, replete with windfalls and thick brush, was 1,200 seedlings per 8-hour day. His crew was raised to 48 in 1932 and to 50 in 1933. After that, his crews, he said, were an "FDR alphabet soup." He supervised many crews paid with National Recovery Administration funds in 1933 and 1934, and in the spring of 1935, he supervised five foremen and CCC crews, but the planting rate fell to only 400 to 600 trees per day. His tree planters that fall were Emergency Relief Administration employees, and in the spring of 1937 through the spring of 1942, he supervised CCC work crews. [47] After that, the forests were rapidly depleted of young men because most had gone to war.

Research: Experimental Forests, Fire, and Gisborne

Although research and experimentation took place on the national forests of the region in earlier years, the McSweeny-McNary Act of 1928 (45 Stat. 699) provided the solid foundation and authority for sustained research. Region 1 research before and during the depression era concentrated on white pine management and fire research. In both areas, some significant work was completed.

On July 1, 1931, the Northern Rocky Mountain Forest and Range Experiment Station, which serviced the Northern Region, opened for business in Missoula. Silvicultural and forest-

product research, which had formerly been conducted through the Regional Office and on the forests, was consolidated under the direction of Lyle F. Watts, who later became Chief of the Forest Service. Two experimental forests (the Priest River Experimental Forest established in 1911 and the Coram Experimental Forest on the Flathead) and two experimental ranges (the Vigilante Experimental Range on the Sheridan Ranger District and the Fort Keugh Experimental Range at Miles City, Montana) functioned under the supervision of the Northern Rocky Mountain Station. The programs and budgets of the station rose from $20,000 in 1931 to more than $140,000 in 1939. [48]

Among the most distinctive work of the station was the pioneering research in forest fire behavior accomplished by Harry Gisborne and his research staff. George Jemison, whose original summer employment turned into a career and who rose to head Forest Service Research, was one of those staff members; Lloyd G. Hornby was another. Gisborne established three timber inflammability stations and a highly successful fire-danger rating meter, which was a simple cardboard device similar to the system then used to calculate exposure settings for cameras. [49]

Deception Creek Experimental Forest, Coeur d'Alene National Forest. Photo byK.D. Swan, September 1937.

A real milestone in fire management was the development of an operational fire-danger rating system by Gisborne and his associates. A fire weather station provided information for predicting the fire-danger rating on a daily basis; it consisted of a weather box or shelter, on stilts, with slanted slats or louvered siding. The weather box normally contained a sling psychrometer, a maximum and minimum thermometer, and a fuel moisture stick scale. An anemometer was at the top of a nearby 20-foot-high pole. Fuel moisture sticks were on the ground, inside the fenced installation. [50] These fire weather stations were the trademark of ranger stations and some lookout towers.

One of the first major conflagrations "predicted" by Gisborne and Clayton S. Crocker (then Acting Supervisor on the Selway National Forest) came in early 1934 when the fire danger was so high that Gisborne believed that any fire would become a "blowup" if it were not extinguished almost immediately. On the night of August 10, a dry lightning storm ignited what eventually became the Pete King-McLendon Butte fire, which burned more than 250,000 acres. [51]

Forest Fires and Fire Control, 1929—41

Although foresters from the region remember 1929, 1931, and 1934 as the "fire years" of the era, none of these approached the magnitude of the fires of 1910, when more than 2.5 million acres burned, or 1919, when 1.3 million acres burned. There were, however, several striking features of the fires of the 1930's. First, most fires were caused by lightning rather than by humans (72 percent). Second, most were extinguished before they became critical. [52] Fire prevention and suppression were particularly effective during the depression decade. Certainly, the presence of large personnel reserves, research, and improved transportation, communications, and suppression equipment were contributing factors.

Fires consumed approximately 241,000 acres in 1929, with many of the conflagrations (67) concentrated on Flathead National Forest lands. The Sullivan Creek fire on the Kaniksu burned 35,000 acres, and the Half Moon fire on the Flathead burned an estimated 100,000 acres of national forest and private timberland, along with lands in Glacier National Park. The 30,000-acre Bald Mountain fire burned lands on the Lochsa Ranger District of the Selway National Forest and lands of the Powell Ranger District on the Lolo. These lands are now part of the Clearwater National Forest. The Clear Creek fire on the Nez Perce National Forest destroyed more than 13,000 acres in 12 hours. Similarly, a fire jumped the Coeur d'Alene River, Dean R. Harrington recalled, and raced 8 miles in 7 minutes. He and his crew took refuge on an island in the river and wet themselves down with a Pacific Marine pump to ward off the heat. [53]

Albert J. "Bert" Cramer, on the Sandpoint Ranger District of the Pend Oreille National Forest, remembered the 1931 season as a nightmare. He state , "Hundreds of miles of fireline were built, hundreds of miles of line lost, and at least some incendiarism to contend with, including the initial setting of the (Dear Creek) fire." He recalled that during the fire, a firefighter was struck and killed by a tall white pine snag. The timekeeper overreacted and called for 500 more men on the line, to which Regional Foreter Evan Kelley replied, "What the hell is wrong -- kill one man and order 500 to replace him?" Kelley conceled the order. [54]

Fires in the region in 1934 consumed 318,993 acres. The best known of these was a complex of fires occurring on the Lochsa and Selway Rivers, officially known as the Pete King-McClendon Butte fire. At one time, it occupied 5,000 fighters --mostly CCC youth--on the lines. The experiences of managing fires enabled the region to better dispatch crews, organize control efforts, and evaluate the results. The vigorous prosecution of "firebugs,' sometimes referred to in the region as "ridgerunners," and of unthinking campers or burners reduced fire hazards, as did improved training, instructional manuals, and surveillance from the air. From 1935 through 1959, the largest single fire in the region was on 41,000 acres. [55]

White Pine Blister Rust

The success of work on fire control was echoed in some respects by achievements in white pine blister rust control. White pine blister rust was first found in Geneva, New York, in 1906 on eastern white pine. It appreared on western white pine near Vancouver and in northwestern Washington in 1921. It was located in Region 1 in 1922. Hope of eradicating the fungus was quickly abandoned, and local control measures (that is, the removal of the alternate host, currant, or gooseberry) began. Following a reconnaissance for the presence of infected ribes plants on 3,500 acres of the Clearwater Natrional Forest in 1925, treatment began. Between 1926 and 1928, another 190,000 acres were inspected, and spraying and hand-pulling the ribes on small acreages followed. Clarence S. Strong headed a 30-person ribes eradication camp above Priest Lake in 1925 and worked on the Kaniksu in 1926. He and Philip Neff headed the entire ribes eradication program during the depression. [56]

Blister rust control work expanded rapidly after 1930, and by 1933--34, more than 5,000 young men were working on the crews. In 1936, 229,000 acres were worked by trhese crews, and a total of 1.6 million acres of infestation had, by then, been treated in the region. Most of the work in 1936 was done by

Emergency Relief Administration workers and 6 percent by CCC and State cooperative workers. Despite the massive control work, the threat from blister rust remained great. [57]

Insect Damage and Control

Insects also caused large timber depredations within the region. From 1910 to 1944, losses caused by insects on Montana forests totaled an estimated 12.8 billion board feet, mostly on ponderosa, western white, and lodgepole pines. The beetle was resident on the Coeur d'Alene National Forest at the time it was created, and it was first detected on the Flathead in 1909. Howard Fliret reported a beetle epidemic between 1914 and 1918 on lodgepole pine stands near the Monture Ranger Station of the Lolo National Forest. [58]

Losses in the region from beetle infestation peaked during the 1920's. The largest single pine beetle infestation of epidemic proportions occurred on lodgepole pine on the Beaverhead, Bitterroot, and Deerlodge National Forests Between 1928 and 1931. The beetle infestations declined during the 1930's.

Annual surveys were conducted on the Coeur d'Alene National Forest under the supervision of James C. Evencon, Entomologist-in-Charge of the Bureau of Entomology's forest insect laboratory at Coeur d'Alene. He concluded that bveetle damage would be severe unless control measures were established. Forest Supervisor Charles McHarg received support from Regional Forester Evan Kelley and Elers Koch in timber management for additional funding ($150,000) to fight "the bug." George S. Hayes assistged in the fight on the Little River District, and control work was also initiated on the Carter, Pritchard, and Magee Districts of the forest in 1930. Haynes explained:

> The amount and value of timber lost through bug control treatment and the cost of the treatment was of considerable c oncern to me in 1930. . . . With the coming of more intensive forest management, it should be possible to harvest many bug-attacked trees before the emergence of the new adults. . . . Good forest management must solve the insect problems to keep ahead of the bugs. [59]

The western spruce budworm also bothered forest of the region. First detected in 1922, epidemic infestation was reported in Idaho. At the instigation of Evenden and with the support of Elers Koch and Richard H. Rutledge (Region 4), district rangers made annual surveys for budworm infestation. The surveys conducted between 1925 and 1933 indicated annual budworm attacks on the Clearwater and Nez Perce National Forests and on several districts of the Helena National Forest. [60]

A Time of Change

In terms of disease and insect infestation, as well as timber and grazing management, forest surveys, and fire contro , the 1930's effectually witnessed the advent of modern forest management and long-range planning. Although few at the time could be aware of their full extent, the 1930's brought change in most areaz of forest management and in the way life was lived in the region.

When he retried in 1955, Ralph L. Hand had compiled an annual journal of experinces and reminiscences for the also 35 years he had work in Region 1. Having served as an assistant ranger on the Roundtop District of the St. Joe National Forest in the 1920's, he was the ranger there in 1932 when a road came through to Roundtop. It was the end of an era, he said. Before that, roads "were something we heard about but seldom saw" and "the mule was king." The region, in fact, was soon forced to rely on its own supply of pack animals as mules and horses rapidly disappeared from the area. Remount Depot at Ninemile Creek became the packing center for the region. From there, horses and mules were sent to fires on GMC trucks and Reo "Speedwagons." Although the mule and Remount operations remained in use until 1953, the modern era had long before crept up on the region. [61]

By the end of the 1930's, automobiles and trucks had largely replaced the mule, highway construction became more important than trail construction, and fires were being scounted by airplane. Almost within a single decade, the telephone replaced the older (and unsatisfactory) heliograph and was supplemented by the radio. By 1936, the region had a network for shortwave radios handling about 2,700 communication contacts with high reliability. That year, for the first time, in the Kelly Forks fire on the Clearwater National Forest, an airplane observer maintained direct communications via radio with a fire boss on the ground.

Although photographs from an airplane were first taken by H.R. Flint in 1926, the region purchased its first aerial camera in 1932 and, in each of the next 3 years, photographed approximately 4,500 square miles of forested lands. In 1936, the Region hosted a national conference on aerial photography; Evan Kelley and J.B. Yule, who had devised ingenious instruments for producing drainage maps from aerial photographs, explained the processes of forest survey by air. [62] The changes that occurred in the 1930's, however, were dwarfed by those that followed. World War II marked a watershed in the history of forestry in the Northern Region and elsewhere.

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Chapter 8

The World War II Experience

"The war," historian Harold K. Steen observed, "was the last hurrah for many forestry pioneers and brought a change of direction for American forestry."[1] World War II marked the end of one era in the history of the Northern Region and the beginning of a new era. It was in some respects, as Ranger Ed Slusher observed after 30 years of forestry service in the region, a time of transition from the older custodial era to the new developmental, managerial era.[2] More immediately, World War II brought sharp changes in forest practices and activities within the region and brought the years of the Great Depression and the New Deal to a close. The Civilian Conservation Corps and Forest Service personnel both left the forests for the training camps and battlefields. Civil defense, operating efficiencies, and war production became paramount considerations. Change would become dramatic and sometimes traumatic. War brought more rapid change; but, to be sure, change was already in the air.

By 1940, the Forest Service had come a long way from the old "horse and buggy days," observed the Sunday Missoulian. "Thirty years ago the use of parachutes, airplanes, and radio in forestry was unthought of," as were trucks and "truck trails," paved highways, and tourism. There was also, the writer observed, a growing demand that "all of our forest lands be handled for the benefit of future generations as well as the present." Such public sentiment, "once aroused," is a powerful thing.[3] The war perhaps delayed for almost a decade the awakening of such powerful public sentiments. The attack on Pearl Harbor by the forces of the Empire of Japan on December 7, 1941, abruptly focused sentiment, thought, and action on national defense.

A month after Pearl Harbor, Regional Forester Evan W. Kelley reflected on the situation nationally when he observed that in Region 1 civil defense programs were still highly disorganized. What would happen within the region or elsewhere was speculative. He was concerned about incendiarism and saboteurs, and he believed that the workforce would be depleted rapidly by the draft, enlistments, and migrations. The region would have to eliminate "things nice to have and nice to be done" he said. "If the forests and ranges can be saved from enemies and so managed that they will contribute their part to defense needs and still leave them in condition to produce more, we will have done our part," he explained to his division chiefs.[4]

Over the next few months, the forests became increasingly silent as Forest Service, Civilian Conservation Corps, and commercial employees left for military service. The stillness was particularly marked by the closing of CCC camps and the departure of the thousands of formerly unemployed youths who now had other duties. During its time, the CCC had invested an estimated 8.5 million person-days in the construction and maintenance of roads and trails and in fighting fires and supporting forestry programs. Some 3,476 miles of truck trails and 338 lookout houses and towers, as well as bridges, fencing, telephone lines, ponds, campgrounds, ranger stations, and ski lodges had been established within the region with the labor and assistance of CCC workers.[5] Kelley observed that the Forest Service must resort to "older men in their fifties and sixties, and boys of high school age," to replace the lost manpower.[6] Women, too, soon came into the ranks as lookouts, guards, and professional staffers.

Fewer Personnel but More Timber Production

Kelley himself became one of those foresters assigned to more urgent war-related duties elsewhere. By late January 1942, he was in Salinas, California, heading up a Government defense program designed to provide emergency supplies of crude rubber made from the desert guayule plant. Placed under the authority of the Forest Service, and in cooperation with the Bureau of Plant Industry, Kelley and his associates planned to plant 2,000 acres of the guayule in 1942, and by early 1943 some 50,000 acres of guayule were scheduled for planting. Kelley helped design and begin the operation of a rubber factory, which he said, in early 1943, was producing "better, cleaner rubber" than ever before. "Have lived, slept [in] that factory for the past year," he said. The two operating guayule extraction plants were producing 30 tons each day. The material was used for the inner plies of tires and, when mixed with natural rubber, could be formed into bulletproof fuel tanks for airplanes. Although the operation continued until the end of the war, by early 1943, according to Kelley, the program was about to fold.[7]

Kelley went to Washington, D.C., in March to protest announced cutbacks in new plantings. He discovered that other synthetic rubber programs were moving so rapidly and were so promising that the slower producing guayule project was being cut back, but a firm decision on what to do had not been made. Seedling nurseries in the Mesilla Valley of New Mexico; Phoenix, Arizona; Edinburg, Texas; and Oceanside, Bakersfield, and Indio, California, were being eliminated. The thousands of men and women who had worked so hard to get the project going "in the belief that they were doing and giving aid to their country in times of distress" would be shocked to hear the news, he said. "I may be home to enjoy the summer in the Northwest," he speculated.[8]

Despite Kelley's early departure, Acting Regional Forester C.S. Webb was determined to maintain business as usual insofar as possible. Available manpower and money would be stretched to maintain as many services as possible, but the situation seemed to change daily. When Webb became Acting Regional Forester upon Kelley's departure in January 1942, E.D. Sandvig moved from range management into Webb's position as the head of the Division of Operations. I.V. Anderson, Chief of the Division of Wildlife Management, went to Washington, D.C., on special assignment. C.A. Joy, who worked under Sandvig in range management, filled the two slots vacated by Sandvig and Anderson. Those who remained in the region worked longer hours at more tasks. Engineers such as J.B. Yule, Donald Sawhill, Frank Cool, E. Morris, and Frank McLeod received assignments with the Army Engineers, as did ranger C.K. Lyman and guard E.R. Augustin. Most had left the region by March 1942. There would be no replacements. [9]

Despite heavy personnel losses, declining Federal appropriations to the region required even further employment reductions. Webb wrote his forest officers a "personal letter" in April 1943 to explain the situation. Personnel reductions were required because of budgetary constraints on the basis of efficiency ratings, with credit given to persons having military service. Moreover, by July, an additional 30 separations would be required, he advised, to make room for people such as Evan Kelley who were being reassigned from the guayule project. Those who had worked long hours were being paid overtime, he said, under the theory that if fewer people worked longer hours they would be releasing others for more important war jobs. Similarly, he said, this "furlough" coming to some should be regarded not as an end to one's employment, but as a temporary contribution to the war effort. "It is my hope," he said, "that at the conclusion of the war the Forest Service will be built up again to serve the public of this great democracy in the post-war adjustment program." [10]

In some respects, the decline in personnel was somewhat consistent with the shift in national policy from protection of the national forests to production of lumber for defense. In May Chief E. H. Clapp reported alarming shortages of lumber and timber products essential for the war effort and estimated that national lumber requirements for 1942 would be 39 billion board feet, not the 8 billion board feet estimated earlier. In response to estimates of 12 billion board feet needed to meet current army, navy, and maritime construction projects, the War Production Board froze softwood construction lumber millstocks. Lumber did not exist, Clapp explained to Secretary of Agriculture Claude

R. Wickard, for defense housing, farm construction and repairs, and grain bins. A thousand cargo trucks were being built each day, he said, all using wood bodies; and a "very large program of wooden ships" was under consideration. He attributed critical shortages to the failure to foresee the "magnitude of requirements," shortages in metals and replacement parts for harvesting equipment limited trans- portation, labor shortages, and real inadequacies of timber supplies in many areas. Clapp advised creating a Forest Products Administration to stimulate and supplement production by private agencies. [11]

Elers Koch reported to Acting Regional Forester Webb that, contrary to the implications of Clapp's letter, there was no lag in lumber production in Region 1. The cut for the first quarter of 1942 was 10 percent greater than in 1941. There were almost no idle mills, he said, and most were working two or three shifts. The only factors limiting production were weather and bad roads, but if all regions were working as well as Region 1, there should be no difficulty in producing the required 39 billion board feet. Koch thought that rather than set up a new agency, such as that urged by Clapp, the Forest Service might simply loan men to the War Production Board. [12]

Philip Nef, Senior Logging Engineer, believed that the 39 billion board feet could not be met nationally, largely because of weather and "acts of Government." The lumberman, he said, "has had little encouragement and sympathetic advice, but a lot of costly regulation. And now the government has imposed ceiling prices." Lumbermen would not support a "Forest Products Administration" he believed; they would be very suspicious of the Forest Service's intent." [13] Under intense pressure from every quarter, and understaffed at home, the Forest Service in Region 1 and elsewhere turned from an emphasis on protection to production.

The Northern Region harvested more timber from the national forests during the last 6 months of 1943 than in any previous half year since the forests were organized. Nearly 150 million board feet were harvested, and another 167 million board feet were already scheduled for cutting. The total 1943 cut of almost 317 million board feet exceeded the 1942 harvest by 46 million board feet. The largest commercial cut occurred on the Kaniksu (36,281,000 board feet), with other cuts totaling 28,307,000 board feet. Harvests on the Kootenai totaled over 83 million board feet, and record harvests of 39,758,000 board feet were recorded on the Nez Perce due to the construction of wartime emergency roads to facilitate the harvest. Total timber sales receipts from the national forests in all regions in the last 6 months of 1943, at $6.3 million, were more than double the receipts in the comparable period of 1942. County coffers,

which received 25 percent of total receipts, were substantially enriched by the sales. [14] The region fully met its wartime lumber production obligations. There were, to be sure, adverse by-products. Curiously, one of those was fire, a threat and a reality that lasted well into the postwar years.

"Careless Matches Aid the Axis"

In 1942, Secretary of Agriculture Claude R. Wickard opened a campaign to prevent forest fires, explaining that "destruction in our forests today by carelessness with fire is equivalent to sabotaging the nation's war program." [15] December of that year, Congress approved legislation that made the willful destruction of timber and forage by fire a form of sabotage comparable to the malicious damage of other war materials, subject to heavy fines and imprisonment." [16] The highway patrols of Montana and Idaho joined the Forest Service in fire prevention and patrol. [17]

Women and Youth at War in the Northern Woods

Regional Forester Evan Kelley, who returned to his duties in the region in the fall of 1943, announced that critical labor shortages would be partially met in the summer of 1944 by recruiting 16- and 17-year-olds not already employed in critical war work. These youths would do blister rust control, slash disposal, trail maintenance, and other essential jobs. They would be given intensive training in firefighting, safety practices, and woodsmanship. Student fire camps, Henry Viche recalled, were held in the region in the Spring of 1942 and 1943. The student fire crews provided the major firefighting force for the entire Northwest, he said. Although the blister-rust control work, which had been accelerated by the CCC crews, entered a period of "austerity" during the war, some young people, foreign nationals, and older people manned the blister-rust control crews.

Some students served as lookouts, but perhaps with less success than did older women, who also were coming into the wood-and forest-products industries in greater numbers as the war progressed. For example, one very young and lonesome lookout on the Lolo finally decided he was having a heart attack and left a note for the ranger to that effect. Another, very young but just married, was described as having neither the experience nor the knowledge for the job. Others, such as Willard R. (Bill) Fallis, who enrolled as a freshman in forestry at the University of Montana in 1941, were extremely effective in seasonal jobs ranging from a lookout (Timber Mountain) on the Kaniksu to administrative guard, firefighter, packer, and range surveyor variously on the Teton, Beaverhead, and Helena. [18] Generally the young men and the women received good training and performed well.

During the 1943 fire season, more than 50 women stood as lone sentinels on the high mountain peaks, splitting their own wood; packing in their supplies and water; and reporting weather conditions, smoke, and—presumably— aircraft movements. Among these lookouts were Helen Conover at the Williams Peak Lookout on the Lolo National Forest; Hollis Stritch, a Missoula housewife who spent her summers at the West Fork Butte Lookout on the Lolo; and Mrs. Ear Hupp, a housewife from Newport, Washington, at King's Mountain Lookout on the Kaniksu. Other female lookouts on the Lolo included E. Clarine Moore, Klara Erickson, Verdie Sward, Mildred Harkinson, and Mrs. R. King, described by an inspector as "an experienced ranch woman, who knows how to take care of herself and is industrious and competent." Harriet Linn, who later described the drudgery and sheer hard work of the lookout, and Ruby Moore were other women on the Lolo. Many women served as dispatchers, truck drivers, camp cooks, and part-time (often double-time) office workers. [19]

Wartime demands to expand timber harvests compounded labor shortages. For example, the construction of a timber access road on the Clearwater National Forest, to open up stands of white pine timber and cedar poles in the Musselshell Creek area, began in May 1943. The 12.5-mile road began from the paved highway at Pierce, Idaho, passed the abandoned Brown's Creek CCC camp (which became the project headquarters), and continued to the Musselshell work center. According to the recollections of J.F. "Jack" Hamblet, who supervised construction, 4 miles of "new" construction crossed Brown's Creek summit, and the remainder of the roadbuilding involved reconstruction of an existing older road, improving grades, and installing drainage systems. "Construction was not difficult and the job would perhaps otherwise be of little interest were it not for two unusual groups of people" involved in the construction." [20] Labor crews included women and Italian internees.

The internees were Italian merchant seamen whose ships were in U.S. ports when World War II began. They were technically Italian nationals, not prisoners of war, under the custody of the Immigration Service for the duration of the war. Most had never seen forested lands such as those in the Northern Region, nor labored at such tasks as roadbuilding or construction; but most, said Hamblet, enjoyed this freedom from the internment camp at Fort Missoula and exhibited "joy and wonderment" at the strange new sights in the woodlands of the Northwest. "It was remarkable," he said, "how fast they learned to fall [sic] timber, deck logs, install culverts, trim backslopes, and perform many other jobs they had never before seen." And it was all done in "first class" style, with ship's pursers providing office help, barbers

giving everyone a weekly trim, and cooks and bakers offering up delicious Italian and American dishes, with a variety of fancy pastries for dessert. During leisure time the internees played "bocce," carved beautiful scale-model ships, did weaving, wrote letters home, and walked in small groups through the woods and meadows. [21]

The roadbuilding project experienced interminable delays, however, because of the lack of sufficient drivers to keep the trucks moving stone to the crushers and back to the road bed. There were simply no drivers available anywhere in the region. Finally, the wives of some of the supervisors offered to "give it a try." Other Forest Service wives joined in, received assistance from women in Pierce (including one grandmother), and, after a short driving course from Tom Moran, within the week were driving 13 dump trucks over narrow mountain roads.

> They seldom missed a shift, driving in dust and rain, and later over snow-packed and icy roads, always bucking the logging traffic, till the job was closed in November. In all that time they never lost a load or had a single accident of any kind." [22]

Women were also at work in lumber mills and factories. During an orientation tour in October 1944 with P. (Pete) D. Hanson, who was replacing him as Regional Forester upon his retirement, Kelley described the almost frenetic lumber production at the Potlatch Forests, Inc., sawmill in Lewiston, Idaho. "Lumber," he said, "was flowing from the four sides and the gang saws, producing veritable rivers of boards and dimension materials." Prestolog machines were "rolling out tons of logs hourly," and the warehouses were bulging with fuel manufactured from wood wastes. The box factory, he said, was working at a "dizzy pace," and hundreds of girls and women were employed there. "One cannot help but wonder how the forests in the Clearwater drainage can possibly feed the hungry maws of that plant continuously," he observed. [23] Forest Service personnel, young and old, men and women, contributed to the war effort in many ways.

County Revenues From Timber Harvests

The exigencies of war resulted in a large increase in the harvest of lodgepole pine, fir, larch, spruce, hemlock, and cedar. Before the war, ponderosa and white pine comprised 75 percent of the timber harvest, but by 1945 accounted for less than 50 percent. Axel Lindh, chief of timber management for the region, speculated that the trend toward lodgepole pine, fir, and other previously ignored trees could sustain a substantial timber industry. Otherwise, he said, "wartime overcutting must be made up by reduced timber harvest in the post-war period.". [24]

County receipts from timber sales on Federal lands, under the 25-percent apportionment, reached unprecedented levels in 1944 with the dispersal of almost $143,000 to Montana and $228,000 to Idaho. Lincoln and Flathead counties in Montana received the largest apportionments, with $50,792.91 and $14,071.05, respectively; Shoshone and Idaho counties in Idaho received $50,144.56 and $29,750.63. The smallest payment went to Jefferson County, Idaho, in which 1 acre of the Targhee National Forest lay. In addition to the 25-percent return to the counties, 10 percent of national forest receipts was reserved for the construction of forest roads and trails within the region. [25]

Buy Bonds, Do War Work, Prevent Forest Fires

Patriotic slogans captured the popular imagination and produced determined support for the war effort. Among those seen and heard in the region's forests were: Say "HEIL HITLER," when you throw a lighted match into the forests, you are helping the Axis; keep the forests green for homecoming heroes; buy all the bonds you can, and then help more by preventing forest fires; and remember" rumors are a weapon of the enemy! The fourth War Loan Drive in 1944 resulted in a 10-percent subscription of gross salaries by Region 1 personnel for war savings bonds. The Missoula Chapter of the American Women's Voluntary Service instituted a "train service" for military personnel traveling through the area on the Northern Pacific Railroad. The women offered soft drinks, coffee, milk, cigarettes, magazines, playing cards, cookies, sandwiches, and a friendly ear. Local merchants contributed cash or goods, and Region 1 sponsored a special collection for the train service in June 1945. [26] People in Region 1 zealously supported the war effort.

Between December 7, 1943, and August 1945, 735 Forest Service employees left the forests and went to war. Many of them served in combat, and some even operated with special forces behind enemy lines. Nineteen were reported killed or missing in combat. [27] On April 12, 1945, President Franklin D. Roosevelt died and Harry S. Truman took the oath of office as the last great battles for Europe were being fought. On May 8, 1945, Germany surrendered to Allied forces, but victory over Japan appeared to be far off. That victory came closer, however, with the explosion of the first atomic bomb over Hiroshima on August 6, 1945, and a second over Nagasaki on August 9. Shortly thereafter, on September 2, 1945, General Douglas MacArthur formally accepted Japan's surrender aboard the battleship Missouri in Tokyo Bay.

Postwar Adjustments

In June, July, and August of 1945 the region already appeared to be in the midst of preparations for the postwar era. In June, Regional Forester P.D. Hanson established the Division of Land Use Coordination in the Regional Office. The division was designed to more closely coordinate Forest Service operations and planning with State and other Federal agencies and private forest managers. Because of their resources of water, timber, forage, recreation, and wildlife, the national forests, Hanson explained, "are so closely linked with the welfare of the entire region that this coordination is essential." [28] In some respects, this action helped implement the Sustained-Yield Forest Management Act approved by Congress on March 29, 1944, which involved the Departments of Agriculture and the Interior in cooperative programs for both public and private forested lands. But it also anticipated the Multiple-Use Sustained-Yield Act of 1960, which directed the Forest Service to give equal consideration to outdoor recreation, range, timber, watershed, wildlife, and fish resources and needs.

Hanson appointed M.H. Wolff, who had joined the Forest Service in 1909 and whose work had concentrated on recreation, land use planning, and special use permits, to head the division. R.U. Harmon, who transferred into the region from the North Central Region to replace Wolff in the Division of Recreation and Lands, also had strong recreation credentials. [29] Nevertheless, the region was largely unprepared for the enormous public demand for recreational opportunities and facilities that lay just ahead. Planning for recreation and repair or expansion of facilities had been eliminated during the war, and management planning and organizational changes had been suspended for the duration. Now that the war was nearing an end, some attention could be given long-delayed plans.

On July 1, 1945, the Gallatin and Absaroka National Forests were consolidated and the Ennis District of the Gallatin was transferred to the Beaverhead National Forest, while part of the Shields Ranger District was transferred to the Musselshell District of the Lewis and Clark National Forest. It was, said Hanson, consistent with the realities of faster communication and modern transportation that made it possible to administer larger forest units than when the forests were first organized. [30] The region also announced the establishment of a forest products utilization unit, under the authority of the Northern Rocky Mountain Forest and Range Experiment Station, at Missoula. This laboratory, headed by I.V. Anderson, who had just returned from his war assignment in Washington, D.C., where he assisted in the development of plywood and veneer products, would work to assist

local industry in developing diversified manufacturing processes to more efficiently utilize forest resources. [31] In August, Hanson announced numerous personnel changes, including transfers between regions, in anticipation of former employees returning to their old jobs and an influx of personnel fresh from the armed services joining the ranks of the Forest Service. In September, the region adopted a standard 40-hour work week in compliance with the new Federal Employees Pay Act, which, among other things, prohibited payment for overtime work except in emergency situations. [32] Thus, by the end of 1945, change was in the air. Forest uses were changing, people were changing, and the rules were changing. No one, however, could anticipate the extent of the changes that would occur in the years ahead. For the most part, it seemed to be very much a case of business as usual, and a welcome return to the order, stability, and familiar faces of the pre-war period.

Timber cuts for the last quarter of 1945 declined by almost 8 million board feet from the third quarter. In the early spring of 1946, the region announced the unprecedented sale of 4,200 acres of lodgepole pine timber from the Lewis and Clark National Forest—unprecedented in that lodgepole pine had been virtually unmarketable before the war but now was becoming heavily demanded for pulpwood, posts, poles, and even sawlogs. Larch also became an increasingly important timber source; 21 percent of all timber being cut in the spring of 1946 was larch, where in 1940 larch was virtually unwanted, constituting only 2.9 percent of all the timber cut on the region. In 1940, 60.7 percent of all sawlogs cut were white pine, compared with 13.2 percent cut in 1945. [33] This data only hints at the postwar changes occurring in the wood-products industry. By April 1946, it was apparent that the Nation's demand for lumber and lumber products had become insatiable.

The rising demand for timber, the growing interest in recreation and public access in the forests, and the necessity for more efficient fire control created the need for more forest roads in the region. By April 1946, Regional Forester Hanson was advertising for experienced engineers and engineering aides for road construction. The base pay ranged from $1,900 to $3,640 per year. Arthur (Art) Kahl, who came to the region in 1934, had for some years been one of the few engineers n the region, supervising most of the bridge construction until his retirement in 1961. [34] Road and bridge construction became a major effort of the Forest Service in the postwar years, facilitated by the accumulation of county road funds and new congressional appropriations. The expanding forest and public road systems aided in the suppression of forest fires but contributed to a greater fire hazard in the form of a growing number of visitors.

Fire Suppression and Smokejumping

By the war's end, both public and private forest funds in the region were veritable tinder boxes.

The region had been extremely fortunate to have experienced relatively few serious forest fires during the war years. The intense public campaigns to reduce fire hazard as a patriotic duty undoubtedly contributed. Student volunteer fire units, such as those trained and supervised by Henry (Hank) J. Viche in 1942, performed extremely well. But the simple fact remained that there were fewer fires between 1941 and 1945 than there had been in the prior 4-year period. In the 4 years following the war, however, forest fire truly became the region's number one enemy. The 1940's, and the postwar era closed with the tragic Mann Gulch fire of 1949 (described later in this chapter). C.S. Crocker warned of the extremely combustible state of the forests at the close of the war. Labor shortages and urgent wartime timber production goals resulted in the neglect of the usual cleanup of brush, slash, and debris. By the war's end, both public and private forest funds in the region were veritable tinder boxes. [35]

Improved access roads capable of supporting motorized equipment such as trucks, tractors, and bulldozers improved firefighting performance over that of earlier years. Aerial fire control also progressed measurably during the war years, stimulated in part by the shortage of manpower in the traditional fire crews. The first aerial fire patrols in Region 1 began in 1925, when Forest Inspector Howard R. Flint recruited two Air Corps reserve lieutenants, Nick Mamer and R.T. Freng, to fly reconnaissance flights over parts of the forests. In 1929, a supply drop was made to a ground crew fighting a fire in remote country, and experiments with aerial photography were being conducted. In 1934, a few experiments were conducted in the Intermountain Region, with firefighters jumping into forests by parachute, but the idea was dismissed as too dangerous. Henry Viche recalled that the first actual drop of a fire camp was made on May 31, 1936, on the Spruce Creek Fire (Powell Ranger District) on the Lolo National Forest. [36] An aerial experimental project conducted by the Washington Office, which was transferred first to California and then to the Pacific Northwest Region, became the conduit for the advent of smokejumping.

Experiments with cargo dropping and aerial spraying with water or chemicals were abandoned in 1939. The surplus funds were diverted to a contract with the Eagle Parachute Company of Pennsylvania, whose personnel experimented with jumps into areas of the Chelan National Forest in Washington. The tests were so successful that Region 1 and Region 6 each established a squad of smokejumpers for the 1940 fire season. The Johnson Flying Service conducted training at a special camp in Missoula. Two brothers, Dick and Bob Johnson, with Dick Vance, flew the

Smokechaser receiving instructions during 1924 fire season.

In 1942, with a critical manpower shortage in the region, greater reliance was placed on the smokejumping crew.

planes and taught "parachuting." During the fire season, in July 1940, the Johnsons also dropped an estimated 300 tons of supplies to fire camps in the region. The first fire jump by Forest Service personnel was made on July 12, 1940, by Rufus Robinson and Earl Cooley on the Nez Perce National Forest. "Smokejumping" quickly adapted to other needs when, 3 days later, Chester N. Derry parachuted onto the Bitterroot to provide assistance to airplane crash victims. U.S. Army staff officers visited the parachute training camp that summer, and the next year adapted some of the techniques to the training of paratroopers at Fort Benning, Georgia. In the spring of 1941, smokejumping was assigned exclusively to Region 1, which was to render services when possible to Regions 4 and 6 (the Intermountain and Pacific Northwest Regions). The Johnson Flying Service provided the planes, pilots, and services. Region 1 jumpers fought nine fires in 1941 and saved the region an estimated $30,000 in protection costs. [37] In 1942, with a critical manpower shortage in the region, greater reliance was placed on the smokejumping teams.

Although the 1942 fire season was relatively mild, smokerjumpers extinguished 31 fires and were assisted by ground crews on four other fires, resulting in an estimated savings of $66,000 in suppression costs, not to mention the savings in timber value resulting from early suppression of fires in remote areas. However, by 1943 the region found itself unable to staff even one smokejumping crew. Only five experienced jumpers

were available and intensive recruiting efforts turned up only four other young men who had been turned down by the Army because of minor physical defects. Providentially, inquiries were made by (4—E) conscientious objector draftees who were stationed in work camps in the northern forests. The Forest Service recruited volunteers from these encampments and finally selected 62 trainees from 300 applicants for smokejumping training. The new crews fought 47 fires with little ground support available. The regional smokejumping school also trained rescue units from the U.S. Coast Guard, the Canadian Air Observer Schools, and the U.S. Army during the 1943 fire season. By 1944, smokejumping ceased to be experimental and became part of the standard operating procedure in Region 1. Regular ground units were reduced in that year, and fire suppression depended heavily on the smokejumping units. Ralph Hand, who directed the parachute operations, added air rescue teams that included medical doctors trained to jump into timber. The Region 1 "Trouble Chuters" received national recognition in an article published by Collier's magazine in December 1944. [38]

Smokejumpers before taking off for a fire. Camp Menard, Lolo National Forest. 1952.

Smokejumping proved to be a particularly effective and economical method of fire control in back-country areas, which were characteristic of the region.

Experienced jumpers from the public service camps were joined by some returning veterans in 1945, raising total enrollment in the smokejumping program to 220. Most of these were stationed at Missoula, but other camps were located in McCall, Idaho; Twisp, Washington; and Cave Junction, Oregon. The enlarged program encountered a more acute fire season in 1945, when jumps ranged from California to Washington, Yellowstone and Glacier National Parks, Native American lands, and, on one occasion, across the international boundary into Canada. The region also sponsored training of the 555th Battalion, a black paratroop unit intended to suppress fires started by Japanese incendiary balloons. When the balloon menace failed to materialize, the paratroopers were used in aerial fire suppression. [39] Smokejumping proved to be a particularly effective and economical method of fire control in back-country areas, which were characteristic of the region.

When the war ended, the Army's CPS program was abolished and the Forest Service recruited returning veterans to fill the smoke jumping units. The spectacular achievements of the Region 1 smokejumping units inspired Twentieth Century-Fox to produce "Red Skies Over Montana," a movie featuring smokejumpers. In 1952, Congress established a permanent Aerial Fire Depot at Missoula, which was dedicated by President Dwight D. Eisenhower in 1954. By 1971, the Johnson Flying Service in Missoula which had begun by ferrying jumpers and supplies in a 1929 Ford tri-motor, added a Lockheed Electra that could ferry 93 jumpers at 350 miles per hour. Although tremendously successful, the smokejumping venture was not without casualties. Dick Johnson died in a plane crash near Jackson Hole, Wyoming; pilot Bill Yaggy died in a plane crash near Dixie, Idaho; and Dave Godwin, the fire control chief in the Washington Office and "godfather" of the parachute project, also died in a plane crash. [40]

The region placed greater reliance on aerial fire detection and smokejumping in the years following the war. The Coeur d'Alene, for example, initiated daily aerial fire patrol flights in 1947. The several hundred smokejumpers on duty in the region in 1948 were only a part of the army of some 7,000 seasonal employees and 1,200 permanent Forest Service employees available for fire suppression work. Generally, casualties, even injuries, had been few in Region 1 until the disastrous Mann Gulch fire on the Helena National Forest in 1949. [41] Fire suppression became increasingly important in the face of growing nationwide shortages of lumber for new housing as the Nation entered the era of the baby and building booms.

National Lumber Shortages

Regional Forester Pete Hanson explained that the decline in U.S. private timber supplies acted to increase the relative importance of timber on the national forests. Public demands for lumber for new housing and home repairs surged. Hanson said, "People have been asking . . . why they can't get all the lumber they want, when they want it." The Forest Service was accused of hoarding the Government's timber resources. "The fact is," Hanson explained, citing a report from Chief Lyle F. Watts, "the Nation's wood pile has been reduced by more than 40 percent" in the past 36 years. Wartime demands, and the new postwar housing boom, were further depleting timber . [42]

Timber harvests were accelerated after the war by massive allotments from the National Housing Administration to the Forest Service for the construction of roads, in addition to the expenditure of surplus county funds received from timber sales during the war years and regularly appropriated road funds. Region 1, for example, received $3 million from the National Housing Administration for road construction in 1946, and spent an additional $2 million on timber access roads from appropriated funds. In March 1947, A.H. Lindh, Assistant Regional Forester in the Division of Timber Management, reported that in the 10-year period between 1937 and 1947, Region 1 timber sales had risen from 105.8 million board feet to 394.8 million board feet. In that period, the percentage of western white and ponderosa pine harvested had declined from 62 percent to 38 percent, with Douglas-fir and larch (23 percent and 24 percent, respectively) taking up the difference. Production on the Flathead National Forest had risen from 2.3 million board feet in 1937 to 54.2 million board feet in 1947. The next year, 1948, the region harvested 410.9 million board feet, with heaviest production from the Coeur d'Alene (63.3 million board feet), followed by the Kootenai (55 million), the Kaniksu (53.2 million), and the Flathead (31.5 million). [43] Faced with heavy public and congressional pressures for timber production, the Forest Service became increasingly concerned about preserving timber resources for future use.

The Forest Service did enlarge the scope of its protection operations under the Clarke-McNary Act (1924), which provided for financial contributions to the States to assist organized forest protection districts in protecting State and private lands until the States could fully resume their protection responsibilities. The act also provided for assistance to private landowners in implementing basic forest practices on their forested lands, and it promoted the production of trees (planting stock) in State nurseries. The Norris-Doxey Act, passed in 1937, provided for cooperative Federal-State programs to promote farm forestry. Disease and pest control efforts, as well as cooperative efforts through the States, were enlarged under the authority of the Forest Pest Control Act of 1947. [44]

In 1948, pursuing the interest in maintaining continuing use of resources in the national forests, Region 1 began planning its first "sustained yield unit" under the authority of the 1944 act of the same name. The proposed Kootenai Sustained Yield Unit, Hanson said, was specifically aimed at ensuring the continuing economic welfare of the communities of Libby and Troy in northwestern Montana, which were "dependent to an unusual degree upon the proper management of the tributary forest lands." The plan called for the management of 170,000 acres of forest land owned by the J. Neils Lumber Company under the direction of and in cooperation with the Forest Service, and compensation to the lumber company by sales "without competition" of timber from selected tracts of the Kootenai National Forest. [45] It was the first such arrangement in the region.

Growing public demand for forest resources did not encompass saw timber alone. The region was becoming increasingly conscious of the growing numbers of hunters, anglers, campers, and tourists. Winter sports, in the past little more than a local pastime, began to attract large numbers of "outsiders" into the region. Interestingly, mining, watershed, wildlife, and range uses intruded into the collective consciousness of the region only slightly. For the most part between 1941 and 1949, the Northern Region was emphasizing timber production and fire suppression. If fire had not already been preeminent among foresters' concerns, certainly the Mann Gulch fire would have made it so.

The Mann Gulch Fire

The region announced the creation of the 28,562-acre "Gates of the Mountains" wild area on the Helena National Forest in June 1947. In this scenic and recreational area, located on the Missouri River between Helena and Great Falls, Montana, timber cutting, road construction, and manmade improvements other than those essential for fire protection, water, and sanitation were prohibited, so that people could enjoy wilderness vacations under the most natural conditions possible. It was within this area that Don Barker, a lookout on Colorado Mountain, some 30 miles distant, spotted smoke on August 5, 949. District Ranger J. Robert Jansson saw the same smoke from the Helena airport about the same time. Jansson and a pilot and acting ranger named Hersey flew over the fire in Mann Gulch at 12:55 p.m. and estimated its size to be about 8 acres. It was "smoking strongly." Another fire was located about 9 miles south of the Mann Gulch fire. [46] The inaccessibility of the area dictated the use of smokejumpers, followed later by ground crews.

Three hours later, 15 smokejumpers with equipment landed at the site of the fire, now estimated to cover about 50 to 60 acres. The jumpers spent approximately 2 hours setting up their equipment and preparing their approach to the fire with no evidence of danger. They then headed down the gulch from the ridge toward the river.

Meanwhile, Jansson and a crew of 10 reached the fire site by river about 5:00 p.m. They were followed by Hersey, who, with a crew of 9, headed for the ridge above the fire. Meanwhile, a fire guard, James O. Harrison, arrived at the fire from the nearby Meriwether Camp. Harrison met R. Wagner Dodge, the smokejumper foreman, at the ridge above the fire site and, with the remainder of the smokejump crew brought up under crew leader William J. Hellman, the party proceeded down toward the river. Dodge realized that the fire was burning more intensely and moving rapidly toward them. He doubled back toward the ridge at a fast pace, had the men discard their heavy equipment, and finally, as the fire moved within 500 feet, decided to take a stand on a grass-covered slope on a side ridge. Dodge attempted to light a backfire and urged the men into the small burned area, where he lay close to the ground, but they refused to follow. Instead, the crew headed for apparent safety through an unburned neck. Two of the crew, Robert Sallee and Walter Rumsey, made it through to a rockslide just over the ridge, but the rest were caught as the main fire passed through the unburned passage. [47]

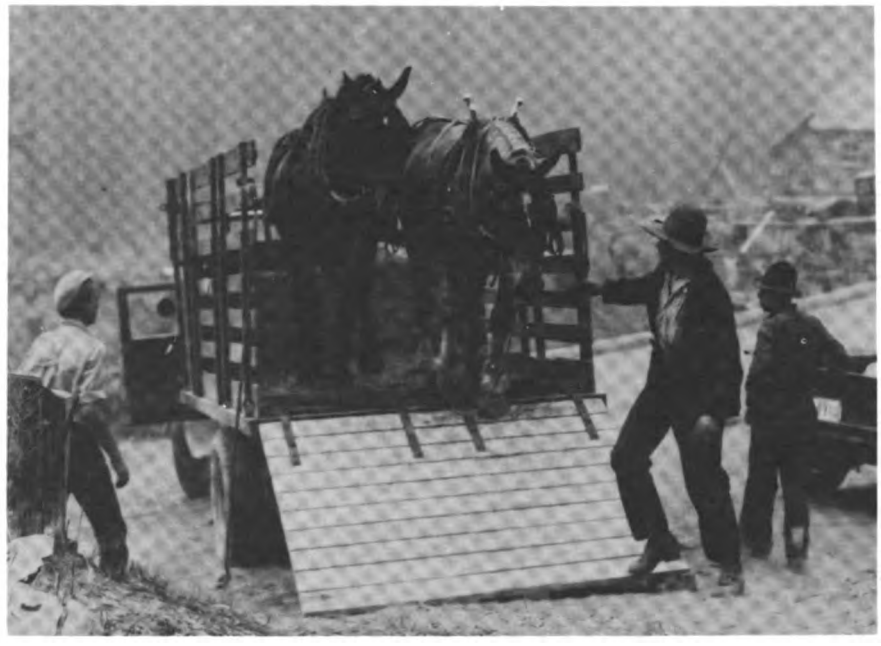
The Mann Gulch fire was a tragic and traumatic affair, which long remained in the hearts and minds of the people of the region.

Dodge and Sallee went for help and arrived at Meriwether Camp at 9:00 p.m. Medical help was called for in Helena, and about midnight Jansson, with a small group and two doctors, reached the site of the worst fire disaster in the history of Region 1. Twelve of the 15 smokejumpers died, as did Harrison, who had arrived at the site on foot. By early morning of August 6, the fire was almost beyond control and fire crews were brought in from all over the region. They included local farmers and ranchers and volunteers from the Reclamation Service, the Highway Patrol, and the Army Air Force Base at Great Falls. More than 450 firefighters finally halted the fire on August 7, and by the 10th they had the fire under control. More than 5,000 acres of the wild area had burned. [48]

A special board of inquiry organized by the Chief of the Forest Service concluded that there had been no evidence of wrong decisions or actions, and that the "blow-up" of the fire could not have been reasonably expected. The board urged greater emphasis on training for firefighters, and intensification of studies and research in fire behavior. [49] The Mann Gulch fire was a tragic and traumatic affair, which long remained in the hearts and minds of the people of the region.

Smokejumpers headquarters, Lolo, National Forest

Firefighting 1934. Nez Perce National Forest



Kaniksu 1934 fire plow

Entering a New Era

Firefighting remained a major priority in the region. The year 1953 brought other major fires, and in intermittent years thereafter the region was sorely taxed, despite the adoption of modern fire control techniques, smokejumpers, helicopters, and bulldozers. Gradually, the Nation's enormous appetite for lumber began to be filled, and the pressures on the national forests for timber production began to be tempered by concerns for conservation and preservation and an increase in nonconsumptive uses of forest resources. In this new age, the public became more acutely aware of the great heritage of the Nation's forest resources, and better organized to impose its own particular concern on the style and purpose of forest management. "Other" direction, from Congress and wilderness organizations, and cooperation and planning as well as new technology relating to silvicultural practices began to change the style and structure of management by the Forest Service in Region 1 and elsewhere.

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Chapter 9

Challenges of the Postwar Years

At the end of World War II, conservationists were concerned that the global conflict's insatiable demands for wood products had reduced American forests for the next generation. The Forest Service and the American Forestry Association undertook separate appraisals and confirmed that their worst fears were well founded. The Nation's timber holdings had declined about 43 percent in the past generation, and mills were cutting timber one and one-half times as fast as it was being grown. Furthermore, there was a marked deterioration of the quality as well as the quantity of the timber coming to market.

The reports showed that cutting practices on private lands were a major concern. They described 64 percent of private timber harvesting as poor, 28 percent as fair, and only 8 percent as good. The surveys concluded that the United States had ample forest land to supply all the timber that was needed, but better forestry practices and more intensive management would be required to build up the growing stocks to supply the increasing demands in the next generation. [1]

The Third American Forest Congress, which met soon thereafter, devoted most of its attention to increasing timber production. The most obvious place for improvement was in the small holdings and farm forests. In comparison, both the lands managed by major timber companies and the national forests administered by the Forest Service were relatively well managed. Chief Forester Lyle Watts used these findings to push for larger public forests and congressional approval for Federal regulation of cutting practices on private lands. Watts urged the regional foresters to place emphasis on increased forest management, tree planting, and timely harvesting of mature, diseased, and damaged timber within their regions. The word went down to the forest supervisors and district rangers that the goal of the next decade would be for larger timber reserves, more intensive management seeking greater sustained-yield production, and more effective protection of the forests from fire and disease. [2]

The Northern Region and Weyerhaeuser's Potlatch Forests, Inc.

The Northern Region's Percy D. Hanson, Regional Forester since 1944, was in complete accord with Chief Watts' program. Born in New Brunswick, Canada, Hanson moved to the west coast of the United States and obtained a degree in forestry at the University of California, Berkeley. He remained at the university for a year, where he taught in the Forestry School before joining the Forest Service as a ranger in 1926. He worked his way up through the ranks, enjoying good relations with officials in Washington and with fellow foresters in the

region. An outdoorsman, Hanson fished, hunted, and explored the mountains, often combining such recreation with an inspection trip. He placed his priorities for the postwar decade on tree planting, fire protection, and the building of access roads into remote parts of the region so that mature and damaged timber could be harvested. [3]

He and his staff maintained regular and important contacts with the leaders of the lumber industry in the Northern Region. In Idaho, the largest and most important timber owners were the Weyerhaeuser family and associates (mentioned earlier in Chapters 3 and 4), who had consolidated their numerous and scattered interests into Potlatch Forests, Inc., with John P. "Phil" Weyerhaeuser as president. Postwar economics made the lumber business in northern Idaho very difficult, even for an industrial giant. One company officer claimed that the combination of rough country, light stands of timber, unfavorable freight rates, and high capital costs (including the building of roads, railroads, flumes, chutes, and camps) made profitable operations precarious. [4]

In spite of all the difficulties, or perhaps because of them, Weyerhaeuser moved to expand and upgrade mills, equipment, and marketing techniques. The key leaders on the scene at Potlatch were Charles L. "Bill" Billings, Fritz Jewett, William P. Davis, and (after 1958) Robert E. Bundy. They enlarged the sawmill at Potlatch, converted to electric power, and automated the operation, increasing the capacity to 350,000 board feet per 8-hour shift. Under Davis, the headquarters for the Idaho operation gravitated to Lewiston, which initially had only a pulp and paper mill, producing its first products in 1950. Davis and his successor enlarged and improved this plant so that its capacity quadrupled in 12 years. They introduced debarkers, riderless carriages, and a machine to peel white pine logs into rolls of veneer. They built a plywood plant at Lewiston in 1958, and thereafter white pine chips produced at the mill at Potlatch went by truck to supply the plant at Lewiston. [5]

Davis, an innovative engineer and restless entrepreneur, never stopped planning for growth and improvement. He had Potlatch acquire mills in California, Washington, and Arkansas, and he increased the company's timberlands nationwide to about 800,000 acres. By 1960, Potlatch had plants in 12 States and catered to markets from the Atlantic to the Pacific. In addition to quality lumber, the company produced milk cartons, package boxes, paper cups and plates, cellophane, rayon, writing paper, newsprint, and various fabricated boards. [6]

Although Potlatch was by far the largest timber owner in northern Idaho, its holdings were intermingled with lands of the Forest Service, the State, and homesteaders—because of the checkerboard system of land surveys and sales designed by Congress in the early 19th century. To protect their forests, Jewett and Davis worked out a cooperative conservation and fire control program with Regional Forester Hanson and with State officials. On occasion, Potlatch bid on and cut timber from national forest lands to supplement that from its own lands. Generally, however, Weyerhaeuser sought to be self-sufficient and operate on a sustained-yield basis that would provide a viable forest for future generations. At the same time, the Forest Service preferred to sell to the small operators who truly depended on the national forests for their resources.[7] In all, Potlatch maintained good relations with the Forest Service, which in turn recognized that Weyerhaeuser was important, not only to its stockholders and employees but to Idaho and to the agency itself.[8]

Regional Forester Hanson was more than a casual observer of the metamorphosis of Potlatch, Idaho—from a company town to a small independent city. In 1950, the directors of Potlatch Forests, Inc., determined that the days of the profitable "company town" were over; they sought to end their involvement. The company owned 267 houses, 2 apartments, 13 business buildings, 1 school, and 2 churches. Residents bought most of the houses, new business people came in and bought the central buildings, and the company deeded the school to the county and the church buildings to their congregations.

The town incorporated in 1953, complete with a city council and mayor. Although Potlatch remained a one-industry town, the new owners improved their homes and property, making Potlatch an attractive little city. The mill continued to operate and to provide employment to hundreds of workers. The decision of the company to divest itself of the town brought fears that this was the first step in closing the entire operation, but that was not the case. The Potlatch mill continued to operate until the 1980's.[9]

Arranging Timber Sales

Arrangements for timber sales from the national forests were a regular part of foresters' activities, especially during the winter and spring months. As a rule, district rangers or forest supervisors handled the details of negotiations and the drafting of contracts, but for some major sales, the regional forester assisted in the arrangements. In the spring of 1951, the Forest Service offered for sale 188.5 million board feet of timber (mostly white pine) at the headwaters of the North Fork of the Clearwater

River. This was located in a remote region of the Bitterroot range along the Montana-Idaho border. The purchaser had to build an access road (meeting Forest Service specifications) and dispose of slash and debris. The buyer would have until 1969 to completely remove the specified timber. Hanson pointed out that this was normal procedure—to cut mature and overmature stands before fire, wind, and disease destroyed them. [10]

The Diamond Match Company (the only bidder) successfully offered a bid for this timber by agreeing to the Forest Service specifications. For the first 5 years of the cutting period, the agreed price was $21.10 per thousand board feet for white pine in remote parts of Idaho and $30.30 in Montana. The agreement listed other species at lesser prices. According to Hanson, this sale opened up one of the few remaining undeveloped timber areas in the Northern Region and was part of the long-range development plan of the Forest Service. [11]

Felling large Douglas-fir with powersaw. Flathead National Forest. 1952.

Hanson took pride in announcing the increased timber production, which had been made possible by improved management and by following long-range sustained-yield plans. The Forest Service timber receipts increased 36 percent from 1950 to 1952; they grew another 7 percent in 1953. The 1955 cut again broke records. At the same time, the Forest Service was planting new trees as rapidly as funds allowed.[12] Principal concerns of foresters in the Northern Region centered around forest management, including a cutting and replanting schedule, fire prevention, the opening of more of the national forests by building additional access roads, and the careful nurturing of public relations (local and national). Heavy snows and hard winters were recurring seasonal concerns for all personnel.

Snowshoes, Snow Courses, and Sno-Cats

In the winter of 1950 (an unusually severe year), Hanson directed a special snow study to determine the depth of the year's snow pack and estimate the expected spring streamflow. Two-man crews went by snowshoes and skis to remote forest lookouts and recorded snow depth at strategic points. Henry Viche and Walter S. Peterson were among those who helped develop and service the "snow courses," which until the mid-1950's were accessible only on snowshoes. Peterson remembered one exceptionally hard winter when he and Clyde (Scoop) Scovel worked their way arduously to Strawberry Cabin on the Swan Range of the Flathead National Forest, only to find the cabin under 15 feet of snow. They worked their way into the cabin, spent a wet, cold night, and continued their measurements the next day. One site scheduled for measurement held 30 feet of snow; however, 13 feet was the norm at most sites, where the water content ran from 55 to 64 inches. Later, such expeditions, which required several weeks of wilderness survival under the most difficult conditions, maintained contact by shortwave radio and were resupplied by airplane drops. By the end of the 1950's, the snow courses could be reached by mechanical means or had been phased out.[13]

The first "sno-cats" were introduced in 1951, and Hanson was enthusiastic about their use. These light half-ski, half-tractor vehicles were seen as "friends" of the forester. Hanson predicted that they could eliminate long, wearying snowshoe trips to isolated areas and also serve in rescue work. They could carry four people up to 10 miles per hours, and the enclosed cabs had heaters and radios. However, the sno-cats could also be dangerous. In 1952m William E. Schmidt was cruising in the upper St. Joe valley when his sno-cat sank in soft snow, the cab disappeared from view, and the exhaust was covered by snow. Schmidt was soon overcome by carbon monoxide fumes, and only the quick work of Cecil Sanford, Idaho game and conservation officer, saved his life. For this action, Assistant Forest Supervisor Dave Kyle presented Sanford with the President's Medal, awarded by the National Safety Council.[14]

Visitors From Home and Abroad

In the late summer of 1951, the region hosted a group of 36 foreign foresters from countries as varied as West Germany, Brazil, and Thailand. Escorted by retired Regional Forester Evan Kelley, the group visited Region 1 to study fire control methods and firefighting techniques. They toured national forest installations for 2 weeks and were impressed by the smokejumper exhibitions, bulldozers, two-way radio control, and aerial photography. [15] About 44 junior foresters attended a 5-day session at the Forest Service Remount Depot, which stressed forest management, safety, communication, and opportunities for a career in the Forest Service. [16] Almost every year, Senate or House committees toured the region. Other visitors included Boy and Girl Scout groups and, of course, thousands of tourists. [17]

Fire Prevention and Control

The region's attention was never diverted from the problems of fire prevention and control. In an article published in April 1953, Percy Hanson asked, "How do you suppress 10,000 forest fires?" He responded that it cannot be done by only a few men. Forest fires in the Northern Region were everyone's business; at least half of them were caused by humans (although only a few were deliberately set). The chief causes were smoking, debris burning, campfires out of control, and hunter fires left burning. As fire frequency increased during the postwar period, the Forest Service had to redouble its efforts. [18]

To facilitate the efforts of smokejumpers in a major emergency, Hanson directed the construction of an Aerial Fire Depot at the Missoula Airport. The training center for smokejumpers was set up at Camp Menard, 25 miles west of Missoula. The depot pro- vided a central assembly station that would accommodate about 150 personnel by the spring of 1954 and serve as a "hub" to speed the "get-away" time for firefighters. [19] About the same time, the Montana State Forestry Department and the Forest Service cooperated in organizing the Montana Rural Fire Fighters Service. Several thousand made up the volunteer crews that protected the areas between the urban sites and the national forests. They formed a valuable reserve force for fire emergencies. [20]

Hanson took pains to encourage and praise the region's Native Americans as firefighters. The Crow and Cheyenne agencies had selected young men for training as firefighters and made them available in emergencies. Howard Welton, who grew up between 1917 and 1931 at the Deep Creek Ranger Station on the Helena National Forest, where this father, Earl V. Welton, was district ranger, began his work with the Forest Service in 1933 through the auspices of the Civilian Conservation Corps. Welton transferred to the Bureau of Indian Affairs in 1955 to work as fire control officer on the Northern Cheyenne and Blackfeet Reservations to recruit and organize the Native American fire crews. In that

capacity, he worked closely with the Northern Region in fire suppression work. Hanson praised the work of these fire crews and credited them with quick suppression of a fire on the Gallatin National Forest, among others. [21]

Remembering the Mann Gulch fire of 1949, which burned 5,000 acres of forest land and cost the lives of 13 men, foresters never ceased to improve firefighting capabilities and communications in the Northern Region. It was something of a milestone when Hanson could report that in 1954 (which was incidentally a "wet" year) a total of 73 forest fires burned less than 1,000 acres. This was the lowest total acreage burned since the region began keeping records. To both Hanson and fire specialist A.E. Spalding (assistant regional forester), this record could be attributed to the speed of trained personnel in attacking fires, favorable weather, and the cooperation of forest users who were responding to the Smokey Bear campaign. [22]

Red Skies Over Montana

The unique fire experiences of the Northern Region resulted in the production of a dramatic Hollywood movie in the 1950's. New to Forest Service employees was the opportunity to appear in and advise on a motion picture. The feature film, made in 1952, depicted the work and heroism of the forest smokejumpers and starred well-known actor Richard Widmark. Hanson devoted the region's full cooperation on location. Fred L. Stallings, Supervisor of the Clearwater National Forest, served as technical advisor. Released as "Red Skies Over Montana," the movie provided an opportunity for people all over the country to become familiar with the role of the smokejumpers in fighting forest fires in the Northwest. [23]

Just as 'Red Skies Over Montana" memorialized the story of firefighting in the region, a more sobering summary of the role of fire is provided by the data in Table 9.1.

Table 9.1 - Region 1 Forest Fire Statistics

Year	Class A	Class B	Class C+	Total	Lightning-Caused	Person-Caused	Acres National Forest Area Burned	Acres Burned in Protection Boundary	Forest Fire Cost of Suppression—$
1951	746	156	32	934	776	158	731	2,145	546,000
1952	755	202	30	987	630	357	2,101	4,583	656,891
1953	1,265	449	87	1,801	1,357	444	8,528	11,569	2,299,211
1954	608	109	14	731	580	151	624	1,009	258,336
1955	659	127	19	805	619	186	2,267	2,521	590,988
1956	924	172	39	1,135	930	205	2,456	3,616	771,049
1957	800	195	19	1,014	755	259	2,051	2,607	958,973
1958	1,067	209	41	1,317	1,069	248	3,346	5,197	1,846,285
1959	630	163	30	823	567	256	1,559	3,312	1,631,742
1960	948	369	72	1,389	1,003	386	16,705	18,509	5,319,785
1961	1,868	408	96	2,372	2,005	317	57,369	63,474	11,525,314
1962	960	205	24	1,189	912	277	3,038	3,302	1,983,303
1963	1,574	260	47	1,881	1,583	298	4,201	5,162	3,097,660
1964	643	130	24	797	567	230	1,258	1,560	1,338,344
1965	610	82	17	709	548	161	548	667	863,467
1966	1,216	261	87	1,564	1,236	328	33,714	35,358	5,220,120
1967	1,355	401	95	1,851	1,426	425	60,447	83,555	21,359,742
1968	618	158	42	818	537	281	6,946	8,680	3,030,724
1969	643	194	38	875	469	406	2,615	3,102	3,104,778
1970	1,446	276	96	1,818	1,416	402	16,687	18,450	8,612,826
1971	798	196	46	1,040	687	353	5,009	8,320	5,618,818
1972	1,062	192	26	1,280	1,007	273	1,839	2,294	4,912,711
1973	1,366	345	95	1,806	1,253	553	16,687	28,151	*16,658,425
1974	1,129	253	55	1,437	842	595	4,997	7,254	*10,781,638
1975	483	85	9	577	392	185	254	592	*6,127,268
1976	669	115	34	818	536	282	2,526	8,031	*8,857,016
1977	891	189	27	1,107	735	372	7,880	8,379	*7,210,520
1978	507	110	21	638	388	250	1,707	1,765	*2,218,061
1979	1,304	363	81	1,784	1,283	501	9,957	12,633	*11,363,815
1980	396	113	34	543	409	134	4,693	5,276	*4,697,366
1981	873	295	47	1,215	962	253	8,034	8,317	*10,709,351
1982	460	128	8	596	394	202	433	659	*1,883,923
1983	393	99	21	513	361	152	2,174	560	*5,879,098
1984	1,068	227	46	1,341	1,016	325	21,986	15,505	*11,010,767
1985	873	279	76	1,228	921	307	37,431	717	*25,684,542
1986	741	326	60	1,127	897	230	19,635	1,399	*11,598,767
1987	747	323	55	1,125	562	563	18,306	1,174	*13,362,095

* Because of a change in the interregional transfer of Forest Fire funds, this figure does not include the use of regional crews, equipment, and aircraft not paid through Region 1, but does include funds spent by Region 1 in support of other regions and agencies.

Insect and Disease Control

Closely akin to the fire menace was the never-ending battle against insects and disease on valuable forest trees. After inspecting a major infestation of the spruce bark beetle, Hanson observed that, if unchecked, this little red and black beetle, only a little larger than a grain of wheat, might eventually cause greater loss than the landmark 1910 fires. He organized a cooperative attack to treat endangered stands and to speedily log and remove infected timber. Where feasible, the Forest Service used aerial or surface sprays to combat the various insects and parasites that plagued the timber. White pine blister rust, pole blight, western pine beetle, gypsy moth, spruce budworm, tussock moth, and many more varieties that only a trained entomologist could identify were studied and programs mapped out to combat them.

Blister Rust Control

Many foresters, such as Floyd R. Cowles on the Kaniksu National Forest, spent a good part of their professional careers in blister rust control work. During the depression, Civilian Conservation Corps crews and, after the war, contract labor crews consumed an enormous amount of energy and money in the war against blister rust damage. Warren Benedict's *History of White Pine Blister Rust Control— A Personal Account,* published in 1981, offers an excellent historical and technical overview of blister rust control work. [24] Chapters 7 and 8 contain additional information on earlier and later aspects of blister rust control work in the region.

In brief, postwar blister control work programs derived from a 1948 report by two Forest Service economists, Don Matthews and Blair Hutchison, who advised that blister rust could be controlled, but only under certain eradication guidelines. The host Ribes suppression standards were lowered to 5 feet of live stem per acre. This required more intensive blister rust control work and involved considerably higher costs. Herman Swanson was named assistant regional forester for blister rust control work in the region in 1953. Despite expanded activity, blister rust was an elusive, costly, and difficult disease to subdue. By the end of the 1960's the Northern Region had begun experimenting with antibiotic fungicides and the breeding of rust-resistant strains of pine through genetic manipulation. [25]

For a time, new chemicals seemed to offer the Forest Service a means for controlling some of the more destructive forest diseases and insects. For example, DDT had entered the market in the late 1940's, and the Forest Service used it extensively. Although its use would later be banned, during Hanson's administration no considerable protest arose against its employment. That would come later.

Changing Forest Boundaries and Changing Foresters

In 1954, in an effort to consolidate administrative functions, Chief Richard McArdle announced the abolishment of the Cabinet National Forest following an executive order from President Eisenhower authorizing the action. The forest, a separate unit since 1907, thus ceased to exist and its 2 million acres were distributed among the neighboring Kaniksu, Kootanai, and Lolo National Forests. The same year, Clarence C. Strong, Assistant Regional Forester for State and Private Forestry since 1946, accepted a 2-year appointment under the Federal Point IV program to advise on forestry and range in Afghanistan, with headquarters at Kabul. Hanson regretted Strong's departure, praising him as "one of the most effective and courageous leaders of the Forest Service who would be missed very much." [26]

The next year (1955), Range Conservationist Thomas Lommasson announced his retirement after 35 years in the Forest Service, mostly in Region 1. Recognized as an authority on range management in the Northwest, Lommasson had received a national award in 1952 for "Superior Service." Hanson was sorry to see him retire; he had contributed much to the range industry and had won the respect of ranchers in the region. [27]

Then it was time for Hanson to move on. In November 1956, after 12 years as Regional Forester—the second longest tenure (after Evan Kelley) of anyone in that position in the Northern Region, Hanson transferred to Region 10 headquarters at Juneau. [28] With the retirement and departure of so many key officers, many Forest Service employees felt it was the end of an era.

Charles L. Tebbe

The new regional boss was Charles L. Tebbe, who transferred from the Eastern Region. At 48, Tebbe was at the height of his long and varied career. He was a native of Weed, California, and the son of a lumber company doctor. After earning a B.S. degree in forestry at the University of California, Berkeley, he worked for the Red River Lumber Company and then Caterpillar Tractor. He next managed a tropical forest in the Philippines. He joined the Forest Service in 1935 and soon went to Washington as Assistant Chief of the Division of Information and Education. He worked with Acting Chief Earl Clapp in writing and publishing "New Forest Frontiers" (1941), which sought to popularize public-private cooperation and reasonable public controls. [29]

After serving as liaison officer for the Forest Service and the War Production Board during World War II, Tebbe became the Director of the Rocky Mountain Experiment Station in Missoula. There, he made use of available aircraft to experiment with seeding clouds to induce rain and later to "bomb" forest fires with water and chemicals, under the supervision of Harry Gisborne and Jack Barrows of the experiment station. He was also interested in grazing problems and experimented with the effects of different kinds of vegetation on the weight and habits of cattle. [30]

In 1950, Tebbe returned to Washington as General Integrating Inspector for the Forest Service. [31] As Tebbe explained his new job, the Forest Service had always placed great emphasis on inspections, because of the many tasks the agency performs, the large number of employees in the organization, and their widely scattered distribution. Rangers inspect their district personnel and job performance, the forest supervisors inspect the rangers, and the regional foresters inspect the national forests under their jurisdiction. Every 3 or 4 years, the Chief performs a general integrating inspection of all the regions. [32]

Tebbe returned to the field again in 1952 as the head of Region 7 (Northeast). He had seven national forests in 14 States—large populations, but little commercial timber. These were lands that the Government had purchased (most during the Great Depression) and planted with fast-growing species to produce second-growth forests in the region. One of Tebbe's problems involved coal mining in the area, which had turned from shaft mining to strip mining and threatened to destroy the fragile new forests above the coal seams. After much controversy and many appeals, the Secretary of Agriculture, Ezra Taft Benson, upheld the Forest Service position and "in a very real sense saved the Cumberland National Forest." [33]

When Tebbe became Regional Forester of Region 1, he was no stranger to the area, the personnel, or the City of Missoula. In contrast to his previous post, he now had a vast region that stretched from eastern Washington to northern Idaho, Montana, and the Dakotas. It included 16 national forests, 100 ranger districts, and the national grasslands in eastern Montana and the Dakotas. The Regional Office occupied three-quarters of a city block in Missoula, and the employees numbered in the hundreds. Among the assistant regional foresters on the Tebbe team were Axel Lindh (timber management), Ernie de Silvia (fire control), Wally Dresskell (range and wildlife), and Harvey Robe (operations). Tebbe had known these men before, and he felt at home. [34]

Because Tebbe had spent much time in Washington, it was not surprising that many Federal officials visited him in Montana. Chief Lyle Watts and Tebbe had an excellent fishing trip on the South Fork of the Flathead River through the Bob Marshall Wilderness. Secretary of Agriculture Benson spent a month in Region 1, with his headquarters on the Priest River in northern Idaho. Benson was an interested and impressed spectator at a Forest Service aerial spraying operation in the Madison River country. After only two runs by the spraying plane, literally millions of larvae fell from the trees. It was an extremely effective demonstration. [35]

At the request of the Montana congressional delegation, in 1959, Tebbe prepared a pamphlet titled "The Full Use and Development of Montana's Timber Resources." It was presented by Senator James E. Murray on the Senate floor and published as a Senate document. In it, Tebbe pointed out the need for specific types and locations of manufacturing plants to make the best use of existing resources and the need for modern roads to provide the needed access to those resources. The pamphlet represented the best professional and political thinking for developing the potential of Region 1's forest resources during the last third of the 20th century. [36] Today, however, this pamphlet is largely an archival item.

As had most regional foresters, Tebbe had many significant contacts with the loggers of the region. The J. Neils Lumber Company at Libby in northwestern Montana had large private timber holdings, but it also bought timber from the national forests. In negotiating timber contracts, the Neils representative was often contentious, but he and Tebbe remained quite amicable. The Diamond Match Company often haggled over details of contracts, but its officials and foresters usually remained in good humor. Tebbe also took care to resolve complaints from small buyers, such as Jack Buchanan, a stud mill operator who protested that his 2 by 4's were too full of knots. Tebbe allowed him to take somewhat larger trees. [37]

The Big Earthquake

Near midnight on August 17, 1959, a severe earthquake shook southwestern Montana; its effects were felt in eight States and in British Columbia. The quake centered in the Madison River canyon area, just west of the northwestern corner of Yellowstone National Park. Much of the quake area lay in the Gallatin National Forest, and it was summertime, so hundreds of people were camped in the forest and along the river, which afforded excellent fishing. High winds accompanied the quake and literally blew campers and camps away and caused mammoth earth slides an avalanches. These cut off and isolated the area from outside. Many families were buried in the slides.

The force of the quake seized the Hebgen Lake basin like a giant saucer and tilted it to one side, sloshing water around and making people fear that the dam had broken. After the quake, large sections of shoreline on the north side of the lake were under water, and on the opposite side, land was exposed that had been part of the lakebed. Further downstream, just west of Lake Hebgen, a huge slide that dammed the river formed a new body of water. This is called Earthquake Lake. [38]

The Forest Service provided immediate aid and evacuation for those trapped in the area. George Duvendak and W.E. Fry, Supervisors of the Gallatin and Beaverhead National Forests, respectively, organized their personnel to begin rescue operations and reestablish communications. Assistant Regional Forester Harvey Robe was in the earthquake area and at once took charge of the rescue efforts and coordinated the disaster relief. He communicated with Fry, who relayed information to Tebbe at Missoula. Near dawn, Tebbe dispatched a team of smokejumpers under the direction of H.E. Hammond. They parachuted into the area between Beaver Creek and the landslide. This was a skilled team equipped with medical supplies, radios, and emergency rations. They aided the lost and marooned, gave first aid to the injured, and set up headquarters to evacuate people by helicopter. Meanwhile, Robe marshaled the volunteers and available forest service personnel. By the 18th of August, search parties were scouting along the slides, canyons, and mountain slopes looking for survivors and bodies. [39]

The final toll was gruesome. Nine bodies were recovered and 19 more lost (probably buried in the mud slides) and presumed dead. There were about 250 people trapped for a time, many of them seriously injured. North of Hebgen Lake, the town of Ennis (with a population of approximately 600) was evacuated for fear that the Lake dam would break and a wall of water would descend on the town. Most returned to their homes by the 19th.

In all, 104 Forest Service personnel engaged in around-the-clock search-and-rescue efforts. Not until August 25th, 8 days after the quake, did the Forest Service dismantle its emergency operation. Led by Tebbe and Robe, the agency demonstrated its effective emergency capabilities through the trained, equipped, professional personnel of the region. Chief Forester Richard E. McArdle praised their efforts at a memorial service a year later at the site of the quake. He also established a special place called the Madison River Canyon Earthquake Area, which has been a popular tourist attraction in more recent years. [40]

During Tebbe's tenure as Regional Forester, Region 1 reported that net receipts for national forest resources had increased from $5.5 million to more than $10 million. Recreation visits jumped from 2 million to 4 million; timber harvests rose from 750 million to more than 1 billion board feet; and 3,000 miles of access roads were added to the National Forest System in the region. [41]

In 1960, while in Washington, D.C., on official business, Tebbe suffered a paralytic stroke and was forced to spend several months in the hospital. When he returned to duty at Missoula, he found that the demands of his position were too great for his diminished strength, so he retired as of March 31, 1961. Popular and respected at all levels, he received gifts and a party from his coworkers. The Montana senators praised his contributions in speeches on the Senate floor. [42]

Boyd L. Rasmussen succeeded Tebbe. He arrived from the Washington Office, where he had served as Deputy Assistant Chief for National Forest Resource Management. Earlier, he had been Assistant Regional Forester in Region 4 (Ogden, Utah). The year of his arrival (1961) was unusually hot and dry. High winds added to the fire danger, and Forest Service personnel were well aware of the powderkeg-like situation. All lookouts were manned, and special crews were placed on the various districts for quick action whenever a fire would break out.

The Sleeping Child Fire

In the southwestern corner of Montana, east of the town of Darby, a remote section of the Bitterroot National Forest presented a special hazard. In the 1920's, pine beetles had attacked a large stand of lodgepole pine and left thousands of acres of mature lodgepole pine standing gaunt and lifeless. High winds during the intervening years and especially a "blowdown" in 1949, which had affected most of the region's forests, had toppled these insect-devastated trees so they lay in confused masses on the forest floor, providing fuel for a great inferno when a spark was added. [43]

On August 4, 1961, a violent thunder-and-lightning storm set off a small fire in this section of the Bitterroot, where access was limited to trails. At first called the "Mine Fire" because of its proximity to a fluorspar mine, it officially became the Sleeping Child fire. Men from the mine and Forest Service fire crews dispatched from the Darby Ranger District station soon recognized that this fire would require a major effort. It spread rapidly and burned a major portion of the headwaters of four drainage areas—Sleeping Child, Rye, Cameron, and Martin Creeks.

On the 5th, the weather center at Kansas City issued a "red flag" alert, forecasting severe turbulence along the Idaho-Montana border. Strong, gusty winds fanned the spot fires and set off a major blowup. At nightfall of the 4th, firefighters reported a burn area of only 300 acres, but by the next evening, the fire encompassed 9,000 acres. Regional Forester Rasmussen, Montana Governor Donald Nutter, and the commandant of the regional U.S. Army post mobilized all available forces to fight the conflagration, which raged out of control for 2 weeks. Most of this time, more than 1,000 individuals were deployed on the fireline, with a peak of 1,721 on August 14. Forest Service officers brought in 41 bulldozers and used 4 helicopters to ferry personnel and supplies into the area and take the injured and exhausted out. They used planes to bombard the fire with retardants and also tankers and pumpers whenever possible. Not until the 14th could the Forest Service report that a line had been established and the fire contained. By then, 28,000 acres of heavily timbered forest had burned, an area 9 by 5 miles. Fortunately, no lives were lost in this emergency. [44]

Salvage operations on the fire site began in the fall of 1961. The lumber companies in the area purchased and cut salvage timber totaling approximately 90 million board feet by the fall of 1964. Forest Service personnel applied tons of grass seed to reseed the area and minimize erosion. The agency also built or had built nearly 200 miles of road into the area, of which about 70 miles were permanent and maintained as part of the national forest transportation system. The Regional Office estimated that it cost more than $11 million to suppress fires in 1961, making it the most expensive fire year in the history of the Forest Service up to that time. The agency also spent about $160,000 for initial watershed restoration. As with previous major fires, the Sleeping Child fire brought new situations and problems, which led to the development of new techniques to better cope with fires in the future. [45]

The National Grasslands

A continuing problem during the tenure of several regional foresters was the administration and disposition of the Federal range and grazing lands. These lay east of the Rocky Mountains in eastern Montana and the Dakotas and, at times, were incorporated into the Custer and the Lewis and Clark National Forests.

Much of this land had been homesteaded late—some as late as the 1910—1920 era. Mild winters, more than average rainfall, and high wheat prices during World War I encouraged settlers to borrow more money to buy more land, purchase more and larger equipment, and plant more wheat. Then, in the 1920's,

grasshoppers, dust storms, and the collapse of farm prices wiped them out. The entire operation was a high-stakes gamble, with severe winters and hot and dry summers stacking the odds against the homesteader. One writer called it the "great next year" country, for optimism continued long after reasonable expectations had disappeared. [46]

One of the first professionals to call for Federal intervention in this deadend cycle was Henry L. Lantz, county extension agent at Malta, Montana. For years, he had watched farmers struggle in vain to make a living on 160 acres of land, which was the usual homestead. Lantz advocated Federal aid, diversification of crops, and irrigated fields. He and others organized the Malta Commercial Club in 1925 and sought to do something about the erosion of life and soil. Farmers should develop the best land, provide their crops with water from impounded lakes, and transform the rest into grazing land with better grasses while regulating the number of cattle allowed on each pasture. [47]

During the Great Depression, among the bright young people with ideas who went to Washington to serve in the "New Deal" was Montana State University agriculture professor M.L. Wilson, who became Assistant Secretary of Agriculture under Henry A. Wallace. An advocate of the Domestic Allotment Plan, Wilson called Lantz to Washington to help draft such legislation as the Agricultural Adjustment Act (AAA) and the Resettlement Acts.

As a result, Lantz became the manager of the Milk River Resettlement Project in northeastern Montana. The plan called for the Federal Government to buy the land from the farmers who could not operate on their own and to reseed the land with grass, preferably a strain of Russian crested wheatgrass. Those who wanted to continue farming would be resettled in the Milk River Valley, where an irrigation project was constructed. The irrigated fields would produce alfalfa, soybeans, and other livestock feeds for the winter months. At the same time, Lantz organized grazing districts that would control and regulate the use of the range and improved pastures. This type of program was put into effect over large areas of the West, particularly in eastern Montana and North and South Dakota. [48]

In 1937, the Resettlement Administration transferred this land, called land utilization project land, to the Farm Security Administration. By this time, the land was showing evidence of becoming stabilized and producing grass and cattle, not wheat for the public. In 1941, these lands were transferred again to the Soil Conservation Service, where they helped produce meat and other foodstuffs during World War II. [49]

The Forest Service acquired these lands by executive transfer in 1954, when Glen Mueller was manager of the land utilization project at Malta and Bernie Alt was his assistant. Headquarters for other land utilization projects in Region 1 were at Miles City, Lewiston, and Dickinson, North Dakota, and at Lemmon, South Dakota. Doc Dyson managed the project at Lemmon and had been there since its inception. In all, there were more than 4 million acres of land utilization project lands, which now are recognized as some of the best grazing lands in the arid West. [50]

Lolo Pass, boundary between the Clearwater National forest and the Lolo National Forest. 1926.

The Montana land utilization acreage was transferred in 1958 to the Bureau of Land Management (Department of the Interior) despite the protests of the Forest Service, especially Johnny Forsman, Supervisor of the Custer National Forest, who termed the move "a tragic mistake." The rest remained with the Forest Service, which in 1961 renamed them the national grasslands. Alt was one of the Forest Service people who had followed these lands through their various homes. A graduate of the University of Montana Forestry School (1951), he had been close to the land utilization question during his early years and became ranger in charge of the project at Medora, North Dakota, in 1961. There, he found the land in excellent condition, with the farmers planting more fairway crested wheatgrass, which made better hay—and the cattle preferred it. He had some difficulty with the Forest Service administrators in Missoula; they were not familiar with the evolution of these lands and the function of the grazing associations. For example, they were confused that he had only two permits to graze in the entire district (these were the two grazing associations). [51]

In 1970, Region 1 had responsibility for the Little Missouri National Grasslands (headquarters at Medora and Watford City), the Cedar River and Grand River National Grasslands (headquarters at Lemmon), and the small Sheyenne National Grasslands (headquarters at Lisbon, North Dakota, near the Red River). All were administered by the Custer National Forest. [52] The cooperative relations between the Forest Service and the grazing associations that use the national grasslands are discussed in Chapter 14.

Public Lands Access Association, Inc.

A major problem for the citizens of Montana and the Forest Service in Region 1 during the postwar era related to maintaining or regaining public access to remote areas of the public lands surrounded by privately held lands. Many of these areas were east of the Continental Divide, where there was little commercial timber. Public lands included those administered by the Forest Service, the Bureau of Land Management, and the State of Montana. Of the approximately 23 million acres of public lands lying east of the Continental Divide, the general public had lost legal access to about 13 million acres, not including lands designated as wilderness or national parks. Private landowners who held adjoining properties had fenced, posted, and closed down old unimproved roads and trails leading to large acreages of backcountry lands of the public domain. [53]

To cope with this ongoing problem, individual foresters, led by Gene Hawkes, organized the Public Lands Access Association, Inc. (PLAAI), a legal, nonprofit corporation. Its purpose was to inform the public about the deteriorating access situation and to take a lead in regaining the right of public access to all the public lands within the State. [54]

As more people moved into Montana, both permanently and part time, and purchased ranch or recreation property, the problem became more severe. PLAAI drafted a series of recommendations as successive steps to regain the public's right to use these remote lands. The first step would be a request for the donation of access routes by the private landowner. Owners, however, were unlikely to comply inasmuch as they enjoyed exclusive use of their own and isolated public lands. A second step would be a purchase of a right-of-way. If this should fail, the public agency could propose a land exchange to acquire the needed access route. If all else failed, another step would be the use of eminent domain by the Government to acquire the necessary land for roads and trails. PLAAI also urged local citizens to research the county records and petition the county government to reestablish control of previously designated county roads and to take legal steps to enforce the public's right to use such routes.

Although PLAAI has been instrumental in reopening many roads and in regaining access to some lands, the problem continues to agitate the large number of people who would like to use the public lands for recreation, camping, hiking, or sport. [55] The local concerns about public access to public lands soon became eclipsed by the environmental movement, which affected all the regions of the Forest Service.

The Beginning of the Environmental Movement in Region 1

Neal M. Rahm, who had come up through the ranks, replaced Rasmussen as Regional Forester at the end of 1963. A native of California, he studied at the University of California, Berkeley, receiving a degree in forestry in 1937. He entered the Forest Service the same year and served successively as a district ranger, Assistant Regional Forester (Region 2), and as Associate Deputy Chief. While serving in the Washington Office of the agency, he developed policies for forest resource management under the Multiple-Use Sustained-Yield Act of 1960.

At Missoula, Rahm was an active and concerned citizen serving on the Board of Visitors of the University of Montana's School of Forestry and various civic organizations. As Regional Forester, he looked forward to managing the national forests and grasslands according to Forest Service regulations and as

directed by the Chief Forester. At the same time, he expected to enjoy his tenure by interspersing work with hunting and fishing trips, as had his predecessors. Times were changing, however, and he would find the direction of the region much more frustrating than satisfying. [56]

Rahm's appointment coincided with the eruption of the environmental and ecology crusade in all parts of the United States. The publication of Rachel Carson's *Silent Spring* (1962) set off a wave of protests against the indiscriminate spraying of pesticides, the management of the national forests primarily for timber production, and the disturbance of wildlife by certain standard forestry practices—especially clearcutting and replanting to an even-age single-type forest. The environmentalists charged that the large-scale spraying of damaged nontarget plants and animals and its effects contributed to the ills of the people in nearby towns or hamlets. Where Agriculture Secretary Benson had been impressed with the effective use of DDT against the larvae of the spruce budworm, new ecologists protested against aerial spraying and demanded that the Government ban the use of DDT and similar pesticides entirely. This disenchantment coincided with the assassination of President John F. Kennedy. The protests took the form of a back-to-nature movement—stressing natural forests, the protection of wildlife, and increased wilderness areas.

To some, the goals of the Forest Service seemed to conflict with those of the new environmentalists. In 1964, Congress passed a National Wilderness Act, which provided for the establishment and designation of a limited amount of true wilderness. Following the doctrines of Aldo Leopold and Bob Marshall, the established wilderness areas should be spacious and quite separate from the main portion of national forest land that would be managed under the multiple-use principle. Environmentalists soon found that they could use the Wilderness Act to push for remote regions to be redefined as new wilderness. The Forest Service feared that such an approach would destroy effective management programs and create a number of snippets of land designated as wilderness that were not actually wilderness.

Environmental advocates pressured Congress on single issues. Congressmen found it easier to submit to vocal groups than to set policy standards. Environmentalists discovered that they could bring suit in Federal courts on specific pleas that, on the surface and by themselves, seemed reasonable. In Region 1, the celebrated conflict between environmentalists and the Forest Service began with the Scapegoat-Lincoln Back Country Area. [57]

The Scapegoat-Lincoln Back Country Controversy

Lying in the northern part of the Helena National Forest, approximately 75,000 acres of rough, lightly forested mountain land was an ideal hunting and fishing hideaway for local and regional sportsmen. This area lay south of the million-acre Bob Marshall Wilderness and was separated from it by the Scapegoat Mountains. In 1957, the State of Montana had completed a paved road from Missoula (Route 20) by way of Ovanda and Lincoln to Great Falls. This brought traffic, new business, and a sawmill to the little town of Lincoln, which was the "jumping-off place" for backcountry sportsmen and outfitters leading groups into the Bob Marshall. Regional Forester Rasmussen proposed that the Forest Service build a road into the backcountry (there was already a dirt trail along the route), which would improve its recreational potential, assist fire protection and control, and incidentally open up stands of spruce and larch for harvesting. He did not anticipate the local reaction. [58]

In Lincoln, still in many respects a frontier town, many local residents viewed with distrust the "progress" brought by the new highway and certainly opposed any opening up of the backcountry that would destroy the secluded and idyllic characteristics of the area. Led by Cecil Garland, a hardware and sporting goods store owner, a group of citizens formed the Lincoln Backcountry Protective Association to oppose any and all Forest Service plans to further disturb the primitive nature of the forest. Joining him was Tom Edwards, a former teacher, who was an outfitter for wilderness expeditions. Both Garland and Edwards proved to be eloquent spokespersons for the association. They frequently spoke of the "hush of the land" that would be "crushed forever" if the Forest Service plans were carried out. [59]

In the spring of 1963, Rasmussen decided to run a limited survey for a "flag line" road into the backcountry. He sent an engineer and equipment, including a bulldozer, to Lincoln to begin as soon as weather permitted. In response, Garland called his Representative, James Battin, and begged him to intervene and at least delay the start of the road building. Battin called Rasmussen and, according to a reliable account, asked for a 10-day delay so he could send an aide to assess the problem and report back to him. Rasmussen, short of temper, replied that he did not have 10 days. The engineer and bulldozer were in place and costing money every day they were idle. Battin reportedly swore that he "had better have 10 days." [60]

The supervisor of the Helena National Forest held a series of public meetings, which were jammed by opponents of the Forest Service plan to open up the Scapegoat area. Garland by this time had enlisted the support of Senator Lee Metcalf, an old friend of

former Regional Forester Tebbe, who asked for a delay of several months. This was the situation inherited by Neal Rahm when he succeeded Rasmussen. [61]

About the same time (late 1963), Robert Morgan became Supervisor of the Helena National Forest. A graduate of the University of Montana Forestry School, Morgan had risen in the Forest Service from smokejumper to ranger and through various staff positions. He soon advised Rahm that there was little or no local support for developing the Scapegoat area; to push it through at this time would be at a large cost in public goodwill. He suggested that the Forest Service delay until the need for development became generally apparent. Although Morgan had initially supported the Forest Service plan and his boss, he gradually became more sympathetic to the arguments of the environmentalists and eventually supported their views. Much later, after the controversy ended, Morgan accepted an award from an environmental group [62]

While the Regional Office wanted to get on with the plan as drafted, the association secured further delays and drew valuable allies, such as the Wilderness Society, the Sierra Club, and the Montana Fish and Game Department. In 1965, Montana congressmen introduced bills that would set aside as wilderness portions of the backcountry ranging from 75,000 acres to more than 200,000 acres. At public hearings on the proposed legislation, the Forest Service took a beating; most speakers attacked at least one aspect of the plan. Both Senators Mansfield and Metcalf and Representative Battin supported a wilderness bill, and Garland was a frequent visitor to their Washington offices. Rahm became increasingly frustrated as every revised and modified proposal was rejected. He exclaimed:

> We have lost control and leadership in the sphere of wilderness philosophy. Why? The Forest Service originated the concept back in the 1920's and, practically, has been standing still since about 1937....Why should a sporting goods dealer in Lincoln, Montana, designate the boundaries of the Lincoln Back Country addition to the Bob Marshall Wilderness? . . .If lines are to be drawn, we should be drawing them. [63]

The Lincoln-Scapegoat bills encountered various procedural delays, but by 1972, Congress finally created a separate Scapegoat Wilderness that included more than 200,000 acres. The all-weather access road was never built, and the mature spruce and lodgepole pine were never harvested. The enlarged area came from the Lolo, Lewis and Clark, and Helena National Forests.

Rahm, who had served 34 years in the Forest Service, advancing through the grades to become Regional Forester, chose to retire in 1971 at the age of 62. He was respected and well liked by his associates, and the region would miss his counsel and leadership during the difficult years ahead. ∞

The Lincoln-Scapegoat controversy was in part evidence of the changing uses of the forest resources of the Northern Region. Wilderness, recreation, and environmentalism began to rival fire management, timber production, and grazing as major concerns of the Northern Region.

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Chapter 10

Recreation: A Developing Dimension of Forest Management

Recreation and tourism in Montana, Idaho, North Dakota, and South Dakota are post-World War II growth industries closely related to the national forests and grasslands of the Northern Region. Although long important to local residents for recreation, the national forests of the Northern Region have since World War II become a magnet to hundreds of thousands of visitors. Two of the Nation's best known National Parks, Yellowstone and Glacier, border the national forests of the Northern Region; many visitors to these important scenic and recreation areas prefer the less crowded conditions of the national forest sites and facilities.

Recreation and public use of the national forests once was a largely local and seasonal affair, but the forests of the Northern Region have become a year-round playground for visitors from all parts of the United States, Canada, and abroad. The recreation industry has come to rival forest products and agriculture in annual income for the residents of Montana and the Idaho panhandle, and recreation management and planning have become important elements of multiple-use planning in the region.

From its inception, recreation in the Northern Region has largely been associated with outdoor sports and activities. Hunting and fishing have been the leading recreational activities over the years. However, hiking and mountain climbing, packing (including outfitting and guiding), caving, river floating and rafting, and—more recently—winter sports, including cross country and downhill skiing and snowmobiling, have attracted thousands of new visitors to Idaho and Montana.

Early Recreational Uses

Foresters were aware of the national forest resources being used for recreation even before the Forest Service and the Northern Region were formed. Supervisor W.E. Jackson, on the Bighorn Forest Reserve, wrote on September 9, 1902, that "..with pleasure seekers, hunters, and outing parties, coming from all sides, and the weather so dry and windy, the Forest Rangers have more than they can do to properly control the people that are on the Reserve...."[1] During these early years, recreation management was largely incidental to the work of the forester.

Other than the tourists who arrived by train in western Montana and took the stagecoach to Yellowstone or Glacier, and those who visited a few dude ranches developed during the World War I era, it was local residents who used the national forests of Montana and Idaho for recreation. Miners, farmers, and cattlemen harvested the game, fish, and wild fruits and vegetation for food as well as for sport. Carol Ryrie Brink, a prominent writer of the legends and lore of the Northwest, and whose father was

the first mayor of Moscow, Idaho, recalls spending the summer of 1911 with an aunt and young friends on a woodlands homestead in Latah County, Idaho, "twenty-eight miles by packhorse from the nearest outfitting post." The cabin, a single room with a porch, two windows, two built-in beds, a cookstove, and homemade chairs and tables, stood among "the finest belt of virgin white pine forest." [2] "Trout were plentiful in these unspoiled streams," said Brink, "and if there were any laws about catching them, we had not heard of them." During August particularly, the forests abounded with mushrooms, huckleberries, thimble berries and wild raspberries and elderberries. [3] Following World War I, both tourism and local traffic began to increase under the influence of the automobile, Federal and State roadbuilding programs, and the generally greater economic affluence associated with the Roaring Twenties. Dude ranching and packing expanded rapidly during this period, as did applications for summer home permits.

National Conference on Outdoor Recreation

President Calvin Coolidge responded to the growing awareness of recreation as a developing social phenomenon and a major "new" use of the national forests when he called the National Conference on Outdoor Recreation into session on May 22, 1924. Leon Kniepp was given temporary leave from the Forest Service to serve as Executive Secretary for the Conference. He was replaced the next year by Arthur C. Ringland. The Conference initiated recreational planning on all Federal lands and within the national forests, to be preceded by inventories of recreational facilities and resources. The inventories were patterned on the survey experiences already being used on the national forests. Congress (and States) responded to the work of the Conference by approving legislation authorizing States, counties, and municipalities to acquire public lands for parks and recreation. Congress also approved a migratory bird bill, the Woodruff-McNary Bill for new forest-land acquisitions, and the McSweeney-McNary Bill for forest and biological research. The Conference officially dissolved in 1929. [4]

Depression—and the Civilian Conservation Corps

Although seemingly distant and isolated from Wall Street, the collapse of the stock market in October 1929 soon reverberated through the forests of Montana and Idaho. Unemployment spiraled in the lumber and mining industries, and the people of the Northern Region settled into the grim specter of the Great Depression. Strangely enough, the involuntary leisure forced upon people by the depression drew more rather than fewer visitors to the national forests. Then, the Government-sponsored

Civilian Conservation Corps (CCC) programs brought unemployed youths to the Northern forests. These youths spent much of their time and energy building recreational facilities for the general public.

The number of recreational visits to the Northern Region grew steadily through the 1930's. In 1936, some 400,000 visitors were recorded, and during the last six months of 1939, the region's 17 national forests hosted 579,400 visitors. Of these, 31 percent came to fish, 16 percent to hunt, 6 percent for winter sports, and the remaining 47 percent for picnicking, swimming, camping, boating, and simple enjoyment of the outdoors. The Deerlodge attracted the largest number of visitors, followed by the Beaverhead, Gallatin, Lewis and Clark, Kaniksu, Helena, and Coeur d'Alene. Regional Forester Evan Kelley commented that it had become almost impossible to meet the public's demand for campground development, despite the impressive work of the CCC. [5]

Kelley said that the "contributions of the CCC to public recreation stand out among its greatest works." By 1937, it had constructed more than 1,000 miles of truck trails into the isolated, scenic backcountry of northern Idaho and northeastern Washington (then included in Region 1). Road and trail construction served multiple purposes—fire breaks and fire-control access, timber harvest and management access, and recreation and tourist access. Sixteen camp and picnic areas with table and bench fixtures and masonry campstoves were constructed. After the CCC began its work, recreational visits in the area rose by more than 50 percent. [6]

The Priest Lake-Sullivan Lake District on the Kaniksu received special attention because of its proximity to Spokane, Washington. Three camp and picnic grounds and a recreational road were built along Priest and Sullivan lakes. Between the two lakes lay an "exquisite mountain forest territory." New truck trails in the Coeur d'Alene offered "entrancing 'skyline' drives," while new campgrounds on the Lolo and Nez Perce National Forests allowed access to the Selway-Bitterroot Primitive Area and the Three Devils' country. Surveys indicated that most people wanted to go to the national forests "feeling that they are in natural wilderness, yet with the conveniences of an improved picnicking or camping area at their disposal." The public clearly had an intense and developing interest in national forest recreation opportunities within the region and something of a preoccupation with outdoor sports and wilderness. [7]

Recreation and Wilderness

Wilderness, or the state of perceived "wildness," has attracted many visitors to the national forests of the Northern Region. Although "wilderness" means different things to different people, for some visitors it denotes the "natural order of things" and a sense of frontier adventure. Thus, many come to the Northwest seeking, as one recent advertisement read: "A western adventure at the edge of wilderness." The Washakie Wilderness and its "wild animals and breathtaking scenery," according to the ad, "will restore the inner calm missing in 'civilization'." [8]

Although wilderness has come to mean a well-defined forest management area under the terms of the Wilderness Act of September 3, 1964, wilderness was before that time and before the advent of the modern environmental movement, as Aldo Leopold said, a "state of mind." Leopold, who became Acting Supervisor of the Carson National Forest in the Southwestern Region in 1912, urged that portions of the national forests be left in their wild state, with no paved roads or human habitations. Others in the Forest Service, such as Arthur C. Ringland and Ray Marsh (who worked with Leopold in Region 3), with Frank Waugh, Arthur H. Carhart, and—prominently—Bob Marshall in the Northern Region, began to recommend preservation of wilderness areas. [9]

Marshall, who spent his first "field tour" of duty with the Northern Rocky Mountain Forest and Range Experiment Station, was an avid outdoorsman. An intrepid hiker who seldom let a week pass without a hike of at least 40 miles through the backcountry, Marshall became an early proponent of wilderness preservation. In 1935, he used his rather substantial personal wealth, his enthusiasm, and his formidable organizational skills to form the Wilderness Society. Marshall described wilderness as "a region which contains no permanent inhabitants" and possesses no possibility of "conveyance by mechanical means." In wilderness, he said, people must depend exclusively upon their own efforts for survival, and because wilderness preserves the primitive environment, roads, power lines, settlements, and habitations (other than trails and temporary shelters) should be barred from them. [10]

In a more poetic vein, Marshall described wilderness as "he song of the hermit thrush at twilight and the lapping of waves against the shoreline and the melody of the wind in the trees." It is, he said, "the unique odor of balsams and of freshly turned humus and of mist rising from mountain meadows." It is "the feel of spruce needles under foot, and sunshine on your face and wind blowing through your hair." It is all of these things at once, he said, "that can only be appreciated with leisure." [11]

On a more pragmatic level, Ralph Space, who spent his very long career in the region, observed in 1988 that wilderness is "a place to go hunt and fish where other people can't go." And Charles (Chuck) H. Raddon, recreation, wilderness, and trails specialist with the Clearwater National Forest, explained that "a wilderness is a step back in time," that provides for a unique and distinctive experience. Wilderness also provides "essential protection for biological diversity, wildlife habitat, high-quality watersheds, and unique scientific and educational purposes." Jim Dolan fondly recalls Aldo Leopold's comment that "I am glad I shall never be young without wild country to be young in." [12]

Bob Marshall was appointed Chief of the Division of Recreation and Lands in 1937, and for a short time he greatly influenced the direction of wilderness and recreational planning at the Forest Service. In 1939, shortly before his death at the early age of 38, Marshall promulgated Regulations U-1, U-2, and U-3, providing directives for Forest Service management of primitive and wilderness areas. [13]

The Bob Marshall Wilderness, the first designated wilderness in the Northern Region, was created by the directive of Secretary of Agriculture Henry A. Wallace on August 16, 1940. Following the tradition established by designation of the Gila Wilderness in the Southwest Region in 1924, the Marshall Wilderness was created by combining and reclassifying three primitive areas, including the South Fork Primitive Area established in 1934. [14] In the years before World War II, the Forest Service and Region I provided the initiative and the leadership to reserve these portions of the national forest lands as primitive areas and wilderness areas where people might enjoy the woodlands in as close to their natural state as possible.

Norman Maclean, a teacher and author who grew up in Montana, has captured the spirit of the land, a land he described as "beyond civilization . . . where the earth and its community of life" are largely untrammeled by man, in *A River Runs Through It and Other Stories*. "We lived," he wrote, "at the junction of great trout rivers in western Montana, and our father was a Presbyterian minister and a fly fisherman. . . ." They assumed, he said," that all first-class fishermen on the Sea of Galilee were fly fishermen and that John, the favorite, was a dry-fly fisherman." The Big Blackfoot River " became a part of us," he wrote, as did the sky, the mountains, the rivers, and the lakes become a part of those others who experienced the land under the Big Sky. [15]

Trail Rides and the End of an Era

The American Forestry Association captured a sense of the frontier by sponsoring "Trail Riders of the Wilderness" expeditions into remote areas of the national forests in the Northern Region beginning in 1933. The rides became increasingly popular. In July 1938, the trip on horseback began at the Monture Ranger Station in the Lolo National Forest and led through the South Fork of the Flathead River and over the Continental Divide to Pearl Basin in the Sun River country. In 1941, the trailriders followed much the same route as the original expedition did in 1933 and entered the newly dedicated Bob Marshall Wilderness. [16] The rides were suspended during World War II, but resumed upon its conclusion. However, as the rides attracted more people, the expeditions were scaled down into smaller, shorter, selected excursions. For some years in the 1960's, the Wilderness Society sponsored similar horseback excursions into wilderness and backcountry areas, but the rides will always be a heritage of the 1930's.

The trail rides, recreational visits, and the region's construction and planning for recreation abruptly ceased with the declaration of war in December 1941. Clarence B. Swim and Victor T. Linthacum, for example, were among those whose primary staff duties were recreational planning and who were reassigned to other duties for the duration of the war. Linthacum became Assistant Supervisor on the Deerlodge. Others left the region for military service. By 1944, most forests were expending little energy and less money on recreation. The Lolo, for example, boasted a $75 annual recreation budget in that year. However, as the war neared an end and recreational use once again began to increase, it became evident that roads, trails, and CCC recreational facilities were "wearing out." [17]

The Modern Recreation "Movement"

Peace brought a massive regeneration of public interest in and demand for recreation within the national forests. Recreational visits in 1946 exceeded the total of any previous year and rose again in 1947. During the 1947 season, sport fishing increased 30 percent over 1946, with an estimated 281,000 anglers in action. Around 122,000 big-game hunters and 21,000 small-game hunters used the national forests during the fall 1947 hunting season. Under State-established limits, 80 antelope, 1,300 black bear, 46 grizzlies, 11,000 mule deer, 5,000 white-tailed deer, 10,200 elk, 107 moose, 96 mountain goats, and 3 mountain sheep were bagged in that season. [18]

Overcrowding and Rising Costs

By the end of 1947, camping and recreational areas on the national forests were regularly overcrowded, and maintenance and sanitation had become a "growing problem." Many of the recreational units built by the CCC had "deteriorated beyond repair," and congressional appropriations to the Forest Service as well as the Forest Service's allocation of funds to recreation had failed to keep pace with real needs. Moreover, very real fire hazards and basic operational deficiencies—a result of wartime neglect—forced Region 1, as most regions, to devote its funds, manpower, and energies to fire protection, restaffing, and basic operations. [19]

Congress, in fact, advised the Forest Service that recreational use should generate its own revenues to offset the cost of constructing, maintaining, and administering recreational facilities in the national forests. As a result, in 1948 Region 5 (California) experimented with leasing formerly public campgrounds to private individuals (and in one case to Eldorado County). The success of these experiments and the need for revenue to apply to recreational uses produced a Forest Service directive authorizing regions to establish fee-camping areas operated variously by private interests and by the Forest Service. Fees for camping were not to exceed 50 cents per day per car party of six people (and 10 cents for each additional person, with no charge for minors under 12) and 25 to 50 cents per day for picnicking or day use. The forests were required to maintain "many small free camp and picnic areas in addition to areas on which charges are to be collected." [20] Thus the Forest Service began to depart from the tradition of free public recreation on the national forests.

The revenues from recreational users did help the Forest Service accommodate the public's rising interest in outdoor recreation. In addition to increases in the traditional recreational uses of Region 1 forests, in such activities as fishing, hunting, camping, and summer home development, the region began to experience a surge of interest in more novel recreational uses such as skiing and winter sports, mountain climbing, hiking, and trail riding and packing.

Hiking and Climbing

Mountain climbing and hiking, supported by the region's development of trails, paths, and guidebooks, have become increasingly important elements of outdoor recreation. Although the forested areas of Region 1 lay in the mountainous areas of northern Idaho and western Montana, one particular mountain—Granite Peak—has long fascinated the climber.

At 12,842 feet in elevation, Granite Peak is Montana's highest peak. Located in the Beartooth Range on the border of the Gallatin and Custer, near Yellowstone National Park, it is the easternmost of a chain of four gigantic peaks that includes Villard Peak (12,300), Mount Spofford (11,780) and Glacier Peak (12,200). Flanked by perpetual snowfields and glaciers such as Grasshopper, Granite, Skytop, and Hidden Glacier, and surrounded by other rugged Beartooth Range peaks and plateaus, these peaks have long attracted sightseers, hikers, and climbers.

A U.S. Geological Survey party headed by E.M. Douglas first attempted a climb of Granite Peak in September 1889. They followed the main ridge of the south slope to within 200 feet of the summit, where they were stopped by vertical cliffs and foul weather. An attempt in 1894 by a party headed by James P. Kimball (which had succeeded in climbing Mt. Villard, Mt. Wilse, and Mt. Wood, among others) also failed short of the Granite Peak summit. Weather aborted an attempt by a party that included Fred Inabnit of Billings in 1910. Inabnit headed and accompanied numerous climbing expeditions between 1907 and 1923, none of which quite achieved the Granite Peak summit, but he was instrumental in exciting public interest in mountain climbing and in stimulating official Forest Service interest in conquering the Granite Peak. [21]

The first successful climb of Granite Peak began on August 25, 1923. A party of foresters including Assistant District [Regional] Forester Elers Koch; R.T. Ferguson, Supervisor of the Beartooth National Forest; and J.C. Whitham, Supervisor of the Custer, with Rosebud District Ranger Guy O'Neil and Alvia Shriver, a forest guard, met a group from Billings that included Harold Rixon, W.H. Banfill, George Osten, and Verne Johnson, who with Fred Inabnit were all experienced climbers. The climbers left Rosebud Lake, headed up a trail along Slough Creek and then branched onto a faintly blazed trail along Mt. Fairview that had not been used since 1916. By midafternoon the party reached the timberline, and the next morning they left their horses at a basecamp, moving ahead through Froze-to-Death Pass to the rim of the upper Rosebud Plateau to Mount Tempest. The climbers reached Avalanche Lake after a laborious hike and made camp while Koch, Whitham, and O'Neil reconnoitered the ascent to Granite Peak. [22]

The climbers agreed to divide into two parties for the ascent the next day. The first, which included Koch, Ferguson, and Whitham, was to approach from the northeast ridge, while Inabnit, O'Neil, and the others climbed the southwestern slope. Whitham's brief narrative of the arduous climb ("up they toiled, foot by foot") which brought him, Koch, and Ferguson to the top at 11:10 a.m. on August 29, 1923, conveys the intensity, excitement, and achievement of this first successful climb. [23]

The challenge and excitement of Granite Peak attracted growing numbers of adventurers and widespread public interest in the Post-World War II decades.

Once the feat had been accomplished, other climbers followed. The challenge and excitement of Granite Peak attracted growing numbers of adventurers and widespread public interest in the post-World War II decades.

In August 1953, George D. Forney and L.B. Beckham of the U.S. Geological Survey, and Vern W. Waples of the Montana Fish and Game Department reached the top, and 2 years later, Region 1 foresters Thad Lowary, James R. Stephenson, and Edward Slusher reached the summit. Slusher later prepared a description of a "passable route" to the top of Granite Peak that others could follow. And they did. A Billings Climbing Club expedition in 1962 left a "registration capsule" on the peak; the next year Thad Lowary, the Regional Budget Officer, organized a climb that included Shirley and Sam Braxton and Gardiner Miller of the Rocky Mountaineers Climbing Club; Don Gordon, an experienced climber from Seattle; and foresters Hank Rate and Bob Van Giesen of the Custer. Arriving about noon on August 4, 1963, the party (including Shirley Braxton as the first woman to reach the top) left a permanent registration box on the peak. [24]

On the lower elevations, hikers began to flock in greater numbers to the pathways and trails, and the Forest Service and the region responded by developing historic and scenic trails. Those trails have become a major recreational attraction of the Northern Region and are reviewed in the following chapter.

Caving

In the 1950's, while some were climbing the highest mountains, a few intrepid adventurers began to explore below those mountains, entering some of the numerous, mostly unexplored caverns that were known to exist, as well as some that they discovered. There was, however, relatively little systematic approach to such exploration, and no discernible effort either to publicize or to capitalize on such discoveries by making the caverns tourist attractions. Most were inaccessible or difficult for the general public to reach.

Although caves were known to local residents in the early years, spelunking as a form of recreation was virtually nonexistent. One cave, known as the Morrison Cave, located east of Whitehall, Montana, and named for the cowboy who discovered it while searching for stray cows, was opened on a fee basis by the owners of the land in the 1920's and 1930's. [25]

During the Great Depression, the State of Montana, using CCC labor and equipment, helped develop Morrison Cave by improving lighting, building steps and stairways, and enlarging the access. A tramway (which was replaced with a roadway after World War II) was built to move visitors to the entrance, and shortly before the war the cave was officially dedicated as the Lewis and Clark Caverns in memory of the explorers who traveled the nearby Jefferson River. Although the caverns are not on national forest lands, the adjacent Deerlodge and Beaverhead National Forests provide a scenic backdrop and recreational areas for visitors. [26]

In response to an official inquiry by the National Speleological Society in 1950, the forests in Region 1 reported, insofar as was then known, the existence and status of the caverns within the forests. The Custer National Forest reported the largest number of caves, most of which had been damaged in some way, some of which had never been explored, and most of which were very difficult to reach. The caves listed by the Custer included Mystic Cave, Little Ice Cave, Bear Canyon Cave, Hole in the Wall Cave, and Blackie Ice Cave. The Helena National Forest reported only the Ophir cave, which contained a large number of massive chambers. The Deerlodge reported only that five or six caves were "rumored" to exist, but none had been precisely located, explored, or improved. Limestone Cave on the Flathead National Forest was reasonably accessible and not dangerous, but contained no crystals, stalagmites, or stalactites. The Lewis and Clark caves were all located in Fergus County and included Ice Cave, Lime Cave, Devil Chute Cave, and Bottomless Pit Cave. [27] By the lack of mention in official memoranda, newspapers, and recreational brochures, caving seems to have been a minor recreational activity.

Recently, according to Jim Dolan in the Regional Office's Division of Recreation, Wilderness, and Lands, a resurging interest in caving has led the region to conduct a new inventory of caves. According to Dolan, the Bob Marshall Wilderness contains some of the deepest cave complexes in the United States. Dennis Gordon, with the Sula Ranger Station on the Bitterroot National Forest, has been assembling the data. Explorations also have been underway on cavern systems near Silvertip Mountains in the Scapegoat Wilderness. [28] Still, it must be said that the caverns of Region 1 are a known but largely undeveloped tourist and recreation resource.

Winter Sports

Winter sports are for the most part a post-World War II phenomenon in the Northern Region. While established activities such as hunting and fishing soared after the war, there was relatively little precedent for the sharp increase in winter sports in the region. Eric White, who moved to Montana with his family in 1915 and after service in the Army during World War I began a Forest Service career that spanned 36 years in Region 1, recalled that skiing was more of a diversion than a source of recreation in the 1920's and 1930's. He and a few other foresters occasionally used skis in preference to snowshoes. Skis, which could not be purchased in the stores, had to be crafted by local artisans. White said that the most important item of apparel for skiing was a good pair of wool underwear. The wooden skis were waxed with a formula obtained from a Finlander who worked on the Elkhorn Ranch, he said, and some people tacked the hide (hair side out) of an elk's leg to the bottom of the ski. The hair would smooth out for gliding or stand back when kicking and turning. [29]

The lack of modern equipment undoubtedly discouraged the development of skiing as a popular pastime. However, after the war, veterans trained in winter skiing took to the slopes as a form of recreation, and the introduction of plastics and vinyls began to revolutionize the industry.

At this time, the region also began to take a serious interest in snow conditions, both for recreational purposes and watershed measurements. Regular snow measurements and fixed snow, measurement sites were established in the early 1930's. These sometimes amounted to little more than blazes or markers, and later standing measuring rods located at specific points. Snow surveyors measured snow depths, calculated water content, and recorded observations about wildlife and vegetation. Walter S. Peterson, for example, remembers making the first snow measurements east of Strawberry Mountain, in the Swan Range on the Flathead National Forest, in 1945 or 1946. He and Clyde Scovel experienced many misadventures snowshoeing through the forests on the arduous winter snow course, where measurements of 30 feet were sometimes made and 11- to 16-foot winter snows were standard. [30]

Now, snowmobiles and even helicopters have replaced the arduous and often dangerous winter trek on skis and snowshoes. In addition to their watershed implications, snow measurements contribute to winter recreation planning and use.

Bob Harmon in the Division of Recreation and Lands announced a 162-percent increase in the number of skiers visiting the Region 1 national forests in the 1947-48 season. Counts indicated that 11,800 individual skiers made 92,000 visits, and that another 58,000 visits were made to adjoining privately owned lands. Major ski areas, many of which had been recently equipped with simple lifts and facilities, included Big Mountain (Whitefish); Silver Lake (Anaconda); Willow Creek (Red Lodge); Lookout Pass (Mullan); Kings Hill Great Falls); Gibbons Pass (Darby); West Yellowstone, Libby, and Elkhorn Springs (Libby); North and South (St. Maries, Idaho); and Chewelah Hill (Chewelah, Washington). The Lionhead Ski Lift on West Yellowstone Mountain began operating in 1946, was permitted by the Forest Service in 1948, and operated successfully until 1961." [31]

The surge of interest in winter sports cooled somewhat with the outbreak of war in Korea and possibly because of the development of modern lifts and ski areas in Colorado and New Mexico in the early 1950's. However, as the 1960's approached, new ski "bowls" in Region 1 began to attract more and more visitors.

In 1962-63, some 152,000 skier visits were recorded in the region. This number rose to 306,000 five years later and was approaching 350,000 by the end of the decade. Bridger Bowl, near Bozeman on the Gallatin National Forest, and Big Mountain, near Whitefish, Montana, on the Flathead National Forest, each reported about 72,000 skier visitors in the 1968-69 season. Red Lodge, on the Custer, had 30,000 visitors; and Snow Bowl on the Lolo, 29,000 skiers; Schweitzer Basin on the Kaniksu, 50,000 skiers; and Kings Hill on the Lewis and Clark, 34,900 ski visitors. Areas such as Lost Trail Pass on the Bitterroot, Grassy Mountain at Helena, Corona Lake on the Lolo, Wraith Hill on the Deerlodge, and Teton Pass on the Lewis and Clark attracted substantially smaller numbers. [32]

The ski and tourism industry received a boost in 1969, when native Montanan Chet Huntley, of NBC News fame (with a group of investors including Conoco, Chrysler, Bulington Northern, Montana Power, and Northwest Orient Airlines), acquired the Crail Ranch to develop the "Big Sky" resort, complete with ski lifts for winter and golf courses for summer. At a meeting of the Northern Rocky Mountain Ski Area Operator's Association, Huntley invited and received resolutions supporting the development of the Big Sky resort. That meeting was attended by a veritable "who's who" of winter sports in the region, including Edward Schenk, then president of the Association and general manager of Big Mountain Ski Resort; Robert Brandenburger, the regional ski area planner for the Forest Service; Leroy Schultz, the

regional ski lift engineer for the Forest Service; V.J. Gamroth, manager of Rainy Mountain Ski Area in Dillon; James Thompson, general manager of Kings Hill Ski Resort in Nyehart, Montana; Loyal Koessler, manager of Red Lodge Mountain Resort; Emile Cochand, manager of Bridger Bowl Ski Resort; Richard McCracken, president of the Northern Division of the U.S. Ski Association; and Sam Wormington of Schweitzer Basin Ski Complex in Sand Point, Idaho. Brandenburger believed that the ski area operators and the Forest Service had a good working relationship. The Forest Service, he said, was recognized "as having expertise in recreation planning, landscape architecture, engineering, and related fields to give assistance to the industry." [33]

Some years later, in March 1974, only a few days after Chet Huntley's death, the Big Sky resort opened. For winter enthusiasts, it sported a four-passenger, French-constructed gondola that carried 1,200 skiers an hour some 1,500 feet up the mountain. In 1976, Boyne USA, operator of ski and golf resorts in Michigan, acquired the Big Sky resort, and has continued to operate it. Another lift, installed in 1984, moves 600 passengers per hour. [34] Big Sky was in many ways a cooperative effort by the Forest Service, the State of Montana, and private industry. It has become a centerpiece for winter sports and regional tourism.

Although less publicized and less commercialized, cross-country skiing is one of the region's fastest growing winter sports. The sport provides winter uses for the expanding system of hiking trails in the national forests, as does snowmobiling. Using surplus military "snowmobiles" introduced after World War II, an entire new winter sports industry was founded upon these machines. Clubs have been organized, and competitive events are staged at "runs" on and adjacent to national forest lands. Snowmobiling also is a popular family sport. West Yellowstone, Montana, located on the Gallatin National Forest and adjacent to Yellowstone National Park, calls itself the "Snowmobile Capita of thel World" [35]

Operation Outdoors

In response to the growing awareness that recreation and tourism were achieving, Region 1 offices provide "Recreation Opportunity Guides" for visitors. The Wisdom Ranger District on the Beaverhead National Forest, for example, issued such a guide, which included descriptions of downhill ski trails (Saddle Mountain, Anderson Mountain Road, and others), ski touring trails, and snowmobile trails and described boating, camping, and fishing opportunities as well as hiking and autotouring trails. [36] The region now boasts excellent informational brochures on every aspect recreational uses of the national forests.

The reality was, as Arnold Hanson, Assistant Chief of the Division of Information and Education, explained to a travel clinic sponsored by the Pacific Northwest Travel Association and the Montana State Advertising Department in Great Falls in 1967, that "tourism in Montana is big business and getting bigger, and much of it is related, in one way or another, to national forest outdoor recreation opportunities." Recreational visits to the 10 national forests in Montana, he said, increased from less than one-half million in 1946 to almost 7 million in 1965. Where most recreational visitors before World War II were local folks "out for a day of hunting or fishing," or a small number of out-of-state visitors "who camped out in the brush," all of whom, he said, had "very little purchasing power," the new recreation mostly came from outside the region. [37]

What was happening in the Northern Region was, of course, a reflection of trends throughout the country. A 250-percent increase in recreational use of the national forests between 1946 and 1955 alerted the Forest Service to the new situation. In Region 1, the number of recreation visits had risen from 288,598 in 1926, to 428,380 in 1936, and to 754,898 in 1946 before soaring to over 2 million by 1956. Edward P. Cliff, then Assistant Chief of the Forest Service, announced the initiation of a USDA 5-year National Forest recreation program, Part I of "Operation Outdoors," in January 1957. Operation Outdoors was intended, he said, to provide recreational opportunities such as camping, picnicking, swimming, skiing, hiking, hunting, wilderness travel, mountain climbing, and fishing throughout the national forests. The Forest Service, Cliff said, intended to keep its facilities "simple and appropriate to the environment" and would not conduct tours, give lectures, or sponsor organized sports activities. In part, the new program recognized that the major recreational facilities in the national forests, built by the CCC, were now over 20 years old and inadequate for the demands being placed on them. Unfortunately, congressional budget allocations for Operation Outdoors invariably fell short of the requests and needs. [38] Nevertheless, both within Region 1 and nationally the Forest Service was beginning to respond to the new demands for recreation being put on the forests.

The new visitors, Hanson continued, "are seeking outdoor recreation with all the comforts of home. They want to 'rough it' in comfort." He sensed that fewer visitors place a premium on solitude and roughing it than once was the case. These visitors prefer to headquarter in local communities, take day trips into the forests, and return each evening "for a hot shower and a comfortable bed." Others head for a resort, such as a dude ranch, ski lodge, or the headquarters of an outfitter and guide. From these secure bases they "journey into the wilderness" and other portions of the national forests for fishing and hunting trips, skiing opportunities, boat trips, and similar adventures. [39]

Although the region received its first funding for Operation Outdoors on July 1, 1957, funding was never equal to the needs of the program, "especially in personnel to do the job." Under the program, each forest developed a recreation plan, the first of its kind. Most plans, however, severely underestimated the growth in visitation to the Northern Region, a growth occasioned, in part, by the completion of the new interstate highways (I-15, I-90, and I-94), which provided much easier access to the national forests. Improved aircraft and airports also changed the visitation patterns in the region. Visitors began to come from everywhere, and they came in greater numbers. The recreation plans, however, proved useful in later multiple-use planning. [40]

One of the problems that began to develop as a result of the greater use of lakes and streams in the region was that access to choice recreation sites was being limited by earlier programs permitting summer homes on lake and stream banks. The region began to open access to choice recreation areas by curtailing summer home permits and where possible revoking, not renewing, or purchasing existing rights. Following the initiation of Operation Outdoors, Congress initiated a study by the National Outdoor Recreation Resources Review Commission of outdoor recreation resources administered by the various branches of Government. [41] Thus, while much more would be needed to serve the burgeoning public demands for recreational resources in the national forests of Region I, by the close of the 1960's a positive new beginning had been made.

Packing (Outfitting and Guiding)

Old traditions, wilderness, and at least some modern camping comforts combined to make the outfitter and guide industry a major recreational attraction in the region after World War II. The "outfitter" as defined by State law is a person who, for compensation or other gain, "provides any saddle or pack animal or animals, for any person or persons to hunt, trap, capture, take, or kill any game animal or game bird, or to catch any of the fish of the state. [42] Although outfitting and guiding in recent decades most often relate to sightseeing, touring, or adventuring rather than hunting and fishing; hunting, fishing, and packing reflect the older; traditional "way of life" in the region. The new commercial outfitters have institutionalized those traditions and made them available to recreational visitors. As one outfitter stated in 1957:

> For the vast majority this magnificent back country would never be enjoyed if outfits like ours were not available to the public. The U.S.Forest Service realizes this more and more each year and are now doing their best in cooperating with outfitters that [visitors] may utilize this great recreational resource which is under their direct supervision. [43]

The Forest Service undoubtedly provided some of the inspiration for the trail rides and outfitting expeditions into the wilderness. The American Forestry Association's Trail Rider Expeditions, mentioned earlier, popularized the idea. For example, the sixth annual expedition departed from the Monture Ranger Station on the Lolo National Forest and, taking to "boots and saddles and by way of forest trails soon leaves civilization behind." The ride included a crossing of the Continental Divide into the Sun River country, a visit to the natural fortress known as the Chinese Wall, a call at the lookout on Pagoda Peak, and a ride across the rugged Swan Range down to Holland Lake. The last ride before the outbreak of World War II retraced the route of the first ride in 1933 (and much of the 1938 route) through the trails of the Bob Marshall Wilderness to Big Salmon and Holland Lakes. [44] Such rides attracted national publicity, and the colorful "packing" tradition preserved at the Remount Depot helped promote interest in wilderness excursions.

After the war, "outfitting" began in earnest as Americans obtained the leisure and the money to visit the backcountry. The region began to use a "Packers Occupancy and Grazing Permit" to give outfitters a special access to certain forest or wilderness areas. Most of the commercial packers and outfitters in the region were members of one of three associations recognized under Regulation A-9, and working relationships with these organizations were good. Both the Forest Service and the outfitters cooperated in developing desired—and proper—policies and practices. In Idaho, outfitters are given exclusive areas and operate under State licenses in areas permitted by the Forest Service. Montana allows overlapping areas under Forest Service permits. [45]

Many private parties also maintain saddle and pack stock and enjoy recreational expeditions into the national forests and wilderness areas. As these private excursions have increased, conflicts with professional outfitting expeditions have developed. Consequently, the region has begun to regulate both private and commercial "outfitting" uses of the forests more strenuously. "People can mix in the wilderness, but pack and saddle stock of different outfits cannot" [46]

Illegal outfitters, or "outlaws," who are not licensed by the State or permitted by the Forest Service are discouraged by the industry, as well as by State and Federal authorities. However, the Forest Service discovered that the greater difficulty usually derived from private, noncommercial packing groups, "many of whom have haywire outfits," who just camped anywhere and left unsightly and unsanitary camps. [47]

Forest Service rules and restrictions governing outfitter use of wilderness areas have become stronger, for the protection of the wilderness and the user. Commercial outfitters, whose business has burgeoned in recent years, initially resisted these restrictions, but a mutually acceptable policy implemented in 1987 has enabled the commercial outfitters to tolerate more restraints while the Forest Service and State authorities have not only discouraged, but have actively pursued, illegal outfitters. [48]

The problem, of course, involves more than outfitting; it relates to widening public use of wilderness areas. Aldo Leopold, who pioneered in wilderness designation in the Southwestern Region in the 1920's, observed that "the day is almost upon us when a pack train must wind its way up a graveled highway and turn out its bell mare in the pasture of a summer hotel. When that day comes," he said, "the pack train will be dead. And the diamond hitch will be merely a rope and Kit Carson and Jim Bridger will only be names in a history lesson." [49] Although wilderness and the outfitter may have helped satisfy the desire for adventure, there was (and is) a conflict in the desire to extend wilderness recreational opportunities to as many people as possible if those opportunities involve diminishing the character of the wilderness.

Wilderness Carrying Capacity

Technical studies are attempting to resolve the difficult problem brought on by the basic conflict between establishing and preserving "wilderness" and facilitating the "use" of wilderness. For example, a 1979 study of the recreation carrying capacity of the Selway-Bitterroot Wilderness, affecting the Bitterroot, Clearwater, Lolo, and Nez Perce National Forests, observed that in 1975, 15,600 visitor-use days were reported in the rugged 64,000-acre Absoraka Primitive Area, while that same year the Desolation Wilderness in California, approximately the same size as the Absoraka Primitive Area, recorded 256,100 visitor-use days. "Is the Desolation Wilderness being overused? Or, is the Absoraka Primitive Area being underutilized? These questions address the perplexing problem of wilderness carrying capacity." [50]

The study pursued the problem with the understanding that "each set of wilderness conditions and experiences that are sought as management objectives implicitly carry with them some limit in the kinds and amounts of recreation use that can be tolerated." [51] Based on studies at the Intermountain Research Station, the Forest Service has more recently adopted a different approach to evaluating "impact" and carrying capacity through the concept of Limits of Acceptable Change (LAC). Under LAC, a more measurable determination of carrying capacity is realistically the wear" that may become apparent

through use. Even assuming that a reasonably accurate determination of carrying capacity can be established, the problem of developing policies and actions ensuring that the limits of tolerance are not exceeded is difficult. Moreover, evidence that limits of tolerance have been surpassed may appear only long after the event, perhaps years or decades. Thus, wilderness is not an easy resource to use or to manage. Acknowledgment of that condition is probably the first step in effective management.

The Whitewater Management Plan for the Selway River provides a good example of the objectives and techniques of managing forest resources for recreational purposes. The Selway River, in Idaho, includes a 47-mile whitewater stretch between Paradise and Selway Falls. It is the only river in the Nation to receive instant inclusion as a Wild and Scenic River under the authority of the Wild and Scenic Rivers Act of October 2, 1968. The Selway offers the opportunity for "outstanding solitude while traveling through a canyon of remarkable natural beauty and challenging whitewater rapids." [52] Once a party enters the river at Paradise there is no return, and they are wholly dependent upon their own resources.

But wilderness, or "wild and scenic" designation in itself generates public interest, popularity, and use. Publicity, curiosity, and the very real combination of wildlife, fish, scenic views, and white- water challenge have drawn a considerable influx of recreationists to the river. The Selway River Whitewater Management Plan (1976), for example, began with the observation that:

> In recent years outdoor recreation has undergone a tremendous growth, subsequently placing heavy use undeveloped back-country areas. The potential for lasting evidence of this use, worn campsites, trash accumula tions, and trampled vegetation, also grows. If the Selway River is to continue to exist in a pristine state, it is vital that the visitor accept a more active role in protecting this area. Each individual should make every effort to pass through the Wilderness with an absolute minimum impact on the land. It should be a matter of pride for every Wilderrness visitor to leave no mark of his passing. [53]

Rafting and White Water Adventures

Many forest and wilderness travelers today take advantage of professional guide services who provide raft, canoe, or kayak expeditions on the region's many scenic rivers and waterways. The Flathead River in Montana and the Salmon River in Idaho, as well as the Selway and many other rivers and waterways that pass through or adjacent to the national forests, are major recreation thoroughfares. Professional guide services provide both fishing and adventure outings for visitors. The services are licensed for the protection of the guide services and their visitors, and access to the waterways is supervised, both as a way to protect the resources and as an essential mechanism for responding to emergencies that might occur on the sometimes dangerous waterways.

River rafting has become an important business for commercial outfitters on the Selway and in the region at large. Under the premise that a wild river and the wilderness it passes through are fragile works of nature, regulations affecting the use of the Selway River seek to prevent the imprint of people in its environs. Access to the Selway is limited to four commercial outfitters each year, each of whom may make four launches with not more than 16 people in a party. Reservations for commercial and personal trips must be made in writing, and approval is set only for pre-established launch dates. Unsuccessful applicants are placed on a waiting list on the basis "of a randomized sequential list of names from the computerized program." [54]

Policies that seek to preserve the pristine, natural (nonhuman) environment of the wilderness include the provision that a party member may make only one float trip, that all unburnable and discarded materials must be packed out, and that no soaps or detergents may be used. Human wastes must be buried at least 100 feet above the high water mark and toilet paper burned; dishwater, food drainings, and wet garbage must be buried; and campsites must be left such that the only evidence of occupation is at most a footprint in the sand. [55] Indicative of both concern by the public and the "methodology" of modern management techniques is the fact that the development of the Selway River whitewater management plan involved extensive technical study and consultation with about 100 persons involved in recreation—guest ranch operators, commercial and private floaters, State regulatory authorities, a Sierra Club representative, attorneys, and in-service specialists. [56] Recreation management plans for the Salmon, Flathead, and other major waterways of the region incorporate many of the features of the Selway plan, plus other features such as regularly scheduled use surveys and wildlife, fish, and biological studies.

Recreation and Forest Management

The Kootenai National Forest multiple-use plan (1972) appropriately observed that "harmonious land management of the Kootenai's resources is like a complex symphony which recognizes the land capabilities and constraints in the satisfaction of man's needs." Land management planning recognizes and is "responsive to the changing needs of people at the local, regional and national level. It must stand the test of time as to how well it serves the continuing public need." Thus, "popular consensus" and "vocal minorities" are part of the planning process, but are not the process; the final decisionmaking is the responsibility of the Forest Service. [57]

Completion of the Libby Dam and the opening of 92-mile-long Lake Koocanusa in the early 1970's created new recreational demands on the Kootenai, which previously had little outside visitation. Only since World War II have the northernmost national forests in Region 1, including the Kootenai, the Flathead, and the Idaho Panhandle, become both accessible and attractive as year-round recreation areas. Camping, fishing, hiking, hunting, and floating attract ever-larger numbers of recreationists into northern Idaho. Winter sports, including skiing, snowmobiling, and now camping and hunting, are extending the recreational calendar. Off-season use of cabins and fire lookouts owned by the Forest Service has been encouraged by the region, which makes unused facilities (usually rustic and primitive) available to the general public for nominal fees and a permit. Since World War II, water sports, often facilitated by the development of new dams and reservoirs, are attracting new visitors, some of whom are becoming permanent residents.

Southwest of Lake Koocanusa, which is on the Kootenai River, and on the upper reaches of the Clark River, Thompson Falls and the Noxon Rapids Dam and Reservoir provide lake-centered recreational opportunities for visitors. West of Lake Koocanusa, in the Idaho Panhandle National Forest, are Pend Oreille and Priest Lake which, with Coeur d'Alene Lake to the south, offer water recreation opportunities for the almost 400,000 residents of Spokane, Washington, and the surrounding region. Coeur d'Alene, Idaho, has only recently become the tourist center of the northern reaches of the inland empire. Idaho Panhandle forester Clyde Blake suggests that tourism is now the growth industry of the Idaho panhandle. In 1987, the Idaho Panhandle National Forest recorded a 20-percent increase in tourism. Perhaps indicative of the changing uses of the national forest resources, Potlatch Lumber Company, which operated a massive sawmill on the banks of Pend Oreille, within what is now the city limits of Coeur d'Alene, has closed the mill and turned its properties over to developers. The development of tourism and

recreational uses of forest resources has necessitated new community-forest liaisons, partly achieved through cooperation with State and local committees and agencies such as the Idaho Trails Council, the North Idaho Travel Committee, the (tri-county) Natural Resource Committee, the Kootenai Environmental Alliance, and the National Wildlife Federation. [58]

The individual forests in the region are central to coordination and planning for tourism and recreation in the Idaho panhandle and in western Montana. A major portion of the land and the recreational resources are owned by the Federal Government and managed by the Forest Service. As was true of the timber industry, the recreation industry in the region is inextricably associated with the management policies of the Forest Service.

Significantly for the Idaho Panhandle and the other forests of the region, expansion of developed and dispersed recreational opportunities is a major management objective. [59] The growth of recreational visits and tourism tends to disproportionately affect the national forests. For example, the Beaverhead National Forest visitor information brochure, distributed in the 1980's, notes that:

> Recreation interest is increasing in the Forest and the surrounding area Attractions such as the high country, the Anaconda-Pintler and Lee Metcalf Wildernesses, the many lakes and streams, the variety and abundance of fish and wildlife, and the relatively primitive land character are drawing ever-increasing numbers of visitors. [60]

But as the number of visitors has increased, private landowners, "who have traditionally accommodated the recreation public," have closed their lands to such use, thus sharply increasing demand on public lands. [61]

The Northern Region has some of the most spectacular lakes, waterways, mountains, and scenic wonders of all the nation's forested lands. It is a veritable last frontier for wilderness and for hunting and fishing. Its scenic trails, including the Lewis and Clark Trail, the Nez Perce National Historic Trail, the North Country National Scenic Trail, and the Continental Divide Scenic Trail, are among the most spectacular and historic, and the national forests of the region encompass or are contiguous to such outstanding national monuments and parks as the Custer Battlefield, Glacier National Park, and Yellowstone National Park. In the past, recreation has distinctly been peripheral or secondary to forest resource management, but indications are that recreation management and planning are to be major concerns of the region in future decades.

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59. Idaho Panhandle National Forest, Forest Plan: Overview (Coeur d'Alene, ID: USDA Forest Service, Region 1, IDP NF, 1987), pp. 6, 10.

60. Beaverhead National Forest, Visitor Information (Dillon, MT: n.d., n.p.).

61. Ibid.

Chapter 11

Roads, Trails, Ranger Stations, Lookouts, Support Structures, and Special Land Use

Human history, in the form of material remains of the past, is one of the resources recognized by Region 1. Not only do these "cultural" resources reflect the history of the uses of the forest lands, but the trails, roads, towers, and structures built by the Forest Service also demonstrate the changing infrastructure of regional forest management since 1908.

Most of the forests in the region already have sites listed in the National Register of Historic Places or are in the process of nominating structures or sites for inclusion. Among the more interesting and significant of these are Lochsa Ranger Station, Fenn Ranger Station, Hornet Peak Lookout, Nine Mile Remount Depot, and the Lolo Trail. National forests, ranger districts, and public-service organizations have all contributed to the preservation of the region's history.

Cultural or historical resources are administered under the general supervision of the cultural resources specialist assigned to each national forest. (Recent cuts in the budget have forced some neighboring forests to share these positions.) Forest plans provide for cultural resources management staffing to include archaeologist and historian positions. This chapter reviews some of the more important cultural and historical resources in the region and emphasizes yet another dimension of national forest management, mandated by Congress in such acts as the 1966 Historic Preservation Act and the 1979 Archaeological Resources Protection Act.

Roads

When the first forest reserves were created in 1891, most of the travel routes in the region were limited to rivers, trails, and wagon roads. Local residents and the Forest Service (after 1905) talked about the need for better roads, but little was done due to lack of funds. A Forest Service report prepared in 1910 became the catalyst for the movement to improve roads. That report emphasized fire protection as an imperative for the construction of more access roads in the region:

> It has been accepted generally as true that one of the main reasons for the disastrous forest fires of the past season was that they started in inaccessible places or portions of the forests which were not regularly patrolled. Also, that had the Forest Service been given a sufficient amount of money for the construction of the necessary trails and telephone lines and for a better patrol, many of the fires would not have spread. [1]

Few roads were built during the first few decades of Forest Service management, and roads built by either the Forest Service or by loggers were little more than trails for the passage of mules and oxen. The "automobile age" and congressional highway funding began to provide access to Northern Region forests in the 1920's, but as late as 1945 many of the forested areas still were roadless. In 1921, Congress began to fund construction of highways that passed through the national forests, but it was not until the 1933—42 period, when the Civilian Conservation Corps was active, that extensive road construction was undertaken in the national forests in Region 1. The number of miles of roads in the national forests doubled during this decade. [2]

During World War II, some roads were built to aid in the war effort. For example, roads were built in the Beartooth Range in 1940-42 at elevations of up to 7,000 feet to aid in mining chrome deposits on the Custer National Forest. The Musselshell timber access road on the Clearwater was built in 1943 using local labor and Italian war internees. [3]

In 1952, Congress appropriated $22.5 million for road construction in the national forests. Region 1's share of this appropriation was approximately $4.25 million. During the 1950's, forest engineers upgraded many of the older roads and constructed new roads. By 1955, some 13,000 miles of improved roadways served the region; 30 years later there were some 31,000 miles, most maintained by the Forest Service. [4]

Roads designed, constructed, and maintained by the Forest Service fall into one of three categories:

1. Arterial roads—paved, two-lane roads designed to take heavy traffic at moderate speed (5 percent of Region 1 roads)

2. Collector roads—medium standard one-or two-lane all-weather roads used for access to timber or recreation (20 percent)

3. Local roads—minimum standard narrow, single-lane roads used for a specific purpose such as timber, grazing, electronic communication, dams, or fire control (75 percent)[5]

Roads exist or are built in the national forests to move people and resources. Interdisciplinary teams of Forest Service specialists plan the required transportation facilities and evaluate their

effects on the environment. Before a road is constructed, a resource inventory of the area is made. Information and opinions are gathered from soil scientists, geologists, foresters, engineers, archaeologists, hydrologists, wildlife biologists, landscape architects, and others. Public involvement and opinion are sought throughout the project planning and decisionmaking process. [6] Environmental impact statements, required by the National Environmental Protection Act, are published for all road construction projects. Regional Forester Charles L. Tebbe in 1957 stated that the need for an adequate road system was critical to management of the 25 million acres of national forest land in Montana, northern Idaho, and northeast Washington. "Without access to land," Tebbe said, "the fruits of the land cannot be available to people; nor can the managers of land do an adequate job of protection, and care, and management". [7] But what once appeared to be a very forthright and reasoned statement of purpose has since been vigorously questioned.

Environmentalists now argue that "road construction is one of the biggest causes of environmental damage on the national forests. Erosion from the construction itself, with the use of heavy machinery, silts up streams and rivers, damages fish habitat, and degrades water quality." Moreover, "along with timbering and motorized access, roads can destroy wildlife habitat" for species such as bear, elk and "others that avoid [human contact]." [8] Although road construction may adversely affect wildlife habitat, it is generally essential for human access. Modern highways, and the ancient historic trails as well, reflect upon human uses of forest resources in the Northern Region.

Historic Roads and Trails

The Forest Service today administers a wide range of roads and trails for the public good. Many of these are both historic and scenic. One of the oldest roads is in the Sioux District of the Custer National Forest—the old Medora-Deadwood and Belle Fourche-Baker Stage routes, which crossed the grasslands in the 1870's and early 1880's. In some places, one may still see the ruts.

Highway 12, known as the Lewis and Clark Highway, runs across Montana and Idaho and parallels much of the historic Lolo Trail followed by the explorers. It provides a route through the Bitterroot Mountains via Lola Pass and the major drainage basins. The Forest Service has provided picnic and camping grounds all along the highway. Motorists can stop and rest at the Lolo Pass Visitor Center or take a restful walk in the DeVoto Cedar Grove, which adjoins Haskell Creek, where the famous historian's ashes were spread. [9]

Highway 36 on the Flathead National Forest follows the shoreline of beautiful Hungry Horse Reservoir and provides access (via Highway 2) to Libby Dam on the Kootenai National Forest. The 63-mile Pintlar Scenic Route crosses high mountain passes and skirts ghost towns. The Beartooth Highway (U.S. 12 and 212), which crosses the rugged Beartooth Plateau on the Custer Gallatin, and Shoshone National Forests, reaches the 10,942-foot Beartooth Summit, an "awe-inspiring, majestic mixture of rugged and natural beauty formed by the forces of nature." [10]

Approximately 20,000 miles of trails complement the more than 31,000 miles of roads of all classes in the forests and grasslands of the region. Together, the roads and trails provide access for fire protection and timber management on the one hand, and public recreational access for backpackers, hikers, cyclists, horse riders, fishermen, and hunters on the other. For winter sports enthusiasts, more than 2,300 miles of snowmobile trails (often using existing roads) are available. Modern trail development in the region combines the region's history with Forest Service recreational development. [11]

National Scenic, Historic, and Recreation Trails

In 1968, Congress passed and President Johnson signed the National Trails System Act (Public Law 90—543), which identified two classes of recreation trails: National Scenic Trails and National Recreation Trails. The original act was amended in 1972 (Public Law 94—527) to include a third category, National Historic Trails.

A National Scenic Trail was identified as "an extended trail located to provide maximum outdoor recreational opportunities and the conservation and enjoyment of nationally significant scenic, natural, or cultural values. National Recreation Trails are much shorter than Scenic Trails and are oriented primarily to urban people." [12]

Region 1 contains some of the better known National Historic, Scenic, and Recreational Trails, including the Continental Divide Trail, the Lewis and Clark Trail, and the Nez Perce Trail. All of the trails are joint undertakings of the Departments of Agriculture and the Interior, "in cooperation with affected Federal, State, and local governmental agencies, private corporations, interest groups, and individuals". [13]

The Continental Divide National Scenic Trail

Authorized by Congress in 1983, the Continental Divide Trail, which begins on the Canadian border in Glacier National Park and extends southward to the Mexican border, is being surveyed and developed. The Montana-Idaho segment was officially dedicated in June 1989. This segment wends its way past glaciers, snowcapped peaks, and waterfalls in Glacier National Park through the Bob Marshall and Anaconda-Pintler Wildernesses and portions of the Helena, Deerlodge, and Beaverhead National Forests of the Northern Region, to the scenic geysers and lakes of Yellowstone National Park. [14]

Nez Perce Trail

The Nez Perce Trail is identified in Public Law 94—527 as extending from the vicinity of Wallowa Lake, Oregon, to the Bear Paw Mountains in Montana. Including the Oregon portion, the trail, which commemorates the flight of Chief Joseph and the nontreaty Nez Perce Tribe in 1877, is 1,350 miles long. Approximately 210 miles of the trail are on national forest lands; about half of that is on the forests of Region 1.

The trail begins at White Bird, Idaho, where in June 1877 the Nez Perce elected to resist rather than to submit to confinement on reservations. They first fled north, to Musselshell Meadow on what is now Clearwater National Forest. Then, following the Lolo and historic Nez Perce Trail across the Clearwater, they left Idaho via the Lolo Pass. In Montana, the tribe stopped for a time on what is now Lolo National Forest. Moving south, they crossed the Continental Divide, entering what is now Beaverhead National Forest, fought the Battle of Big Hole, and moved through the Yellowstone area and then northward toward Billings, Montana, where they surrendered on October 5, 1877, to U.S. forces under Col. Nelson A. Miles. [15]

The Lewis and Clark National Historic Trail

When the original National Trails System Act was passed in 1968, the Lewis and Clark Trail was not included. Congress had, however, in 1964, enacted Public Law 88—630, which established the Lewis and Clark Commission. An amendment to the National Trails System Act, approved in 1972, authorized the Lewis and Clark National Historic Trail. In 1979, the trail was officially sanctioned. [16]

The Lewis and Clark expedition began on May 14, 1804, when the explorers "headed their boats into the current of the river under a jentle brease." Thus began a journey of 2 years, 4 months, and 9 days, covering almost 8,000 miles and reaching across the unexplored continent to the Pacific coast and back to St. Louis, Missouri. The expedition first entered land now designated national forest at a point Lewis called, on July 19, 1805, "Gates of the Rocky Mountains," located northeast of

Helena, Montana, on what is now the Helena National Forest. Moving southward, the expedition entered what is now the Beaverhead National Forest and continued southwest, crossing the Continental Divide at Lemhi Pass and entering what is now the Salmon National Forest in Idaho. On August 12, 1805, Lewis reported "a handsome bold running creek of cold clear water. Here I first tasted the waters of the great Columbia River." The expedition turned north and eventually crossed the Continental Divide at Lost Trail Pass, reentering Montana and the present-day Bitterroot National Forest. [17]

Moving northward across the southern part of the Bitterroot area, the expedition entered the Bitterroot Valley. When they reached its northern end, just south of the present town of Lolo, they spent several days at Travelers Rest. (The expedition would stop here again on its return.) Historians disagree on the location of the camp, but Ralph Space, who probably has studied the historic trail more than any other in the region, believes the stop was on Lolo Creek, just west of the present town of Lolo. [18]

The travelers rested for three days, and on September 11, 1805, moved from Lolo Creek onto the Lolo Trail. They visited Lolo Hot Springs, where Lewis tasted the water and "found it to be not bad." Pressing westward, the expedition crossed the Bitterroot Mountains near Lolo Pass and entered today's Clearwater National Forest in Idaho, where they rested in a half-mile-wide valley with good grass, called Glade Creek (now Packer Meadow). [19]

The expedition now entered some of the most difficult terrain it had encountered since leaving St. Louis. They reached the headwaters of the Lochsa River, which they called Koos Koos Ke, and camped in an open meadow where the Powell Ranger Station would one day be built. Crossing this rugged area, the travelers were cold and hungry most of the time. Among their camps and rests were Wendover, Snowbank Camp, Spring Mount, Sinque Hole, and Dry Camp. All of the diaries of the expedition speak of the cold, deep snow and the steep, rocky pathway often blocked by fire-killed and wind-fallen timber. [20]

The trail became worse due to increasing cold and snow. Stops were made at Horse Sweat Pass, Hungry Creek, Portable Soup Camp, and Lewis and Clark Grove. Finally, on September 20, the expedition dropped down from the mountains, near Weippe Prairie. Here, on what is now the Clearwater National Forest, they met the Nez Perce Tribe, and then continued on toward

the Pacific Ocean. On the return trip in 1806, the expedition would retrace the Lolo Trail back to Travelers Rest. From there, they would return to the Missouri River by a new route. [21]

Over the years a number of Forest Service personnel have made efforts to mark the original trail. Ralph Space traced much of it through the Clearwater National Forest in the 1920's and 1930's. It took Space and his son an entire day to merely trace one and a half miles of the old trail. Space feels that in the intervening years, much of the physical evidence of the original trail has been obliterated. [22]

In the past 5 years, Clearwater National Forest staff have scouted and flagged almost all of the original trail across the forest. "Take Pride in America" programs organized by the Forest in the years since 1988 have resulted in more than 650 person-days of volunteer labor that has cleared, marked, and maintained several miles of the route. In the next 5 years, they plan to have opened a route on which one can still walk in the indented path that perhaps Lewis and Clark themselves trod.

The Lewis and Clark expedition "crossed mountains that had no highways, floated rivers that had no dams, saw buffalo that had no limits, talked with Indians that had no masters. They were the first!" Contrast their trek with that of present day travelers who ". . . follow the explorers' footsteps across the West in mobile homes with ice makers, air conditioners, and hot showers. [23] Although the world has indeed changed since the days of Lewis and Clark, it is fitting that the National Historic Trails and the Scenic and Recreational Trails enable modern travelers to share the rich heritage of the Northern Region. Somewhat less historic in terms of elapsed time, but significant as evidence of the history of forest management in the Northern Region, are the pioneer ranger stations, lookout towers, and logging and mining structures that survive.

Ranger Stations, Work Centers, and Other Structures and Installations

What is believed to be the oldest ranger station in the Forest Service, and certainly in Region 1, is located on the Bitterroot National Forest. Alta Ranger Station, as it is called, was built in 1899 by pioneer rangers Nathanial Wilkerson and Henry C. Tuttle, who paid for the materials from personal funds that were never reimbursed. This sturdy 13 by 15 foot, one-story log cabin served as a ranger station for 5 years. (The Hughes Creek area, where the cabin was located, flourished with the discovery of gold in 1900, but the strike played out in a few years and the station was closed. It was also discovered that the building stood on private land.) In 1904, it was sold to a private owner, who moved it to Darby. [24]

Alta Ranger Station as it appears today.

Abandoned, the Alta Ranger Station would have gone the way of most derelict buildings. The Hamilton, Montana, Lions Club, however, decided to preserve and restore the building. In 1941 they purchased the site of the original ranger station, moved the restored cabin to the original site, and deeded both to the Forest Service. Unfortunately, the building again fell into disuse and neglect as described by a newspaper article in 1959:

> Only the packrats scurry among the old newspapers and magazines that litter the floor now, and a few window panes are broken out, but the day may come when the old landmark will be something of an official monument to pioneer foresters who had such a personal interest in protecting the nation's forests that they were willing to sacrifice much of their own time, comfort and meager funds. [25]

Awakening interest in historic building preservation in the 1960's led to the restoration and renovation of the Alta Ranger Station. It has been listed in the National Register of Historic Places and receives regular financial support from the Forest Service and private philanthropists alike.

The Alta Ranger Station is not atypical of those used by rangers well into the 1930's. At that time, ranger stations varied from simple log cabins like Alta to more modern work centers with well-built homes and administrative offices. As ranger districts became consolidated, the older and more remote cabins still were used for small crews to live in and work out of on a temporary basis. A more modern ranger station might include cabins, storage sheds, and work centers radiating out from the station itself. More isolated and less important facilities might include little more than a shed or a barn and corral for the horses and mules. Still others, like Lochsa Ranger Station on the Clearwater National Forest in Idaho, were almost small towns. Highway 12 reached Lochsa in 1953 and was opened to through travel to the Powell Ranger Station in 1960.

Lochsa was established in 1926, when a log structure was moved from Boulder Flat on the Lochsa River and reassembled on a new site about a mile down river. A cabin was built in 1928, and an alternate dwelling, the site of the present visitor center, was built in 1931. A second ranger station, which replaced the first cabin, was completed in 1933. About 8 acres were cleared around the station to provide a hay meadow for the animals; in 1934, "as flames raged around and overhead," that clearing saved the lives of more than 200 people. [26]

West Fork Ranger Station,
Bitterroot National Forest,
Darby, Montana. 1941.

The Lochsa Ranger Station also boasted an elaborate root cellar, which maintained a fairly constant temperature in both summer and winter for the storage of root vegetables and other perishable foods. Eventually, in addition to those structures already mentioned, there were toolsheds, a tack room, an office, a commissary, a tool room, storage sheds, and a kitchen for the bunkhouse. Until the 1950's, all of this was maintained and supplied by strings of horses and mules. [27]

The Lochsa era came to a close when Highway 12 penetrated the region. The district headquarters was relocated to Kooskia, Idaho, in 1956. As more and more roads entered the more isolated parts of the region, the Forest Service began to abandon or downplay such places and operate out of more centrally located centers. In 1976, the Lochsa Historical Ranger Station was established by the Forest Service "as a memorial to the history of the Forest Service efforts to bring management to the National Forests." It is listed in the National Register of Historic Places". [28]

At Lochsa, visitors can enter the ranger's home and marvel that the furniture, including a Victrola and a 375-pound cast-iron bathtub, was all packed in by horses. The dining table is set with the durable but still aesthetically pleasing Forest Service issue pottery and china (donated by retired Forest Service personnel and their families). Entering the buildings is like stepping back into the early 20th century. Future generations will be able to have a brief glimpse of what life was like in a less complex time. [29] In the early 1900's, the Forest Service developed a rather elaborate system for establishing ranger stations and other required buildings, from the selection of the site to the type, style, construction, and number of buildings desired. For example, in 1908 a report issued for the proposed Sleeping Child Ranger Station on the Bitterroot National Forest contained complete plans, specifications, diagrams, and maps. [30]

Clyde P. Fickes completed another series of reports between 1936 and 1939, evaluating new sites and plans as well as reporting on the condition and value of those already operating on the Deerlodge, Custer, and Kootenai. [31]

The age of the automobile and completion of roads into previously remote forested areas brought changes in the size and location of ranger district headquarters and support structures. The older structures were often built to last. Many survive today, and these are now being protected and preserved as a part of the cultural heritage of the Northern Region.

For example, the Forest Service is cooperating with State agencies and the private sector to preserve the Bull River Ranger Station on the Kootenai National Forest. Built in 1908, this station operated until 1920. It then served as a guard station until 1966. The Montana Historical Society in 1987 urged preservation of the Bull River Ranger Station, which has since been entered in the National Register of Historic Places. [32] The region recently awarded a contract for evaluation of Bull River's historic structures for nomination to the National Register and protection or renovation as may be advised.

Slate Creek, Big Prairie, and Fenn Ranger Station and Vigilante Work Center

One of the more important sites already protected and preserved by the Forest Service is the Slate Creek Ranger Station. Built in 1909 on the Nez Perce, it was relocated to a more desirable spot in 1975, completely reworked, and furnished by retired Forest Service employees.

Big Prairie Ranger Station on the Flathead, established in 1904, has surviving structures dating from 1930 that have been in continuous use since that time. The station is now in the heart of the Bob Marshall Wilderness. [33]

The first log structure of the Vigilante Work Center was built in 1925, and other buildings were added in following years. In 1957, the supervisor of the Beaverhead first raised the question of ultimate disposition of the outdated facilities. Later evaluations concluded that the station should be kept and preserved as funds permitted. [34]

Fenn Ranger Station, built by the Civilian Conservation Corps in the 1930's and named for Major Frank A. Fenn, the first supervisor of the Selway, is considered one of the Forest Service's classic stations."[35]

Aerial Fire Depot

The Aerial Fire Depot, located outside Missoula, Montana, is the largest single physical plant in the Northern Region. It is devoted to the control of forest fires through use of airplanes and smokejumpers. The visitor center at the depot features a reconstructed fire tower and other displays explaining how forest fires are caused and fought. Also located here is the Intermountain Fire Sciences Laboratory, a weather science unit, and the Northern Training Center—a cooperative effort of the Forest Service; the States of Montana, Idaho, and North Dakota; and other Federal agencies. Supplies to maintain 5,000 firefighters in the field for 48 hours are stored here. Helicopters and aircraft for use in reconnaissance, smokejumping, and transport are available, as are large quantities of fire-retardant chemicals. ❧

Beds at Savenac Nursery. Coeur d'Alene National Forest. Photo by K.D. Swan.

Savenac Nursery

Over the years, Region 1 has established and operated a number of tree nurseries. One example is the Savenac Nursery, which has operated continuously since being established in 1909 near Haugen, Montana. (The facility was totally destroyed by the great fire of 1910 but was rebuilt in 1911.) In 1933, Camp Taft was built nearby to house the Civilian Conservation Corps (CCC), marking a new era for the nursery as the CCC completely rebuilt, enlarged, and landscaped the facility. In 1969, nursery operations were transferred to Coeur d'Alene, Idaho, and the Lolo National Forest assumed responsibility for administration of Savenac. The complex consists of nine buildings and two fine stone bridges dating from the 1920's. While the CCC was providing labor, extensive plantings were made in the arboretum (begun in 1916), which today provides a beautiful area for botanical observations. [37]

Fort Missoula Historical Museum

The historical museum at Fort Missoula, Montana, is another cooperative endeavor supported by the Forest Service. The Service maintains a forestry interpretive area that includes a restored 1910 guard cabin; a 1934 L-4 type lookout tower, from Little Sliderock Mountain; a railroad logging spur with a steam-powered Shay engine that was in use until 1949; and other displays. The Missoula Chapter of the Society of American Foresters, the Friends of the Museum, Champion International, and other public and private agencies cooperate with the Forest Service in managing the museum and developing its interpretative programs. The Lolo National Forest is headquartered in one of the buildings of old Fort Missoula, itself of historic interest. [38]

Logging Remnants

Many structures and artifacts on national forest lands have become historic resources of the early logging practices discussed in Chapter 3. Some of the more interesting structures in the Northern Region are the log chutes and dams of northern Idaho and western Montana. The St. Joe National Forest, for example, has splash dams, steam donkeys, log chutes, flumes, and an incline railroad.

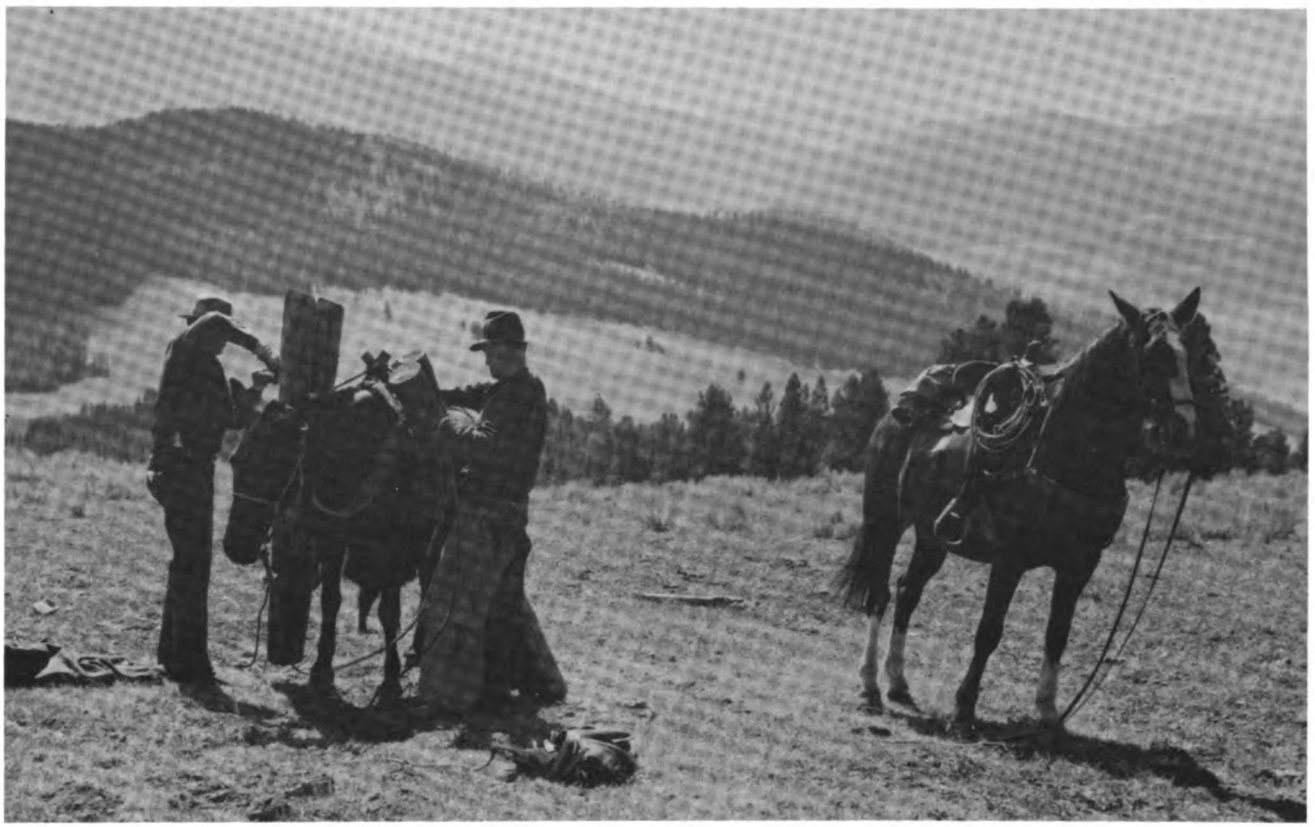
Extensive historical and archaeological investigations have been conducted to determine the exact manner in which the chutes were operated and their period of operation have been conducted. Hundreds of miles of old log chutes are in varying stages of decay. Splash dams for impounding water to operate some of the chutes still exist, and donkey steam engines used to haul logs to the site are still in place in some instances. Most of the chutes date from the 1910—30 period, although some—such as one on Fall Creek near the old Shiloh Ranger Station on the Kaniksu—operated into the 1950's. One of the best-

preserved log chutes is located at Sheep Creek at Little Belt Mountain on the Lewis and Clark National Forest in Montana. »

Remount Depot

Other than foot, horses and mules were the only means of traversing the forests in the early days, and they remained important well into the 20th century. Over the years, the Forest Service slowly developed a planned system of transportation and "an elaborate trail system began to grow through the roadless, timbered mountains." [40] The automobile was introduced before World War I, but was not common until the late 1920's. Even though the car and truck were available, large expanses of the region remained roadless until after 1945, and animal transportation continued to play a vital role in supplying isolated units and fighting forest fires. The automobile, airplane, and helicopter have almost brought the day of the horse and mule to a close, although animals remain the principal means of transportation in wilderness areas.

The horse and mule were still very important in 1930, when the regional forester authorized establishment of the Remount Depot on Nine-Mile Creek near Missoula, Montana, for the training, breeding, care, and stabling of horses and mules. Ranger Clyde P. Fickes was placed in charge of the depot and instructed to collect and train animals to meet the needs of Region 1 and adjoining regions. Fickes and his crew of experts experimented with horses and mules and decided that mules, known as Rocky Mountain canaries, were tougher and more reliable. "Mules were preferred for packing as they were more careful to avoid bumping their packs into trees along the trail," and mules simply were more surefooted and could carry greater loads than horses. Fickes also discarded the old "sawbuck" and the "diamondhitch" in favor of the Idaho Decker Packsaddle, developed by O.F. Robinette and the Decker brothers near Kooskia, Idaho. This saddle allowed each animal to carry larger and heavier loads. [41] The Remount Depot was a complete center for breeding, training, and dispatching animals, training packers for wherever they might be needed; and for manufacturing and repairing the necessary equipment. Fickes and his team, Jane Benson said, "proved that a string of nine mules with more than a ton of supplies on their collective backs could form a solid basis of supply for firefighters controlling forest fires." [42]



Unpacking horses. Beaverhead National Forest, 1945.

In 1933, the Civilian Conservation Corps established Nine-Mile Camp near the Remount Depot and thereafter did much of the work on and around the depot. By the fall of 1935 they had cleared the surrounding land for pastures, cut poles, and built miles offence to enclose the entire unit. During this period the first training of smokejumpers, bailing out of Ford Tri-Motor planes, took place in the CCC hayfields. Later, the CCC built the large barn that still stands, a cookhouse, and a number of cabins and other buildings in a distinctive Cape Cod style of architecture. [43]

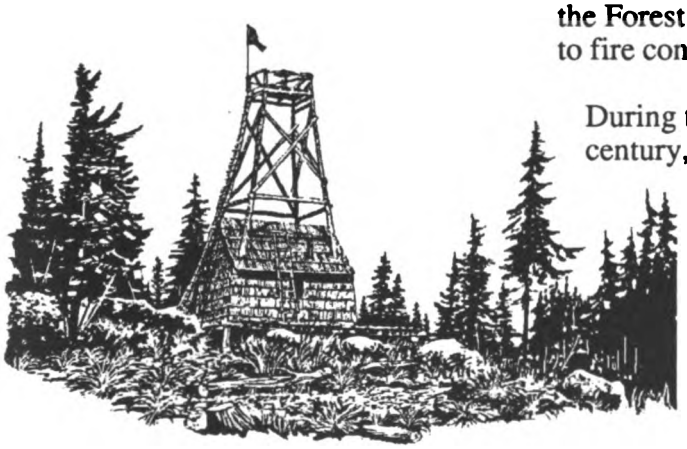
Following World War II, the feasibility of continued operation of the Remount Depot was discussed, but no clear-cut verdict was reached. Many felt that the horse and mule still had a role to play in fire control, and as late as 1953 some 13 strings still operated in the field; however, some felt that the depot had served its purpose. Because the cost of operating the depot was constantly increasing, its phasing out soon began. [44]

Fortunately, the depot continued to be occupied for various Forest Service projects, and most of the buildings were kept in good repair. As the Forest Service developed more awareness of the public trust it held in the care and preservation of cultural resources, even more attention was given to preserving the Remount Depot as a historical entity.

Because most of the Remount Depot structures were built during the middle 1930's, they began to approach the required 50 years of age that would merit their consideration for inclusion in the National Register of Historic Places in the late 1970's. Beginning in 1978, the Lolo National Forest began to survey and gather documentation about the buildings in preparation for submission to the National Register. The submission was accepted in 1980. In keeping with the American public's increasing consciousness of the value of the past, plans have been made to reopen the facility as a living museum in the tradition of Colonial Williamsburg, Virginia. One of the more exciting and interesting aspects of the project will be the training of a working packstring of mules that also could visit such gatherings as parades, county fairs, and rodeos, providing today's citizens a better understanding of the past. A specially designed and painted trailer for the mules has been purchased to transport the mule string. [45]

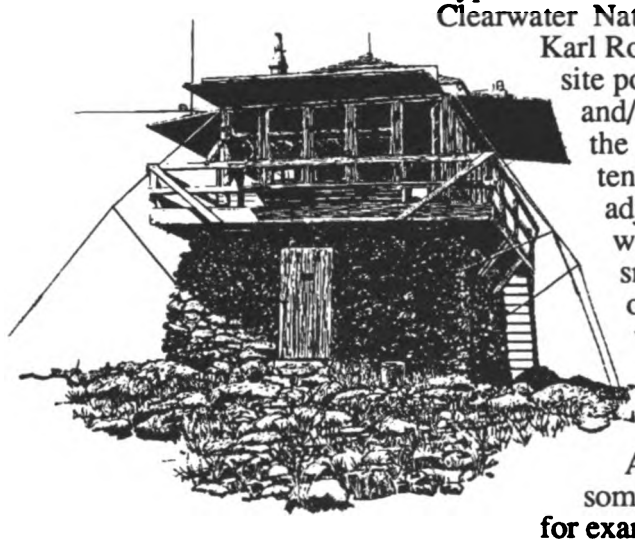
Fire Lookouts

The greatest danger to all forests is the natural disaster of fire. In earlier times, fires were largely caused by lightning, which remains the major fire-causing agent; however, in more recent years it is increasingly common for a fire to be manmade. Even when the forests in the region were still Forest Reserves, prevention and control of fires received attention, but it was not until the Forest Service was created that a planned, orderly approach to fire control was inaugurated.



During the latter part of the 19th century and the early 20th century, a lookout was merely an observation post established on a high point with an unrestricted view. The evolution of the famous Hornet Peak Lookout on the Flathead shows the development of these isolated outposts. Hornet Peak began as a high-ground observation post. In 1917, it was a crude pole tower and a cabin. The present structure, a D.L. Beatty "D-1" standard lookout house with a church-like tower, was erected in 1922. [46] Hornet Lookout is a classic example of the era when Forest Service pioneers hand-carved every bridge, barn, corral, and cabin out of the woods around them, using only crosscut saws to fell and buck the logs, and mule teams to drag each one into place. With a broad ax they hewed and fitted the corners; and with a froe they hand-split each shingle to match the rest. [47]

Everything not obtained from the Hornet Lookout site was hauled by mule strings 35 miles by trail up the North Fork of the Flathead River from Columbia Falls, Montana. Even today a four-wheel drive vehicle and a good hike are required to visit the cabin. When one stands at the lookout, it is quickly evident why its site was chosen—the beautiful view encompasses Glacier National Park, Kintla Lake, and even the Canadian Rockies in the distance. [48]



Typical furnishings of fire lookouts are much like those on the Clearwater National Forest, described by Linnea Keating and Karl Roenke. "Prior to the 1920's" they said, "a lookout site possibly consisted of a tree platform (crow's nest) and/or alidade table (map board), a tent camp, and the lookout person." Other equipment besides the tent would be a pair of binoculars, maps of the adjacent areas, and storage facilities for food and water. Early lookouts were expected to extinguish small blazes on their own or in the case of a larger one ride for help. After 1910, telephone lines were run from each lookout to a central clearing headquarters, allowing a much faster reporting and response. [49]

A number of the region's lookouts have recorded some of their early experiences. Norm Schappacher, for example, served as a lookout on the Flathead from 1930 to 1937. His first assignment, Tally Lake, was simply a topped tree and a tent. Schappacher received $65 a month plus room and board, and as he remarked, "Board tended to be canned government rations," which varied from excellent for the butter to terrible for the bread. [50]

Most lookouts seem to remember fondly their time spent in the forests, although all agree it was lonely work. Due to the shortage of men during World War II, many women served as lookouts. Harriet Linn spent the war years at Thompson Lookout on the Lolo and considered smoke-spotting her contribution to the war effort. Her lookout, she recalled, had a hardwood floor, built-in cabinets and table, and apple-green woodwork. [51]

Another firsthand account of the life of the lookout comes from Walter L. Robb, who described the construction of Thompson Lookout:

> The tower was built in 1934 from a L-4 cabin package milled in Columbia Falls. Materials were packed by mule to the site and raised on legs cut on Thompson Peak. A horse and "ginpole" rigging were used to raise the tower. [52]

The Thompson Lookout later had to be closed and torn down because it became unsafe due to age and vandalism.

Fern Bonnell, interviewed in 1982 by C. Milo McLeod about her 12-year career as a spotter, recalled her work as a relaxing and educational interlude away from her public school duties from 1943 to 1955. She described lookout responsibilities, "which included weather observation, fire detection and location, and playing good host to visitors." She was more fortunate than many lookouts because her tower had an air traffic beacon that required electricity and allowed the use of a refrigerator. [53]

When the Civilian Conservation Corps became active in 1933, the heyday of the lookout had arrived. Using this almost inexhaustible source of both skilled and unskilled labor, the Forest Service began to replace archaic lookouts with more elaborate structures and rather comfortable cabins. They also upgraded paths, trails, and roads serving the lookouts, which allowed for much easier and faster communication and resupply. One of the better known and best preserved lookouts built by the CCC is Tri-point Lookout and Station on the Beaverhead. Built in 1940, it consists of a wooden lookout tower and log cabin. Well maintained and modernized, it is in excellent condition and will continue to be used as an active lookout. [54]

Porphyry Peak Lookout on Kings Hill Pass, just west of Highway 89 on the Lewis and Clark, also is well preserved and considered to be one of the finest examples in the region. The CCC did extensive work on this structure during the 1930's. [55]

The Forest Service experimented with many different construction plans for lookouts. A few steel-girder lookouts were built, but the cost proved prohibitive, especially when wooden poles cost only the labor required to fell and emplace them. The peak year for the operation of fixed lookouts in the region was 1938, when some 800 lookouts were in operation. The number declined to 250 in 1964, and only 85 were in service in 1987. [56] Satellite surveillance and modern electronic technology have displaced most of the manned fire lookout posts, but those surviving remind us of the role that fire has played and continues to play in the history of the Northern Region. In recent years, some of the fixed fire lookout towers still in good repair and reasonably accessible have been made available, as have some of the unused ranger and guard cabins, for rental to the public. The Northern Region's innovative recreational rental program has thus far been successful. [57]

Communications

Before 1910, few telephones were in operation in the Northern Region. The first was strung to Iron Mine in 1905. However, the devastating fire of 1910 emphasized the immediate need for more rapid communications. To meet this need, wire in the form of a single-wire grounded circuit was purchased and quickly strung by simply attaching insulators to standing trees. The Civilian Conservation Corps began to string thousands of miles of metallic (No. 2) wire line into even remote parts of the forests in 1933. [58]

A notable early example of individual forest communication was on the Nez Perce, where the CCC helped to string a 125-mile circuit. The peak year for telephone usage was 1948, with 12,650 miles of wire, but thereafter mileage began to rapidly decline as radio and private telephone services replaced Forest Service lines. Some of the unused lines were sold to local residents, but most of the wire remained in the forests. The region began a program to remove the wire because it was dangerous and unsightly. [59] A number of forest reports in the 1950's include information on the progress of wire removal and the conversion to radio, but by the end of the next decade lines owned by the Forest Service had become so insignificant that they were no longer being considered in official reports.

In the pre-telephone era, the Forest Service experimented with a variety of communication devices. One of these was the heliograph, a signal device relying on mirror flashes. It seems that Forest Service personnel universally cursed the machine. Red Stewart, who operated heliograph devices from the Mallard Peak Lookout in 1915, termed it "an invention of the devil." [60] The radio, introduced into the Northern Region in 1919, quickly displaced the heliograph.

Historical records indicate that the first use of radio communication in the Northern Region was in 1919, but it did not become widely used until after 1930. In 1933, 59 radio sets of varying power and dependability were in use, and the next year 43 additional two-way radio sets were in service. The Forest Service established a Radio Laboratory in Portland, Oregon, to improve radio communications systems. The laboratory designed the "M" set, the SPF semiportable, and a smaller unit that the Forest Service had specially manufactured for its use because comparable commercial units were not then available. After World War II, the Forest Service adopted the radio as its primary means of communication, hastening the decline of the

field telephone. Very soon, radio towers appeared on the forests, providing better transmission into and across the forests. Those simple towers have now been joined by highly complex electronic centers for transmission of television and satellite signals.

Modern transportation and communications, characterized by the automobile, airplanes, the telephone, radio, and television, have not only improved the processes of national forest management, but they have also greatly widened the rank and file of forest resource users in the Northern Region. The "outside" world became much more conscious of the scenic, recreational, and economic attributes of the national forests in the decades following World War II. This phenomenon contributed in part to the fact that resource management by Federal agencies increasingly came under the scrutiny of many diverse and often geographically remote interest or "user" groups. That new condition of management became clearly evident in the Forest Service, and in Region 1, near the end of the 1960's.

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Chapter 12

The Bitterroot Controversy and the Environmental Movement

The expanded recreational use of the national forests following World War II, along with increased access to those forests made possible by construction of roads and trails within the forests and the expanded interstate highway system, indicated changing uses of forest resources. The public's awareness of the national forests also was changing, as the automobile, airplane, telephone, and modern media truly "nationalized" the national forests. Thus, an issue that began as a matter of concern to local residents in western Montana, and more particularly among those most closely associated with the Bitterroot National Forest, became a Region-wide" and indeed a nationwide" controversy.

Origins of the Bitterroot Controversy

World War II enormously increased the demand for timber from the nation's forest resources, but the wartime demand paled in comparison to postwar demand, which began to peak in the 1950's and 1960's as millions of new families began to set up households and cities and suburbs grew throughout the nation. Assistant Chief Edward P. Cliff announced to the Intermountain Logging Conference on March 26, 1956, that "the overall timber policy of the Forest Service is to build up the annual cut to the full [amount] allowable under sustained yield management in each working circle." He also set four objectives for the timber management programs: (1) complete inventories and management plans on all working circles, (2) accelerate salvage logging, (3) intensify forest management, and (4) close the gap between the allowable and the actual cut. [1] In response to burgeoning public needs, production had become a major factor in national forest management. [2]

Northern Region Timber-Sales Policies

A confidential in-Service report in 1956, *Guidelines to Timber Phase of the Forest Service 10-Year Program,* included estimates of future possible annual allowable cuts by region. The Northern Region, which in 1956 had an allowable cut of 906 million board feet, was projected to have a cut of 2,380 million board feet by the year 2000—an increase of more than 250 percent. [3] Thus, a mandate to raise timber production levels would have had a particularly great impact on Northern Region forests.

Region 1 achieved an increase in its annual allowable cut largely by incorporating species such as lodgepole pine, which had become acceptable for sawtimber as well as for poles and pulpwood, in its merchantable inventories. Under such new industry standards, spruce also could be harvested as a lumber species. Thus the total allowable cut rose by 64 percent between 1958 and 1971 (table 12.1).

Within the region, the increase in allowable annual cut for each national forest varied considerably; some forests actually saw a decrease (table 12.2). Total scheduled timber production, however, showed a marked increase. Specifications for timber sales also changed in the postwar era.

Road Construction in the National Forests

A few years later, in May 1959, again in Congress, the Subcommittee on Forests of the House Committee on Agriculture began hearings on a long-range program for the national forests. Although not directly related to the larger scope of the hearings, Region 1 at these hearings pressed its need for additional timber access roads on the national forests of Idaho and Montana. Table 12.3 shows this planned road construction by national forest.

Table 12.1—**Northern Region Allowable Cut and Harvest, 1958-71**

Fiscal Year	Annual Allowable Cut (Regeneration Cutting Only) (Millions of Board Feet)	Timber Harvest Calendar (Millions of Board Feet)	
1958	1,018.5	1958	768.4
1959	1,208.5	1959	979.9
1960	1,098.2	1960	919.6
1961	1,255.8	1961	1,025.5
1962	1,317.5	1962	1,120.1
1963	1,406.5	1963	1,384.5
1964	1,415.5	1964	1,317.7
1965	1,415.5	1965	1,467.3
1966	1,454.0	1966	1,431.5
1967	1,470.6	1967	1,339.3
1968	1,498.2	1968	1,551.5
1969	1,526.2	1969	1,563.6
1970	1,593.1		
1971	1,675.0		

Source: USDA Forest Service, Northern Region, Statistical Summary, July 1, 1970, Table 8—Annual Allowable Cut of Sawtimber by Fiscal Years, and Table 10—Timber Harvest by Species by Calendar Year.

Although this planned road construction attracted no significant public or media attention at the time, the intent to enlarge the scope of road building and timber harvesting on the national forests of the Northern Region had become a matter of public record. Later, projections for road construction on the forests of the region would be cited as "evidence" of timber "exploitation." The actual record, however, belied these charges because the region had a strong record of cooperation and involvement with the public in its road and timber-harvest planning.

Table 12.2—Allowable Annual Cut by National Forest, Northern Region, 1958, 1962, 1966, 1971

National Forest	(Allowable Annual Cut (Millions of BoardFeet)			
	1958	1962	1966	1971
Beaverhead	38.0	35.4	35.4	93.5
Bitterroot	26.0	26.0	63.0	63.0
Clearwater	110.0	171.0	171.0	194.4
Coeur d'Alene	90.0	100.0	100.0	100.0
Colville	65.0	68.0	87.5	87.5
Custer	11.0	10.2	18.2	10.4
Deerlodge	18.0	39.0	39.0	67.0
Flathead	84.0	116.0	127.0	186.6
Gallatin	30.0	43.0	47.0	52.0
Helena	18.0	33.2	33.2	40.5
Kaniksu	113.0	132.0	139.0	139.0
Kootenai	135.0	164.0	164.0	230.0
Lewis & Clark	26.0	58.7	58.7	40.1
Lolo	125.5	171.0	178.0	178.0
Nez Perce	7.0	98.0	100.0	100.0
St. Joe	52.0	52.0	93.0	93.0

Source: USDA Forest Service, Northern Region, Statistical Summary, July 1, 1970, Table-8—Annual Allowable Cut of Sawtimber by Fiscal Year.

Regional Forester Neal M. Rahm consistently stressed a public-oriented and cooperative forest management program. The region's program of work, for example, issued to forest supervisors in 1966, urged the "cultivation of a dynamic team using managerial grid concepts." Rahm told the supervisors that "the days of the one man show" if they ever really existed—are gone." [5]

The program of work for the region specified development and implementation of watershed surveys and rehabilitation, including flood prevention and control, of lands on the national forests and those subject to Forest Service management. It also called for application of multiple-use management decisions in all phases of national forest land management. The region proposed to implement improved logging practices that would protect erosive soils and establish and maintain high-quality wilderness. The program of work also recognized the importance of tree planting for erosion control, woodland establishment, and beautification, and the region hired its first landscape architect, Joe Gutkoski, in 1957.[6]

Table 12.3—**Road Development and Construction Needs, Northern Region (miles)**

National Forest	Roads for Timber		Roads for Other Purposes	
	Reconstruction	Construction	Reconstruction	Construction
Idaho				
Bitterroot	.0	.0	64.1	39.4
Clearwater	408.3	10,492.2	521.4	85.9
Coeur d'Alene	1,014.2	3,069.3	433.5	499.5
Kaniksu	702.6	3,428.4	288.6	389.9
Kootenai	18.0	185.9	.0	1.5
Lolo	117.6	1,762.6	64.0	16.0
Nez Perce	577.6	3,558.7	276.0	230.1
St. Joe	473.3	2,612.2	393.1	426.2
Montana				
Beaverhead	751.3	6,050.5	171.2	96.3
Bitterroot	467.7	2,499.3	65.1	224.0
Coeur d'Alene	149.7	1,025.7	111.6	223.3
Custer	479.0	838.1	97.5	224.1
Deerlodge	737.1	4,014.9	62.4	43.5
Flathead	987.2	7,020.9	72.7	106.1
Gallatin	348.6	4,006.6	108.5	192.9
Helena	375.5	2,821.8	240.6	418.9
Kaniksu	232.1	1,875.4	49.8	48.8
Kootenai	1,877.5	14,091.9	173.0	158.0
Lewis & Clark	512.6	4,913.2	315.2	749.3
Lolo	737.7	10,141.4	227.3	147.9
South Dakota				
Custer	1.7	9.9	98.1	1.7
Washington				
Colville	634.8	4,492.1	95.9	75.7
Kaniksu	306.8	1,109.4	82.8	85.3

Source: U.S. 86th Congress, 1st Session, House Committee on Agriculture, Subcommittee on Forests, "Long-Range Program for National Forests" Hearings (Washington, D.C.: Government Printing Office, 1959, 307 pp.) Table 2, pp. 160—164.

To be sure, the region had not abandoned the earlier emphasis on timber production. The program of work, for example, directed that the amount of timber available for industry where capacity exceeds allowable cut be increased by implementing programs to sell salvable dead, intermediate, and nonregulated classes of timber. More orderly marketing and better production methodologies resulted as the volume of sales was increased to 80 percent of the 1968 planned program by June 30, 1967, and to 100 percent by June 30, 1969. Both development and harvest became more orderly as plans to avoid lumping a large percentage of sales at the end of each year were implemented.[7]

Wilderness Preservation and Timber Production

Wilderness advocates were aware that timber harvesting fit in with the traditional demand in the Western States for exploitation of national resources. They also felt that within the Forest Service, and to a lesser extent within the National Park Service, there were some who believed that however worthwhile wilderness preservation might be, local and regional economic development and welfare were more important. Recognizing this conflict of interest, the Wilderness Society, the Sierra Club, wildlife organizations, and other interested individuals and groups began to urge Federal legislative protection for the Nation's wilderness areas. A wilderness preservation bill was introduced in Congress in 1958 and signed into law by President Lyndon B. Johnson 8 years later, in September 1964. According to forest historian Dennis Roth, passage of this bill marked the coming of age of the modern environmental movement.[8]

In very broad terms, what happened next on the Bitterroot National Forest represented the conjunction of two seemingly incompatible forest resource interests—those who would develop and harvest renewable forest resources and those who would preserve both renewable and nonrenewable forest resources in their "natural" state. Thus, the Bitterroot controversy became only one of many conflicts involving environmentalists and the national forests. Disputes over clearcutting developed in West Virginia and in Wyoming. The French Pete Creek confrontation in Oregon, the Sylvania issue in Wisconsin, and the Boundary Water Canoe Area disputes in Minnesota paralleled developments in the Northern Region.

Emerging Local Conflicts Relating to the Bitterroot

The genesis of the controversy in the Northern Region began in 1963, according to Ray Karr. Karr was timber staff officer on the Bitterroot between 1963 and 1966, when, in spite of very strong local opposition, the Secretary of Agriculture approved declassification of those portions of the Selway-Bitterroot wilderness known as the Magruder Corridor. Local residents had organized a "Save the Selway" movement, led by Guy M. Brandborg, retired Bitterroot National Forest supervisor. Doris Milner, a housewife, served as secretary and became a leader of the group after Brandborg stepped down.[9]

In September 1966, the Secretary of Agriculture responded to the continuing controversy over the Magruder Corridor by appointing an independent committee, under the leadership of Dr. George Selke, to review Forest Service plans. His charge to

the committee was to "review on a broad basis these Forest Service management plans for the Magruder area and advise me whether, in his opinion, it is feasible to execute those plans or plans of this character." Following receipt of the committee's report, the Secretary issued a statement on May 23, 1967, asking the Forest Service to prepare a new, integrated plan for the orderly development and management of the Magruder Corridor and that "three primary values should govern this management: watershed and fisheries, historic, and recreation." This marked one of the earliest occasions in which a Forest Service decision had been changed due to the involvement of concerned citizens. The significance of the Magruder Corridor and other early challenges to the Forest Service decisionmaking process lies not in those cases in and of themselves, but in the development of a cadre of leadership and expertise essential to the success of ensuing challenges in other portions of the Bitterroot and throughout the Northern Region. [10]

The Forest Service stepped up the cut and salvage of timber. Driven by the Saddle Mountain and Sleeping Child fires and increasing forest industry demand for timber, by 1963, the timber industry had developed a very large sawmill capacity near the Bitterroot and, with the salvage declining, began to pressure the Forest Service and Bitterroot Forest Supervisor Harold Anderson to allow harvests to the full allowable cut. The existing timber management plan, according to Karr, provided only for harvesting of timber from ponderosa pine and Douglas-fir stands at the lower slopes (and less than 30 million board feet per year). [11]

Jack Shepard, author of *The Forest Killers,* noted that the allowable cut on the Bitterroot had been 7.5 million board feet per year in 1941 and had risen to 12.5 million board feet by 1957, to 50 million board feet in 1964, and finally to 63 million board feet in the 1966 timber management plan. G.M. Brandborg, who retired in the Bitterroot Valley, believed that the Forest Service had set the "allowable cut too high. And the way they were clearcutting was pure murder," he said. Ernie Townsend, a logger from Darby, Montana, told Dale Burk of the Missoulian, "They're ruining our timber stands for the next three generations. They're taking out all the timber and pretty soon there won't be any more to log." [12] Concerns such as these, expressed by local people who were familiar with and participated in consumptive use (timber harvest and grazing) of forest resources, began to raise the level of local and regional consciousness of the need to protect and preserve national forest resources. These concerns were effectively communicated to recreationists, sportsmen, wilderness advocates, the media, and Congress.

In 1968, the Recreation Committee of the Ravalli County Resource Conservation and Development Committee prepared a report critical of Forest Service clearcutting and reforestation practices on the Bitterroot. The Committee members were particularly disturbed by the potential impact on tourism in the region. Conversely, the Bitterroot Multiple Use Association, representing other local interests, defended the Forest Service. Meetings and letter writing ensued, including contacts with the Montana congressional delegation. [13]

Although not directly related to events on the Bitterroot, considerable controversy also had arisen at this time within the region over proposals to variously develop or protect the Lincoln Back Country (adjoining the Bob Marshall Wilderness) by creating a new Lincoln-Scapegoat Wilderness Area. Each controversy tended to feed the other.

In 1969, while hearings on the proposed Lincoln-Scapegoat Wilderness were being held in Congress, Regional Forester Neal Rahm and Joseph F. Pechanec, Director of the Intermountain Forest and Range Experiment Station, requested a special task force review of the situation on the Bitterroot. Rahm received responses from the Recreation Committee and the Multiple Use Association in May 1969; the disagreement quickly assumed overtones far beyond the scope of the Bitterroot or the region. In October, Dale Burk, also the environmental writer for the Missoulian (published in Missoula, Montana, site of the Region 1 headquarters), wrote a series of articles highly critical of management practices on the Bitterroot. Montana Senator Lee Metcalf, in December, asked the University of Montana to investigate the situation. [14]

Environmentalists were particularly opposed to the use of heavy equipment, such as bulldozers, to terrace the land prior to tree planting. Terracing as a means of site preparation on steep slopes was introduced on the Bitterroot in 1964, based on studies conducted on the Boise Basin Experimental Forest through a cooperative research program of the Intermountain Forest and Range Experiment Station and the Boise National Forest. Terracing improved plant survival to the 90-percent level, as opposed to 20, 40, and 50 percent for plants on areas that received only prescribed burning before planting. However, observers noted that terracing clearly impaired scenic beauty and suggested that terracing could contribute to greater sedimentation. Although planting programs affected the entire forest, one specific site at issue on the Bitterroot was in the Mud Creek drainage on the West Fork District. [15]

Experimental terraces constructed for tree planting on steep slopes, Bitterroot National Forest.

Region 1 Task Force Study

In 1970, a special Forest Service task force, created as an autonomous investigative body independent of higher authorities and not subject to review by anyone outside of the task group, recommended substantive changes in planting and harvest programs on the Bitterroot. The task force report, written and published without review by anyone outside of the Forest Service, was released by Regional Forester Rahm on May 11, 1970, at Hamilton. The following week, a ranger-staff meeting was held on the Bitterroot to discuss the report and to plan implementation of its recommendations. The foresters decided that reform and revision of existing policies were required and that the Bitterroot and the region should develop a new timber management plan, integrated with a multiple-use plan that included landscape management. [16]

Drawing upon the work of the task force study, the region later issued a broader analysis of timber management policies, *Quality in Timber Management: A Current Evaluation*, July 1970. This report reviewed timber-sale policies and timber resource management practices employed in 13 timber sales conducted in 12 ranger districts on 8 different forests in the region. The report criticized past policies and recommended a "clearer understanding" of both timber sales and road planning and development. In the summary, the report concluded: "It is interesting, though perhaps not surprising, that our overall observations were similar and in many cases identical, to those of the Bitterroot Task Force." The region promulgated an action plan for implementing the recommendations of the timber management study on September 22, 1970. [17]

The Bolle Report

Two months later, in November 1970, an independent select committee sponsored by the University of Montana and chaired by Arnold Bolle, Dean of the Forestry School at the University, presented its own report on Bitterroot harvest and planting programs. The report was based in part on the data and analyses developed by the Forest Service task force study concluded in May, but it reached markedly different conclusions and recommendations. Moreover, this report was presented directly to Senator Metcalf without review by Forest Service personnel. Metcalf forwarded the report to the Forest Service on November 17, and the next day requested that the report be printed in the Congressional Record. Regional Forester Rahm forwarded copies of the report and a rough draft of the response to forest supervisors, division chiefs, and the director of the Equipment Development Center on November 20, 1970. The Forest Service response to the Bolle report suggested, among other things, that some of the allegations in the report could not be supported by fact or logic. [18] The controversy, however, now extended far beyond the Bitterroot and the Northern Region. It had become a matter of national interest.

The Bolle report became a divisive and controversial document in itself. According to historian David A. Clary:

> The Forest Service was devastated, partly because Bolle's report upstaged the Service's own self-examinations but mostly because the document made the Service's protestations about multiple use seem empty and its claims of professional correctitude false. No longer could the Forest Service presume to speak for all of forestry or to say that its actions reflected universal technical judgments, unalloyed with other considerslogan, hiding a devotion to timber production. [19]

Northern Region Timber Management Chief John Milodragovich issued a response to the findings of the Bolle report in January 1971. The response questioned some of the Bolle report's findings, conceded mistakes by the Forest Service, and sought more efficient management practices. Regional Forester Rahm directed a memorandum to the supervisor of the Bitterroot National Forest, outlining new management directions for the Bitterroot, on February 22, 1971. Rahm highlighted the phrase "A definite and visible change in approach to management on the Bitterroot National Forest is required." Rahm was particularly concerned that the public be kept informed and that changing management programs were understood. [20] However, beneath these restrained responses, the level of acrimony and emotionalism generated by the Bolle report, both within and outside of the Forest Service community, rose precipitously. It would have lasting consequences within the Northern Region.

In a speech before the Inland Empire Section of the Society of American Foresters on March 5, 1971, a member of the Bolle committee, Richard E. Shannon, discussing the committee's operational philosophy, responded to a statement about the *status quo* by saying, ". . . we are intent on upsetting that status quo." He added, "forestry was once a proud profession. We want it to be a proud profession again. . . . To function as leaders we must be aggressive, innovative, and responsive to changes in the world around us. This is the kind of thinking that motivated our report." [21]

Thus, the Bolle report may have been motivated as much by preconceived mandates for change as by an analysis of conditions on the Bitterroot. A staff review by the Environmental Policy Division of the Library of Congress stated: "Conclusions reached in both studies [the Forest Service task force and the University select committee] are similar in many respects. Both conceded that mistakes had been made and that drastic changes in management practices are in order." [22]

Even as the repercussions of the Bitterroot affair continued to unfold, changes in management policies and philosophy were occurring within Region 1. As Neal Rahm stated:

> The need is for change and the time is short. To merit the respect of the people we must seek their counsel and truly listen. We must start crusading for quality land management as we never have before. I want leadership from everyone in the organization in this region to accomplish our objectives. In case of a conflict between quality and quantity, the decision will be made in favor of quality land management. [23]

On March 25, 1971, Joel L. Frykman, a Forest Service retiree serving as an independent consultant, presented a written review of the Bolle report to a private company. Frykman made the following comment in his evaluation:

> One naturally expects that a report prepared by a group of scholars will be thoroughly objective and free from apparent bias. This report, though, clearly reveals that its writers had strong personal feelings about the problem they were investigating; one cannot help suspecting that these strong personal feelings influenced the manner of the investigation and the stated conclusions; this leads the reader to suspect he validity of the report. [24]

To be sure, the validity of the report was being tested at "higher" levels than Region 1.

Congressional Hearings

Senator Frank Church of Idaho convened public hearings by the Subcommittee on Public Lands of the Senate Committee on Interior and Insular Affairs, of which he was Chairman, on April 5, 1971. These hearings were held to investigate clearcutting practices on national timberlands. Testimony before the packed committee room featured witnesses from the public and industry, and the Bitterroot controversy was prominent in their statements." [25]

Arnold Bolle, Dean of the School of Forestry at the University of Montana and chairman of the Bolle committee, told the subcommittee that the Forest Service "had overweighted commodity values and underweighted amenity values" in its planning. The agencies, he said, "have developed a philosophy of intensive forest management based upon assumptions that are best characterized as unrealistic. For example, appropriations largely have been tied to income from timber." He said that he had no argument with clearcutting as a tool in forest management, but clearcutting cannot be rationally applied in much of the forested land of the northern Rocky Mountains. "We mean to move forward," he said, "working within the forestry profession, to do our part in creating these new management approaches to forestry and its problems." Bolle suggested that the Bitterroot was not economically suited to logging and that efforts to maintain sustained yields had led to clearcuts and terracing. He said that his committee's conclusions could be applied to similar public lands, but not to national parks, primitive areas, wildlife refuges, and wilderness areas. [26]

Lanerd A. Williams, conservation editor of *Field and Stream* and a Northwest representative of the Sierra Club as well as a Forest Service retiree, stated that the Forest Service "had gone very badly haywire (mismanaged) timber on the St. Joe, Clearwater, Kanikso [sic], Pend Oreille, Cabinet, Coeur d'Alene, Lolo, Bitterroot [and] Kootenai". [27]

Dale Burk of the Missoulian offered both oral and written testimony. He said that he had spent many hours in the past 3 years investigating forestry practices in western Montana and that he could say "without fear of contradiction . . . no forest could hold up under the scrutiny given the Bitterroot." Burk went on to call for the immediate removal of the Chief of the Forest Service and his entire staff. [28]

Joel Frykman, who reviewed the Bolle report as an independent consultant, explained that the Bolle committee opposed the "dominant use" philosophy that gives preeminence to the greatest need. He added that dominant use was a common and accepted

management practice for wilderness, recreation areas, national parks, and many other resources and activities. He then posed the question that if dominant-use land management was so bad for timber, why was it not equally bad for other resources and activities? [29]

Karl S. Landstrom, former Director of the Bureau of Land Management, took exception to several points in the Bolle report. He argued that multiple-use management "does exist as the governing principle on the Bitterroot National Forest as it does universally in the Forest Service, the Bolle Committee report to the contrary notwithstanding." [30]

The *Journal of Forestry* subsequently summarized the first few days of the hearings on clearcutting by noting that slightly more than two-thirds of the witnesses were overtly critical of the practice of clearcutting and indicted the Forest Service for practicing it, and that Federal representatives did not testify at the hearings. [31]

A few weeks after the initial hearings, on April 23, 1971, Orville L. Daniels, Supervisor of the Bitterroot National Forest, ,sent Regional Forester Rahm an accelerated program package for the forest for the years 1972 through approved package, Final Environmental Statement, Management Direction for the Bitterroot National Forest, was issued. The statement contained comments on 15 of the findings of the Bolle report and included responses to a mailing of 8,000 copies of the Forest Service task force appraisal of the Bitterroot. The 100 or so responses doubted an objective view by task force members, doubted the need for terracing, and urged better communications with the public. [32]

When the Senate subcommittee hearings reconvened in May and June, Government witnesses, including Forest Service Chief Edward P. Cliff, were heard. Cliff announced that on the Bitterroot Forest, as a result of the studies, discourses, and many hours of planning, "clearcutting will generally not be done where alternative methods are feasible," and that where clearcutting is not feasible, all cutting would be withdrawn if environmental considerations required it. He added that the size and nature of clearcuts would be modified to account for "esthetics and other resource values"; that slopes of more than 30 percent grade would not be terraced; and that where areas cannot be satisfactorily regenerated because of restrictions, they would not be harvested. Finally, roads were to be confined to "the least mileage needed," and multiple-use planning would be accelerated and intensified. [33]

Regional Forester Neal Rahm now elected to retire after 40 years of distinguished service. Rahm had joined the Forest Service in 1937 after graduating from the University of California, serving as ranger, forest supervisor, and Associate Deputy Chief of the Forest Service before being transferred to the Northern Region as Regional Forester in 1963. Rahm was eminently aware of both the role of foresters as conservators of the nation's forested lands and of their role as members of the community in which they worked. He had been a dedicated forester and a civic leader and, as Chief Cliff said, "would be missed." [34]

Rahm was replaced by a member of a younger generation of foresters, Steve Yurich, who began his forestry career on the Medicine Bow National Forest in Wyoming as a seasonal employee in 1951 and 1952. On May 14, Yurich forwarded the Bitteroot "balanced program" to Chief Clif with a note indicating that :a definite and visible change in approach to management-use planning, protection of the environment when considering timber sales, greater public involvement, and balanced uses of forest resources— including timber. [35]

Repercussions of the Bitterroot Controversy

Despite efforts to resolve the controversy by the Forest Service, the region , and the Biterroot, the gap of misunderstanding only seemed to widen. In June 1971, Chief Cliff issued a Servicewide memorandum that observed, "We now stand at a position where our ability to carry out our program is endangered, our integrity doubted, and our credibility seriously in question." He admonished all personnel to "Tell It Like It Is— Now!"

In August 1971, the Forest Service laundered a program called Inform and Involve." This program sought to 1) establish multiple-use management as the most beneficial and efficient management concept 2) encourage greater public involvement and cooperation, 3) include improved management of privately owned forests and woodlands, 4) verify the need for increased research, 5) verify the Forest Service role in leadership in forest management planning, and 6) obtain recognition that wood is a renewable [not nonrenewable] natural resource. [36]

Almost concurrently, the College of Forestry and Natural Resources at Colorado State University issued a report for the Council on Environmental Quality, discussing clearcutting in the forest of the Rocky Mountains. Robert E. Eils, Dean of the College and the report's major author, advised more intensive and careful clearcutting in strips or patches and stressed better communications between the Forest Service and the public it serves. [37]

A General Integrating Inspection (GII) in Region 1 and 4, including the Intermountain Forest and Rane Experiment Station, during the period June 21 through August 31, 1971, brought inspectors into 12 of the national forests of Region 1. The inspectors reviewed on-the -ground activities; overflow the forest examined State and private forest management activities in Idaho, Montana, and North Dakota; and conducted discussions with representatives of the Bureau of Land Management and Native American lands. Among the voluminous reports and supporting documentation use in the inspections, John R. Milodragovich submitted a 20-page resume of timber management activities in the region since the last GII. Milodragovich indicated that in recent years, the region had received the most criticism in its history. The sharpest criticism, he said was directed at timber harvest and the practice of constructing roads to get the timber out. The report highlighted the development of multiple-use planned on an ecological framework and made it clear that the question of merging local and national needs and local and national options had become a major problem in the region. [38]

At the fall 1971 conference of forest supervisors and division chiefs, a program emphasis statement was adopted as a sequel to the "balanced program" directive issued earlier by Regional Forester Neal Rahm. The program emphasis statement, according to the new Regional Forester, Steve Yurich, would guide planning and programming for the next 2 or 3 years. Yurich confirmed that "road construction, timber harvest, and similar developmental activities" were to be withheld from roadless areas "until multiple-use plans, including public involvement, are developed to guide activities." The region would emphasize efforts to regain professional credibility with the public, to raise standards, and to restore trust and confidence among people and units within the region. [39]

Research and Modern Management

In January 1972, the region released a document prepared in response to members of the Montana congressional delegation. *A Proposed Forest Service Land and Environmental Management Program for Montana* reviewed research programs being conducted by the Intermountain Forest and Range Experiment Station and explained the significance of that work to the welfare of Montana. It summarized the laboratory facility needs at Missoula and Bozeman and projected the region's activities through the 1970's. The report sought to justify the need for expanded research, which would provide better management of the national forest resources in Montana, and advised an "accelerated joint research-development-action program." [40] As Intermountain Forest and Range Experiment Station Scientists Charles A. (Mike) Hardy stated, the Northern Region management programs were built on the interaction between research and administration. [41]

Hardy pointed to the splendid research work accomplished by the staff of the Northern Rocky Mountain Forest and Range Experiment Station after its organization in September 1911. Dedicated scientists such as Dr. Julius A. Larsen, who joined the Forest Service in 1910 and began his work at the Priest River, Idaho, experimental forest in 1913, kept annual reports and studies on evaporation, temperature, wind movement, humidity, and soil quality and prepared a half-century analysis of climate and forest types. Larsen conducted growth and yield studies on White Pine stands and contributed significantly to analyses of fire dangers, blowups, and fire control techniques. As an example of his dedication, in the early 1920's Larsen took 6 months of leave without pay to tour forest experiment station in Norway, Denmark, Germany, and England. [42]

Research such as that conducted by people like Larsen, George M. Jemison, Charles A. Wellner, I.V. Anderson, and Mike Hardy, among others, has greatly enhanced the efficiency of Forest Service management practices and has contributed immeasurably to improving the welfare of the Northern and Rocky Mountain Regions. More so now than at any time in the organization's history, modern, multiple-use forest management requires a close association between the research and operations branches of the Forest Service.

New Trends in Forest Management

Because of the apparent "national" rather than "regional" character of the Bitterroot controversy, there was evidence that Washington had begun to preempt the traditional management planning role of the region, at both the agency and the congressional level. The regionally issued *Management Direction for the Northern Region* (March 1972) was in reality a personalized version of the Chief's "Framework for the Future" program. The report stressed the regional management situation, basic assumptions, and coordinated management direction. [43]

Almost concurrently (but unrelated), the Subcommittee on Public Lands of the Senate Committee on Interior and Insular Affairs released a 13-page report on clearcutting on Federal timberlands, which strongly suggested four policy guidelines for timber management on Federal lands. Only two of the guidelines were related to clearcutting. These stated that clearcutting should not be used on Federal land areas where soil and watershed conditions were fragile, where aesthetic values outweighed other considerations, or where it was doubtful that the cut area could be restocked within 5 years, or in cases where the decision to clearcut was made wholly on the test of promoting the greatest dollar returns. The Subcommittee further specified situations that should prevail if clearcutting were used (including a multidisciplinary review of the potential environmental, biological,

aesthetic, engineering, and economic impacts on the sale area) and advised clearcutting only in patches or strips "shaped and blended as much as possible with the natural terrain." [44]

That the Bitterroot controversy had become a Federal as opposed to simply a regional affair was further confirmed in the final GII report, which was relayed to the regional foresters and the director of the Intermountain Forest and Range Experiment Station in April 1972 by Acting Chief John McGuire. The GII report, which applied to more than one region, contained more than 50 recommendations, most of which required action at the Chief's level rather than at the regional or forest level. It identified timber harvesting and mineral extraction as major critical issues:

> Through these activities the Forest Service has lost credibility in varying degrees with some segments of the general public. Criticisms of Forest Service land management decisions have been increasing in frequency and intensity for the past several years. The unwillingness of people outside the Forest Service to accept land management decisions *carte blanche* can be expected to continue into the future. During this inspection it became apparent that an analogous situation is developing internally. Forest Service employees, especially younger professionals, are unwilling to accept hierarchical decisions carte blanche. External credibility will not be fully regained without developing internal mutual confidence. [45]

Public Participation in Management Decisions

Thus, for the Forest Service, the world was changing, not only on the outside, but on the inside as well. Increasingly, management decisions would become a product of outside participatory public hearings and recommendations and inside collegial negotiations and review. Increasingly, decisions would be reviewed, if not made, at "higher" levels. What once were the decisions of the ranger were now those of the forest supervisor and staff; those formerly made by the forest supervisor became the concern of the region; and the problems and decisions of the region became those of the Chief. Although these trends were already under way, and undoubtedly would have continued even without it, the Bitterroot controversy and the wilderness and environmental movements in general became something of a catalyst in hastening the change.

In specific reference to the Bitterroot, the GII report observed, "Although timber harvesting on the Bitterroot National Forest is no worse than some on other National Forests, there are a number of indications that the Bitterroot will continue to be a national focal point for Forest Service critics. The social forces which combined to make the initial controversy a national issue have not weakened." [46]

That the Bitterroot had become of national concern did not preclude local input; rather, it strengthened the evaluations of non-Forest Service interests. One study, for example, prepared by a team chaired by Dr. Robert E. Dils, included professors and researchers from Oregon State University, Utah State University, Montana State University, and the University of Washington, as well as the director of the Montana Department of Fish and Game. This study noted that timber processing has "low energy requirements for conversion to usable products." Insistence upon a "pure" forest environment would require trade-offs for products requiring nonrenewable natural resources and the expenditure of substantially higher levels of energy for their conversion to usable products. [47] Thus, the reduction in the output of national forest resources generated by environmental or aesthetic considerations held often unseen but rather predictable environmental consequences elsewhere.

A special report on wood products in Montana, prepared by Maxine C. Johnson for the State Department of Planning and Economic Development in 1972, examined three possible scenarios in the Montana (and national forest) timber industry. The first assumed the 1972-75 cut equaled the amount of timber sold. The second assumed the 1972-75 cut remained at the level of the previous 5 years and the third assumed a moratorium on clearcutting for the next 3 years. Predictably, the conclusions reached were that over the long term, some jobs would be lost under the first and second conditions and that fewer jobs would be lost with a moratorium on clearcutting. [48]

In 1973, proposed new programmed allowable cuts in three of the forests in Region 1, which included significant reductions, were under public review. In addition, all of the national forests in the Rare timber RAM method, which would result in lower allowables. A privately funded study by Carl Newport, *The Availability of Timber Resources from the National Forests and Other Federal Lands* (1973), examined production capacities in the national forests of Region 1 and elsewhere. In recalculating allowable cuts, Newport concluded that increases rather than reductions in allowable cuts were justified. For example, on the Flathead National Forest, instead of a reduction from the then-current annual harvest of 181.6 million board feet to the projected 159.8 million board feet, Newport estimated the annual allowable cut at 190 million board feet. [49] The initial response to the Bitterroot controversy clearly had been the imposition of new, more conservative timber production programs On the national forests. These programs would themselves begin to have new consequences for the regional economy and for the national environment. Multiple-use forest management had become a very complicated business indeed.

Willard R. Fallis, who began his Forest Service career with temporary employment in 1940 and retired in 1979, having spend most of his career on the forests of Region 1, concurred that during his career land management decisions became considerably more complex and controversial. [50]

The spirited events of the Bitterroot controversy had helped precipitate a different kind of management on the Bitterroot and other forests of the Northern Region. Forestry, if it had not been so before, increasingly became a "people" business rather than a timber business. Robert Morgan, for example, who became supervisor of the Bitterroot in 1974, became something of an expert in reconciling both conflicting interest groups. As a responsible arbitrator standing between his agency, the Forest Service, and the public, Morgan, as supervisor of the Helena National Forest (1961-74), played a determining role in resolving the heated controversy over roadbuilding into the Lincoln Back Country, an area of 75,000 undeveloped forest acres in the northern half of the Lincoln Ranger District on the Helena National Forest. Rumors in 1960 that the Forest Service planned to build roads and harvest timber in this "Poor Man's Wilderness" area adjoining the Scapegoat Mountains, beyond which lay the Bob Marshall Wilderness, thoroughly alarmed local citizens in Lincoln, Missoula, and elsewhere. Morgan and a succession of Lincoln District rangers, such as Neil O. Peterson (one of the most horse- and mule-oriented rangers in the region) and Jerry Stern (who recalled the Lincoln Ranger District as one of his most challenging assignments), resisted pressure from the Regional Office to implement the long-range plan for road construction and harvests in the backcountry. The controversy ended in 1972, when the Lincoln-Scapegoat Wilderness became the first *de facto* wilderness to enter the National Wilderness Preservation System. [51]

Morgan's tenure as supervisor on the Bitterroot, from 1974 until his death in late 1988, was spent working with people. As Arnold Bolle commented, "He listened to people and tried to work out agreements and solutions with them. Hew had a deep concern for the forest and its proper management and getting people to work together on it." He became adept at resolving conflicts between commodity groups and conservation groups who objected to terracing and clearcutting practices on the Bitterroot. He had, as Regional Forester John Mumma said, "a special way of being able to sit down and visit with folks and bring a sense of consensus on what should happen." And one of his employees commented, "You didn't work for Bob Morgan, you worked with him." Because of his good works, Morgan received the Environmental Awareness and Achievement Award from the Rocky Mountain Center on Environment, a Superior Service Award from

the U.S. Department of Agriculture, and a Special Achievement Award from the Forest Service. He was also honored by election as a Fellow of the Society of American Foresters. [52] Most importantly, perhaps, Morgan helped convert the ill feeling generated by the Bitterrot controversy into a spirit of cooperation and goodwill. It was a great achievement — indicative of the aspirations of the new style multiple-use management, not only in the region, but throughout the Forest Service.

As Neal Rahm believed (in 1969), the Forest Service had entered an era "within which many 'publics' compete vigorously for the social and economic values of National Forest resources." Current public opinion and Forest Service professional analysis of long-range public interest, he said, "often may be in opposition." Each public group, he observed, is itself a changing, dynamic composite. "Thus, the decisionmaking process is complex today and can only become more complex as time advances." [53]

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Chapter 13

Mandated Forest Management

The Bitterroot controversy was a symptom of the change taking place in national forest management—change that had accelerated in the years since World War II. Dennis C. LeMaster's *Decade of Change* noted that in the first half-century of Forest Service management of the national forests, its statutory authority derived from a total of six legislative enactments, including the Forest Reserve Act (1891), the Organic Administrative Act (1897), the Transfer Act (1905), the Weeks Law (1911), and the Clarke-McNary Act (1924). These laws served admirably, so long as the demands upon the resources of a national forest remained small. Demands tended to be local, and the response equally local—often resolved by the ranger on the ranger district. As the public's demands broadened, the Forest Service response required greater participation first from the forest, then from the region, and increasingly from the Chief's office. After World War II, according to LeMaster, the demands for the resources available in the national forests "grew by leaps and bounds," and "so, too, did conflicts among groups who used those resources." [1]

Thus, administration of the national forests within Region 1, as elsewhere, increasingly came to involve very diverse, geographically dispersed, and philosophically different individuals, groups, and interests. The old autonomy and independence of the ranger district, the forest, and the region became melded into a collectivist system of management that involved every tier of the Forest Service, along with Government agencies and private entities external to the Forest Service.

The management framework and the legislative authority for national forest management changed repeatedly during the environmentally conscious 1960's and on into the 1980's. Six major pieces of forest-related legislation passed Congress between 1960 and 1976, as many in a 15-year period as had been approved in the previous 70 years. These acts included:

1960 Multiple-Use Sustained-Yield Act (74 Stat. 215)

1964 Wilderness Act (78 Stat. 890)

1969 National Environmental Policy Act (P.L. 91—190)

1974 Forest and Rangeland Renewable Resources Planning Act (P.L. 93—378)

1976 Federal Land Policy and Management Act

1976 National Forest Management Act (S. 3091)

Regulatory guidelines, court decisions, and additional legislative enactments affected both national forest management and the utilization of forest resources. In the 1970's alone, for example, Congress created 20 new Federal regulatory agencies—28 such agencies had administered the Nation's business before 1960. The Water Quality Improvement Act (1970), the Clean Air Act Amendments (1970), the Federal Water Pollution Control Act Amendment (1972), and the Federal Insecticide, Fungicide, and Rodenticide Act (1972), to mention only a few, directly affected forest management and planning, both through the auspices of the Environmental Protection Agency, created by Congress in 1970, and through the special-interest groups that utilized the courts, the legislation, and the National Environmental Policy Act. Concurrent with these legislative enactments, the character of the Forest Service, particularly in the representation of professions other than foresters, affected the administration and management of the national forests in the Northern Region.

The expanded cadre of users of national forest resources often interpreted new legislation in different ways, further compounding the growing difficulty of decisionmaking and policy implementation. Much of the new legislation, to be sure, was not radical, instead evolving naturally out of programs and policies of the past. Such was the case with the Multiple-Use Sustained-Yield Act of 1960, for example. This act, which reaffirmed the concept of multiple use and sustained yield, derived in good measure from Secretary of Agriculture James Wilson's directive to the first Chief Forester, Gifford Pinchot, in February 1905:

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to the most productive use for the permanent good of the whole people and not for the temporary benefit of individuals or companies.
>
> . . . You will see to it that the water, wood, and forage of the reserves are conserved and wisely used.
>
> . . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run. [2]

The Northern Region accepted "multiple-use management of the National Forests to ensure a sustained production of outdoor recreation, range, timber, watershed, wildlife and fish." [3]

Multiple-Use Plans Replace Single-Use Plans

Up to the beginning of the 1960's, foresters prepared management plans for each of the major types of resources. Timber management planning was prominent. For instance, a timber management plan for the Bitterroot National Forest was approved in 1961 and amended in 1966. Lands in the forest were categorized as nonforested, noncommercial forest, and commercial forest. The timber management plan, therefore, recognized that forest uses included activities other than timber production. To reflect the multiple-use concept, the 1966 amendment specifically recognized employment of multiple-use plans in the working circles. [4]

The first multiple-use plans in the Northern Region were for ranger districts. Multiple-use plans for the national forests soon followed. The ranger district plans provided for broad zoning and included coordinating requirements needed to ensure compatible use of resources. The Hebgen Lake District on the Gallatin, for example, produced its 1964 plan with an introduction, a definition of management zones and the management situation within each zone, the principal forest uses, and the management decisions that would be required. A "special zone" on the Hebgen was the Madison River Canyon earthquake area. (In 1966 and 1969, the region issued guides to coordinate the plans for the ranger districts on each national forest. These guides identified seven major management zones: high area, general forest, lower slope-foothill, water influence, travel influence, riverbank, and special.) [5]

An article by Thomas Nelson in Forest Planning (1980) explained the process as follows:

> The Ranger District multiple-use plans usually provided for broad zoning of National Forest land as the basis for further decisions. They included specific coordinating requirements considered necessary to ensure compatibility.
>
> These multiple-use plans didn't identify resource development goals. Instead, they were set at the individual national forest level.
>
> . . . Although multiple-use planning was headed in the right direction, NEPA [National Environmental Policy Act] refined the process in three major ways. [6]

NEPA interpreted the ranger district's multiple-use plan as a land management unit plan. It required interdisciplinary interaction in the preparation of plans, and its enactment resulted in a "quantum jump in the intensity of public involvement" in forest management decisions. [7]

Published multiple-use forest plans developed over time. All national forests in Region 1 were to have the overview portion of their multiple-use plans completed by July 1, 1972. The 1968 program of work admonished that "there continue to be too many examples of poor multiple-use decisions, judgements, and execution." Special-interest groups were seizing upon these errors as "typical examples of Forest Service management," to such a degree, the report continued, "that the terms devastation and exploitation are being equated with multiple use." [8] Special-interest groups and the media, intentionally or otherwise, often distorted the multiple-use management that had long been a Forest Service policy.

The Wilderness Act of 1964

The Wilderness Act, first introduced by Senator Hubert Humphrey and eight cosponsors on June 7, 1956, but not approved by Congress until September 3, 1964, designated 54 wilderness areas containing 9.1 million acres and directed the Secretaries of Agriculture and the Interior to conduct 10-year reviews of other lands suitable for inclusion in wilderness designation. The work on the Wilderness Act occupied 9 years and involved 65 different bills, 18 congressional hearings, and thousands of pages of records, transcripts, and documents. [9]

Wilderness set-asides (first called primitive areas) and wilderness management by the Forest Service predated the Wilderness Act by four decades, as did concern for maintaining roadless tracts. For example, in 1938, Regional Forester Evan Kelley forwarded a list of roadless areas in the Northern Region to the Forest Service Chief. Kelley identified 538,000 roadless acres near established primitive areas, and recommended maintaining another 602,000 acres as roadless areas. He explained that the decision to build roads properly takes into account "many other kinds of land and resource service." [10]

In Montana, 1,983,997 acres of national forest were treated as wilderness areas or wild areas as of 1957, before passage of the Wilderness Act. Wilderness areas established under U-1 and U-2 regulations were instantly transformed into "wilderness" under the act. Studies, hearings, and recommendations for the transfer of primitive areas were to be made within 10 years. Some

primitive areas, such as the Selway-Bitterroot, were transferred to wilderness very quickly. Public hearings were conducted on the proposal to classify the area as wilderness after passage of the Wilderness Act, and after those hearings the area was reclassified as the Selway-Bitterroot Wilderness Area. [11]

The experience gained in the Selway-Bitterroot review process in the Northern Region, and similar situations in other parts of the country, prompted the adoption of a regular review and evaluation procedure described as RARE I—Roadless Area Review and Evaluation. According to Dennis Roth, former historian for the Forest Service, the Forest Service Manual in 1967 directed regional foresters to review and report on areas that might have wilderness potential by 1969. Dick Joy, a member of the Regional Office recreation staff who was on duty in Washington, outlined the need for an inventory of roadless areas, which were beginning to receive attention from backcountry users of the region's national forests. Associate Chief McGuire affirmed the need for such inventories. Between the fall of 1971 and the summer of 1972, the Forest Service inventoried and studied 1,449 roadless areas containing 55.9 million acres. [12]

The inventory, designed to improve the effectiveness of the Forest Service in its management of wilderness under the authority of the Wilderness Act, was viewed by wilderness preservationists outside of the Forest Service as a prelude to the Forest Service building roads into all roadless areas as a means to preserve the areas for multiple use, mostly timber growing and harvesting. These interests immediately began to pressure Congress to place much of the region's national forest land under wilderness status. A former forest supervisor from the region, Kenneth P. Norman, explained that "somebody in the Forest Service in the very early 1970's decided it would be useful to show on maps those areas of national forest land that had no roads." For those opposed to further development of the national forests, the inventoried areas became "designated roadless areas," or quasi-wilderness, thus adding a new category to an already complicated scheme of land-use planning. [13]

When the National Environmental Policy Act (NEPA) was signed by President Richard M. Nixon on January 1, 1970, land-use planning and forest management took on radical new dimensions.. The act created a Council on Environmental Quality, enunciated a statement of national policy for the protection of the environment, and directed all Federal agencies to implement protective measures under the authority of the Environmental Protection Agency. The act had broad and pervasive influences not anticipated at the time of its passage. [14] One of these has

been to make the work of forest management and planning more cumbersome and subject to external review and revision.

S. T. Dana and S.K. Fairfax, in their study *Forest and Range Policy,* suggest that it has been particularly difficult for the Forest Service to work within the framework of NEPA. Given the traditionally decentralized management system of the Forest Service, actions, taken at the unit level are difficult to assess in the context of the region or the nation. [15] Other external legislation, or attempted legislation, contributed to internal management stresses within Region 1.

The growing concern for conservation and preservation of wilderness and forest resources confronted a rising "shortage" of marketable timber in the early 1970's indicated by sharply rising timber prices. Congress attempted to respond to this problem by introducing the Timber Supply Act, which would have enlarged the allowable harvest from Federal lands. This bill, and several related bills, failed to pass, but triggered tremendous debate and infighting and widened the apparent chasm between environmentalists and timber producers. Consideration of these measures also greatly enhanced the supply of information about the renewable natural resources of the national forest and other public lands. [16] Essentially external events such as these have an impact upon the decisionmaking processes within the Northern Region.

New Management Directions Within the Northern Region

The year 1971 was a year for "taking stock" in Region 1. Problems on the Bitterroot National Forest focused attention on proper responses from district, forest, and regional managers. Between January and March, Regional Forester Neal Rahm conducted six management direction seminars, in which he reviewed the natural of changing conditions, the acceleration of those changes, and how such changes might or should affect the organization. His major emphasis was that the Forest Service "must change to cope with the speed of change." This, Rahm said, involved two important skills:

> One . . . is to be able to respond quickly on critical issues and the other is to plan ahead. We need people who fall in that critical 5 percent category—the people of the future, not the people of the present. [17]

The General Integrating Inspection (GII) of 1971 documented, perhaps for the first time, the full extent of changes affecting the Northern Region's forest management during the past decade. The report discussed critical issues in hardhitting fashion and

identified timber harvesting, mineral extraction, and other development on the national forest lands as the major external issues. The Forest Service, the report observed, had lost credibility in varying degrees with some segments of the general public, and criticism of land management decisions had been increasing in frequency and in intensity. [18]

The inspector addressed the Bitterroot timber harvest situation, now laden with potential conflict and confrontation. They suggested that an opportunity to conduct harvest operations "carefully integrated with quality protection and management of other values" existed, and that managers could "improve public understanding of the silvicultural practices used or to be used" on the forest. The GII inspection also highlighted the human-interest aspects of the forests—recreation and the development and utilization of historic sites such as the Lewis and Clark route on the Clearwater and the Madion River earthquake area on the Gallatin. The region was encouraged to support use of backcountry areas where activities were less limited than in wilderness, and to expand public involvement in planning and development. [19]

Timber Management and Multiple-Use Planning

At the same time as the GII report was issued, John R. Milodragovich, Chief of the Timber Management Division, presented a detailed analysis of the status of Northern Region timber management practices. Milodragovich recognized the need for change within the region. He remarked that the Forest Service's "Framework for the Future" was fundamentally multiple-use management.

> It is obvious the public is not satisfied with our land management. Perhaps almost as important , our own people in the Forest Service question the emphasis on some activities and the neglect of others. I believe we are finally facing up to the responsibilities and tremendous complexities of "land" management. [20]

Milodragovich went on to identify *planning* as the major problem facing the region.

In his report, Milodragovich recognized a structural weakness in the ability to plan across agencies. He quoted the 1970 Bitterroot task forest forced evaluation regarding the slow pace of planing on that forest and explained that while the region could not tolerate allowable cuts that were incorrect, the current pace of completing only the one and one-half timber management inventories per year required to determine realistic annual cuts was

simply to slow. Milodragovich lamented the lack of milt-disciplinary planning teams that might "reduce the possibility of overlooking any significant ecological or environmental consideration." He also noted several areas such as nutrient cycling, which required concentrated research effort. [21]

The regional forester's management direction for the Northern Region resulted in the coordinated planning exemplified in the program of work for each national forest. Each district within the forest prepared a plan of work for the fiscal year; these were consolidated into the forest's program of work. [22] However, the difficulties of effective planning remained a major concern throughout the 1970's.

The 1972 Supervisor-Staff Conference, held in Spokane, Washington, focused on planning as the region's major challenge—and opportunity—for the next two decades. Regional Forester Steve Yurich noted, however, the day-to-day burden of managing the forests, which utilized the full resources and personnel of the region, made long-range planning a slow and difficult process. He said, "I wish we could stop the clock for 2 years and be able to get on top of the multiple-use planning job and be able to identify our land capabilities." [23] He said, "somehow we will integrate management so that we can contribute to people's needs and still have harmony with environment." [24]

The Pace of Multiple-Use Planning Quickens

Multiple-use forest plans began to appear in at the latest preliminary stages in 1972. Supervisor Jack Large approved the first part of the Lolo National Forest multiple-use plan on May 31, 1972, and Regional Forester Steve Yurich approved it the following day. Copies of the plan were disseminated to the public on June 26. The plan described forest resources and assumptions about their future management, and it set forth management directives for coordinating resource utilization. Resource were categorized under soil, air, water, visual, recreation, range, timber, wildlife, fishery, wilderness, and minerals; the discussion concentrated on inventory problems and management. The Bitterroot forest plan, completed on August 14, and subsequent forest plans followed the same format. [25] The level of effort represented in the plans can best be seen by examining a representative planning unit within a forest plan.

The multiple-use plan for the Gold Creek Planning Unit, on the Missoula Ranger District, is a microcosm of the changes in the Forest Service process during this period. The Gold Greek unit

comprises 17,332 acres of national forest land in seven management units, out of 78,415 acres of ownerships. The final environmental impact statement for the unit, which was, in effect, a revise multiple-use plan, was published in 1974. However, the process began in 1970 and 1971, when district multiple-use plans were revised to emphasize "delineations of management units and zones." In 1972, the whole system of multiple-use planning was reorganized, "to provide greater coordination at the forest level and more specific management guidance at the district level." This produced part II of the multiple-use plan for a national forest. The part II eventually superseded ranger district multiple-use plans, indicating , among other things, the greater emphasis on central planning at the forest headquarters level and a decline in the autonomy of the Ranger District. [26]

The Gold Greek Unit plan began by publishing a "notice of intent to plan" in the local newspaper on May 7, 1972. The announcement included an invitation to the public meeting to be held on May 8. Two announced field trips to the affected area, followed by another public meeting held on December 7, 1972, provided the input for the draft environmental statement, which was filed with the Council on Environmental Quality created under NEPA on December 11, 1973. Public notice that the draft environmental statement was available appeared locally on December 12, 1973, and in the *Federal Register* on December 17. The Lolo National Forest transmitted the final environmental statement to the Council on Environmental Quality on August 6, 1974. [27]

During the next few years, the region completed many of the environmental statements required for its various planning units by the Multiple-Use Sustained-Yield Act of 1960.

The environmental statements for the two planning units of the Little Missouri National Grasslands, the Rollowing Prairie Planning Unit and the Badlands Planning Unit, were completed in 1975. The grassland units were distinct components of the Custer National Forest, offering open, undefined, and unrestricted landscapes; a unique history; and a land where ranching and dry-land farming were not just economic enterprises but a traditional way of life,. Here, the statement said, "a man can own and work his land, be his own boss, breathe fresh air, be free." Almost 700 individuals, 4 Government agencies (other than the Forest Service), 4 State or county authorities, and 10 private organizations—ranging from the Wilderness Society to Texaco, Inc.—testified in public hearings on the development of management plans for these grassland units. [28] Some 14 years had elapsed since the passage of the Multiple-Use Sustained-Yield Act and

the completion of multiple-use management plans. Not only did planning consume an enormous amount of time and human resources, but legislation and ruling issued after the planning began changed the rules and procedures for planning.

Planning on the Bitterroot National Forest after 1971 included considerable change in acres allocated to the timber production. By 1976, the Bitterroot had filed final environmental impact statements on 445,000 acres, had completed draft statements on 220,000 acres, and had drafts in progress for another 66,000 acres. Nearly 100,000 acres remained. All of this effort involved massive public participation. Following the Northern Region policy on clearcutting, the Bitterroot plans guaranteed that if irreconcilable conflicts were found to exist between the biological requirements of timber stands and the multiple-use needs of an area, no harvest would be made. The forest reallocated timber treatment allotments, reduced its saleable timber allocations, and curtailed planned road construction. [29]

Planning on the Beaverhead National Forest began somewhat differently in the early 1970's In 1972, the forest published part I of its multiple-use plan, which was a general document printed in brochure format. Part II of the plan, published in final form in 1977 and forwarded to the Environmental Protection Agency on December 15, 1978, included two documents; a land management plan and a final environmental impact statement for the land management plan. The Beaverhead included 40 to 60 pages of plans for each of the planning units within the comprehensive land management plan. [30]

By the time the land management plan and the environmental impact statement were published, the planning rules had been changed under the provisions of the Resource Planning Act (1974) and the National Forest Management Act (1976), and the process had to began again.

The Resource Planning Act (1974)

The Resource Planning Act required considerable greater detail in management planning for national forest lands than did the Multiple-Use Sustained-Yield Act or the National Environmental Policy Act. It was initiated by Senator Hubert Humphrey, passed by Congress on August 2, 1974, and signed by President Gerald Ford on August 17, 1974. The Forest Service responded to the act in a document entitled *Alternative Goals for Six Resource Systems,* released for public review on March 7, 1975. The six resource systems included outdoor recreation and wilderness,

wildlife habitat, range forage, timber, land and water, and human and community development. The Forest Service then submitted two documents to Congress—*Renewable Resource Assessment* and *Renewable Resource Program*—along with a 129-page summary of the documents. The first document provided an analysis of the long-run supply and demand of renewable resources; the second established a program for Forest Service management of renewable resource, including cooperative forestry assistance for Statement governments with an invitation to submit written comments to the Forest Service Chief by October 15, 1975, and to attend briefing sessions and hearings scheduled at various locations through the country in September. [31]

The Final responses to the Resource Planning Act were sent to President Ford on December 31, 1975. The White House submitted them to Congress for approval, which passed on March 2, 1976. Follow-up assessment (631 pages) and program (537 pages) documents were submitted to Congress on June 19, 1980. [32] Congressional mandates, thus, radically altered the management of the national forest by the regions, and those mandates came with relentless regularity in the 1970's.

The National Forest Management Act of 1976

Sidney Weitzman, who published a study of a controversy over clearcutting on the Monogahela National Forest in West Virginia, believed that, if the Forest Service had implemented the 1970 Region 1 task force appraisal report on the Bitterroot, many conflicts between the Forest Service and special interests might have been avoided. Mandates approved by Congress also may have been muted. Unfortunately, Weitzman suggests, "the Forest Service and some other agencies in the natural resources field did not fully appreciate the depth and intensity of feeling—and the pressure that could be generated by these new interests." [33] The National Forest Management Act was a product of this rising public concern.

Senator Hubert Humphrey introduced the National Forest Management Act. Congress approved it expeditiously, and the bill because law with President Ford's signature on October 22, 1976. This act, according to the Forest Service, strengthened the Resource Planning Act. It provided new regulations and procedures respecting land management planning, timber management actions, and public participation in Forest Service decisionmaking. At least 80 percent of its provisions amended existing acts pertaining to national forest management. Unfortunately, the act was very long and complex, making delays and confusion in implementation, plus conflicts over interpretation, possible, if not likely. [34]

As a portent of things to come, Brock Evans of the Sierra Club indicated that the National Forest Management Act achieved 25 percent of the Sierra Club's long-range goals, and "for now, we are going to see what the Forest Service does with its regulations. If they have learned, we will not contest them for a while. If not, there are plenty of legal handles in the bill." [35] One of those "handles," in fact, became the basis for a complaint against national forest management in Texas the day after the new act was signed into law.

The Forest Service announced a schedule of public briefing sessions to be conducted as a prelude to the 6-month process of developing the rules and regulations that would be used to implement the National Forest Management Act. In December, the Forest Service issued on information report explaining procedures planned for implementing the act. A committee of scientists were named to "provide scientific and technical advice and counsel on proposed procedures to assure that an effective interdisciplinary approach is proposed and adopted." [36] Ten planning "actions" were to be followed:

1. Identification of issues, concerns, and opportunities
2. Development and establishment of planning criteria
3. Collection of data and information
4. Analysis of the management situation
5. Formulation of alternatives
6. Estimation of the effects of the alternatives
7. Evaluation of the alternatives
8. Selection of the preferred alternative
9. Implementation
10. Monitoring and evaluation.

Each management plan required two parts, an environmental impact study and a national forest plan. The process required a preliminary draft followed by the final plan. [37] Thus Region 1, as other Forest Service division, now had congressional directivess to guide forest management. More would be forthcoming.

The Federal Land Policy and Management Act, which Congress approved almost concurrently with the National Forest Management Act, required that Forest Service activities relating to land acquisition, land exchanges, domestic livestock grazing, and rights-of-way be coordinated with the Bureau of Land Management (BLM). [38] Whatever the respective legislation, wilderness concerned continued to preoccupy the public's attention and Forest Service management planning throughout the 1970's and 1980's.

RARE II: Wilderness Planning

About 15 million acres of national forest lands were actually designated as wilderness under the Wilderness Act of 1964. Another 70 million undeveloped acres of national forest land remained to be considered for wilderness classification. M. Rupert Cutler, Assistant Secretary of Agriculture, proposed guidelines for wilderness classification—"Roadless Area Review and Evaluation" (**RARE II**).

Cutler believed that it was imperative that a quality National Wilderness Preservation System be completed and that early determination be made as to which roadless areas should no longer be considered for wilderness.

Roadless or undeveloped areas in Montana totaled 5,762,095 gross acre (5,471,380 net), inventoried by forest area code, and area name. The **RARE II** environmental impact statement evaluated the probable impact of each wilderness alternative on timber harvest, recreation, wildlife, and grazing. [39]

Under the direction of Culter, the **RARE II** executive group in the Chiefs office supervised the completion of **RARE II** studies for the entire Forest Service organization, and those studies were completed by the announced deadline. As a result, President Jimmy Carter transmitted the completed studies to Congress as the format for the wilderness initiatives on April 16, 1979. The studies did not, by any means, fully resolve the conflict over wilderness designation, but they did enable a better or more enlightened look at areas that would be added to those previously designated as wilderness. Congressman John H. Seiberling, chairman of the Subcommittee on Public Lands and National Parks, commented in May 1983 that **RARE II** seemed to be capable of resolving the remaining issues over wilderness designation. [40] Thus, a management mandate established in 1964 began to reach some resolution two decades later.

RARE II ended on January 27, 1983. At that time, National Forest Management Act regulations were revised to include wilderness evaluations as a part of the regular national forest planning process. Congressional action on wilderness/ nonwilderness proposals on a State-by State basis became the standard procedure for resolution of wilderness issues. Thus, within a period of two decades, procedures relating to format management within the Northern Region, as elsewhere, had become mandated by congressional authority, in what was at least for a time a bewildering array of legislation.

Moreover, the decisionmaking authority had in many respects been removed from the national forest to the region, and then from the region to the Chief's Office and, more accurately, directly to the halls of Congress. How much timber to be cut, where roads should be built or not built, and where wilderness should be preserved or not had become the direct concern of Congress and of myriad interest groups far beyond the compass of the Northern Region. This did not mean that the Northern Region had abdicated its role in the management of forest resources, but that the region must involve diverse, often external groups—ranging from local grazing or preservation associations, to State and national groups (including other Government agencies), to corporations and Congress—in the planning and decisionmaking process.

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Chapter 14

Social and Economic Influences

Management of forest resources by the Forest Service within the Northern Region has directly affected the lives and welfare of area residents. The geographic areas contiguous to the Northern Region have for the most part remained an economic hinterland. In Idaho, North Dakota, South Dakota, and Montana, most economic activity is extractive and tied in some way to resource development or agriculture. This has accentuated the importance of the Forest Service to the States and localities associated with the region. Because resource management is a central function of the Forest Service, and because the impact of Forest Service spending and employment is greater in the absence of a manufacturing sector, Forest Service operations have come to play an especially significant role in the economic and social life of the region.

Early Use of Forest Resources

In 1897, 6 years after the passage of the Forest Reserve Act, President Grover Cleveland used its authority to establish the Bitterroot Reserve and the Lewis and Clark Reserve within what is now the Northern Region. At the same time, the Pettigrew Amendment authorized the Secretary of the Interior to make rules governing the use of national forest resources. Officials developed regulations that allowed ease of access to those resources and would thus be seen as helpful to local development. They were eager to foster cordial relations with communities that feared the agency might stifle economic growth. [1]

Under the early regulations, the Forest Service could sell public-domain timber, for example, but levels of allowable cuts would be established with the goal of supplementing harvests from private forests rather than competing with them. Officials would first advertise the sale at a minimum appraised value and then supervise the cuts of mature or dead timber by the successful bidder. Most of the timber sold at this time satisfied local demand. It represented a small contribution to the national total, but did boost local economies in the area by lowering construction costs as less lumber was freighted in from other areas. [2]

Before long, however, national demand would open wider markets for the sale of the region's timber. What had been primarily local use of forest resources became, after the turn of the century, increasingly national. Nationwide in the 19th century, timber production peaked in the Northeastern States, the Great Lakes

States, and the Central States. The lumber industry then turned much of its attention to the South. This contributed to a rise in the use and thus the price of softwoods, western yellow pine, larch, and other species that did not thrive in the South but abounded in the Northern Region. James Hill helped by charging low freight rates on his Great Northern Railroad at this time because he wanted to encourage traffic for his otherwise empty eastbound trains. The export of timber to the outside thus accelerated dramatically and this in turn allowed local lumber-related businesses to expand. Nonetheless, forests of the Northern Region remained for decades less intensively used than those in many other parts of the country. [3]

In 1902, the Department of the Interior issued a manual on administrative policies in opening portions of the forest reserves for other purposes. Prospecting and mining would be open on most lands through a system of leasing. Other types of development, such as trails, roads, and irrigation works, could be undertaken with special use permits. Ranchers were given the opportunity to use lands for grazing cattle, sheep, and horses by obtaining "grazing permits" from the Forest Service. Small operators could run up to 10 head for free. The amount charged for large herds was based on a "reasonable fee" concept, with national guidelines determining the amount per head. Actual charges for many years remained well below market value. The Forest Service wanted to cultivate a good working relationship with stock owners because they inevitably played an essential role in the defense against fires throughout the entire area. [4]

Grazing permits could be obtained individually by cattlemen or through wool-growers' associations for sheepmen. Range on Forest Service lands quickly became highly sought after and subject to competition. Rather than allotting to the highest bidder, preference was given to established ranchers who owned property nearby and whose operation depended on access to Forest Service lands. Permits could last for up to 5 years and were not transferable, except in the case of the sale of stock under permit. Thereafter, the buyer would have to file independently, although if the sale was of both stock and ranch property, the permit could be renewed. The Forest Service even allowed some fencing and kept losses from predators down by hiring hunters to reduce their numbers. Ranch properties with close access to Forest Service lands quickly became more highly prized and more highly priced. [5]

As the region's population grew, more and more links were forged between national forest lands and the development of the surrounding communities. Many of the ties used to construct the railroads that connected the region with outside markets came from national forest timber. The same was true of most of the timber that reinforced the mines in the Butte area and throughout the region. The extraction of forest resources created jobs in the timber, mining, and livestock industries that became the economic backbone of many communities. The wages earned in those commodity production jobs had a multiplier effect, supporting employment in service sectors of the economy. Ranchers in many places came to rely on national forest timber for fenceposts, corral poles, and barn rafters, among other things. Wood gathered from Forest Service lands heated many homes in the region, while animals taken from the national forests through hunting, fishing, and trapping supplemented the diets and the incomes of many residents. [6]

The Impact of Recreation and Tourism

In the early years, recreation was not envisioned as becoming a significant function of the national forests. However, the Forest Service recognized that it nonetheless had a place. The production of a use book (Forest Service manual) in the early 1900's provided for permits for the recreational use of forest lands. Individuals could lease cabins or homesites, and commercial businesses could lease locations for tourist attractions such as hotels and resorts. [7]

It was not surprising that national forests within the Northern Region would serve as a magnet for tourists. The Western States had for many years been a popular attraction for those easterners able to afford the long and expensive journey. In certain places within the northern Rocky Mountains, the majestic beauty alone was enough to lure people. A few came to see specific locations of unusual splendor, like the Yellowstone Park area. But the West also represented the roots and the heritage of the American experience. It was a reminder of what America had been and what Americans had lived through. It came to symbolize the rugged adventure, the spirit of starting over, and the individualism of the past at a time when the industrial future looked increasingly collective and staid. Some of those intoxicated with the romance and imagery of the West, including famous national figures like Theodore Roosevelt, came to hunt the big game that no longer existed further east. [8]

Since many of the undeveloped landscapes and national attractions of the West were on national forests, it was perhaps inevitable that recreation would play an ever increasing role on those lands and bring more tourists and tourist dollars into the region.

More than anything else, the automobile accelerated the process. The distance to national forests was in effect "shortened," and the trip suddenly became feasible for many more people. In addition, many people were eager to escape the congestion of an increasingly urbanized America. The result by the 1920's was a surge in everything from family camping to the use of summer homes and vacationing in resorts and hotels on sites leased from the Forest Service. [9]

The automobile also changed the composition of the groups who used Forest Service lands for recreational purposes and altered their activities as well. More and more middle-class Americans could afford Western vacations that previously had been a luxury for only a wealthy elite. Many of the changes could be seen vividly in the evolution of dude ranching, which was the most important recreational use of Forest Service lands in the Rocky, Mountain West until the World War II period. [10]

Dude Ranching

A few dude ranches dated from as far back as the time just before the creation of forest reserves. The Eaton brothers established the famous Custer Trail Ranch in the Dakota Territory in 1879. One of the founding fathers of the industry, Dick Randall, was forced to find a new way of life when, like many of his fellow cowpunchers, his ranching career was ended suddenly by the severe winter of 1886—87. The railroad had recently been finished to Livingston, Montana, and on up the Yellowstone Valley, so Randall and his partner, June Buzzell, bought about 80 horses from Native Americans and began guiding big-game hunters in the area around the town of Gardiner. After about 1912, when the operation had amassed a larger clientele and enough land for a ranch, Randall expanded into a wider variety of dude ranch activities. [11]

The Van Cleeve family of Montana, also key figures in the early years of the industry, came into the region in 1870 and ranched for a time north of Sweet Grass Creek in the Melville country near Big Timber, Montana. They later fell in love with and bought a beautiful ranch at the head of Big Timber Creek canyon in the Crazy Mountains. Over the next few years, many friends and visitors came from all over the country to experience ranch life in the rugged West. The family eventually decided to charge fees and turn the operation into a dude ranch. Most people who came at first stayed for a considerable length of time, a reflection of their affluence and the difficulty of travel into the region for most. However, the introduction of the automobile meant that more people, including many on short vacations from average jobs, could make the trip and stay for less time. [12]

The automobile was not solely responsible for the boom in the region's dude-ranching industry. Auto clubs helped tremendously by promoting dude ranches in advertising campaigns that encouraged motoring and vacationing. By 1930, the Conoco Travel Bureau was including dude ranches in its promotional material, and 4 years later it began directing motor parties to ranches as part of its vacation planning packages. Railroads also started advertising dude ranches heavily. Certainly the aggressive efforts of the newly formed Dude Ranchers Association, under Larry Larom, must be given credit as well. The result was a golden age for the industry in the 1920's, one that was hurt only moderately by the otherwise devastating Great Depression of the 1930's. In Montana alone, where the industry was the largest, dude ranches generated annually at least $1 million in revenue. [13]

From the beginning, good relations with the Forest Service were an important consideration for dude ranchers, as the agency administered many of the lands they used. The Forest Service, in the view of the industry, generally looked more favorably upon dude ranchers because the dude rancher usually cooperated in preserving the wilderness that attracted guests in the first place. The result for the most part has been a positive and productive working relationship. [14]

The Advent of Winter Recreation

As cars continued to extend people's mobility, winter recreation began to experience a boom in the Northern Region. By the 1930's, skiing was becoming popular and drawing many tourists, primarily from within the region at first, but eventually from other areas as well. The Forest Service responded by improving access facilities on many of its lands and allowing commercial development on appropriate sites. The Anaconda Ski Club, for example, used a Forest Service special permit to create the Silver Lake ski facility on the Deer Lodge National Forest, 14 miles west of Anaconda, Montana. Likewise, Lookout Pass was established near the Montana-Idaho line, 19 miles east of Wallace, Idaho, on the Coeur d'Alene National Forest. The Gibbons Pass ski area was set up on the border between the Bitterroot and Salmon National Forests, about 50 miles north of Salmon, Idaho. [15]

The Region Matures

By about the World War II period, the Northern Region had matured into a more sophisticated and diversified social and economic configuration, although still underdeveloped by national standards. It consisted primarily of small, traditional communities tied closely to basic, extractive industries or, in a few areas, to tourism. Ranching and farming dominated the economies and life styles of some areas, while logging and

mining largely defined the nature of others. Urban areas, small by standards of industrialized sections of the country, developed in a few locations, but they, too, were influenced by land use patterns in the area. Life in cities like Helena and Butte, Montana, and Coeur d'Alene, Wallace, and Kellogg, Idaho, revolved largely around mining-related activities, while timber-related industries dictated most economic and social arrangements in Thompson Falls, Missoula, Bonner, Libby, Polson, and Kalispell, Montana; in St. Maries and Sandpoint, Idaho; and in Newport and Cusick, Washington. [16]

Employment During the War and in the Postwar Era

World War II led to an increase in the demand for many war-related resources. The Nation especially needed certain minerals, as well as a great deal of timber for housing, barracks, and other structures. As a result, mining activity for minerals important to the war effort increased on national forest land. Coal miners from the East were brought to the Butte copper mines to maintain full production. The Anaconda and Great Falls smelters operated at record levels. In addition to copper, manganese, a strategic war mineral, was mined in the Butte area. The Anaconda Copper Company established the Mousat Mine on the Custer National Forest and extracted 133,000 tons of chrome ore during the war years. [17]

The total annual timber harvests allowed under management plans in national forests also rose. Many of the region's national forests had been underutilized previously, so an ample supply was available. Lumber production therefore increased but was still limited by the lack of roads and by the difficulty of cutting on many of the steep slopes common to the area. [18]

The region's timber industry expanded even further in the years immediately after the war. Improved road access and harvesting techniques made cutting on steep slopes more feasible. Demand remained strong in the postwar economic boom. Development by the Rural Electric Association picked up, requiring a tremendous number of power poles. New materials such as container board, plywood, and plastics replaced some wood in the housing industry and thus kept total national timber harvest levels from climbing, but the Northern Region's share of the harvest increased. Spruce and lodgepole pine trees abounded in the area, but previously had been considered commercially unattractive and priced accordingly. However, new uses for these trees in the postwar housing industry meant higher prices. [19] More timber was subsequently harvested within the region, and most of that increase came from national forests. In the past, privately owned lands had been cut at a much faster rate, even more so in northern Idaho than in Montana. [20]

If the timber harvest had not grown, the region would have experienced a significant economic depression after World War II. Employment in agriculture and mining actually declined because improvements in methods and equipment required fewer workers in those areas. Comparable technological developments in the timber industry actually kept employment figures low relative to the increase in production. (The chainsaw alone revolutionized the harvest of timber.) Nonetheless, the increase in the volume of timber harvested not only stimulated direct employment, but also became the foundation for a wood-products industry that propelled manufacturing into the leading position among sectors of the economies in some portions of the region, such as the mountainous western counties of Montana. [21]

Indeed, after about 1950, chips and residues from existing wood industries were used to make a wide variety of products. The Hoerner Waldorf Corporation, newly formed through the merger of two pulp mills, became a leading industry in the area. The list of manufactured items reflected the dramatic changes in the postwar housing and construction industries. Pulp, paper, finished and rough lumber, and plywood were most popular, both other examples included laminated beams, modular panels, molding, window frames and sashes, door frames, end-glued products, prefabricated houses, particle board, posts, and poles. [22]

New Services and Recreation Industries

Virtually all other important growth sectors in the region's economy after about 1960 were service related. Tourism stands as the most dramatic example. Recreational use of national forest lands grew steadily in the postwar period, as described in Chapter 10. Rising standards of living, a product of the national economic boom, made it easier for people to afford vacations in the West as well as the automobiles to get them there. The development of lightweight back-packing and camping equipment and the increasing popularity of self-contained recreational vehicles eliminated many of the less desirable aspects of outdoor activities and thus encouraged more vacationers to enjoy the attractions that national forests had to offer. [23]

The Forest Service responded to this growth through further development of tourist facilities. Roads gave people access to more locations for picnicking and camping, boating, kayaking, and fishing. Trails for hiking, cross-country skiing, and snowmobiling expanded the range of available activities. Outdoor recreation in national forests became a major component in the lifestyles of many residents living in surrounding areas. [24] More and more tourists also came from outside the region,

naturally stimulating the area's wholesale and retail trade sectors and providing a significant infusion of dollars into local communities. The importance of tourism would be seen most vividly in Idaho, where the tourist industry eventually surpassed timber in the number of dollars generated. [25]

In many ways passage of the Wilderness Preservation Act of 1964 characterized the rising popularity of rugged outdoors recreation. Similarly, the 1968 Wild and Scenic Rivers Act sought to both preserve and facilitate the use of these areas for recreation. Both reflected the emergence of a new consciousness, a new outlook toward the Earth and humanity's place on it. The "ecosystem" came to rival the "economic system" in the consciousness of Americans. Ecology became the catchphrase to describe the new view of life on Earth being connected through a vast interlocking chain, with all parts mutually interdependent. This fostered a greater concern about the health of the environment and about policies regarding the use of natural resources. The result was a heightened awareness and appreciation of nature and the outdoors. [26] Everything from sightseeing to camping and hiking surged in popularity. Winter forms of recreation also grew as more people joined in activities like cross-country skiing and snowmobiling. These new attitudes and lifestyles would eventually alter the way many national forest lands were used and thus help determine the further evolution of social and economic institutions in most of the region's communities.

New People

The type of people who migrated into the region and their reasons for doing so changed considerably about 1960. Most earlier residents had been attracted primarily by the economic value of resources on national forest lands. They came in search of jobs in extractive industries. At this time, however, an increasing number of people came into the region for reasons that had more to do with escaping conditions elsewhere. The rebellious generation of Americans that reached early adulthood in the 1960's viewed forest and wilderness areas as places of refuge from a culture and lifestyle that they found themselves at odds with. Many chose to leave their familiar urban surroundings to avoid the corruptions of modern technocratic life. [27]

Many of these "New Pioneers" or "New Homesteaders," as they came to be called, moved into portions of the region near the outdoor attractions of the national forests. They tried to create new communities and new lives more attuned to nature and natural cycles. They placed a high value on self-sufficiency as a way of avoiding the social and economic entanglements they left behind. Most of them were more urban, more liberal in

politics and lifestyle, and younger than the region's "old timers." The beauty, grandeur, and isolation of the national forests were more important to them than the commodity value of available natural resources. Certain areas attracted more New Pioneer types than others and thus were more deeply influenced by this influx of newcomers. In Idaho, many settled in communities like St. Maries, Sandpoint, Bonner's Ferry, and Priest River. They typically lived a back-to-nature existence with low environmental impact, usually on 5- or 10-acre plots of land. Most subsisted on a combination of small farming, cattle raising, and part-time work. In fact, the Forest Service frequently hired many of them for seasonal work or to plant trees under contract. [28]

By the 1970's, a somewhat different type of urban refugee joined the New Pioneers in migrating into the region. More affluent and more materialistic, many of these well-educated and successful professionals sought to escape the congestion and the limitations of city life. They were attracted to the beauty and open spaces of the land, but also wanted to enjoy an outdoor recreational lifestyle that many of them could afford, or that others were willing to make great sacrifice for. Some, like artists and writers, earned a living in a way that allowed them to work in their homes. Others commuted on a seasonal basis, usually involved in something like construction or tourism during the warm months of the year and then either working elsewhere during the winter or subsisting on odd jobs until spring. Many of these people soon left because of a lack of well-paying jobs or a desire for warmer and easier environments. However, overall population increased in the postwar era, particularly in the decade between 1970 and 1980, when South Dakota grew by 3.7 percent, North Dakota by 5.7 percent, Montana by 13 percent, and Idaho by 32.4 percent. [29]

Changing Lifestyle

New attitudes and lifestyles also affected existing types of recreation on national forest lands. Dude ranching, for example, had continued to grow after World War II, especially outside of Montana. It never regained its pre-war position as the leading industry in attracting tourists, but adjusted by drawing the younger generation of wilderness preservationists. New industry centering on outfitters and guides brought the visitors into the wilderness and backcountry areas of the region. Backpacking was added to the list of activities, and recreation with low environmental impact, such as hiking and sightseeing, became more popular components in scheduling. [30]

Many dude ranches moved into outfitting, another activity that boomed with the new environmental consciousness. There had always been a loose connection between the two. Montana

dude rancher Dick Randall got his start in the late 1880's by guiding big-game hunters. [31] In Idaho, much of the push behind tourism as it surpassed timber in importance to the State's economy can be explained by expansion in outfitting and guiding. [32] On the Clearwater National Forest alone, the tourist industry grew at a steady rate of 6 percent per year after 1970. By the 1980's, it accounted for an annual business of $36 million, which supported 647 related jobs. It could boast of 30 licensed general outfitters and 3 that provided river services. [33]

The Grasslands—Resettlement and Regeneration

Another important postwar development was the expansion of Forest Service responsibility to include the national grasslands in the Dakotas. Most of those lands had at one time been individual homesteads. However, the experiment to farm this semiarid area failed, resulting in many broken farmers and many devastated acres. In the 1930's, the Resettlement Administration began to buy many of these submarginal lands to reclaim them for productivity as range for livestock. Grazing associations were organized and land utilization projects set up. The important Bankhead-Jones Farm Tenant Act furthered the effort after 1937 by turning the submarginal lands over to the Soil Conservation Service, which subsequently reclaimed many thousands of additional acres. Finally, in 1954, the lands and the administration of the grazing associations were transferred to the Forest Service. [34]

The reclaimed rangeland within what was now called the Little Missouri National Grassland, the Cheyenne National Grassland, and the Cedar River/Grand River National Grassland quickly became a significant part of the local livestock-based economies. Hundreds of ranchers depended on access to the lands. With proper management ensuring continued production of forage, range productivity rose. The average gross income for the 125 ranches using the national grasslands within the Cheyenne Valley Grazing Association rose from $716 in 1935 to $15,000 in 1971. [35]

In more recent years, a few additional types of resource development on the national grasslands have supplemented local economies and hold the prospect of having much greater impact. There has been an increase in oil and gas drilling since the early 1950's, when it was learned that the Williston oil field underlies the Little Missouri National Grassland. Interest in the extensive coal deposits beneath some of the lands also has risen with the rebound in that industry that resulted from the energy crisis of the early 1970's. [36]

Human Resource Development: Special Programs

In the contemporary era, the impact of the Forest Service upon the region broadened as Congress expanded the role and function of the agency. Beginning in the 1960's, the Forest Service joined in waging the war on poverty, one of President Lyndon Johnson's "Great Society" initiatives in response to rising national concern over poverty, racial injustice, and the lack of equal opportunity. A number of programs were set up under the Office of Economic Opportunity (OEO) to battle the causes of these social and economic problems. [37]

One such program, the Job Corps, consisted of residential centers that provided counseling and job training for unskilled young people between the ages of 16 and 22. Congress gave the Forest Service a mandate and the funding to establish centers in communities near its jurisdiction and to use the Job Corps on projects on and around national forest lands. Most of the young people who began to arrive in the Northern Region in 1965 were from urban areas in the Midwest and the East, and many were ethnic or racial minorities. The sudden addition of people from vastly different racial and social backgrounds into communities within the region sometimes strained the tolerance of local residents. However, it also occasionally broadened points of view and enhanced awareness and understanding of social problems. [38]

One representative Job Corps center was created near Cottonwood, Idaho, in 1965. Part of the program there stressed basic academic achievement, as many young people in the Job Corps were unable to read, write, or reckon well. Receiving one's General Equivalency Degree came to be seen as "graduation" from the academic portion of the program. Another goal was for the youth to gain useful work experience. The 4,136 trainees who passed through the Cottonwood center during its operation learned a number of vocational skills, as well as how to operate heavy construction equipment. The projects varied widely, but included working on roads, installing culverts, planting trees, building range fences, constructing buildings, and making campgrounds. The Job Corps also contributed directly to community health and welfare. For example, the Cottonwood center helped paint a church, constructed a community clinic, and restored several historic sites. [39]

By the mid-1970's, political and economic support for the Great Society effort was fading. Some of the programs were eliminated, some were cut back, and some were reshaped. The Cottonwood center lost its funding at the end of the fiscal year 1974, about the same time that most other OEO programs were being dismantled. The Government did not do away with all Great

Society undertakings at this time, but instead sought to decentralize the war on poverty by turning programs over to the States, with Federal financial contributions in the form of block grants. The bureaucracy changed and some programs were altered, but new agencies took on many OEO functions. [40]

The Comprehensive Employment and Training Act (CETA) of 1973, for example, authorized several job training programs. The Forest Service served as a host agency for three types of programs funded under CETA: the Adult Work Experience, Public Service Employment, and Public Service Projects. The Forest Service also sponsored other programs funded directly by Congress. The Youth Conservation Corps (YCC) employed youths aged 15 to 18 in conservation work for 8 weeks during the summer. Within the region, participation grew from 78 participants in 1972 to over 700 youths in 1978. The Young Adult Conservation Corps (YACC) was enacted in October 1977 as an emergency program under CETA to combat high levels of unemployment. Out-of-work young people between the ages of 16 and 23 could participate in the YACC program. Resident employees (that is, those who lived on the YACC encampment) were brought into the region from other areas and lived in Forest Service facilities. Non-resident participants came from the vicinity and lived at home while working. Yet another example, the Senior Community Service Program (SCSEP), provided part-time work for people over 55 with incomes below the poverty line. Before the decade was over, the Forest Service was employing 51 SCSEP participants in northern Idaho and 9 in western Montana. [41]

By the mid-1980's, funding for CETA programs, the YACC, and the YCC had been eliminated. National attitudes had changed, and competition for increasingly scarce Federal dollars had intensified. But the role of the Forest Service in human resource development remained intact. For example, the Forest Service served as the host organization for programs funded by other agencies, including the Tribal Work Experience, Handicapped Employment, and Youth Accountability Referral Programs. These continued to provide many people in the region with useful work experiences. Moreover, they contributed to important Forest Service functions like construction of recreation facilities, general facility maintenance, fire control, and fish and wildlife management. In addition, in 1982, the Forest Service became a host agency for the newly created Community Work Experience Program (CWEP), which required that recipients of State welfare aid work up to 24 hours each week. [42]

The Forest Service's mandate for human resource development included still another aspect. Beginning with the Great Society

programs, Federal policy emphasized removal of the social and racial barriers that contribute to social injustice and inequality. The Forest Service established long-range goals for achieving equitable representation of minorities and women throughout its work force. Resource management policies also were adjusted to reflect the new social goals. For example, by treaty, Native American tribes retained certain rights, such as hunting and fishing or access to sites of religious importance, over some national forest lands adjoining their reservations. The National Forest Management Act of 1976 and the American Indian Religious Freedom Act of 1978 confirmed and expanded Federal recognition and enforcement of those rights. The Forest Service responded accordingly by making the necessary changes in policies regarding long-term planning, resource extraction, and site development. [43]

The widening role of the Forest Service in human resource development was indicative of the overall direction in the relationship between the agency and the surrounding communities in the contemporary era. Clearly the Forest Service's attachments to the region and influence in shaping the region's social and economic contours has deepened over time. The direct impact of jobs created by Forest Service spending has become an increasingly important foundation in many local economies because employment in the agency has risen while it has fallen in basic industries like agriculture and mining. Government employment has come to represent a larger percentage of available jobs, and the Forest Service is the single biggest Government employer in many areas. In fact, the social and cultural atmosphere in some communities is obviously colored by Forest Service employees who, as professionals with more education and broader experience, often become community leaders. [44]

Regional Industries Related to the Forest Service

Employment in the timber industry grew through the 1970's, in spite of the fact that the percentage of the region's timber harvest taken from national forest lands continued to fall, recently dropping below 50 percent. The recession of the early 1980's, however, led to more efficient mill equipment and a recent decline in employment in the lumber industry. By the end of the 1980's, for example, the lumber mill in New Bonner, Montana, had reduced employment from 160 to 67 while maintaining previous levels of production. Nonetheless, the timber harvest still employs thousands. In Idaho, each million board feet cut puts 0.29 persons to work. Just as important, the wages spent in the area generate a variety of jobs in nonbasic industries for woodworkers, truckers, mill operators, wood processors, wholesalers, equipment suppliers, and retailers. More specifically, three jobs in nonbasic industries are created for every five people directly employed in the timber harvests. [45]

Mining on national forest lands declined somewhat in the post-war years, but has picked up more recently. It remains important to the economies of a few areas, particularly northern Idaho, and in the 1980's experienced a resurgence in Montana. Livestock production on national forest land is still a cornerstone in many parts of the region. The areas surrounding the national grasslands in the Dakotas are the most dependent upon and make the most use of Forest Service forage. Forest Service land is somewhat less important to the ranchers of western Montana and Idaho, but grazing permits remain an important part of Forest Service activity on the eastside forests. [46]

The magnitude of direct impact of the Forest Service upon communities within the region can be easily seen in a few recent economic statistics. All factors considered, for example, in the mid-1980's the Clearwater National Forest in Montana contributed between 10 and 14 percent of all employment in the vicinity and accounted for $56 million in annual personal income, representing about 10 percent of the total for the area. [47] The comparable figure for the Lewis and Clark National Forest was closer to 2 percent, with Forest Service activities generating well over $12 million in personal income and 946 private-sector jobs. [48] In the communities around the Kaniksu, Coeur d'Alene, and St. Joe National Forests in northern Idaho, the Forest Service accounted for 4,900 jobs and $103 million in personal income, or an amazing 20 percent of all local economic activity. [49]

USDA Forest Service operations directly support the maintenance of fundamental local government services in communities in the region. Because Federal lands cannot be included in the tax base for local and State government, Congress has mandated that 25 percent of all income derived from the leasing of resources on Forest Service lands be turned over to the States and counties on the basis of the number of Federal acres within a particular jurisdiction. These monies are referred to as in-lieu-of-taxes payments and are usually earmarked by State law for specific purposes. [50]

In Idaho, 30 percent of this income goes to schools and 70 percent for roads, while in Montana the breakdown is one-third for schools and two-thirds for roads. The total number of dollars varies greatly, according to fluctuations in yearly harvests and extraction of minerals. However, in some counties it still represents a significant portion of total revenue, especially for roads. [51]

The Forest Service Family

One area in which the Forest Service has direct "social and economic" impact can be seen in the lives of those who spent most of their careers on the forests of the Northern Region. Retirees generally speak warmly of their work and associations within the Forest Service community. Thomas P. Farbo, for example spent over 27 years in the region, retiring in 1981. His career, he said, "was a beautiful experience and the environment we grew up in was in the greatest part of the country to have a family." He described the Forest Service as an extended family that possessed a great *esprit de corps*. [52]

Walter Peterson remembers that one of his favorite pastimes in late summer evenings "was to go out and bugle the elk, who would vigorously respond and sometimes even come to the call." [53] Donald V. Williams, who retired in 1978, spent 32 years in a forestry career that began during World War II at the age of 17. [54] Everett M. "Sonny" Stiger, who retired in 1984, although a "latecomer" to Region 1, spent much of his time in the wilderness and on wilderness fire management projects. He recalled one "loner" trip into the Scapegoat:

> Without seeing another human for several days, I was in the process of photographing some fire-related vegetation, when I sensed someone or something nearby. I turned to greet whom I thought was a wayfaring stranger, only to find myself face-to-face with a young grizzly. He was as scared of me as I of him, and we both quit the country rapidly without small talk. [55]

Walter R. Hahn, who began seasonal work with the Forest Service in 1931, considering the wide variety of jobs he did over the years for the Forest Service, thought working with his pack string was the one he enjoyed the most. He said that mules were very intelligent animals; however, his opinion of "too many bosses" was much less enthusiastic. [56] Raymond West, who in 1988 had been retired from his work as a Forest Service biologist for 30 years, continued his interest in wildlife management during his retirement through the Isaac Walton League. [57]

F.K. Stewart completed 46 years and 10 months of service in Region 1. He began his Forest Service career in 1915 and retired in 1963. Writing at the age of 92 (in February 1988), he said:

> During that period I watched the region grow from a quite primitive, protection, nursemaid type of agency to a well-organized agency where the utilization of resources and land use was well managed. [58]

The most common response to the inquiry as to what former employees liked most about their careers was that the personnel

in Region 1 were "one big family" and treated each other as such. [59] Many think that that, too, has changed.

Members of the Region 1 Retirees History Committee who reviewed this manuscript believed that the authors restricted the concept of the "Forest Service family." They pointed out that the Forest Service family held many of the 'same goals, problems, family ties, aspirations, successes, and failures as those people in the communities in which they worked and lived." This identification was particularly true in the smaller communities, less so in the larger towns and cities. The major point, one retiree commented, was the "common feeling of unity and mutual support," and the desire to "make the 'outfit' a good organization to work for." It was "not the pleasure of being in the woods, hearing an elk bugle," but the "sheer pleasure of working with a group of people, all with the common goal of doing a job managing the resources for the greatest good of all the people. This was Region One!" [60]

> The Forest Service was made up of men and women of strength, character, and purpose. They were not out for glory, only to do the job as best they could "under trying circumstances many times" and without fanfare. They were bound together by a common cause, and their dedication and devotion to this cause was unswerving. When R.E. McArdle was Chief, he emphasized the Forest Service family and worked at keeping the family theme going. [61]

They also acknowledge that "some of the fine esprit de corps may be slipping" and attribute it in part to the diversity of disciplines required to manage an ever increasingly complex resource. Change is characteristic of both the environment and institutions. So, too, the mission and the methods of the Forest Service in the region have changed over time.

Over the years, the Forest Service in Region 1 has responded to an ever-growing number of people with an increasingly wider variety of needs and interests. It has become acutely aware of the need to balance the development of many different resources while preserving the integrity of the environment. Assessments and analyses in studies and documents such as regional situation overviews, forest plans, environmental impact statements, regional plans, and the planning area analyses for western Montana, northern Idaho, and the particular subdivisions of the Northern Region are used as the basis for specific goals and policies of the Forest Service. This has proven to be very important, because the national forests within this region perhaps have a more direct and more positive impact upon the lives of a larger portion of the population than in other parts of the United States.

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Chapter 15

Working With Others

State, private, and other Federal lands are contiguous to and often intermingled with national forest lands. These "alienated lands" have a significant impact on the management of the national forests and occasion the need for cooperative efforts in the protection and management of forest resources of every kind. The multiple uses of forest resources also have required the development of cooperative management and resource utilization.

The following studies are intended to exemplify the cooperative work of the Forest Service in the Northern Region. They include cooperative fire prevention and control, elk habitat and herd management programs, the Greater Yellowstone Association, grazing associations, cooperative research, and the Job Corps programs.

Cooperative Fire Prevention and Control

Fire has been a preeminent element in the management of the national forests in Region 1. John Mumma (who began his Forest Service career in Colorado in 1962 and served as a wildlife biologist, staff officer, and district ranger in Region 3 before assuming staff and supervisory duties in Region 4) became Regional Forester for the Northern Region in February 1988, only a few months before the beginning of one of the most destructive fire seasons of all time. Many rank the 1988 fire season with that of 1910. Regardless, Mumma said later that it was "one that will not soon be forgotten." By November, "when snows had dampened the last flames," he said, "the fires had burned more than 571,000 acres of national forest land in Montana, northern Idaho, and the western Dakotas. . . . More than 988,000 additional acres had burned in Yellowstone National Park." Mumma extended appreciation to the thousands of State, county, city, and rural firefighters who cooperated in battling the blazes. [1] Cooperation, however, has not always been characteristic of firefighting.

In the past, public and private organizations with overlapping forest lands went their own way in matters related to fire control. George T. Morgan has said that in the early years of Region 1, "the most pressing problem . . . was the deficient system of fire protection. Private, State, and Federal holdings were intermingled throughout the region; each interest was almost solely concerned with protecting its own lands, to the obvious detriment of comprehensive fire control. [2] The Forest Service became a catalyst in the development of cooperative fire protection and control programs soon after it became established in the Northern Region.

Region 1 was unique in its inception of cooperative firefighting initiatives. In most of the Western States, the Forest Service and the States each maintained exclusive firefighting organizations and jurisdictional areas. The responsibility for forest fire control generally fell to State forestry agencies for State and private land and the appropriate Federal bureau for Federal land. Only in a disastrous fire season did private timberland owners and State and Federal forest firefighters begin working together. However, the northern Rocky Mountain area had a different history.

In Region 1, particularly in northern Idaho, fire control on private lands began as a private matter, but soon extended to Federal lands. According to Alfred D. Folweiler (who later became head of the Texas Forest Service) and A.A. Brown in their critical study *Fire in the Forests of United States*, private landowners in the Idaho panhandle were "compelled to band into mutual protection associations before there was any public recognition of the need for assistance to private owners." Private protective fire associations were organized in Oregon, Washington, Idaho, and Montana. According to George Morgan, the Coeur d'Alene and Clearwater Timber Protective Associations were organized in 1906, the Potlatch Timber Protective Association the following year, and the Pend Oreille Timber Protective Association and the North Idaho Forestry Association in 1908.[3] Thus, at the time when Region 1 was being organized under the auspices of the National Forest Service, associations were providing the only fire control services available in the region. Unfortunately, insufficient funds plagued the private fire control associations, as many landowners refused to join and accept the required assessment.

Hero of 1910 Fire
Edward L. Pulaski, District Ranger, Coeur d'Alene, Idaho. Pulaski developed the forestry hand tool that bears his name.

William B. Greeley, the first Regional Forester, realized the value and importance of the private protective associations and, beginning in May and June 1909, developed cooperative agreements between the associations and the Forest Service. One important element in these cooperative agreements involved the preparation of maps indicating the contiguous property holdings of national forests and the lumber industry.[4]

The Forest Service, the States, and the private associations divided responsibility for fire control and shared authority and costs for combatting fire. During the terrible fire season of 1910, $52,000 in cooperative firefighting costs incurred under the agreements were prorated between private and Federal authorities. The Weeks law of 1911 greatly facilitated the development of cooperative fire protection by authorizing and funding the establishment of State forest and fire protection agencies and

legislation. Idaho, according to George Morgan, led all States in the development of the protective association concept. [5]

The 1913 fire plan for the Coeur d'Alene National Forest, for example, included cooperative agreements among the private associations (usually timber company lands), private landowners (including farmers), and the Forest Service. The Coeur d'Alene deployed 10 fire protection units while the Coeur d'Alene Forest Protective Association maintained six fire patrolmen and one lookout in the field. Under the agreements, fires were fought by combined Forest Service and private association personnel on both public and private lands. Thus, in 1913, of the 61 fires fought by Coeur d'Alene National Forest personnel, 29 were on the forest and 32 were on private lands. In that year, the Clearwater Forest Protective Association shouldered $504.60 in firefighting costs, and the Forest Service $357.26. [6]

In 1924, the Clarke-McNary Act, which stressed cooperation and voluntary fire control, passed Congress. Among its provisions, the act provided financial support for fire protection to the States and the private associations. It also enabled the States and the Forest Service to provide fire protection through "offset" procedures; that is, when such practices improved protection, private land could be protected by Forest Service crews and Government lands could be protected by private crews.

The five protective fire associations operating in northern Idaho in the 1920's included the Clearwater, Potlatch, Coeur d'Alene (which combined with the St. Joe Association in 1921), Pend Oreille, and Priest Lake. The two associations in Montana were the Blackfoot Forest Protective Association and the Northern Montana Forest Protective Association. The Idaho Forestry Law of 1925 required owners of forest lands to maintain adequate fire protection or to be taxed by the State for fire services. This greatly stimulated both the expansion of protective fire associations and the cooperation between the private associations and State and Federal forest managers. [7]

The Forest Service became the monitor, or supervisor, of the protective associations in this period. Key association organizers and liaisons included Les Tarbet and Ralph Hanson (Blackfoot), Burt and Maurice Boorman (Northern Montana), Lee White (Priest Lake), and Bert Curtis and Mick Kopang (Clearwater). Progress in reducing acreage burned, however, was slow. In one ranger district, more than 90 percent of the fires during a 5-year period began in slash or cut-over areas. [8]

Throughout the history of forest management in the region, fire has ranked as perhaps the most significant factor. The role of the protective associations was particularly important in the years before World War II, between 1908 and 1935. Their role began to decline in the 1930's as firefighting techniques and equipment became more costly and as depression-era timber income plummeted. Concurrently, the Forest Service became better financed and protection boundaries were redefined. In addition, the Civilian Conservation Corps assisted immeasurably in fire control work in the 1930's. In their day, however, the protective associations had been very important. Ralph S. Space recalled that he was initiated into forest firefighting as a smokechaser for the Clearwater Timber Protective Association in 1919. Ralph L. Hand remembers that in 1932 the Coeur d'Alene Timber Protective Association was dissolved, and according to Dean R. Harrington, the Forest Service assumed responsibility for the Potlatch Lumber Company Fire Protective Association in that decade. Most, but not all protective associations terminated in the 1930's, although the Orogrande Forest Protective District was cooperating with the Clearwater National Forest as late as 1947. [9]

Later, the Forest Service extended cooperative fire control to a broader base. Cooperative agreements such as those consummated in 1937 between the Blackfoot Forest Protective Association, the Northern Montana Forest Protective Association, the Priest Lake Timber Protective Association, the National Park Service, the U.S. Indian Service, and the States of Montana and Idaho helped create a genuinely "regional" fire-protection program. In addition, the "Keep Green" campaigns and tree-farm movements begun in the early 1940's helped sustain the spirit of cooperative forestry and cooperative fire control programs. However, not everyone believed in cooperative fire protection. Sanders County, Montana, for example, obtained an injunction against the State of Montana after the State approved a fire-protection assessment law. The county refused to participate until all private land in the county was inventoried and classified. The state forester's office under Rutledge Parker solved the problem by using timber-type maps, aerial photos, and the technical assistance of the Forest Service. [10]

One of the most fascinating epochs in cooperative fire control in the region began as early as 1917 when, at the request of the Forest Service, the Army Air Corps began flying fire patrols over Western forests. Major Hap Arnold, for example, flew fire patrol in the Northern Region as an Army pilot in 1920. After initial successes in California, flights began over the forests in Washington, Oregon, Idaho, and Montana. The Northern Region initiated its own aerial observation program in the summer of 1925, when

Howard R. Flint and Lieutenants Nick Mamer and R.T. Freng of the Air Corps Reserve began patrols out of Spokane, Washington. Region 1 also began to contract with private flying services, such as the Johnson Flying Service in Missoula, for fire patrol services and, in 1938, the Forest Service purchased its own aircraft for surveillance. [11] Air patrols and aerial firefighting have remained prominent in the region's fire control programs.

Smokejumping, a firefighting technique closely identified with the region, benefited from cooperation with the armed services. U.S. Army staff officers asked to visit the parachute training camp at Missoula to learn techniques for smokejumping and to obtain technical data and ideas for training paratroopers at Fort Benning, Georgia. The region also trained military inductees such as the conscientious objectors during World War II in smokejumping techniques, and the U.S. Marine Corps loaned the region military aircraft for smokejumping missions. During the late 1950's, the region provided smokejumper services for Yellowstone National Park (National Park Service) and training programs for the Bureau of Land Management and the Province of Saskatchewan, Canada. Later, in the 1960's, regional expertise in smokejumping and recovery missions were used in training recovery crews for the X-15 rocket missions. [12]

About 1950, the region began to employ organized fire crews made up of members of the Zuni Tribe from the Southwest. Later, Native American crews from reservations within the region were formed. Interregional fire-suppression crews, including units of the National Park Service and Region 1 and 4, were first established in 1961. Cooperation with State authorities was always a prerequisite of effective fire protection and management. Plus, the Johnson Flying Service of Missoula, Montana, had a long and close relationship with the Northern Region in fire protection and rescue. [13]

Cooperation began very early in the region and improved as the years passed. A general functional inspection of fire control on the Kootenai National Forest in 1959 indicated cooperation by forest rangers with the state forester's office in monitoring questionable practices by small sawmill operators located on adjoining private lands. On the Kootenai, fire protection was particularly difficult because of 516,886 acres of alienated land inside the fire protection boundaries. [14]

Research programs were conducted by the Research Branch of the Forest Service, specifically the Fire Research Division of the Northern Rocky Mountain Forest and Range Experiment Station. Much of this work, under the direction of Harry T. Gisborne, was done in cooperation with Region 1 fire control and national forest personnel. The tireless efforts of Jack Barrows, who joined Gisborne's Northern Rocky Mountain Station fire research staff in 1946, led to the establishment of the Northern Forest Fire Laboratory at Missoula. The story of fire research has been chronicled by Charles E. (Mike) Hardy in *The Gisborne Era of Forest Fire Research: Legacy of a Pioneer* (April 1983). Hardy served on the staff of the Northern Forest Fire Laboratory at the Intermountain Forest and Range Experiment Station for almost 22 years, working much of that time on refining the fire-danger rating system designed by Gisborne and his research staff. [15] (See also Chapter 7.)

> Cooperation in fire or other work requires continuing effort and hard work by the Forest Service and participating public and private agencies. Over 6.5 million acres of State and private lands were enrolled in cooperative fire protection programs with the Forest Service during the 1970's and 1980's. [16]

Cooperation in Wildlife Management: Elk

Wild animals ignore boundaries imposed by human land ownership; thus, protection and management of wildlife requires the continuing cooperation of Federal, State, and private landholders. The fight to protect and preserve the grizzly bear in the Northern Region may command the headlines and generate public sentiment, but it is the elk that has been the bellwether species in the northern Rocky Mountains. Along with timber, North American elk are the most important resource of the mountains and forests of the Northern Region and often are a *cause celebre* in disputes about its habits and habitat.

Elk were once found from the Atlantic to the Pacific coasts and from Mexico to Alaska, "in habitats that included hardwood and coniferous forests, grasslands, and arid deserts. Today, elk are restricted to a much smaller geographic area and less diverse habitats." Whereas the elk was once principally a grasseater on the plains, it "readily adapted to forbs and shrubs when forced into the mountains." On the winter ranges of the Northern Region, grass holds little grazing value because it is buried beneath deep snow for much of the year; instead, brush and tree foliage are consumed by the elk in winter. The critical winter range for elk are the foothills, south slopes, and river bottoms. A migratory species, it may have home ranges of from 5 to 2,000 square miles. Both unpredictable and habitual, elk seem to delight in presenting contradictions. [17]

While States have authority for management and harvest of wild game, the Federal Government owns most of the land that serves as wildlife habitat, and private landowners control most of the remaining habitat. Thus, cooperation between Federal, State, and private land managers in game management and protection is essential. The story of the elk reflects the nature of cooperative fish and game programs in the Northern Region.

A scientific study of the elk was conducted by the Forest Service and the Biological Survey beginning in 1911. In 1917, Forest Service Chief Henry S. Graves and Biological Survey Chief Dr. E.W. Nelson personally took part in elk studies in the Northern Region and produced the Graves-Nelson Report of 1917. This report recommended, among other things, a long-range, intensive study of the elk, its habits, habitat, and life history. W.M. Rush subsequently conducted such a survey between December 1, 1928, and April 1, 1932. The study was funded jointly by private contributions, the Forest Service, the National Park Service, and the Montana State Game Commission. The Montana Fish and Game Commission published the report in 1932. [18]

Rush's study eliminated much of the guessing about the harvest, forage, and habitat of the elk, and produced more effective game-management programs. He advised new harvest quotas, improved licensing procedures, and removal of domestic livestock from winter elk ranges to ensure adequate elk forage. The study stressed the necessity for interagency cooperation: "It is also mandatory upon the Forest Service," Rush advised, "to cooperate with State fish and game authorities to secure the best utilization of the game resources of the forest areas. [19]

Following the implementation of protective management programs, the elk herds of the Northern Region, and particularly those of the greater Yellowstone area, continued to expand.

Although cooperation among various public and private interests contributed to the success of wildlife management programs, disagreements did occur. The Northern Region Retirees History Advisory Committee expressed it thusly:

> To plant more elk involved livestock organizations and organized sportsmen in serious controversy. The controversy was heightened with the continuing problems of too many elk in the Northern Yellowstone herd. Sportsmen groups, the Montana Fish, Game and Parks Department, and others strongly supported more transplants to

> the National Forests. The region opposed more transplants except in some limited areas.. In order to cope with too many elk and severe damage to resources within the Park, the Park Service was forced to reduce the herd by shooting within the Park [in the early 1950's]. The public outcry was fierce. The Park Service was soon forced to stop killing within the Park. Some sportsmen's groups (Butte-Anaconda) insisted on more elk transplants and removal of all livestock where there was conflict. The Forest Service and the State Fish and Game Department were in controversy. Controversy gradually lessened as the two agencies working together applied more scientific [management] methods. [20]

The resolution of elk transplant problems in the 1950's evolved into new controversy relating to roadbuilding, timber harvest, and elk preservation in the 1960's.

Outdoorsmen began to become concerned that the increase in roadbuilding and the larger timber harvest might result in the depletion of elk herds. The Montana Fish and Game Commission announced in 1968 that it "vigorously opposed the Forest Service roadbuilding program where these roads would make travel more accessible into key elk areas" including calving grounds and winter and summer ranges. [21] Local chapters of the Montana Wildlife Federation supported limited access as well. Subsequently, George Engler, Lewis and Clark National Forest Supervisor initiated a region-wide program to gather information about elk, timber harvest, and roadbuilding. In cooperation with the Montana Fish and Game Department and the School of Forestry at the University of Montana, several hundred selected units on seven national forests were studied. Records of elk harvest, type of season, acres of clearcut, and miles of road built were analyzed and, although the results were mixed, several units were identified as areas to be closely monitored to determine if timber harvest and roadbuilding did in fact contribute to a downward trend in elk harvest. [22]

The Bureau of Land Management joined the study in 1971 and, pending the results of the study, the region elected to close some roads to prevent elk habitats from becoming heavily used by people. The management of winter habitat became a major concern, and it was determined that large segments of the Gallatin and Northern Yellowstone elk herds did winter on national forest lands. The Gallatin National Forest adopted a management program in cooperation with and coordinated with "four agencies in wildlife management and five organized wildlife groups" to manage the 1,900-head elk herd located in the

Gallatin River Canyon. The Forest identified approximately 95,000 acres as elk range, with 51,400 acres of that being critical winter range. On the winter elk range, greater protection was extended by limiting snowmobile travel to "trails only." [23]

A cooperative agreement for the management of the Northern Yellowstone elk herd entered into by the National Park Service, the Montana Fish and Game Department, and the USDA Forest Service recognized the "very different, equally valid land use objectives of the others." Each agency agreed to provide part of the necessary biological data and, annually, "field personnel of each agency prepared recommendations, based upon their studies, for the administrators." From these reports, recommendations were forwarded to the Montana Fish and Game Commission for the establishment of hunting seasons and quotas. [24]

Douglas Houston, author of a 1982 elk management study, suggested expanding fire management in Yellowstone National Park to include the entire northern elk range. This would require a cooperative agreement with the Gallatin National Forest, similar to agreements in effect between Yellowstone National Park and the Bridger-Teton and Shoshone National Forests of Region 4. These agreements essentially permitted fires originating in the park to spread into the national forests as a mechanism for enhancing elk browse. The controversial Yellowstone fires of 1988 subsequently created a new examination of such fire policies. Nonetheless, a relationship between fire, roadbuilding, timber harvest, seasonal browse, elk harvest, and the welfare of elk herds was acknowledged. [25]

Analysis of the welfare of elk herds sometimes developed into more disputed analyses involving the concepts of "security cover" and "thermal cover." "Security cover," according to some authorities, is the basic minimal amount of vegetal cover that makes use of an area by elk possible. "Thermal cover" aids the elk in conserving energy and maintaining narrow tolerance limits of body temperature. During the summer, overstory vegetation intercepts incoming solar radiation and provides a cooling effect; in the winter, it limits radiation loss and convective heat loss. [26] Wildlife biologists who have joined the regional staff in increasing numbers since World War II in response to the need for more scientific game-management programs recommend to land managers that adequate security cover and thermal cover be maintained. This requirement generally has become a consideration in timber-harvest decisions.

The 1985 report Coordinating Elk and Timber Management, published by the Montana Department of Fish, Wildlife, and Parks, culminated 15 years of work by a research committee composed of representatives from four public agencies and a private timber company. Bob Milodragovich described this as a "classic in joint effort." The report addressed such considerations as security during logging operations, the redistribution of elk, traditional home range use by elk, road construction and design, road management, area closures during hunting seasons, clearcuts, cover type, moist sites, elk/cattle relationships, and winter ranges. Clearcuts were considered useful in providing forage for elk, but the size of such cuts needed to be regulated and the slash depth closely controlled. [27]

Cooperative State and Forest Service studies on logging roads and elk resulted in closure of designated forest roads, permanently or intermittently, on both public and private lands as a measure to provide security and cover to elk herds. The road-closure program resulted in better hunting, but reduced harvesting rates and limited off road hunting opportunities. [28]

The years of study and interagency cooperation resulted in more knowledgeable and effective game management in the northern Rocky Mountain area. Chief Peterson used the elk studies to explain to the House Committee on Appropriations in 1986 the distinction between single-use planning (timber) and multiple-use planning (including elk management) on the Deer Park Area of the Lolo National Forest. Single-purpose management, he said, could result in a 90 percent reduction in elk habitat in one decade, whereas multiple-use planning would preserve such habitat. [29]

The Deerlodge forest plan, for example, discusses elk habitat management in two appendices. The plan identifies 45 elk "hunting recreation opportunity" geographic areas, indicating the type of hunter ingress and "game retrieval distances." Elaborate calculation processes for effective cover were employed, and elk security analysis areas were mapped. The forest plan anticipates interagency monitoring and evaluation in cooperation with the Montana Department of Fish, Wildlife, and Parks. [30]

How has concern for and study of the Northern Yellowstone elk herd been translated into plans and activities by the Northern Region? A review of current forest plans and environmental impact statements for the Beaverhead Custer, and Gallatin National Forests demonstrates the adoption of the guidelines established by the Montana Cooperative Elk-Logging Study. The Beaverhead is providing habitat for 4,150 elk on national

forest winter range. The Custer has entered into cooperative work with biologists from the Montana, North Dakota, and South Dakota fish and game departments for habitat development and study. The Gallatin provides elk security by maintaining hiding cover and through road access management, and cooperates in wildlife and fish resource management with numerous agencies such as the Montana Department of Fish, Wildlife, and Parks; the U.S. Fish and Wildlife Service; Yellowstone National Park; and private landowners and other agencies. The Gallatin also employs the "elk effective cover" analysis used on the Deerlodge National Forest. The Gallatin plan indicates that 5,600 elk, of the total wintering elk population of 9,800, winter on national forests, and that the remaining 4 ,200 winter on private and State land adjacent to forest boundaries. [31]

Although this discussion has used elk as the primary example, cooperative work in wildlife and fisheries in the Northern Region encompasses many species and almost as many agencies and entities. To be sure, cooperative work on a technical and personal basis always has been essential in management of fish and wildlife and their habitat. Ed Slusher recalled that during his service on the Deerlodge, Custer, and Gallatin National Forests after World War II, overpopulations of deer were causing winter ranges to be depleted:

> We worked with State fish and game, local sportsmen's organizations, and ranchers to try for extended seasons, two-deer limits, and either-sex hunting. I can remember one joint meeting in Butte when Barney King, president of Rocky Mountain Sportsmen, walked out, saying, "I'll have nothing to do with any group who proposes the killing of female deer." It was of little use to us to know the science of game management if we didn't know the art of public relations. [32]

The essence of cooperation is good public relations. One of the most sensitive areas of cooperation and public relations in the Northern Region relates to Yellowstone National Park, which is administered by the National Park Service but affects the management of contiguous national forest lands.

The Greater Yellowstone Area

Yellowstone National Park is one of the two gems of the National Park System. Others would use greater superlatives, as did the Chairman of the House Committee on Interior and Insular Affairs, John F. Seiberling, who in 1985 said, "Yellowstone

National Park is probably the most unique aggregation of geologic and biologic resources in the United States and perhaps in the world." [33]

Yellowstone National Park is part of an ecological and geological system that is surrounded by six national forests, another national park, and at least 11.7 million acres of contiguous lands. The Greater Yellowstone area includes State lands, national wildlife refuges, unreserved public domain, and private lands as well as national forests. It is the area loosely defined as the high, mountainous region centered around Yellowstone National Park and surrounded by dry plains. About 90 percent of the area is administered by the National Park Service, the Fish and Wildlife Service, and the Forest Service. The Bureau of Land Management regulates mineral development in the region. [34]

Conflicting uses and priorities occur in the Greater Yellowstone area. Each of the major managers of land and resources manage their lands for essentially different purposes: National parks are managed for preservation and recreation, national wildlife refuges are managed for wildlife, and national forests are managed for many uses, including timber, grazing, energy and minerals, recreation, and fish and wildlife. These differing management purposes at times result in conflicts among various resources and users. [35] Understanding the cooperative relationships involved in the Greater Yellowstone area requires a comprehension of each agency's principal role.

Two important reports provide a good framework for this analysis: *Issues Surrounding the Greater Yellowstone Ecosystem: A Brief Review (1985) and The Greater Yellowstone Area:* An Aggregation of National Park and National Forest Management Plans (1987). These reports explain, for example, that national parks and national forests have been managed differently since their inception. National parks "were founded upon the principles of preservation, public enjoyment, and noninterference with natural processes." Developmental activities such as logging, oil and gas production, mining, hunting, livestock grazing, and wildlife habitat modification are restricted or banned on national parks but are primary uses of national forest resources. Although the national parks, including Yellowstone and the adjacent Grand Teton National Park, are not designated wilderness areas, large areas in each are managed as wilderness. [36]

Although the National Park Service does not manage park resources for multiple use, it confronts the sometimes contradictory mission of providing resources for public enjoyment while preserving those resources. Conflicts between preservation and

enjoyment can be serious when visitor use is high, as it most often is in Yellowstone and concurrently in contiguous Forest Service lands. Classically, for example, confrontations between visitors and bears have required one or the other to give way. While bears have been relocated in some cases, in others people have conceded territory to the bears. Despite their intrinsic differences in missions, and not too infrequent conflicts, national forests and park managers began to appreciate the necessity for coordination and cooperation in the management of their resources in the Greater Yellowstone area in the early 1960's. [37]

To coordinate management and public services in the area, the Greater Yellowstone Committee, including representatives of the Northern, Intermountain, and Rocky Mountain Regions of the Forest Service; the regional (Rocky Mountain) director of the National Park Service; the superintendents of Grand Teton and Yellowstone National Parks; and the supervisors of the Beaverhead, Custer, Gallatin, Shoshone, Targhee, and Bridger-Teton National Forests, was formed in 1960. This group has met annually for the past three decades. In 1985, the Regional Forester of Region 2 became the designated coordinator of the committee's work. [38]

A congressional oversight hearing held in October 1985 resulted in a more formal agenda for the Greater Yellowstone Committee. During testimony before House subcommittees, Chief R. Max Peterson recounted the history of the Committee and cited the development of the Greater Yellowstone grizzly bear guidelines (1974), a cooperative transportation study in 1978, and the "Bear Us in Mind" grizzly bear education campaign in 1982 as examples of its cooperative endeavors. Peterson concurred that the Greater Yellowstone Committee could well include representatives from the Fish and Wildlife Service, the Bureau of Land Management, and possibly the U.S. Geological Survey. [39] Multiple-use land and resource management increasingly requires the coordination and cooperation of managing agencies and the resource users.

Administrators of the agencies participating in the Greater Yellowstone Committee indicated full support for cooperative efforts during the 1985 hearings. William Penn Mott, Jr., Director of the National Park Service; Robert F. Burford, Director of the Bureau of Land Management; Ronald E. Lambertson, then Acting Director of the U.S. Fish and Wildlife Service; and R. Max Peterson, Chief of the Forest Service, urged interagency cooperation. Peterson commented that the Greater Yellowstone area "is one of the best coordinated places on earth." [40]

Mott responded to a question from Montana Congressman Ron Marlenee concerning cooperation between the National Park Service and other agencies by observing that "at the field level there has been good understanding between the superintendents and our people relative to the management of the areas outside of the park. . . ." He added that communications among the Fish and Wildlife Service, the Forest Service, the Bureau of Land Management, the State of Montana, and the National Park Service had always been open. However, Mott advised that cooperation could be further enhanced by the organization of a continuing Greater Yellowstone Interagency Committee, structured like the Grizzly Bear Committee. [41]

Subsequently, the Rocky Mountain Region of the National Park Service and the Northern, Rocky Mountain, and Intermountain Regions of the Forest Service approved a memorandum of understanding in September 1986. The critical point of the agreement simply stated that, "to provide better service public, we agree to work together." [42]

The Gallatin National Forest has been particularly affected by the Greater Yellowstone cooperative agreements. Cooperation involves its continued commitment to local users who use forest resources for outdoor recreation; the livestock industry that depends on the forest for forage; local lumber mills dependent on the forest for their timber; commercial outfitters and guides; and the many other users of the forest resources. Cooperation also requires "complementing the work of and coordinating with the National Park Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management, State agencies such as fish and game departments," and "a wide range of interested organizations and private citizens." [43]

Beginning in 1986, the newly established Greater Yellowstone Committee undertook an ambitious project to aggregate the plans for all Federal lands in the Greater Yellowstone area. The project proposed to "aggregate all the National Forest, National Park, and U.S. Fish and Wildlife Service Refuge plans into one set of maps and a companion narrative document." The final document, *Aggregation of National Park and National Forest Management Plans*, was published in September 1987. It provided maps and basic data on resources and management decisions for specific area and type of use in the Greater Yellowstone area and was intended to be (and is) "a valuable aid to public understanding, as well as a useful tool for coordination and future interagency planning within the Greater Yellowstone area." [44]

The interagency initiatives taken within Yellowstone National Park denote a new era of cooperative endeavors that will affect future planning and management by the Northern Region. The Greater Yellowstone Committee is authorized to oversee interagency and interregional review and analysis of identified issues. This review and analysis may lead to changes in national park and national forest management direction, for each national forest and each national park must incorporate the policies and decisions of the Greater Yellowstone Committee in their management plans. The integration of resource management has been facilitated by the dual appointment and funding of committee coordinators. Coordinators, such as Jack Troyer (Custer National Forest), are paid salaries by both the National Park Service and the Forest Service. [45] The Committee now faces the difficult job of evaluating the 1988 fires and assessing postfire plans and actions.

Interest groups such as the Greater Yellowstone Coalition already have challenged the Forest Service plans to salvage timber from national forest lands burned in the area surrounding Yellowstone National Park. Salvage has been an integral part of timber management throughout the region's past. Yellowstone National Park, pursuant to this traditional policy of "natural" management, would not salvage. [46]

Whatever the outcome, the Yellowstone fires of the 1988 season are but a prologue to forest planning and management in the Northern Region. Although difficult, that work would be even more difficult-if not impossible-were it not for structures such as the Greater Yellowstone Committee to provide coordination and cooperation in management policies and programs.

Grazing Associations and the Grasslands: A Partnership Effort

One of the more distinctive and unique cooperative associations in the Northern Region is that established between the Forest Service and the grazing associations that use the national grasslands and national forests for livestock forage. (See Chapter 9 for a discussion of the creation of the land utilization projects, and subsequent establishment of the national grasslands under national forest supervision.) The role of the private grazing associations in the management of the grasslands provides an outstanding example of cooperation between the Forest Service and private interests in behalf of the common good.

During its administration of the grasslands (1938-54), the Soil Conservation Service encouraged the development of grazing associations" organizations of local landowners who grazed their

cattle on the public lands" to assist in the rehabilitation and management of the destitute lands. The Forest Service continued what has become a vital and effective partnership with these associations. The associations receive single permits to grazing rights on the grasslands, allocate "headrights" (animal unit months) among their members, prescribe rotation procedures, and monitor compliance. They participate with Forest Service staff in developing grazing allowances, improving pasturage, and protecting wildlife. By managing the grasslands through the boards of directors of the grazing associations, the Forest Service can resolve issues collectively (and usually very effectively) rather than individually with each livestock producer. [47] The various grazing associations are themselves organized into an Association of National Grasslands, which provides input for rangeland management on a national basis. As are the national forests, the grasslands of the Northern Region are commingled with private lands, and grazing on the adjoining and commingled lands affects and is affected by the management of the national grasslands. Thus, through the grazing associations, public and private land managers on the sensitive grasslands determine management policies for almost twice the land accounted for by the approximately 1.2 million acres designated as national grasslands under the jurisdiction of the Custer National Forest. [48]

The national grasslands then are administered in some respects on the concepts of the Greater Yellowstone management area, but here the cooperative system is a public-private partnership that has been functioning with considerable success for, in many cases, almost a half century.

Grasslands Research

Cooperative programs on the national grasslands extend to the area of grasslands research. Range surveys and grazing research by foresters and stockmen benefit both. Anthony (Tony) Evanko participated in range research at the Northern Rocky Mountain Forest and Range Experiment Station. He recalls that range and watershed research efforts, often difficult because of the lack of funding, began in earnest at the Northern Rocky Mountain Forest and Range Experiment Station (near the Vigilante Experimental Range on the Beaverhead National Forest) in 1936. Initial studies related to forage plant development and range readiness for livestock grazing, evaluation of the impact of grazing on ranges, study of grazing patterns and range utilization, and studies in plant nurseries of grasses and legumes suitable for rangelands. The nursery studies, Evanko remembers, "formed the basis for subsequent erosion control and stabilization projects on both Federal and private lands." [49]

Other range research studies related to studies of cow-calf weights, mechanical and herbicidal control of noxious and poisonous plants, and the use of fire to control sage-dominated range areas. Erosion control studies were particularly significant, Evanko believed, but while some results, such as erosion control and noxious plant control systems were utilized, others, such as evaluations for range readiness and range conditions, were "not readily accepted, if at all, by administration." More than 1 million acres of privately owned lands were seeded in the late 1930's and early 1940's as a result of the range research programs conducted at Miles City and Fort Keogh. In 1948, the Inland Empire Research Center, at Spokane, Washington, provided valuable information on forest management, range management, noxious weed control, and watershed rehabilitation throughout the Forest Service and certainly influenced the work of Region 1, although it was not located in the region. Working relations there "were the best encountered in my career," Evanko said, "especially with private land owners—both ranchers and farmers—whose utilization of research information was most rewarding and beneficial to all parties." [50] Cooperation necessarily extended into both management and research functions.

Later, the Northern Rocky Mountain Forest and Range Experimental Station was consolidated. The Intermountain Forest and Range Experiment Station and the Agricultural Research Service assumed responsibility for Inland Empire's range studies in 1954, a move that somewhat reduced Forest Service experimental grazing work at the very time it had assumed the national grasslands from the Soil Conservation Service. But the work and the experience in grazing administration facilitated the Northern Region's administration of the grasslands.

The Job Corps

A more contemporary, and distinctly different, cooperative endeavor of the Northern Region involves the administration of Job Corps Training Centers. Established as a result of President Lyndon B. Johnson's declaration of war on poverty, the Job Corps was part of the Economic Opportunity Act of 1964. At the signing ceremony for the act, on August 20, 1964, Johnson commented, "Today, for the first time in all the history of the human race, a great nation is able to make and is willing to make a commitment to eradicate poverty among its people." [51] Likened to the Civilian Conservation Corps work of the depression era, the Job Corps Training Program focused on preparing unskilled men and women for jobs. During its 25 years the program has weathered many storms, including objections from local communities concerned about undesirable elements moving into their midst, but it has become one of Region 1's proud accomplishments and "Montana's best kept secret." [52]

The Anaconda Job Corps Center, administered by the Deerlodge National Forest, over its lifetime worked with some 11,000 disadvantaged young people between the ages of 16 and 21, often from inner-city areas. They were given employment, a healthy environment, training, and opportunity. It is estimated that, since 1966, the Anaconda Center, which involves cooperation with local communities, school districts, private industry, and other government agencies, has contributed an estimated $12 million to the economic value of western Montana communities. [53] Most importantly, the young people who participated in the Anaconda programs obtained a fresh start, enhanced education and skills, and productive employment.

The Trapper Creek Job Corps Center on the Bitterroot has, since its establishment in 1966, trained some 10,000 young people. "In the last 23 years, Trapper Creek has helped 6,272 individuals find jobs; 1,167 students have returned to school; 858 have joined the military; and 1,483 have earned GED certificates." [54] Students from the Job Corps centers have provided important volunteer labor to the communities and to the Forest Service. The benefits have been mutual. Another center, operated by the Flathead Reservation, obtains the support and cooperation of the Forest Service when needed. In one sense, Job Corps programs are indicative of the more integrated, cooperative kinds of human resource programs that have been assigned to the Forest Service and other Government agencies by Congress since the 1960's.

Cooperation Is a Necessary Part of "Doing Business"

Forest Service professionals have learned that cooperation is a necessary part of "doing business." In the early days, rangers, who identified with their districts and their forest users, constantly worked with others in accomplishing their jobs. Then, as now, the work of the forester also was shaped by others. Management structures for cooperation were established within the region for fire control in the very early years of the region's organization. Cooperation in wildlife management from the start involved working with State authorities who controlled game seasons and harvests while the Forest Service administered much of the habitat. In more recent decades, this cooperation has been extended to include other agencies, private landowners, and diverse interest groups. Elk studies and elk management are outstanding examples of cooperation in game management. The Greater Yellowstone area has become a regional and interagency cooperative management enterprise that typifies modern land-management parameters. And the somewhat more historic grazing association-grasslands partnerships denote a generally successful case of integrated private-

public land-management programs. A trend toward more cooperative management is not only apparent, but urged by the greater complexity of modern society and, indeed, by the growth in the data upon which decisions must be based.

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Chapter 16

Modern Management in Region 1

In 1988, the Northern Region comprised 15 national forests and 4 national grasslands—approximately 25 million acres—administered by 13 forest supervisory offices and 70 ranger districts. Those who manage the national forests include scientists, foresters, engineers, archaeologists, wildlife specialists, botanists, hydrologists, soil and range specialists, firefighters, seasonal employees, clerks, typists, volunteers, and many others who carry out the work of the region. Those who use the forest resources include lumbermen, livestock ranchers, miners, hunters, hikers, campers, tourists, birdwatchers, skiers, rock hunters, and firewood gatherers, among others. Uses are many; they are diverse and change over time. The resources are renewable and nonrenewable, but even the renewable resources often require decades for regeneration. For example, production of marketable timber may take 80 years or more, depending on the species. Thus, management of the national forests in the Northern Region involves decisions that affect very long timeframes, many different users with often divergent and conflicting interests, and a broader and often ill-defined national interest. The processes of reaching management decisions have changed markedly in recent decades, but the management goals and objectives have not. The reasons for which the region was organized, and the commitment on the part of those who manage the region, have been remarkably consistent. One of the most important resources of the Northern Region is the people who work there and manage the national forests. The history of the region is indeed their history, and they are the best tellers of that history. It is clear that over the past eight decades or so they have cared deeply, both about the forests and about those who use the forest resources. This stewardship can be demonstrated by reflecting on some of the personal experiences of the people who have lived and worked on the Northern Region forests; their tradition of stewardship is one of the living legacies of the Region.

Tradition of Stewardship

Thomas P. Farbo, who retired in 1981, spent his entire forestry career (almost 30 years) in the Northern Region. He recalls it as a "beautiful experience," and sees the work of the Region as having been, overall, an "enormous, complex task .. . . undertaken by a group of people who worked as one large family (with an occasional internal spat here and there). ." [1]

"Service," Farbo said, "is a large part of Forest." He recalls the Englemann Spruce Bark Beetle Salvage Program on the Kootenai, Flathead, Lolo, Kaniksu, and other forests, in cooperation with the wood-products industry, as an outstanding effort by Region 1 personnel. Hundreds of miles of timber access roads were engineered and constructed, and millions of board feet of

spruce were salvaged for conversion to building materials for use throughout the world. What might have been terrible losses from disease instead became a positive benefit for society. Moreover, he said, "this program welded the people in the Forest Service into a 'family' mode that made me very proud and humble, and created an *esprit de corps* very seldom seen in public-sector organizations." [2]

John A. Beebe (Supervisor of the Kaniksu National Forest from 1960 to 1966) praised the forest staff's pride in their work. That pride, he said, is partly exemplified by reintroduction of the large pine-tree shield badge on the working-day uniform; the effort to improve directional and location signs in the forests; and, most significantly, the organization of the Forest Advisory Council, which created a better public understanding of the work of the Forest Service. "With major assistance from Senator Frank Church," he said, "we acquired key real estate in the Upper Priest Lake area to prevent development of this pristine area." There were, of course, problems. There was always much more to do than the rather limited staff could accomplish; an antibiotic blister rust program "failed," and the Advisory Council was phased out as other planning structures developed. [3] (Later, the Kaniksu was incorporated with the Idaho Panhandle National Forest.)

Richard T. Bingham, who spent most of his career working to control blister rust in the Idaho Panhandle area, suggested that, despite the failures of pilot programs, enormous advances have been made. Selective breeding programs, he said, have increased the immunity of timber to blister rust by 65 percent and ultimately will save hundreds of millions of dollars for the wood-products user. Bingham estimated that the selective breeding programs, which probably cost $2 million, compared to the $50 million invested in traditional manual blister rust control work between 1926 and 1967, have resulted in impressive savings for present and future generations. [4]

The terrible losses from the great fires of earlier years have been alleviated by fire planning and management programs. Fire is not the enemy it once was, but it is fickle and dangerous. One method of "managing fire," noted by Donald V. Williams on the Nez Perce, is to develop "pre-attack planning," that is, to determine natural firebreaks and thus use nature as an ally rather than an enemy and, when appropriate, to organize fire cooperative teams. Williams assisted in forming such a team, which involved firefighting resources from Regions 1, 4, and 6. [5] Cooperation, necessitated by the very nature of the forest resources and their users, has always been a major management policy in the region.

However, from the early days of the independent ranger on the ranger district to the present, management also has been a highly individual practice. Thus, most Region 1 employees have treasured not only working with others, but also the independence of their jobs and lifestyle. Rolf Jorgensen, for example, said that throughout his career, whether as a district ranger or a forest supervisor, "One was pretty much his own boss. You made many major decisions on your own and were held accountable for them by your supervisors. You learned in a hurry from your mistakes!" [6]

Work experiences in the region tended to be diverse, making jobs there ever interesting and never dull. Walter Hahn, who hopped a freight to Butte, Montana, in the spring of 1927, began work with the Forest Service as a packer, fire lookout, and trail foreman. He subsequently supervised a Civilian Conservation Corps workgroup, repaired phone lines, worked a pack string of mules, measured snow, built helicopter pads, and, as he said, did enough interesting and different things to "fill a large book." Similarly, Arne O. Nousanen, a trained forester, spent his career in the region working on blister rust control, fighting fires, counting game, supervising ranger districts, and serving as a check scaler and mill scale studies leader, all interposed with tours for the State Department in Cambodia and duty as Bitterroot staff officer in charge of recreation and lands. [7] Being a forester in the earlier years required that one be a "jack of all trades"; today, forest staff must include both generalists and specialists.

New Dimensions in Forest Management

Susan Giannettino believes that a good district ranger, in fact a forest manager, must necessarily be a generalist. Giannettino, with a degree in history and anthropology from the University of Montana, worked for a time as an archaeologist in the region, before an assignment in Alaska with the short-lived Heritage Conservation and Preservation Service. She began her management career in Region 1 as public information officer on the Flathead National Forest, working for Forest Supervisor John Emerson. Later, as the District Ranger for the Nine-Mile Ranger Station, Giannettino suggested that, rather than the "jack of all trades," today's ranger has become more of a general manager with a "people" orientation. The ranger and the forester must have a "broader view" of resource management that in a sense involves as much political science, sociology, and anthropology as it does forestry. A good manager, she said, must have a sense of the "public perception and culture." [8] Women such as Giannettino are assuming more management positions within the region.

Bertha Gillam, trained in botany, biology, and ecology, began her Forest Service career on the Bighorn National Forest in Sheridan, Wyoming, and filled various staff positions before transferring into the Custer Ranger District on the Black Hills National Forest. She then became Deputy Forest Supervisor on the Wasatch-Cache National Forest in Region 4 and in 1988 became Forest Supervisor on the Bitterroot—the first woman to serve as Forest Supervisor in Region 1. Forest management, according to Barbara Beck, archaeologist on the Deerlodge, has evolved from being largely an internal Forest Service business to include local input and most recently national and even international considerations. , Thus the role of the manager and the processes of management have distinctly changed.

The generalist, however, cannot function effectively without a team of specialists to deal with technical problems—the essence of the planning and applications aspects of Forest Service work. Andrew J. Arvish, who began his career in 1947 and retired 30 years later, lamented the passing of the old "family atmosphere," but commented that, "in retrospect, I can see why the 'family' atmosphere seemed to disappear. In its place are a multitude of little empires operating as specific disciplines to provide the forest supervisor with hard facts needed to blend into a working program." Thus, the work of such people as Raymond M. West, one of the first biologists in the Forest Service, who worked in Region 1 between 1934 and 1942 before going to another region, was crucial in the development of fish-planting plans developed in cooperation with State fish and game commissions. [10]

The role of engineers such as Ray Miner grew ever greater in the region after the 1920's, as roads, bridges, and land-use projects became more important. Miner built everything from bunk houses to fire towers, but spent much of his career as a "designated engineer" and operations and maintenance engineer. He insisted on quality construction and careful attention to specifications. [11]

Bayard R. (Bob) Van Giesen, trained in both forestry and electrical engineering (the latter interrupted by World War II), became one of the region's specialists in handling large-scale fires; Art Kahl, with the region's Division of Engineering, specialized in building bridges; L.M. Powell worked most of his career on boundary, right-of-way, and road surveys; and Virginia Hoeger spent much of her 22-year career as district clerk at the Squaw Creek Ranger District on the Gallatin National Forest. [12]

The job of managing and operating the national forests of Region 1 requires a diversity of talents, dedication, and simple hard work. Over the years, the personnel of Region 1 appear to have been unstinting in their efforts. The region has developed an enormous sense of "belonging" and pride among those who have served, but those people also believe that the work has become much more impersonal and complex.

Bill Fallis, who spent most of his career in Region 1 before transferring to become Forest Supervisor on the Fishlake National Forest in Region 4, and then served for a time in the Southwest (Region 3), treasured his years in the Northern Region above all others. "We worked with great people," he said. "Performing good work seemed to be a prevalent attitude among employees, and little attention was paid to personal discomfort or working long hours." Growing populations and more diverse and remote pressures have made land-management decisions "more complex and controversial," he believes. [13] The work of managing the national forests of the Northern Region has changed over time, as indeed it must. Change has been particularly intense since the 1960's; the Bitterroot Controversy of 1969 is both symbolic and symptomatic of that change.

The Management of Change

Regional Forester Neal M. Rahm was keenly aware of the changes occurring in the 1960's. He told a meeting of the Northern Rocky Mountain Section of the Society of American Foresters in Kalispell on July 14, 1969, that he wished he possessed the simplified outlook on life that his grandmother enjoyed. She had only two worries, he said—grandpa and the kitchen stove. But times, he said, are changing:

> . . .[W]e are now living in a strange and restless time. It is strange because long-established qualities and standards are being challenged and new values are being introduced. It is a restless time because new forces are loose in our society, with unmeasured dimensions and untested strength.. . .. This is a new environment for conservation and it is creating new problems and new challenges for all of us. [14]

This has been a century marked by phenomenal change, Rahm said, and we have now come "to an almost unprecedented concentration of it." [15] For the Forest Service, the problem had become the effective management of change.

Rahm began to speak of new management directions for the 1970's and beyond. He believed that the Forest Service, including the Northern Region, had passed through three major eras and was now entering a fourth. The first, he said, was the "Crusading and Custodial Era," which lasted from about 1905 to 1940. It

was, he said, a desperate and difficult period. National forests were carved out of the public domain lands of the West. Forest rangers were "cowboys and lumberjacks," who often literally had to fight to wrest control of the lands from local interests and pioneer settlers. In the "Industrial Development Era," from about 1940 to 1960, depression and war shaped events. Emphasis was placed on social programs, relief, and timber production and harvesting. The "Social-Multiple Use Era" of the 1960's, he said, was characterized by the development of multiple-use planning, increased population pressures, and markedly increased and diverse competition for national forest resources. "The Forest Service," he said, "was bombarded from every direction by pressures of all kinds." The 1970's introduced the "Environmental-Public Involvement Era" that resulted in the Forest Service recruiting people with more diverse skills, finding new ways to involve the public in management decisions, and actively seeking external advice on decisions relating to the uses of land and resources. [16]

One of the most important changes that has occurred in the management of the national forests, both in the Northern Region and elsewhere, has been in the processes used to measure and evaluate the public's interests and needs. At one time the individual ranger within the district could best determine the nature and extent of public uses; then, first the national forest, then the region, and finally Congress began to assist in determining management policies and practices. More than ever before, the administration of the national forests became an "other-directed" process involving much greater public participation at the individual forest level, the Regional level, and the national level. The region began to develop a new level of management consciousness before "crises" of change, such as the Bitterroot controversy, developed.

In 1967, Neal Rahm organized the Forest Service Public Understanding Committee to conduct an exhaustive study and critical self-examination. "Ironically," said Ray Karr, who served as a member of the Committee, "the problem turned out to be us." The situation was:

> The Forest Service is in an era within which many "publics" compete vigorously for the social and economic values of our national forest resources. Current public opinion and our analyses of long-range public interest may often be in opposition. . . ..Thus, the decisionmaking process is complex today and can only become more complex as time advances. [17]

The region subsequently developed the Program for Public Involvement, which established a conceptual framework for new management directions. [18]

The region also adopted certain basic assumptions to frame its new manage-ment direction. The region recognized, for example, that it was perhaps unique among all regions in that it had a wealth of resources that were relatively undeveloped. The realization that competition for land and resources would increase sharply meant that more coordination in multiple-use planning was essential. New, more intangible values such as natural beauty and the quality of the environment, it was believed, would begin to outweigh tangible economic values and dictate new management practices and programs. Increased demand for water storage, downstream water use, and recreation were expected to increase more sharply than other uses. While tourism and "viewing" would continue, more vigorous, action-oriented outdoor forms of recreation—many of them, such as hunting and fishing, traditional in the region—were expected to expand rapidly. Mining operations also were expected to expand greatly, as were other public uses of every kind. Greater use also meant more need for law enforcement and legal assistance. Although there were other assumptions, the key assumption was that the region must continue to "slant its attitudes and programs toward people." [19]

Rahm incorporated these assumptions and management criteria in the "managerial grid" training programs he began in the mid-1960's. The programs emphasized teamwork, trust, and openness, both internally and externally. Without them, Ray Karr believed, the region would have been "floundering 'under the multiple attacks on its performance and credibility. Instead, personnel worked hard to understand the basis of . . .criticisms. . . and to correct them where possible." [20] In part, because of these adaptations, the Northern Region not only succeeded in coping with the concentrated changes Rahm referred to, but also found new opportunities in those changes.

Karr, then public information officer for the region, contributed significantly to the new directions in forest management. He continually sought more information to apply to his job—one increasingly at the focus of the public's new environmental awareness. In 1975, while still managing his job with the Forest Service, he earned a master's degree in environmental studies with a thesis on public involvement. After a heart attack, which he explained came from "too much burning the candle at

both ends," he pursued a Ph.D. and completed a dissertation entitled "Forests for the People," which studied the **RARE I and RARE II** processes. Karr opened "all the windows and doors and let the light in," said Orville Daniels, Supervisor on the Lolo National Forest. [21] By the 1980's, if not before, forest management had become a public process.

In his studies, Karr concluded that the Forest Service and thus the region had not understood that "it serves its external environment and is controlled by the same environment, just like any other modern, large, and complex organization." Moreover, similar to such organizations, the Forest Service had a propensity to repeat the same mistakes "time and time again," because it lacked (as do most such large-scale enterprises) a corporate memory. [22] The more rapid the changes, the greater the turnover of personnel, and the more far-flung and diverse the user constituency, the more difficult becomes the problem of retaining a "memory" that can guide responses to events. History, a form of corporate memory, is a useful management tool in a rapidly changing society.

As a logical extension of the multiple-use planning procedures adopted in the 1960's, the region and individual national forests began to systematically analyze the sources of social and economic influence on forest planning in the 1970's. The Beaverhead's socioeconomic overview (January 1974) explained that the Forest Service was "embarking on a course of constructive change in its planning and decisionmaking processes." The use of internal interdisciplinary teams, public participation, and improved systems of data collection and evaluation became the essence of the new unified planning and decisionmaking process. The point was, the overview explained, that in the realm of modern forest management, the capability for decisionmaking was beyond the scope of the individual. [23] Decisions, then, had become a collective process, and the data used to make decisions would be drawn from a broad array of socioeconomic inputs.

Forest Management Planning and Congressional Mandates

While the processes for planning and decisionmaking were changing, the end products of that planning were mandated in part by new Federal legislation. Thus, the National Environmental Policy Act of 1969 required the development of forest environmental impact statements demonstrating alternative impacts to be anticipated by a decision; the Forest and Rangelands Renewable Resource Planning Act of 1974 necessitated the development of renewable resource assessments and renewable re-

source programs; and the National Forest Management Act of 1976 supplemented previous legislation and established more precise guidelines for forest management plans. This "mandated management" has been previously discussed (see Chapter 13). The question is, coupled with the multiple-use planning and the new collectivist decision-making processes, what did it really mean?

For one, mandated management meant far more time, labor, and money involved in the planning and decisionmaking process. Theoretically, it meant wiser, better decisions with greater public acceptance. Forest plans produced in the region between 1979 and 1985 cost an estimated $884,000 each, involved an average of 48 full-time employees or contractors for each year, and attracted perhaps 1,000 public participants for each plan. Retired foresters are quick to point out that the congressional mandates of the 1960's and 1970's had a severe impact on the work of the region. According to Clark S. Binkley (1983), " planners were recruited from the normal work force, thus reducing it materially, since they were not nor could not be replaced under personnel ceilings in effect. [Moreover] the planners, *per se*, were not involved in implementation to any degree." [24] Thus, delays in implementation and traditional field work can be considered one practical result of management planning.

A review of one or two "case histories" of the forest planning process offers good insight into the enormous energy and application involved in the region's total planning effort. The forest plan and environmental impact statement for the Lolo National Forest, produced in 1980, the first issued under the new legislation and procedures, became both a model for other plans and a weathervane for evaluating the problems with the new procedures. Preliminary reviews by the Inland Forest Resource Council (representing industry) and the Sierra Club (representing environmentalists) both found fault with the forest plan. Industry believed that the Forest Service forest planning model used to define quantitative expressions of ecological relationships was too complicated, and that the baseline date in the Lolo plan was inadequate. Although the Sierra Club thought the plan was a "remarkable accomplishment," reviewers thought the document was poorly organized, was superficial on some points, treated management in a vacuum, and failed to summarize alternative courses of action in one section. [25]

The Lolo forest plan and environmental impact statement; the regional forest plan, which was the first regional plan to be published; and all other forest plans in the region came under intense local and national scrutiny after the Lolo plans were

issued. Lolo Forest Supervisor Orville L. Daniels issued a public update on the plan on March 6, 1981. Daniels explained that over 2,000 responses to the proposed plan and environmental impact statement had been received. Since publication of the Lolo plan and statement, he said, much had happened:

> . . ..[T]he draft Northern Region Plan had been published; the 1985 [Resource Planning Act] program has been recommended to Congress by the President; the major questions about management of the Rattlesnake drainage were resolved through legislation; a review within the agency of the Proposed Lolo Forest Plan package surfaced some question about the legality of the format used in writing our [draft environmental impact statement].[26]

The Lolo's revised plan and environmental impact statement were issued in January 1982. Again, the process of public review and revision involved many years, many people within and outside of the Forest Service, and a lot of paper. The final plan and statement were issued 4 years after these revisions, in February 1986. With each iteration, the plan grew in physical size:

Doc. Status	Date: Pages	Date: Pages	Date: Pages
Forest Plan	4/80: 188	1/82: 217	2/86: 404
Environmental Impact Statement	4/80: 272	1/82: 383	2/86: 1,165

Thus the physical size of the Lolo's planning documents grew to three volumes and some 1,569 pages. This degree of activity and involvement was reflected in each of the planning documents for each of the national forests in the region. During the period roughly between 1980 and 1986, the National Forest Management Act planning regulations were revised, and the Northern Region plan, which already had been formulated, was revised and reissued in June 1983 under the new guidelines. The proposed Northern Region plan now became the Northern Regional Guide. The record of decision (which reviews and explains the processes by which the guide was developed) explained that the guide was to provide direction for individual forest resource management planning efforts by establishing regional management guidelines, setting long-range program objectives, and resolving internal regional issues or variances in management planning.[27]

However, what appeared to be an uninterrupted flow of input from external reviewers, Congress, and even the courts, in addition to internal revisions of the planning process itself, continued to delay the schedules for completion of draft environmental impact statements and forest plans. Originally scheduled for completion in 1981 and 1982, the plans were rescheduled for 1984 and rescheduled again for 1985. [28]

Schedule for Planning Documents

Regional Guide	Draft Plan and Environmental Impact Statement Published	Final Plan and Environmental Impact Statement Published
Beaverhead	September 1984	June 1985
Bitterroot	July 1984	April 1985
Clearwater	January 1985	September 1985
Custer	September 1984	June 1985
Deerlodge	October 1984	July 1985
Flathead	July 1984	April 1985
Gallatin	July 1984	April 1985
Helena	August 1984	May 1985
Idaho Panhandle	January 1985	September 1985
Kootenai	June 1984	March 1985
Lewis and Clark	May 1984	February 1985
Lolo	July 1984	April 1985
Nez Perce	February 1985	September 1985

Completion and publication of these plans was considered more of a new beginning, rather than an end to the planning and public review process. Procedures for raising objections and appeals were specified by the plans, and the Wilderness Society and other advocacy groups gave the Region 1 forest plans and impact statements close scrutiny, as did editors such as Randal O'Toole of Forest Planning, and Robert E. Wolf, formerly with the Congressional Research Service. Wolf believed that, collectively, the plans did not reflect much improvement over the earlier multiple-use forest plans because they failed to demonstrate past accomplishments and shortcomings, failed to evaluate conditions, used weak data without showing its quality, and possessed "more volume than they have content." [29]

Subsequently, all final plans in Region 1 were appealed. Most of the appeals related to below-cost timber sales, water quality issues, and wilderness. Finally, the Beaverhead, Bitterroot, Custer, Deerlodge, Flathead, Helena, Lewis and Clark, and Lolo National Forests filed final forest plan environmental impact statements with the Environmental Protection Agency before the end of 1986. The Clearwater, Gallatin, Idaho Panhandle, Kootenai, and Nez Perce filed plans in 1987. [30]

Representative Plan: The Clearwater National Forest Plan

Although each forest plan and environmental impact statement is necessarily unique to a forest, the format of and basic processes used to create the documents are similar. In this section, the Clearwater National Forest Plan, issued in September 1987, is used as a representative plan. Forest Supervisor James C. Bates's cover letter to the four-volume report notes that "It is an understatement to say that considerable time, data, and public input have been applied to complete the enclosed documents. [31]

The Clearwater National Forest is defined as "unique in Idaho, a 'jewel' among the national forests in the 'Gem' State." It contains landscapes and land forms characterized by rugged, mountainous terrain, high mountain lakes, clear streams, and dense vegetation. "Nearly a million acres, over half of the forest, are currently roadless," and another quarter-million acres are designated wilderness. It is a land where the "natural environment and people are not separate entities, but an integral part of life." [32]

Development of the plan began in 1979, when a notice of intent was filed in the Federal Register. Next, letters were mailed to interested parties, a brochure explaining the planning process was circulated, and news releases announcing public workshops were distributed. About 210 people attended public workshops held in Moscow, Lewiston, Orofino, and Kamiah in November 1979. Issues raised at these meetings were addressed in the planning and evaluation process and, in 1983, additional public meetings were held to discuss roadless areas. The draft forest plan and impact statement were submitted for public inspection and review in September 1985, and public meetings for discussion and explanation followed. Some 300 people attended the various meetings, and 3,250 letters, 16 oral statements, and 30 reports were received in response to the draft documents. New assessments and evaluations resulted in the decision as to which designated land management planning program would be selected from the alternatives presented in the forest plan. [33]

The one-volume forest plan and the two-volume environmental impact statement accompany the record of decision that identifies the selected alternative. This strategy for land and resource management is to be followed for a period of 10 to 15 years, after which it will be revised under the terms of the National Forest Management Act of 1976. The forest plan contains general management direction but does not specify projects or actions on specific sites, nor does it address "day-to-day management." (Personnel matters, internal organization, and equipment and property management are not within the scope of forest plans). [34] As previously mentioned, the forest plans are subject to appeal, and the Clearwater plan, as were the plans for all forests, was appealed.

Implementing the Forest Plans

Implementation of the forest plans required resolution of all appeals and then, most importantly, financial and personnel resources adequate to do the work called for in the plans. Resolving appeals occupied considerable resources on the part of the forests and the region during the years after the forest plans and impact statements were released. A sampling of post-plan activity from selected forests is indicative of what took place throughout the region.

In October 1988, the Flathead reported that 39 administrative appeals were filed after implementation of its forest plan in January 1986. Expert evaluations, public hearings, and reviews resulted in the Forest Service Chief issuing decisions on two of those appeals, in August and October 1988. The Chief's decision required in one case additional analysis of habitat requirements for certain wildlife species, a supplement to the environmental impact statement, and an amendment to the forest plan. A second decision required additions to the forest plan that would clarify the intent of certain recommendations. It was believed, however, that these revisions or changes would not alter the environmental impact statement. [35]

These two decisions required another assessment and reporting procedure. Specifically, the Flathead amassed a considerable amount of new information for public review and comment, issued in three packages. The first contained nonsignificant forest plan amendments that resulted from the Chief's decisions; the second, scheduled for release in 1989, would contain nonsignificant amendments that might require some specific site selection analysis (grizzly habitat); and the third, also scheduled for release in 1989, would be a draft supplement to the environmental impact statement that reviewed old-growth, management indicator species, and grizzly bear density estimates. The Flathead again invited public review and comment for each stage of the planning and review process. [36]

New Style of Planning and Management

Forest planning became a complicated process, with consequences that will continue to unfold in the years, and even decades, ahead. But some of the products of that process are even now becoming evident. Although the reviews are mixed, there are some very positive indicators.

Frank Salomonsen, Supervisor of Deerlodge National Forest from 1979 to 1989, believes that the forest plan and the processes that encompass it were a cornerstone of effective forest management. He said that the plan provides "a long-range vision," and that one can deal with specific issues only if one has such a vision. "We made a conscious effort to get the facts

out to people and to have people be a party to the decisions," he said. [37] Salomonsen and the Deerlodge staff succeeded in bringing together such diverse interest groups as industry, Recreationists, and environmentalists to approve cooperative agreements that established public guidelines approved by users of the forest resources. Tony Schoonen, then president of the Montana Wildlife Federation, credited Salomonsen and the Deerlodge with being exceptionally "cooperative and open- minded in its planning process," saying, "We can talk to the Deerlodge," rather than litigate. Salomonsen, who was trained as a "generalist" with a degree in forest management, served on the Kaibab National Forest in Region 3 and was a member of the Kootenai staff before heading ranger districts on the Gallatin and then the Bitterroot. He believes that the Deerlodge's conscious efforts "to get the facts out to people and to have people be a party to the decisions" resulted in an increased trust and credibility of the Forest Service. [38]

On the Nez Perce, Forest Supervisor Tom Kovalicky believes that the forest plan and the processes leading to its development have placed the forest and the region in a new "defensible" position. The plan, he said, is "believable." It establishes high standards. It establishes the role of the forester as a public servant. It makes the work of the forest open and visible, as it should be. "The forest plan," he said, " is a contract between the Forest Service and the public." [39]

The Nez Perce plan, Kovalicky said, drew 11 appeals. By mid-1988, six of those had been negotiated, two of the remaining five were being resolved, and two, he said, were nonnegotiable in that they were requests for larger allowable cuts. Kovalicky believes that the Nez Perce plan fully recognizes the National Environmental Policy Act standards and provides an excellent example of a contemporary and effective planning document. The recent problems in Forest Service management, he suggested, derived from something of an over-reaction to the National Environmental Policy Act, in that forests necessarily rushed to recruit specialists but then failed to establish a system to effectively integrate disparate technical information. Thus the Forest Service became overcompartmentalized. The new planning procedures provide necessary integration, public participation, monitoring processes, and Forest Service accountability. [40]

Kovalicky also believes that the new style of forest planning and management also requires a new style of manager. The district ranger must relate across the scale to people, budgets, and processes. The forest manager at every level must not be a passive administrator who essentially responds to external or internal

stimuli. Instead, the forest manager must be a "leader". [41] As such, the forest manager becomes a manager of change, rather than a pawn and a victim of change. The new imperative of the Forest Service has become not just planning, but also the ability to manage change and to implement plans through effective leadership.

To be sure, planning and leadership are not truly new elements in the Forest Service or certainly in Region 1. The ranger traditionally has been a leader in the community and the district in which he or she operates. What has happened over time is that the community—through growth or through urbanization and modernization—has changed markedly. Thus, the Forest Service has been called upon to change both its perception of the community it serves and the processes through which it exercises leadership within that community. In Region 1, that change occurred for the most part between 1960 and 1980. The years since 1980 have been directed to applying the lessons learned to the management of the forest resources for which the region has responsibility.

Despite what may at times seem to have been unduly "concentrated" doses of change, the processes actually have been evolutionary. Planning and leadership have been recognized as essential to effective management throughout the region's history. Regional Forester Evan Kelley, for example, addressing potential roadless area classifications in a letter to the Chief in 1938 explained that effective land-use planning required the integration of various special interests and sound leadership from above. "Drives," he said, "by one division for this or that sort of land use—or any other form of planning having directly or indirectly to do with land and resource-use planning —without coordination of the interests and obligations of other Divisions, violate every principle of good organization and sound leadership. . ."[42]

Kelley believed that Washington needed to develop a program for land and resource planning that would incorporate "objectives, principles, procedures, and rules of practice," so that the Forest Service could move forward on a broad front in the development of land and resource plans. "Every region," he said, should "contribute its coordinated part to such a plan for the entire system of national forests." [43]

Although certainly earlier acts established a program for national forest management, the new legislative mandates from Congress, and the Forest Service regulations, have established a comprehensive program for the entire system of national forests.

The work of the Forest Service in the Northern Region has not been easy. It is a diverse, far-flung land; a land of hard winters and abundant raw resources. The Northern Region, perhaps more than others, has been closely integrated with the welfare and livelihood of the people who live in those States associated with it. A larger percentage of the people there have had more direct contact with the Forest Service than is true in other regions, either as employees, contractors, or users of national forest resources. The Forest Service there has had many "publics" and has acquired high visibility and set high standards of service and accountability. The uses of the forest resources have always been many, and both the uses and the users have changed over time. In recent decades, the region's accountability and visibility are no longer localized or even regional in scope, but are indeed national. Its planning processes and directives have changed to assume that larger role, but the basic responsibility and the intense sense of service that the region has exhibited throughout its history, like the forests, the waterways, the lands, and the wildlife that constitute its living legacy, are in many ways more abundant today than when the Forest Service began its work there. Paradoxically, so long as the Forest Service does its work in the Northern Region well, that work will never end.

Reference Notes

1. Thomas P. Farbo, Orofino, ID, to Henry C. Dethloff, Dethloff, March 27, 1989, Intaglio Collection, University of Montana Archives, Missoula, MT.

2. Ibid.

3. John A. Beebe, Hayden Lake, ID, to Dethloff, May 26, 1989, Intaglio Collection, University of Montana Archives.

4. Richard T. Bingham, Moscow, ID, to Dethloff, October 17, 1988, Intaglio Collection, University of Montana Archives.

5. Donald V. Williams, Chino Valley, AZ, to Dethloff, February 17, 1989, Intaglio Collection, University of Montana Archives.

6. Rolf B. Jorgensen, Coeur D'Alene, ID, to Dethloff, April 23, 1988, Intaglio Collection, University of Montana Archives.

7. Walter R. Hahn, Superior, MT, to Dethloff, October 28, 1988, Intaglio Collection, University of Montana Archives.

8. Interview, Dethloff with Susan Giannettino, Nine-Mile Ranger Station, August 18, 1987, Intaglio Collection, University of Montana Archives.

9. Biographical Sketch," Bertha C. Gillam to Dethloff, Intaglio Collection, University of Montana Archives; Interview, Dethloff with Frank Salomonsen, Barbara Beck, and Ron Hansen, Deerlodge National Forest, July 23, 1987.

10. Andrew J. Arvish, Orofino, ID, to Dethloff, March 1, 1989; Raymond M. West, Portland, OR, to Dethloff, July 22, 1988, Intaglio Collection, University of Montana Archives.

11. Ray Miner, Libby, MT, to Dethloff, April 27, 1988, Intaglio Collection, University of Montana Archives.

12. L.D. Bruesch, Missoula, MT, to Dethloff, January 20, 1988, re: Arthur (Art) Kahl, Intaglio Collection, University of Montana Archives; Virginia Hoeger, Gallatin Gateway, MT, to Dethloff, December 4, 1987, Intaglio Collection, University of Montana Archives; L.M. Powell, Hamilton, MT, to Dethloff (n.d., Intaglio Collection, University of Montana Archives); "Biographical Sketch," Bayard R. (Bob) Van Gieson, to Dethloff, Intaglio Collection, University of Montana Archives.

13. (Bill) Willard R. Fallis, Frenchtown, MT, to Dethloff, January 12, 1988, Intaglio Collection, University of Montana Archives.

14. Regional Forester Neal M. Rahm to the Northern Rocky Mountain Section of the Society of American Foresters in Kalispell, MT, July 14, 1969, Federal Records Center, Seattle, WA, Box 95—75A109.

15. Ibid.

16. Opening Remarks by Regional Forester Neal M. Rahm at a news conference in the Federal Building, Missoula, MT, December 8, 1970, Federal Records Center, Seattle, WA, Box 95—75A109.

17. Forest Service" Public Understanding: A Candid Evaluation," USDA Forest Service, Northern Region, 1968, p. 2, in Intaglio Collection, University of Montana Archives.

18. Ray Karr, "Program for Public Involvement: A Synopsis," reprinted in 1982 by Region 1 from a report to the President's Panel on Timber and the Environment, dated June 1972, Intaglio Collection, University of Montana Archives.

19. George A. Mahrt, Chairman, Middle Zone Supervisors, to Regional Forester, January 27, 1970, Federal Records Center, Seattle, WA, Box 95—75A109.

20. Ray Karr, Missoula, MT, to Dethloff, March 1, 1989, Intaglio Collection, University of Montana Archives.

21. Ibid.; Missoulian (December 26, 1983).

22. Ray Karr, Forests for the People: Case Study of the RARE II Decision, Ph.D. dissertation, University of Montana, 1983, p. 160.

23. Region 1, Beaverhead National Forest, Pub. No. R1—74—005, Socio-Economic Overview (January 1974), p. 7.

24. Clark S. Binkley, "Comments," in Roger A. Sedjo, ed., Governmental Interventions, Social Needs and the Management of U.S. Forests (Washington, D.C.: Resources for the Future, 1983), p. 237 (but see pp. 1—300).

25. Looking at the Lolo,—Forest Planning 7 (October 1980): 5—7, 19—21.

26. USDA Forest Service, Northern Region, Lolo National Forest, Lolo Forest Plan Public Update (Missoula, MT: March 6, 1981), pp. 1—6.

27. See USDA Forest Service, Northern Region, The Northern Regional Guide (Washington, D.C.: Government Printing Office, 1983); and USDA Forest Service, Northern Region, Record of Decision, Final Environmental Impact Statement for the Standards and Guidelines in the Northern Regional Guide (Washington, D.C.: Government Printing Office, 1983), pp. 1—11.

28. "Planning Schedules Update," Forest Planning 4 (March 1984):8.

29. "Forest Service Timber Sales,—Oversight Hearings Before the Committee on Interior and Insular Affairs, Subcommittee on General Oversight, Northwest Power, and Forest Management, and the Subcommittee on Public Lands, House, 99th Cong., 1st Sess., 1985, pp. 1—90.

30. Forests of the Future? (Washington, D.C.: The Wilderness Society, 1987), pp. 56—62; Report of the Forest Service, Fiscal Year 1987 (Washington, D.C.: Government Printing Office, 1988), p. 97.

31. James C. Bates, Forest Supervisor, Orofino, ID, to "Dear Reader," September 23, 1987, Intaglio Collection, University of Montana Archives.

32. Clearwater National Forest, Forest Plan: Record of Decision (Orofino, ID: September 1987), pp 2—3.

33. Ibid.

34. Ibid.

35. Robert G. Hensler, Flathead National Forest, Planning Staff Officer, to "Dear Forest Plan Participant," October 26, 1988 (Progress Report), Intaglio Collection, University of Montana Archives.

36. Ibid.

37. John McNay, "Forest Chief Leaves Landmark Pact," Montana Standard (n.d.), clipping in Intaglio Collection, University of Montana Archives.

38. Ibid.

39. Interview, Dethloff with Tom Kovalicky, Grangeville, ID, July 28, 1988, Intaglio Collection, University of Montana Archives.

40. Ibid.

41. Ibid.

42. Evan Kelley, Regional Forester, to Chief, Forest Service, February 9, 1938, Federal Records Center, Seattle, WA, Box 95—32173.

43. Ibid.

Biblography

Traditional bibliographic lists fail to indicate the relative value or frequency of use of resource materials . For that reason, the authors have combined the list and essay bibliographic styles. Specific references to resources can be accessed quickly from the Reference Notes associated with each chapter, and those sources are not wholly duplicated in the following bibliographic listing and essay. Rather, the chapter Reference Notes and this Bibliographic Essay should be considered complementary research tools.

Historical resources generally fall into two broad categories: primary materials and secondary materials. Primary materials usually are those considered to be contemporary with the event. Secondary materials are what others have said or written about an event. Letters, manuscripts, reports, and documents generated by an institution or agency are considered primary sources for the history of that institution or agency, as are the letters, memoirs, diaries, oral histories, and memoranda of persons associated with the agencies or involved in a particular activity or event relevant to the work or activities of that agency. Books and articles, even those technically classified as Government documents (such as a Regional History of the Forest Service published by the Forest Service) are usually secondary sources. Both categories of resources are valuable in the development of a history. Primary sources tend to define "history as it happened," while secondary sources, usually written sometime after an event and often evaluating the event in the context of other historical events or time periods, are helpful in promoting an understanding of the past. Each generation is constantly involved in the process of determining what happened in the past and in developing an understanding of that past and its application to the present. Historians seek to provide intelligent and trained assistance toward that effort.

Bibliographies particularly recommended for initial review of forest history material include:

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Dictionary Catalogue of the Yale Forestry Library. 12 vols. New Haven, CT: Yale University, Henry S. Graves Memorial Library.

Fahl, Ronald J. North American Forest and Conservation History: A Bibliography. Santa Barbara, CA: ABC Clio Press, 1977. 408 pp.

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Shands, William E. Forest Land USA: Annotated Bibliography of Policy, Economic and Management Issues, 1970—1980: A Conservation Foundation Report. Washington, D.C.: The Foundation, 1981. 62 pp.

Primary Sources

Manuscripts

Primary sources used in the history are largely manuscripts, documents, and interviews. Most of the writing derives from these resources. The major historical source, in terms of both volume and value, are the files and records generated by the Northern Region. These are on deposit at the Federal Records Center, Seattle, Washington, and in the Seattle Branch of the National Archives. Records generated by the ranger districts, national forests, and regional headquarters are filed according to Forest Service Handbook 6209.11—Filing System Handbook. At the Federal Records Center, each forest is assigned a Prefix Group Identification; materials are assigned an accession number, preceded by the general forestry designation (095), and a box number within the accession group.

Additional manuscript sources and historical records have been retained by the regional headquarters and by some of the national forests within the region. These have been stored or managed in various ways, usually by placing the records in file cabinets and giving the cabinets a very loose designation such as "Historical Files and Records." The Custer National Forest has a very strong historical collection. The Bitterroot National Forest has selected historical materials, some related local history manuscripts, and an outstanding photographic collection. The Nez Perce historical collections are useful, but at the time of the research these were physically scattered. The Clearwater National Forest has selected materials, which are very useful, and a good historical photographic collection. The Idaho Panhandle National Forests has an excellent historical file, a very well organized (by data base) photographic collection, and a good map collection. The Lolo National Forest has strong archaeological records and some oral interviews. The Deerlodge has a few scattered historical records. Other forests in the Region have relatively few historical resources. Manuscript sources are identified below:

Beaverhead National Forest, historical files, Dillon, MT
Bitterroot National Forest, historical files, Hamilton, MT
Custer National Forest, historical files, Billings, MT
Deerlodge National Forest, historical files, Butte, MT
Federal Records Center, Seattle, WA
Helena National Forest, historical files, Helena, MT
Idaho Panhandle National Forests, historical files, Coeur d'Alene, ID
National Archives—Seattle Branch, Seattle, WA
Regional Office, historical files and records, Missoula, MT
University of Montana Archives, Missoula, MT

The rather extensive files and records gathered in the research of this book have been deposited in the University of Montana Archives at Missoula.

Documents generated by the Northern Region are deposited in libraries designated as Government document depositories, but the holdings are often incomplete and difficult to access. Documents generated within the Region are not always accessed by the Library of Congress or other Government depositories: thus the documents used in this history are physically located in a variety of libraries and forest offices.

Documentary sources are, of course, voluminous. One of the most useful historical documentary resources in the Region is the four-volume compilation of interviews with and commentaries by early foresters (Missoula, MT: USDA Forest Service, *Early Days in the Forest Service*, I—IV). The Region or forests within the region also have published a number of forest and ranger district histories; while technically identified as "documents," having been generated by a Government agency, these are secondary historical sources and are noted under Secondary Sources.

Copies of the Northern Region Press Releases are available in bound volumes for the years from approximately 1926 to date in the regional offices. Copies of Northern Region News also are available, and these are a valuable resource. The Region and each forest have independently generated documentary sources over the years. The individual forest plans are a prominent resource for contemporary history. These are in three or four volumes (some with supplements) and are summarized below:

Beaverhead National Forest, Dillon, MT. Forest Plan. April 1986. Parts I—VIII, Appendices.

_____. *Final Environmental Impact Statement*. April 1986. 2 vols.

_____. *Record of Decision*. 30 pp.

Bitterroot National Forest, Hamilton, MT. *Forest Plan*. September 1987. Parts I—VII.

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_____. Forest Plan: Final Environmental Impact Statement. II. September 1987. Parts I—VIII.

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Clearwater National Forest, Orofino, ID. *Forest Plan*. September 1987. Parts I—IV, Appendices.

_____. Forest Plan: Environmental Impact Statement. I. September 1987. Parts I—VI, Appendices.

_____. Forest Plan: Environmental Impact Statement. II. September 1987. Parts I—VIII.

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_____. *Final Environmental Impact Statement*. October 1986. 380 pp.

_____. *Record of Decision*. June 1987. 37 pp., Appendices.

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_____. Forest Plan: *Final Environmental Impact Statement*. September 1987. Parts I—VIII.

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Flathead National Forest, Kalispell, MT. *Forest Plan*. December 1985. Parts I—VII, Appendices.

_____. *Environmental Impact Statement:* Summary. 28 pp., tables.

Gallatin National Forest, Bozeman, MT. Nelson, Thomas C. "The Evolution of National Forest Planning," *Forest Planning 1* (April 1980):13—14; USDA Forest Service, Northern Region.

Helena National Forest, Helena, MT. *Forest Plan*. April 1986. Parts I—VI, Appendices.

_____. *Forest Plan: Final Environmental Impact Statement*. April 1986. Parts I—VII.

_____. *Forest Plan: EIS, Appendices A,B,C*. April 1986. Parts A—C.

Idaho Panhandle National Forests, Coeur d'Alene, ID. *Overview, Forest Plan*. 1987. pp. 1—22.

_____. *Forest Plan*. August 1987. Parts I—V.

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Kootenai National Forest, Libby, MT. *Forest Plan*. Vol. I. September 1987. Parts I—VI.

_____. *Forest Plan*. Vol. II. Appendices.

_____. *Forest Plan: Final Environmental Impact Statement. I*. 1987. Parts I—IV.

_____. *Forest Plan: Final Environmental Impact Statement. II*. 1987. Parts I—VI.

_____. *Forest Plan: Public Comments and Forest Service Response*. 1987. 2 vols.

Lolo National Forest, Missoula, MT. *Plan*. February 1986. Parts I—VI.

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_____. *Final Environmental Impact Statement: Appendices*. February 1986. Parts A—C.

Nez Perce National Forest, Grangeville, ID. *Forest Plan*. October 1987. Parts I—VII, Appendices.

_____. *Final Environmental Impact Statement*. October 1987. Parts I—VI.

_____. *Final Environmental Impact Statement: Appendices*. October 1987. Parts A—D.

Research reports of the Northern Rocky Mountain Forest and Range Experiment Station and the Intermountain Forest and Range Experiment Station are many and diverse and also are useful historical documents.

Correspondence and Memoranda From Retirees

In response to a letter requesting anecdotes and information that was sent to Region 1 retirees, a considerable volume of interesting and informative personal history was received. Much of this has been incorporated in the history. Respondents included the following:

Amsbaugh, Byron C.	Redding, CA
Alt, Bernard W.	Kalispell, MT
Arvish Andrew J.	Orofino, ID
Beebe, John D.	Hayden Lake, ID
Bennett, Jack	Missoula, MT
Bingham, Richard T.	Moscow, ID
Blackmer, Fred	Missoula, MT
Blessing, Mildred (Cheney)	Federal Way, WA
Bruesch, L.D.	Missoula, MT
Cheyney, Hugh R.	Des Moines, WA
Collins, John G.	Missoula, MT
Cowles, Floyd R.	Portland, OR
Evanko, Anthony B.	Missoula, MT
Fallis, Willard R. (Bill)	Frenchtown, MT
Farbo, Thomas P.	Orofino, ID
Frayer, Hume	Jefferson, OH
Gillam, Bertha C.	Salt Lake City, UT
Green, Geoffrey E.	Great Falls, MT
Gutkoski, Joe	Bozeman, MT
Hahn, Walter R.	Superior, MT
Hardy, Charles E. (Mike)	Missoula, MT
Harper, Mrs. James M.	Missoula, MT
Hoeger, Virginia	Gallatin Gateway, MT
Hunter, Ray D.	Victor, MT
Johnson, Maurice R.	Kalispell, MT
Jorgensen, Rolf B.	Coeur d'Alene, ID
Karr, Ray	Missoula, MT
Lockhart, Russell E.	St. Ignatius, MT
Milodragovich, Robert	Missoula, MT
Miner, Ray	Libby, MT
Navratil, Ted	Sandpoint, ID
Nelson, Junia Benedict	Kalispell, MT
Norman, Kenneth P.	Redding, CA
Nousanen, Arne D.	Hamilton, MT
Odell, Charlie	Camp Crook, SD
Peterson, Neil O.	Sheridan, MT
Peterson, Walter S.	Kalispell, MT
Powell, L.M.	Hamilton, MT
Rahm, Neal	Missoula, MT
Robe, H.O.	Las Vegas, NV
Rowland, Harvey C.	Butte, MT
Sampert, L.R.	Coeur d'Alene, ID
Sandberg, Victor O.	Sun City, AZ
Sharp, Bill	Bozeman, MT
Sievers, Edwin R.	Polson, MT
Sinclair, Clarence S.	Coeur d'Alene, ID
Slusher, Edward M.	Rockport, TX
Smart, Robert A.	Colville, WA
Smith, Larry	Sandpoint, ID
Snyder, Nathan	Seeley Lake, MT
Space, Ralph S.	Orofino, ID
Stern, Jerry	Sagle, ID
Stewart, F.K.	Missoula, MT
Stiger, Everett M. "Sonny"	Wolf Creek, MT
Swift, Bernie A.	Hamilton, MT
Van Gieson, Bayard R. (Bob)	Missoula, MT
Viche, Henry J.	Missoula, MT
Weatherstrom, Carl	Missoula, MT
Welton, Howard	Coeur d'Alene, ID
West, Raymond M.	Portland, OR
White, Eric P.	Helena, MT
Williams, Donald V.	Chino Valley, AZ
Williamson, Lester M.	Post Falls, ID
Wilson, Mary Lou (Hamblet)	Coeur d'Alene, ID

Oral History Interviews

Interviews were conducted with a number of both active and retired Northern Region foresters and interested parties. They included:

Beaman, Dallas W. (Bill)	Hoverson,Robert
Beck, Barbara	McKenzie, Ellen
Blake, Clyde	McLean, Gary
Clark, Wilson F.	McLeod, C. Milo
Davis, Dan	Milodragovich, John
Dawson, L.H.	Milodragovich, Robert R.
Denne, John	Morgan, Robert
Emerson, John	Purcell, Neal (Pete)
Espinosa, Al	Raddon, Charles H.
Finch, Thomas	Robinson, Johnny
Giannettino, Susan	Roenke, Karl
Gibson, Robert	Ruediger, Bill
Hansen, Ronald	Salinas, Joe
Hardy, Charles E. (Mike)	Salomonsen, Frank
Hawkins, Gordon, Sr.	Sims, Cort
Hearst, Loren	Space, Ralph S.
Heid, Jim	Trevey, Fred
Helseth, Carter	Viche, Henry J.
Holland,Tom	Warren, Nancy
Kovalicky, Tom	Wetterstrom, Carl W.

Secondary Sources

Many of the national forests in Region 1 have narrative histories of the forests, written by persons who previously spent most or all of their active careers within the region. A number of these have been published by the forest, the region, or on occasion by private presses or individuals. Some of these history manuscripts have not been published, but instead are retained as part of the historical record of the forest or Region. Prominent published histories of specific forests include: Ralph Space, **The Clearwater Story** (1964); Charlie Shaw, **The Flathead Story** (1967); Wilson F. Clark, **A General History of the Custer National Forest** (1982); and Albert N. Cochrell, **History of the Nez Perce National Forest** (rev. 1970).

Unpublished histories available in the Regional Office include: Bettie Doetch, "History of the Kootenai National Forest," and Lewis Hawkes, "History of the Gallatin National Forest," (1988). There are brief manuscript histories of many of the forests, ranger districts, and ranger stations.

Books that have been published by private persons or presses within the geographical region and that bear directly on the history of the Northern Region include: Clyde P. Fickes, **Recollections** (1972); Elers Koch, **Forty Years a Forester** (n.d.); Elers Koch, ed., **When the Mountains Roared: Stories of the 1910 Fire** (n.d.); Kenneth D. Swan, **Splendid Was the Trail** (1968); Robert C. Gildert, **Montana's Early Day Rangers** (1985); Stan Cohen and Don Miller, **The Big Burn: The Northwest's Fire of 1910** (1983); Stan Cohen, **Smokejumpers** (1983); and Neal Parsell, **Major Fenn's Country** (n.d.).

A selected list of some of the more significant secondary resources and historical narratives relating to the Northern Region are listed below:

Books

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Behan, Richard W. "Wilderness Decision in Region 1, United States Forest Service: A Case Study of Professional Bureau Policy Making," Ph.D. dissertation, University of California, Berkeley, 1972.

Brandon, William. **Indians.** New York: American Heritage, 1985.

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Burlingame, Merrill G. **The Montana Frontier.** Bozeman: Big Sky Books, Montana State University, 1942.

Burroughs, Raymond Darwin, ed.. **The Natural History of the Lewis and Clark Expedition.** East Lansing: Michigan State University Press, 1961.
340 pp.

Bryan, William L., Jr. Montana's Indians: **Yesterday and Today.** Helena: Montana Magazine, 1985.

Carhart, Arthur H. **The National Forests.** New York: Alfred A. Knopf, 1959. 289 pp.

Carriker, Robert C. **The Kalispel People.** Phoenix: Indian Tribal Series, 1973.

Chittenden, Hiram Martin. **The American Fur Trade of the Far West: A History of Pioneer Trading Posts and Early Fur Companies of the Missouri Valley and Rocky Mountains and of the Overland Commerce with Santa Fe.** New York: Rufus Rockwell Wilson, 1936. Vol. I.

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Clawson, Marion. **The Western Range Livestock Industry.** American Forestry Series. New York: McGraw-Hill, 1950. 401 pp.

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Denig, Edwin Thompson. **Five Indian Tribes of the Upper Missouri: Sioux, Arickaras, Assiniboines, Crees, Crows.** Norman: University of Oklahoma Press, 1961.

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